
ලක්විජය බලාගාරයේ මෙහෙයුම් කටයුතු හා එහි පාරිසරික බලපෑම



වාර්තා අංකය: PER/B/2018/02



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පරිසර විගණන අංශය



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1. විධායක සාරාංශය

වයඹ පළාතේ කල්පිටිය - නොරොච්චෝලේ ප්‍රදේශයේ පිහිටුවා ඇති මෙගාවොට් 900 ක ධාරිතාවයකින් යුත් ලංකා විදුලි බල මණ්ඩලයට අයත් ශ්‍රී ලංකාවේ ප්‍රථම සහ එකම ගල් අඟුරු තාප බලාගාරය ලක්විජය ගල් අඟුරු තාප බලාගාරය වේ. 2006 වර්ෂයේදී මෙගාවොට් 300 කින් යුතු ප්‍රථම අදියරද, 2010 වර්ෂයේදී මෙගාවොට් 600 කින් යුත් දෙවන අදියරද ආරම්භ කරන ලද අතර 2011 හා 2014 වර්ෂයන්හි දී පිළිවෙලින් ප්‍රථම හා දෙවන අදියර වලින් මෙගාවොට් 900 ක් ජාතික විදුලි බල පද්ධතියට එකතු වී ඇත. ශ්‍රී ලංකාවේ වර්තමාන විදුලි බල උත්පාදනය සඳහා ශ්‍රී ලංකා විදුලි බල මණ්ඩලය යටතේ ප්‍රධාන බලාගාර 26 ක (පුද්ගලික බලාගාර හැර) දායකත්වයක් හා මුළු උපපොලවල් 247 ක් යටතේ 2017 වර්ෂයේදී නිෂ්පාදනය කරන ලද මුළු නිෂ්පාදනය ගිගාවොට් පැය 14,671.2 ක් වූ අතර මෙම නිෂ්පාදනය සඳහා ලක්විජය බලාගාරයේ දායකත්වය සියයට 34.78 ක් විය. විදුලි බල නිෂ්පාදනය සඳහා යොදා ගනු ලබන ප්‍රධාන මූලාශ්‍ර වන ජලය , ඉන්ධන හා ගල් අඟුරු අතුරින් ගල් අඟුරු මඟින් විදුලිය නිපදවීම දෙවන අවම සාමාන්‍ය ඒකක පිරිවැය සහිත මූලාශ්‍රය බව නිරීක්ෂණය විය.

මෙම බලාගාරයේ මෙහෙයුම් කටයුතු හා එහි පාරිසරික බලපෑම හඳුනාගැනීම අරමුණු කරගෙන මෙම වාර්තාව පිළියෙල කරන ලදී. 2015 වර්ෂයේදී වයඹ පළාත් පරිසර අධිකාරිය විසින් ලක්විජය තාප බලාගාරය සඳහා ප්‍රථම පරිසර ආරක්ෂණ බලපත්‍රය නිකුත් කර තිබුණු අතර මේ සඳහා මධ්‍යම පරිසර අධිකාරියේ මැදිහත් වීමක් සිදු කර නොතිබුණි. 2017/2018 වර්ෂය සඳහා බලපත්‍රය අළුත් කිරීම සඳහා බලාගාරය විසින් 2017 ජූනි 14 දින පළාත් පරිසර අධිකාරිය වෙත අයදුම්පත ඉදිරිපත් කර තිබුණද 2018 මැයි 10 දින වන විටත් පරිසර ආරක්ෂණ බලපත්‍රය නිකුත් කර නොතිබුණි. පරිසර ආරක්ෂණ බලපත්‍රය නිකුත් කිරීමේ අරමුණ සාක්ෂාත් කර ගැනීම සඳහා බලාගාරයේ මෙහෙයුම් ක්‍රියාවලිය පිළිබඳව පළාත් පරිසර අධිකාරියේ අවධානය ප්‍රමාණවත් පරිදි යොමු වී නොතිබීමත් ඒ සඳහා වගකිව යුතු අනෙකුත් ආයතන වල අකාර්යක්ෂමතාවයත් හේතුවෙන් අහිතකර පාරිසරික බලපෑම් ඇති වී තිබුණු බව නිරීක්ෂණය විය.

ලක්විජය බලාගාරය මඟින් විදුලිය නිෂ්පාදන කාර්යයේදී යොදාගනු ලබන ප්‍රධාන අමුද්‍රව්‍ය වූ ගල් අඟුරු වල පැවතිය යුතු ගුණත්වය කෙරෙහි විශේෂ අවධානයක් යොමුකර නොතිබීම ද ඇති වී තිබූ පාරිසරික ගැටළු වලට ප්‍රධාන හේතුවක් වී තිබුණි. එසේම ගල් අඟුරු දහනයේදී නිෂ්පාදනය වන පියාසර අළු හා යටි අළු වශයෙන් වූ අතුරු ඵල බැහැර කිරීමේ ක්‍රමවේදය ව්‍යාපෘති සැලැසුම් අදියරේදී හඳුනාගෙන තිබුණද එම ක්‍රියාවලිය ප්‍රමාණවත් අයුරින් ක්‍රියාත්මක නොකිරීම හේතුවෙන් පාරිසරික ගැටළු ඇති වීමත් එම ගැටළු පාලනය සඳහා ක්‍රියාමාර්ග ගැනීමේදී බලාගාරය විසින් දැරිය යුතු පිරිවැය ඉහලයාමක් සිදුවන බවත් නිරීක්ෂණය විය. පාරිසරික වශයෙන් ගැටළුවක් වූ පියාසර අළු, අංගනයේ තැන්පත් කිරීම වෙනුවට කඩිනම් ක්‍රියාමාර්ගයකින් අංගනයෙන් ඉවත් කර හඳුනාගත් වෙනත් නිෂ්පාදන සඳහා අමුද්‍රව්‍යයක් වශයෙන් යෙදවීමේ අවශ්‍යතාවය නිරීක්ෂණය විය. පළාත් පරිසර අධිකාරිය විසින් ප්‍රසිද්ධ කරන ලද සංසරණ වායු තත්ත්ව පිළිබඳ ප්‍රමිත වලට අනුකූලව බලාගාරයේ මෙහෙයුම් කටයුතු සිදුවන්නේද යන්න පළාත් පරිසර අධිකාරිය විසින් අඛණ්ඩව අධීක්ෂණය කර නොතිබුණු බවද නිරීක්ෂණය විය.

ගල් අඟුරු දහනයේදී විමෝචනය වන පරිසර තත්වයන්ට හානිකර වායුන් හා බැර ලෝහ බැහැර කිරීමේ ක්‍රියාවලිය, බලාගාරයේ මෙහෙයුම් ක්‍රියාකාරීත්වය සඳහා උපයෝගී කරගන්නා මුහුදු ජලය පිරිපහදුවෙන් පසු නැවත මුහුදට බැහැර කිරීමේ ක්‍රියාවලිය හා භූගත ජලය අඛණ්ඩව අධීක්ෂණය කිරීමේ අවශ්‍යතාවය විගණනයේදී නිරීක්ෂණය විය. තවද විමෝචක වායු සම්බන්ධයෙන් විමෝචක වායු ගෙන්දගම් විද්‍යුත්තකයේත් පියාසර අළු සම්බන්ධයෙන් ස්ථිති විද්‍යුත් අවක්ෂේපකයේත් කාර්යක්ෂමතාවය අඛණ්ඩව අධීක්ෂණය කල යුතු බව නිරීක්ෂණය විය. බලාගාරයේ නඩත්තු කටයුතු සැලැස්මකට අනුව සිදු කිරීම හා ගල්අඟුරු අංගනයේ ඇති දූවිලි අංශු සුළඟ සමඟ ව්‍යාප්ත වීම වැළැක්වීම සඳහා ගල් අඟුරු අංගනය වටා දැනට පවතින සුළං බාධකය පුළුල් කිරීමත්, දැනට අංගනයේ ගොඩ ගසා ඇති අළු ගම්මානය දෙසට ව්‍යාප්ත වීම වැළැක්වීම සඳහා අවශ්‍ය ක්‍රියාමාර්ග ගැනීමත් සිදුකළ යුතුය.

බලාගාරයේ ක්‍රියාකාරකම් තුළින් ධීවර ජනතාවට වන බලපෑම අවම කිරීමත්, මුහුදු පතුල සමීක්ෂණ කටයුතු සිදුකිරීම මඟින් ගල් අඟුරු තැන්පත් වී ඇති ප්‍රමාණයත්, එම තැන්පත්වීම් අවම කිරීම සඳහා අවශ්‍ය ක්‍රියාමාර්ග සැලැසුම් කිරීමත් කළ යුතු වේ. වෙරළ බාදනය අවම කිරීම හා වෙරළ තීරයේ ආරක්ෂාවට අවශ්‍ය ක්‍රියාමාර්ග සිදු කළයුතු බව නිරීක්ෂණය කෙරෙන අතර ඉහත සඳහන් සියළු ක්‍රියාමාර්ග ගැනීමෙන් පාරිසරික හානිය අවම කරගනිමින් පරිසර හිතකාමී කර්මාන්තයක් ලෙස හා ජාතික ආර්ථිකයට එකතු කළ වටිනාකමක් සහිත විදුලිබල නිෂ්පාදන කර්මාන්තයක් වශයෙන් දායකත්වයක් ලබාදීමේ හැකියාව ඇති බව නිරීක්ෂණය කෙරේ.

2. වාර්තාවේ පසුබිම හා ස්වභාවය

වයඹ පළාතේ කල්පිටිය - නොරොච්චෝලේ ප්‍රදේශයේ පිහිටුවා ඇති මෙගාවොට් 900 ක ධාරිතාවයකින් යුත් ලංකා විදුලි බල මණ්ඩලයට අයත් ශ්‍රී ලංකාවේ ප්‍රථම සහ එකම ගල් අඟුරු තාප බලාගාරය ලක්විජය ගල් අඟුරු තාප බලාගාරය වේ. 2006 වර්ෂයේදී මෙගාවොට් 300 කින් යුතු ප්‍රථම අදියරද, 2010 වර්ෂයේදී මෙගාවොට් 600 කින් යුත් දෙවන අදියරද ආරම්භ කරන ලද අතර 2011 හා 2014 වර්ෂයන්හි දී පිළිවෙලින් ප්‍රථම හා දෙවන අදියර වලින් මෙගාවොට් 900 ක් ජාතික විදුලි බල පද්ධතියට එකතු වී ඇත. ශ්‍රී ලංකාවේ ප්‍රථම සහ එකම තාප බලාගාරය වන ලක්විජය ගල් අඟුරු බලාගාරය මගින් මුළු විදුලිබල උත්පාදනයෙන් 1/3 කට ආසන්න දායකත්වයක් ලබා දෙනු ලැබීමත් එමගින් ඇතිවන ආර්ථිකමය, සාමාජීය වටිනාකමත් හඳුනාගැනීම වැදගත්වේ. එම බලාගාරය ක්‍රියාත්මක කිරීමේදී ඇතිවන පාරිසරික ගැටළු හා ඒවා වැලැක්වීම සඳහා ගෙන ඇති ක්‍රියාමාර්ග ද අනාගතයේදී ක්‍රියාත්මක කිරීමට අපේක්ෂිත යෝජනා හා එහි ක්‍රියාකාරීත්වය පිළිබඳ පාරිසරික විගණන වාර්තාවක් පිළියෙල කිරීමේ අවශ්‍යතාවය මත මෙම වාර්තාව පිළියෙල කරන ලදී.

3. විෂය පථය

ලක්විජය බලාගාරයේ 2016, 2017 වර්ෂ වල හා 2018 මැයි 10 දින දක්වා මෙහෙයුම් ක්‍රියාකාරීත්වය, බලාගාරයේ නඩත්තු කටයුතු හා වර්තමානයේ මුහුණ දී ඇති පාරිසරික තත්ත්වයන් ද මේ සම්බන්ධයෙන් උනන්දුවක් දක්වන පාර්ශවයන් විසින් නිකුත් කරන ලද පරීක්ෂණ හා සමීක්ෂණ වාර්තා පරීක්ෂා කරන ලදී.

4. විෂය පථය සීමා කිරීම

මෙම වාර්තාවෙන් පෙන්වනු ලබන ඇති නිරීක්ෂණයන් මගින් නිගමනයන්ට එළඹීමේදී මාගේ විෂය පථය මතු දැක්වෙන සීමා වලට යටත්ව තිබූ බව අවධාරණය කරනු ලැබේ.

- 4.1. බලාගාරය විසින් මිලදී ගෙන ඇති ගල් අඟුරු තොග හා අංගනයේ අතුරා ඇති පියාසර අළු හා යටි අළු සත්‍යාපනය නොකිරීම හේතුවෙන් ගල් අඟුරු අංගනය හා අළු අංගනයේ ධාරිතාවයන් පිළිබඳ නිශ්චිතව ප්‍රකාශ කල නොහැකි වීම.
- 4.2. වර්තමානයේදී බලාගාර පරිශ්‍රයේ පවතින පසෙහි ගුණත්වය සඳහා බලාගාරය ආරම්භයේ සිට සිදු වූ මෙහෙයුම් කටයුතු වල බලපෑම තක්සේරු කිරීම සිදුකල නොහැකි වීමත් ශබ්ද හා කම්පන තුලින් අනාගතයේ ඇතිවිය හැකි බලපෑම පුරෝකථනය කල නොහැකිවීම.
- 4.3. ගල් අඟුරු බලාගාරයේ ඉදිකිරීම්වලට අදාළ නිර්මාණ සැලැසුම් පරීක්ෂා නොකිරීම හේතුවෙන් පාරිසරික ගැටළු වලට හේතු වූ සැලැසුම් දුර්වලතා හඳුනාගත නොහැකි වීම.
- 4.4. ලංකා විදුලිබල මණ්ඩලය විසින් විදුලි උත්පාදනය සඳහා යොදා ගන්නා ජල විදුලි, ඉන්ධන, සුළං හා පෞද්ගලික අංශයන්ගෙන් ලබා ගන්නා විදුලියට අදාළ සියළු මූලාශ්‍ර වල කාර්යයසාධනය පරීක්ෂා නොකිරීම.
- 4.5. විගණන නිර්දේශ හා නිගමනයන්ට එළඹීමේදී වාර්තාවේ සඳහන් වෙනත් පාර්ශවයන්ගෙන් ලබාගත් දත්ත හා තොරතුරුද පාදක කර ගැනීම.

5. වාර්තාව පිළියෙල කිරීමේ ක්‍රමවේදය

මෙම වාර්තාව පිළියෙල කිරීමේදී පහත දැක්වෙන ක්‍රමවේදයන් අනුගමනය කරන ලදී.

5.1. ලේඛන පරීක්ෂාව

- 5.1.1. 1980 අංක 47 දරණ ජාතික පාරිසරික පනත.
- 5.1.2. 1990 අංක 12 දරණ වයඹ පළාත් පාරිසරික ප්‍රඥාප්තිය.
- 5.1.3. ලංකා විදුලිබල මණ්ඩලය හා ලංකා ගල් අඟුරු සමාගම අතර ඇති වූ 2017 සැප්තැම්බර් සිට 2019 අප්‍රේල් දක්වා ගල් අඟුරු සැපයීම සඳහා වූ ලංසු ලේඛන.
- 5.1.4. 2018 ජනවාරි 8 දින ශ්‍රී ලංකා මහජන උපයෝගීතා කොමිෂන් සභාව විසින් ඉදිරිපත් කර තිබූ ලක්විජය ගල් අඟුරු බලාගාරය මඟින් සිදුවන පාරිසරික බලපෑම් හැකිතාක් අවම කිරීම සඳහා වූ ක්‍රියාත්මක සැලැස්ම හා නිර්දේශ.
- 5.1.5. ජාතික ජල සම්පත් පර්යේෂණ සහ සංවර්ධන නියෝජිත ආයතනය විසින් ලබා දී තිබූ නිර්දේශ.
- 5.1.6. ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයේ අතිවිශේෂ ගැසට් පත්‍රය 2006 (වෙරළ සංරක්ෂණ දෙපාර්තමේන්තුව).
- 5.1.7. 2017 මාර්තු 16 දිනැති අංක 2010/23 දරණ ජල සම්පත් මණ්ඩල නියෝග අති විශේෂ ගැසට් පත්‍රය.
- 5.1.8. වයඹ පළාත් පරිසර අධිකාරිය විසින් පවත්වාගෙන යනු ලබන ලේඛන.
- 5.1.9. ලක්විජය ගල් අඟුරු බලාගාරයේ විදුලිබල උත්පාදන හා පර්යේෂණ දත්ත 2016, 2017 හා 2018 මැයි 10 දින දක්වා.
- 5.1.10. ලක්විජය ගල් අඟුරු බලාගාරයේ කාර්යසාධන වාර්තා.
- 5.1.11. ලංකා විදුලිබල මණ්ඩලයේ කාර්යසාධන වාර්තා.
- 5.1.12. මහජන උපයෝගීතා කොමිෂන් සභාවේ නිර්දේශ.
- 5.1.13. පාරිසරික ගැටළුවලට අදාළව නිකුත් කර ඇති පුවත්පත් වාර්තා හා වෙනත් ආයතන වලින් නිකුත් කරන ලද වාර්තා.

5.2 වෙනත් පරීක්ෂාවන්

- 5.2.1 ස්ථානීය පරීක්ෂාවන් - ලක්විජය බලාගාර පරිශ්‍රය.
- 5.2.2 නාරක්කල්ලිය, පනිඅඩිය ගම්මාන වැසියන් කිහිපදෙනෙකු සමඟ සිදු කරන ලද සම්මුඛ සාකච්ඡා.

6. ක්‍රියාවලිය හැඳින්වීම

- 6.1. වර්තමාන ශ්‍රී ලංකාවේ විදුලිබල ඉල්ලුම හා විදුලි උත්පාදනය, ලක්විජය බලාගාරය පිළිබඳ හැඳින්වීම හා එහි පාරිසරික බලපෑම හඳුනා ගැනීම.
- 6.2. ගල් අඟුරු වල පැවතිය යුතු ගුණාත්මකභාවයක් ගල් අඟුරු දහනයේ අතුරු ඵල හා සංසරණ වායු තත්ත්ව ප්‍රමිති පවත්වාගෙන යාම.
- 6.3. බලාගාරයේ සිසිලන පද්ධතිය සඳහා අවශ්‍ය ජලය ලබාගැනීම, පිරිපහදුවෙන් පසු ජලය මුහුදට බැහැර කිරීමේ ක්‍රියාවලිය හා භූගත ජලයේ වර්තමාන තත්ත්වය හඳුනාගැනීම.
- 6.4. බලාගාරයේ කාර්යයසාධනය, මෙහෙයුම් කාර්යයන් සඳහා බලාගාරය තාවකාලිකව නවතා දැමීමට අදාල දත්ත විශ්ලේෂණය.
- 6.5. පාරිසරික ගැටළු වලක්වා ගැනීමට ක්‍රියාත්මක වැඩසටහන් වල වර්තමාන තත්ත්වයන්, පාරිසරික ගැටළු සම්බන්ධයෙන් තෙවන පාර්ශවීය අදහස් දැක්වීම හා ඒ සම්බන්ධව පුවත්පත් වාර්තා වල තත්ත්වය පැහැදිලි කිරීම.

7. ක්‍රියාවලිය

7.1. වර්තමානයේ ශ්‍රී ලංකාවේ විදුලිබල ඉල්ලුම හා විදුලිබල උත්පාදනය

7.1.1. ශ්‍රී ලංකාවේ විදුලි ඉල්ලුම

2002 වර්ෂයේ සිට 2016 වර්ෂය දක්වා පසුගිය වර්ෂ 15 ක විදුලි ඉල්ලුම සලකා බැලීමේදී සාමාන්‍ය වාර්ෂික වර්ධනය සියයට 6 ක් බව නිරීක්ෂණය විය. 2015 වර්ෂයේදී ගිගා වොට් පැය 11,786 ක් වූ විදුලි ඉල්ලුම 2016 වර්ෂයේදී ගිගා වොට් පැය 12,785 ක් විය. තවද 2018 වර්ෂයේ සිට 2022 වර්ෂය දක්වා වූ ඉදිරි වර්ෂ 5 සඳහා පුරෝකථනය කරන ලද සාමාන්‍ය ඉල්ලුම සියයට 5.9 ක් වූ අතර 2018 වර්ෂයේ සිට 2042 වර්ෂය දක්වා වූ ඉදිරි වර්ෂ 25 සඳහා සියයට 4.8 ක සාමාන්‍ය වර්ධන වේගයකින් යුතු ඉල්ලුමක් ඇති වේයැයි අපේක්ෂා කෙරේ.

මූලාශ්‍රය - [Generation Expansion plan -2017] ඇමුණුම - 01

7.1.2. ශ්‍රී ලංකාවේ වර්තමාන විදුලි බල උත්පාදන මූලාශ්‍ර

ශ්‍රී ලංකාවේ ප්‍රධාන විදුලි බල සැපයුම්කරු ලංකා විදුලි බල මණ්ඩලය වේ. 2017 වර්ෂය අවසාන වන විට මුළු උත්පාදන ධාරිතාවය මෙඟාවොට් 4,087 ක් වූ අතර උප පොළවල් 247 ක් මගින් විදුලි බලය බෙදාහැරීම සිදුකර තිබුණි. තවද මෙම උප පොළවල් අතරින් බලාගාර 26 ක අයිතිය හා ක්‍රියාකාරීත්වය ලංකා විදුලිබල මණ්ඩලය යටතේ වූ අතර 2017 වර්ෂයේ විදුලි බල උත්පාදන දත්ත අනුව ශ්‍රී ලංකාව සතු බලාගාර සංඛ්‍යාව පහත පරිදි වේ. (ඇමුණුම - 02)

වගු අංක 01 - ශ්‍රී ලංකාවේ විදුලිබල උත්පාදන බලාගාර - 2017

<u>විදුලි බලාගාර වර්ගය</u>	<u>විදුලි බලාගාර සංඛ්‍යාව</u>
ජල විදුලි බලාගාර (Hydro Power)	17
තාප විදුලි බලාගාර (Thermal)	8
සුළං බලාගාර	1
<u>පුද්ගලික අයිතිය යටතේ</u>	
තාප විදුලි බලාගාර	6
<u>සුළු පරිමාණ අයිතිය</u>	
අනෙකුත්	215

මූලාශ්‍රය - [CEB Statistical Digest 2017] ඇමුණුම-02

7.1.3. විදුලි බල උත්පාදනය සඳහා මූලාශ්‍ර දායකත්වය

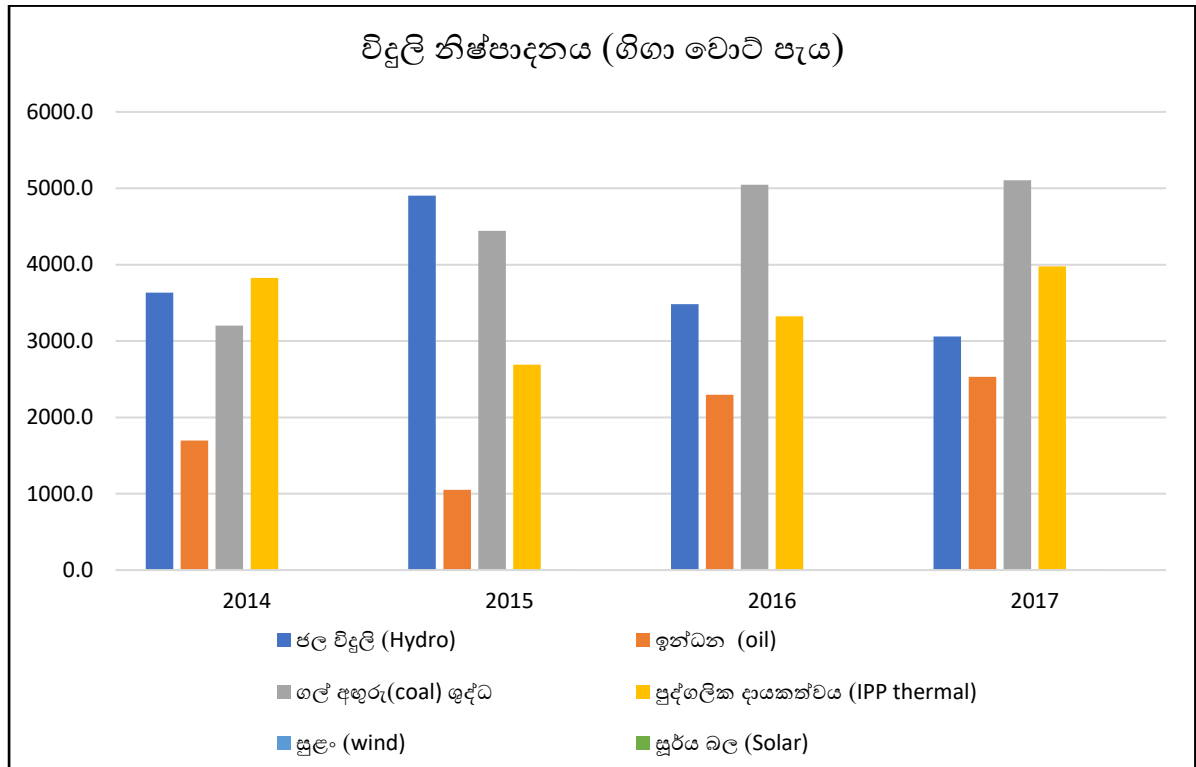
“අපගේ සාරධර්මයන්ට අනුගත වෙමින් සමස්ථ ශ්‍රී ලංකාවට කාර්යක්ෂම සමායෝජිත සහ සකසුරුවම් විදුලිය සැපයුමක් සංවර්ධනය කර පවත්වාගෙන යාම” යන මූලික මෙහෙවර (ඇමුණුම - 03) යටතේ ආරම්භ කරන ලද ලංකා විදුලි බල මණ්ඩලයේ සමුච්ඡිත විදුලි නිෂ්පාදනය සඳහා පසුගිය වර්ෂ 4 ක බලාගාර වල දායකත්වය පහත පරිදි වේ.

වගු අංක 02- විදුලිබල උත්පාදනය සඳහා මූලාශ්‍ර දායකත්වය 2014-2017

වර්ෂය	විදුලි නිෂ්පාදනය (ගිගා වොට් පැය)						මුළු නිෂ්පාදනය (ගිගා වොට් පැය)	විදුලි නිෂ්පාදනය සඳහා ලක්විජය බලාගාරයේ දායකත්වය %
	ජල විදුලි (Hydro)	ඉන්ධන (oil)	ගල් අඟුරු (coal) ශුද්ධ	පුද්ගලික දායකත්වය (IPP thermal)	සුළං (wind)	සූර්ය බල (Solar)		
2014	3,632.0	1,696.0	3,202.0	3,825.0	2.1	-	12,357.1	25.91%
2015	4,904.0	1,050.0	4,443.0	2,691.0	1.1	-	13,089.1	33.94%
2016	3,481.0	2,297.0	5,047.0	3,322.0	2.1	-	14,149.1	35.67%
2017	3,059.0	2,529.0	5,103.0	3,978.0	2.2	-	14,671.2	34.78%

මූලාශ්‍රය - [CEB Statistical Digest 2014,2015,2016,2017] ඇමුණුම-04

රූප සටහන් අංක 01- විවිධ මූලාශ්‍ර යටතේ විදුලිබල නිෂ්පාදනය



7.1.4. විදුලි බල උත්පාදනයේ කාර්යක්ෂමතා මිණුම්

විදුලි බල උත්පාදනයේ කාර්යක්ෂමතාවය මැනීමේදී යොදා ගන්නා කාර්ය සාධන දර්ශක කිහිපයක් පහත පරිදි වේ.

- i. බලාගාර සාධකය (Plant Factor)
- ii. ක්‍රියාත්මක වන බලාගාර සාධකය (Running Plant Factor)
- iii. ජනන පිරිවැය (Generation Cost)
- iv. සාමාන්‍ය ඒකක පිරිවැය (Average Unit Cost)
- v. පවතින සාධකය (Availability Factor)

මූලාශ්‍රය - [Generation Performance in Sri Lanka – 2016 – PUCSL] ඇමුණුම - 05

2016 වර්ෂය තුළදී මෙම කාර්ය සාධන දර්ශක වලට අදාළව ප්‍රධාන බලාගාර කිහිපයක ප්‍රගතිය පහත පරිදි වේ.

වගු අංක 03- විදුලිබල උත්පාදනයේ කාර්යසාධන දර්ශක වලට අදාළ ප්‍රධාන බලාගාර කිහිපයක ප්‍රගතිය

බලාගාර වර්ගය	කාර්ය සාධන දර්ශකය					
	වාර්ෂික උත්පාදනය (ගිගාවොට්ට් පැය)	බලාගාර සාධකය (Plant Factor) ප්‍රතිශතය %	ක්‍රියාත්මක වන බලාගාර සාධකය (Running Plant Factor) ප්‍රතිශතය %	ජනන පිරිවැය (Generation Cost) (රුපියල් මිලියන)	සාමාන්‍ය ඒකක පිරිවැය (Average Unit Cost) (මුළු පිරිවැය ලං.වි. ම) (රුපියල්/කිලෝවොට් පැය)	පවතින සාධකය (Availability Factor) ප්‍රතිශතය %
ජල විදුලිය						
වික්ටෝරියා	588.93	31.9	64	2,345	3.98	83
			64			88
ලක්ෂපාන(නව)	432.18	42.4	50	1,630 (ලක්ෂපාන නව/ පැරණි)	2.44	87
			48			91
පොල්පිටිය	325.04	49.3	54	2,201	5.09	85
			62			89
රන්දෙනිගල	323.44	30.2	85	2,021 (රන්දෙනිගල/ රන්ටැමේ)	4.34	88
			92			89
සමනල වැව	260.54	24.7	56	1,868	7.17	90
			59			89
ගල් අඟුරු - ලක්විජය						
ලක්විජය - Unit 1	826.96	31.38	38.93	33,349	6.61	48.23
ලක්විජය - Unit 2	2,383.01	90.43	95.2		6.61	93.63
ලක්විජය - Unit 3	2,365.48	89.76	94.11		6.61	92.7

ඉන්ධන						
කැලණි තිස්ස විදුලි බලාගාරය (KCCP)	780.71	55.2	GT - 89	19,845 (CCY)	38.71 (PS GTS)	70 (GT)
			ST - 94		25.42 (CCY)	64 (ST)
සපුගස්කන්ද B	474.70	77.6	84	10,969	23.11	85
යාත්‍රාවක නැංවු බලාගාරය (Barge CEB)	356.11	67.6	100	7,783	21.86	98

මූලාශ්‍රය - [Generation Performance in Sri Lanka – 2016 – PUCSL හා ලං.වි.ම] අමුණුම - 05

7.1.5 විදුලිබල ජනන පිරිවැය - 2015/2016

විදුලි බල උත්පාදනයේදී විදුලි බල ඒකකයක් ජනනය කිරීම සඳහා එක් එක් තාක්ෂණයන් මගින් වූ දායකත්වය පසුගිය වර්ෂ 2 ක් සඳහා පහත දක්වා ඇත.

වගු අංක 04 - විදුලිබල ජනන පිරිවැය 2015/ 2016

තාක්ෂණය	ඉන්ධන පිරිවැය		අමතර කොටස් සහ වෙනත් නඩත්තු ද්‍රව්‍ය පිරිවැය		වෙනත් මෙහෙයුම් සහ නඩත්තු වියදම්		සම්පූර්ණ ජනන පිරිවැය		ඒකක		ඒකකයක් ජනනය සඳහා සාමාන්‍ය පිරිවැය	
	රු. මිලියන	රු. මිලියන	රු. මිලියන	රු. මිලියන	රු. මිලියන	රු. මිලියන	රු. මිලියන	රු. මිලියන	ගිගාවොට් පැය	රු./කිලෝ වොට් පැය	රු./කිලෝ වොට් පැය	රු./කිලෝ වොට් පැය
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
තාප-තෙල්	22,802	49,516	1,087	1,677	6,322	6,412	30,211	57,605	1,085	2,362	27.84	24.38
තාප-ගල් අඟුරු	21,304	20,762	748	762	10,631	11,978	32,682	33,502	4,457	5,066	7.33	6.61
ජල විදුලි	-	-	532	364	7,608	7,980	8,140	8,344	4,925	3,501	1.65	2.38
මුළු ගණන	44,106	70,278	2,367	2,803	24,561	26,370	71,033	99,451	10,467	10,930	6.79	9.10

මූලාශ්‍රය - [Annual Report – 2015/2016 – CEB] අමුණුම - 06

7.1.6 විදුලි උත්පාදන මූලාශ්‍ර විචලන

පසුගිය වර්ෂ 03 ක විදුලිබල උත්පාදනය සඳහා භාවිතා කරනු ලැබූ ජල විදුලි(Hydro) මූලාශ්‍රයේ විචලනයන්ට සාපේක්ෂව අනෙකුත් විදුලි උත්පාදන මූලාශ්‍ර භාවිතා කිරීම සම්බන්ධයෙන් වූ තොරතුරු පහත දැක්වේ.

වගු අංක 05 - විදුලි උත්පාදන මූලාශ්‍ර විචලන

වර්ෂය	ජල විදුලිය ගිගා වොට් පැය	විචලනයේ ප්‍රතිශතය %	ඉන්ධන ගිගා වොට් පැය	විචලනයේ ප්‍රතිශතය %	ගල් අඟුරු ගිගා වොට් පැය	විචලනයේ ප්‍රතිශතය %	පුද්ගලික දායකත්වය ගිගා වොට් පැය	විචලනයේ ප්‍රතිශතය %	වෙනත් (සුළං සහ සූර්ය බල)	විචලනයේ ප්‍රතිශතය %	මුළු නිෂ්පාදනය ගිගා වොට් පැය
2015	4,904		1,050		4,443		2,691		1.1		13,089
2016	3,481	(37.62)	2,297	140.85	5,047	14.85	3,322	47.82	2.1	100	14,149
2017	3,059		2,529		5,103		3,978		2.2		14,671

මූලාශ්‍රය - [CEB Statistical Digest 2014,2015,2016,2017] ඇමුණුම -04

2015 වර්ෂයේ සිට 2017 වර්ෂය දක්වා විදුලි උත්පාදන කාර්යයයේදී ජල විදුලි මූලාශ්‍රය(Hydro) මගින් විදුලිය නිපදවීම මුළු උත්පාදනයෙන් සියයට 37.46(4,904/13,089*100) සිට 20.85(3,059/14,671*100) දක්වා අඩුවීමක් වාර්තා වී තිබුණු අතර ජල මූලාශ්‍රය(Hydro) පමණක් සලකා බැලීමේදී විදුලි උත්පාදනය සියයට 37.62 කින් අඩු වී තිබුණි. මෙම කාලය තුළ වූ විදුලි ඉල්ලුම සපුරාලීම සඳහා ඉන්ධන ප්‍රභවය (Oil) භාවිතා කරමින් විදුලි උත්පාදනය සියයට 140.85 කින් ද, පුද්ගලික අංශයෙන්(IPP) විදුලිය මිලදී ගැනීම සියයට 47.82 කින්ද ඉහල ගොස් ඇති බව නිරීක්ෂණය විය. ලංකා විදුලිබල මණ්ඩලයේ විදුලිබල උත්පාදන මූලාශ්‍ර අතුරින් අවම දෙවන ඒකක පිරිවැය සහිත මූලාශ්‍රය වූ ගල් අඟුරු භාවිතා කර මෙම කාලය තුළදී උත්පාදනය කරන ලද විදුලි ඒකක සංඛ්‍යාවේ වර්ධනය සියයට 14.85 ක් පමණක් විය.

7.2 ලක්විජය බලාගාරය පිළිබඳ හැඳින්වීම

7.2.1 පිහිටවීම හා නිෂ්පාදන ධාරිතාවය

වයඹ පළාතේ කල්පිටිය - නොරොච්චෝලේ ප්‍රදේශයේ පිහිටුවා ඇති ලංකා විදුලි බල මණ්ඩලයට අයත් ශ්‍රී ලංකාවේ ප්‍රථම සහ එකම ගල් අඟුරු තාප බලාගාරය ලක්විජය ගල් අඟුරු තාප බලාගාරය වන අතර එම බලාගාරයේ ධාරිතාවය මෙඟාවොට් 900 කින් යුක්ත වේ. පුත්තලම මුහුදු තීරයේ සිට මීටර් 100 කට ආසන්න ප්‍රමාණයකින් ගොඩබිම දෙසට හා පනිඅඩිය හා නාරක්කල්ලිය ගම්මානවලට යාබදව පුත්තලම නගරයේ සිට ප්‍රධාන මාර්ගය ඔස්සේ කිලෝමීටර් 12 ක පමණ දුරින් නගරයට බටහිර දිශාවෙන් මෙම බලාගාරය පිහිටුවා ඇත. 2011 මාර්තු මාසයේ දී පළමු අදියරේ ද, 2014 මැයි සහ සැප්තැම්බර් යන මාස වලදී දෙවන අදියරේ ද වැඩ අවසන් කර තිබූ අතර බලාගාරය මෙඟාවොට් 300 ක ධාරිතාවයෙන් යුත් ඒකක 03 ක් යටතේ ක්‍රියාත්මක වේ.

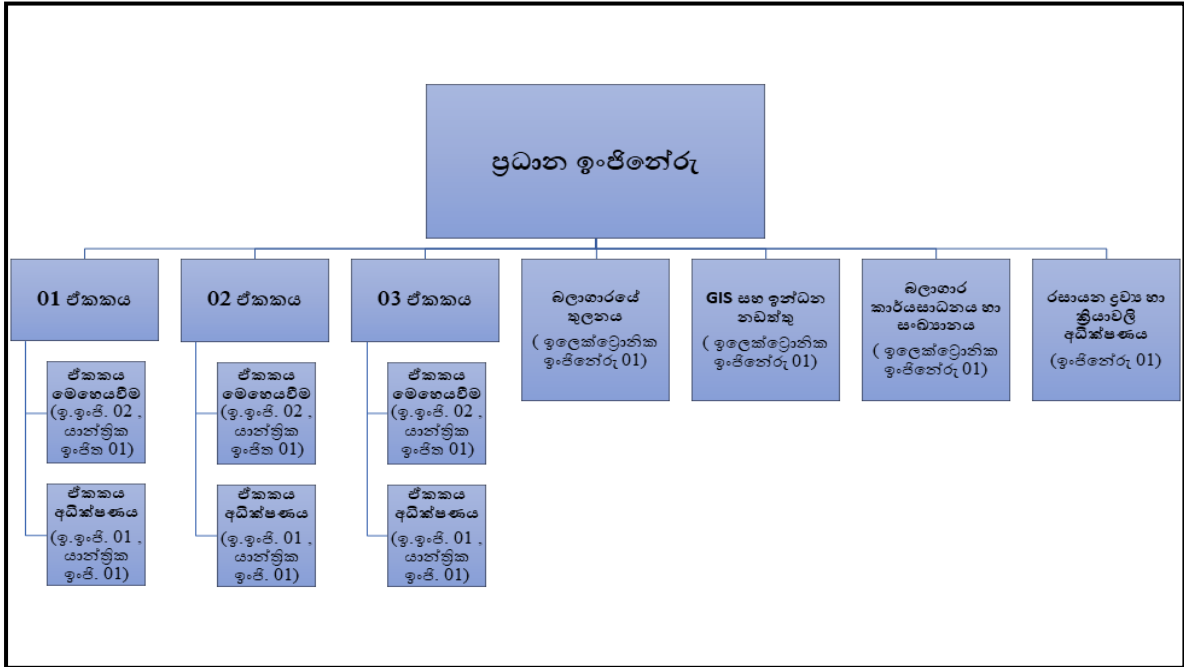
7.2.2 බලාගාර පරිශ්‍රයේ සැකැස්ම

බලාගාරය පිහිටුවා ඇති භූමි ප්‍රමාණය දළ වශයෙන් මීටර් 470 ක පළලින් හා මීටර් 2000 ක දිගකින් යුක්ත විය. මෙම බලාගාරයේ ඉදි කිරීම් අදියර 02 ක් යටතේ සම්පූර්ණ කරනු ලැබූ අතර පළමු අදියර මෙඟාවොට් 300 ක ධාරිතාවයකින් ද, දෙවන අදියර මෙඟාවොට් 600 ක ධාරිතාවයකින්ද යුක්ත විය. මෙඟාවොට් 300 ක ධාරිතාවයෙන් යුත් එක් ඒකකයක් සඳහා බොයිලේරු 01 ක් , හුමාල තල බමන 01 ක්, ස්ථිති විද්‍යුත් අවක්ෂේපකයක් , විමෝචක වායු ගන්දගම් වියුක්තකයක් සහ මීටර් 150 ක උසකින් යුත් විමිනියක් ද ඇතුළත් වේ. ගල් අඟුරු දහනයේදී නයිට්‍රජන් ඔක්සයිඩ් පිටවීම අවම වන ලෙස උෂ්ණත්වය යාමනය කෙරෙන විශේෂ සැකැස්මක් (Low NO_x Burners) සහිතව බලාගාරය නිර්මාණය කර ඇත. එයට අමතරව එම භූමිය තුළ අක්කර 46 කින් යුත් ගල් අඟුරු අංගනයක්ද, අක්කර 25 කින් යුත් යටි අළු තැන්පත් කිරීමේ අංගනයක්ද විය. මෙම විදුලි බලාගාරයේ විදුලි ජනනය මගින් කිලෝ වෝල්ට් 20(KV) ක ප්‍රමාණයක විදුලිය නිපදවන අතර පරිනාමකය මගින් එය කිලෝ වෝල්ට් 220(KV) කට ඉහල නංවා කිලෝමීටර් 117 ක හා 100 ක දිගින් යුතු පරිපථ දෙකකින් සමන්විත සම්ප්‍රේෂණ මාර්ග දෙකක් ඔස්සේ ජාතික විදුලිබල පද්ධතියට පිළිවෙලින් වේයන්ගොඩ හා අනුරාධපුර විදුලි උප පොලවල් හරහා සම්බන්ධ කෙරේ.

7.2.3 බලාගාරයේ පාලන බලතල

ලක්විජය බලාගාරය ප්‍රධාන ඉංජිනේරුවරයෙකු යටතේ ක්‍රියාත්මක වන අතර එහි සංවිධාන ධුරාවලිය පහත පරිදි වේ.

රූප සටහන 02 - ලක්විජය බලාගාරයේ සංවිධාන ධුරාවලිය



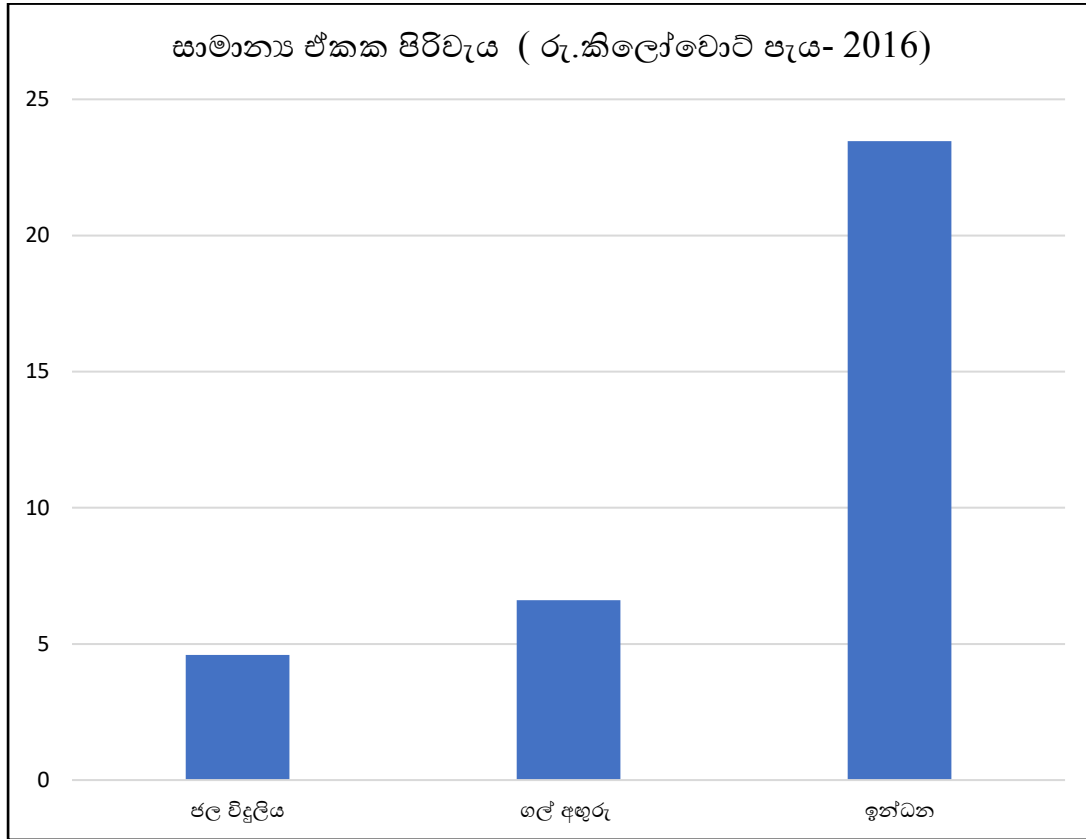
7.2.4 විදුලිබල ඒකකයක පිරිවැය හා ජාතික පද්ධතියට වන දායකත්වය

ලංකා විදුලිබල මණ්ඩලය විසින් විදුලි නිෂ්පාදනයේදී යොදාගනු ලබන මූලාශ්‍ර ප්‍රභවයන් ප්‍රධාන වශයෙන් ජල විදුලිය, ගල් අඟුරු හා ඉන්ධන වශයෙන් වර්ග කෙරෙන අතර එම මූලාශ්‍රයන් යොදාගෙන 2017 වර්ෂය තුළදී සිදු කරන ලද දායකත්වය හා ඒකකයක ජනන පිරිවැය පහත පරිදි වේ.

වගු අංක 06- විදුලිබල ඒකකයක උත්පාදන පිරිවැය හා විදුලි උත්පාදන දායකත්ව - 2016

මූලාශ්‍රය	සාමාන්‍ය ඒකක පිරිවැය (කිලෝවොට් පැය 1 ක් සඳහා රු.)	විදුලිබල උත්පාදනය
ජල විදුලිය	4.60	24.6%
ගල් අඟුරු	6.61	35.7%
ඉන්ධන	23.46	16.2%

රූප සටහන් 03- සාමාන්‍ය ඒකක පිරිවැය



මූලාශ්‍රය - [Generation Performance in Sri Lanka – 2016 – PUCSL, CEB Statistical Digest 2016 හා ලං.වි.ම] ඇමුණුම -07

7.2.5 ලක්විජය තාප බලාගාරයේ විදුලි ජනන පිරිවැය සංසන්දනය.

ලක්විජය තාප බලාගාරය මගින් 2017 වර්ෂය දක්වා ජනනය කරන ලද ගිගා වොට් පැය (Gwh) ගණන එම බලාගාරයේ නිෂ්පාදනය කිරීමට හා එම ගිගා වොට් පැය (Gwh) ප්‍රමාණය ඉන්ධන භාවිතා කරමින් සංයුක්ත චක්‍ර (Combine Cycle) මගින් විදුලිය ජනනය කරනු ලබන කැලණිනිස්ස බලාගාරයේ නිෂ්පාදනය කිරීමට වැය වන පිරිවැය සංසන්දනය පිළිබඳ තොරතුරු පහත දැක්වේ.

වගු අංක 07- ලක්විජය බලාගාරයේ විදුලි ජනන පිරිවැය කැලණිනිස්ස බලාගාරයේ පිරිවැය සමඟ සංසන්දනය

	විස්තරය	ඒකකය	පළමු අදියර	දෙවන අදියර	මුළු එකතුව
ලක්විජය තාප විදුලි බලාගාරය					
I	ශුද්ධ විදුලි ජනනය	ගිගා වොට් පැය	8,787.87	13,681.28	22,469.15
II	විදුලි ඒකකයක් සඳහා මෙහෙයුම් හා නඩත්තු පිරිවැය	රු.	8.39	8.39	8.39
III	ආසන්න විදුලි ජනන පිරිවැය	රු.මිලියන	73,730.00	114,785.94	188,515.94
IV	ගිවිසුම් ගත මිල	රු.මිලියන	70,525.00	126,945.00	197,470.00
කැලණි නිස්ස බලාගාරයේ සංයුක්ත චක්‍ර (Combine Cycle) මඟින් විදුලි ජනනය					
V	ලක්විජය බලාගාරය මඟින් සිදු කරන ලද ශුද්ධ විදුලි ජනනය	ගිගා වොට් පැය	8,787.87	13,681.28	22,469.15
VI	ඒකකයක් සඳහා මෙහෙයුම් හා නඩත්තු පිරිවැය	රු.	24.00	24.00	24.00
VII	8787.87 GWh කැලණිනිස්ස බලාගාරයේ සංයුක්ත චක්‍ර (Combine Cycle) මඟින් විදුලිය නිපදවූයේ නම් ජනන පිරිවැය	රු.මිලියන	210,908.94	328,350.72	539,259.66
VIII	මේ අනුව , ලක්විජය බලාගාරය මඟින් විදුලිය ජනනය කිරීම නිසා හිමි වූ මුළු ඉතිරිය (VII-III)	රු.මිලියන	137,178.69	213,564.78	350,743.47
	ශුද්ධ ඉතිරිය (VIII-IV)	රු.මිලියන	66,653.69	86,619.78	153,273.00

ඇමුණුම - 08

ඉහත තොරතුරු අනුව 2017 වර්ෂය වන විට ලක්විජය තාප බලාගාර මඟින් නිපදවූ ගිගා වොට් පැය 22,469 (Gwh) නිපදවීම සඳහා එම බලාගාරයට රු.මිලියන 188,516 ක නිෂ්පාදන වියදමක් වැය වී තිබුණි. එසේම එම ගිගා වොට් පැය (Gwh) ප්‍රමාණය කැලණිනිස්ස බලාගාරයේ සංයුක්ත චක්‍ර (Combine Cycle) මඟින් නිෂ්පාදනය කරනු ලැබුවේ නම් රු.මිලියන 539,260 ක් වැය වන බවට උක්ත ගණනය කිරීම් මඟින් පැහැදිලි වේ.

7.3 ලක්විජය බලාගාරය හා එහි පාරිසරික බලපෑම

7.3.1 1980 අංක 47 දරණ ජාතික පාරිසරික පනත හා 1990 අංක 12 දරණ වයඹ පළාත් පාරිසරික ප්‍රඥප්තියේ බලාත්මකභාවය

7.3.1.1 1980 අංක 47 දරණ ජාතික පාරිසරික පනත (ඇමුණුම - 09) යටතේ 1981 වර්ෂයේදී මධ්‍යම පරිසර අධිකාරිය ස්ථාපනය කරන ලද අතර ශ්‍රී ලංකාවේ සංවර්ධන ක්‍රියාදාමය සහ පාරිසරික කටයුතු ඒකාබද්ධ කිරීමේ අරමුණු පෙරදැරිව වර්ෂ 2001 දී පිහිටුවන ලද පරිසර සහ ස්වභාවික සම්පත් අමාත්‍යාංශය(වර්තමානයේ , මහවැලි සංවර්ධන හා පරිසර අමාත්‍යාංශය) විසින් මධ්‍යම පරිසර අධිකාරිය හා සම්බන්ධ සියළු වගකීම් දරණු ලැබේ. මධ්‍යම පරිසර අධිකාරිය සතු නෛතික බලතල 1988 අංක 56 සහ 2000 අංක 53 දරණ ජාතික පරිසර (සංරක්ෂණ) පනත් යටතේ (ඇමුණුම - 09)

පුළුල් කර ඇත. ජාතික පරිසර පනතට අනුකූලව ප්‍රධාන පළාත් 09 ආවරණය වන පරිදි උප කාර්යාල 25 ක් පිහිටුවා තිබුණි. තවද මේ යටතේ වයඹ පළාත ආවරණය වන ලෙස කුරුණෑගල සහ පුත්තලම් දිස්ත්‍රික්ක සඳහා උප කාර්යාල 02 ක් පිහිටුවා තිබුණි. මෙම කාර්යාල 02 මගින් ද ඉදිකිරීමට යෝජිත කර්මාන්ත සඳහා පාරිසරික නිර්දේශ ලබා දීම, පාරිසරික ආරක්ෂණ බලපත්‍ර නිකුත් කිරීම හා පාරිසරික කළමනාකරණ ක්‍රියාකාරකම් ඉටුකර තිබුණි. (ඇමුණුම -10)

7.3.1.2 එමෙන්ම 1987 වර්ෂයේ 13 වන ආණ්ඩුක්‍රම ව්‍යවස්ථාව යටතේ වූ පළාත් සභා බලතල මත 1990 අංක 12 දරණ වයඹ පළාත් පාරිසරික ප්‍රඥාප්තියේ (ඇමුණුම - 11) I වන කොටසේ 2(1) උප වගන්තිය යටතේ වයඹ පළාත් පාරිසරික අධිකාරිය පිහිටුවා ඇත. ප්‍රඥාප්තියේ 07(1) උප වගන්තිය ප්‍රකාරව පළාත් පාරිසරික උපදේශක සභාවක් පිහිටවිය යුතු අතර එහි සාමාජිකයන් විෂය භාර අමාත්‍යවරයා විසින් පත් කරන ලද හෝ ඒ අය අතුරින් පත් කරනු ලබන යම් සාමාජික සංඛ්‍යාවකින් යුක්ත විය යුතුය. ප්‍රඥාප්තියේ 7(1)(ක) වගන්තිය ප්‍රකාරව එක් සාමාජිකයකු මධ්‍යම පරිසර අධිකාරිය නියෝජනය කළ යුතු විය. (ඇමුණුම - 11)

7.3.1.3 තවද වයඹ පළාතේ කර්මාන්ත ක්‍රියාකාරකම් තුළින් ඇතිවන පාරිසරික තත්ත්වයන් සඳහා පළාත් සභාව සෘජුවම වගකිව යුතු බවට 2006 වර්ෂයේදී ශ්‍රේෂ්ඨාධිකරණයේ මූලික අයිතිවාසිකම් නඩු අංක 226/2006 (ඇමුණුම - 12) මගින් දක්වා ඇති අතර මෙමගින් 1980 අංක 47 දරන ජාතික පාරිසරික පනත වයඹ පළාත තුළ ක්‍රියාත්මක වීමේ වලංගුභාවය අත්හිටුවා ඇත.

7.3.2 පරිසර ආරක්ෂණ බලපත්‍රය නිකුත් කිරීම

7.3.2.1 යම් නිශ්චිත කර්මාන්ත / ක්‍රියාකාරකම් සම්බන්ධයෙන් එකී ආයතන විසින් ලබා ගත යුතු බලපත්‍රය පිළිබඳ ජාතික පාරිසරික පනතේ 23 (ආ)(1) වගන්තිය (ඇමුණුම -09) යටතේ ද වයඹ පළාත් පාරිසරික ප්‍රඥාප්තියේ V කොටසේ 21(1) වගන්තිය (ඇමුණුම -13) මගින් ද ප්‍රකාශයට පත්කර ඇති අතර, එම බලපත්‍රය මධ්‍යම පරිසර අධිකාරිය / පළාත් පරිසර අධිකාරිය මගින් ලබාගත යුතුය. මෙම බලපත්‍රය පරිසර ආරක්ෂණ බලපත්‍රය නමින් වන අතර කර්මාන්තයේ ස්වභාවය අනුව එම බලපත්‍රය නිකුත් කරනු ලබන ආයතනයන්, බලපත්‍රයේ වලංගු කාලයත් තීරණය වේ. මධ්‍යම පරිසර අධිකාරිය/ පළාත් පරිසර අධිකාරිය විසින් නිශ්චය කර ඇති ප්‍රමිත හා උපමාන වලට අනුකූලව මිස පරිසරයට අපද්‍රව්‍ය බැහැර කිරීම, එහි තැන්පත් කිරීම හෝ පරිසරයට මෝචනය කිරීම හෝ පරිසර දූෂණය හෝ ශබ්ද දූෂණය හා කම්පනය සිදු කරන හෝ සිදු කිරීමට ඉඩ ඇති අවස්ථානුගත කරුණු වලදී කටයුතු නොකළ යුතු වීම මෙම බලපත්‍රය නිකුත් කිරීමේ මූලික අභිප්‍රාය වී තිබුණි.

7.3.2.2 2015 වර්ෂයේ ජූනි 30 දින 3536/2015 (ඇමුණුම - 14) දරණ අංකය යටතේ 2015 ජූනි 30 සිට 2016 ජූනි 29 දක්වා බලාගාරය සඳහා ප්‍රථම පරිසර ආරක්ෂණ බලපත්‍රය වයඹ පළාත් පරිසර අධිකාරිය විසින් නිකුත් කර තිබුණි.

7.3.2.3 2016 ජූනි 29 දිනෙන් පසු ප්‍රථම අළුත් කිරීම සඳහා බලාගාරය විසින් ඉල්ලුම් කර තිබූ අතර අධිකාරිය විසින් 2016 ජූනි 30 දින අනුමැතිය ලබා දී තිබුණි.(ඇමුණුම - 15)

7.3.2.4 2017/2018 වර්ෂය සඳහා පාරිසරික ආරක්ෂණ බලපත්‍රය අළුත් කිරීමේ ඉල්ලුම් පත්‍රය බලාගාරය විසින් 2017 ජූනි 14 වන දින (ඇමුණුම -16) ඉදිරිපත් කර තිබුණද විගණන දිනය වූ 2018 මැයි 10 දින දක්වා පළාත් පරිසර අධිකාරිය විසින් ඒ සඳහා අනුමැතිය ලබා දී නොතිබුණි.

7.3.2.5 2016 ජූනි 30 දින සිට 2017 ජූනි 29 දක්වා කාලපරිච්ඡේදයට අදාළව නිකුත් කරන ලද අංක 3536/2016 R1 දරණ බල පත්‍රයේ කොන්දේසි අංක 06 අනුව,(ඇමුණුම -17) “බලාගාරයේ මෙහෙයුම් හෝ වෙනත් ක්‍රියාකාරකම් සඳහා ජල සම්පත් මණ්ලයේ පූර්ව අවසරය නොමැතිව භූගත ජලය යොදා නොගත යුතු බව” දක්වා තිබුණි.

7.3.2.6 1990 අංක 12 දරන වයඹ පළාත් පාරිසරික ප්‍රඥාප්තියේ 20,21 වගන්ති සමඟ කියවිය යුතු එකී ප්‍රඥාප්තියේ 61 වන වගන්තිය යටතේ අමාත්‍යවරයා විසින් සාදන ලද නියෝග 2010 දෙසැම්බර් 21 දිනැති අංක 1685/11 දරන ගැසට් පත්‍රය (ඇමුණුම - 18) මඟින් ප්‍රසිද්ධ කර ඇත. මෙම ගැසට් පත්‍රයේ සඳහන් කර තිබූ සංසරණ වායු තත්ත්ව නියෝගයන් බලාගාරය විසින් දැඩිව අනුගමනය කළයුතු බවට බලපත්‍රයේ කොන්දේසි අංක 07 (ඇමුණුම -17) මඟින් අවධාරණය කර තිබුණි.

7.3.2.7 බලපත්‍රයේ කොන්දේසි අංක 8 අනුව,(ඇමුණුම -17) බලාගාරයේ මෙහෙයුම් කටයුතු සඳහා භාවිතා කරනු ලබන ඉන්ධන වල පැවතිය යුතු ගුණාත්මක තත්ත්වයන් පහත පරිදි දක්වා තිබුණි.
good quality, low ash coal with sulfur content of 1% or less by weight shall be used for the operation of the plant.

7.3.2.8 පරිසර ආරක්ෂණ බලපත්‍රයේ 13.5 වන කොන්දේසියට අදාළව ව්‍යාපෘතියේ මෙහෙයුම් කටයුතු වලදී උත්පාදනය වන අන්තරාදායී අපද්‍රව්‍ය ප්‍රමාණය හා එහි ගුණත්වය සම්බන්ධයෙන් වාර්තා පවත්වාගෙන එම වාර්තා පළාත් පරිසර අධිකාරිය වෙත වාර්ෂිකව යොමු කළ යුතුය.

7.3.3 ජාතික පාරිසරික පනත අනුව නිකුත් කර තිබූ ප්‍රමිත හා උපමාන

ජාතික පාරිසරික පනතට අනුව නිකුත් කර තිබූ සංසරණ වායු තත්ත්ව නියෝග පාදක කර ගනිමින් වයඹ පළාත් සභාවේ පාරිසරික ප්‍රමිති හා උපමාන තීරණය කර තිබුණි.

7.3.4 වාර්ෂික ගල් අඟුරු අවශ්‍යතාවය, ගොඩබෑම සහ අංගනයට ප්‍රවාහනය තුළින් ඇතිවිය හැකි පාරිසරික බලපෑම් විග්‍රහය

7.3.4.1 මෙගාවොට් 300 ක විදුලි ධාරිතාවයක් නිපදවීම සඳහා දළ වශයෙන් පැයකට ගල් අඟුරු මෙට්‍රික්ටොන් 110 - 114 ක් අතර ප්‍රමාණයක් අවශ්‍ය වන අතර, මෙගා වොට් 900 ක විදුලි ධාරිතාවයක් නිපදවීම සඳහා දළ වශයෙන් වාර්ෂිකව ගල් අඟුරු මෙට්‍රික්ටොන් 2,250,000 ක් අවශ්‍ය වන බවට ඇස්තමේන්තු කර ඇත. බලාගාරය වෙත ගල් අඟුරු සැපයීම සෑම වර්ෂයකම ජනවාරි සිට අප්‍රේල් මාසය දක්වාත් සැප්තැම්බර් සිට දෙසැම්බර් මාසය දක්වාත් වන අතර මෙම ගල් අඟුරු ප්‍රවාහන නැවත ධාරිතාවය දළ වශයෙන් මෙට්‍රික්ටොන් 65,000 කි. මේ අනුව දළ වශයෙන් වර්ෂයකට අපේක්ෂිත නැව් ගමන් වාර සංඛ්‍යාව 35කි.

7.3.4.2 1998 මාර්තු මස සකස් කර තිබූ පාරිසරික බලපෑම් ඇගයීම් අධ්‍යයන වාර්තාවේ 2.2.3 ඡේදය අනුව ආනයනය කරන ලද ගල් අඟුරු අංගනය වෙත ගොඩබැමේ පහසුව සඳහා ජැටියක් නිර්මාණය කිරීම සඳහා විකල්ප 02 ක් යෝජනා කර තිබුණි. එක් විකල්පයක් ලෙස දිග කිලෝමීටර් 4.2 ක ජැටියක්ද, දෙවන විකල්පය ලෙස දිග මීටර් 500 ක් වූ ජැටියක් ද ඉදිකිරීම වශයෙනි. බලාගාරය විසින් මීටර් 500 ක් දිග ජැටියක් ඉදි කිරීමේ විකල්පය තෝරාගෙන තිබුණි.

7.3.4.3 ආනයනය කරන ලද ගල් අඟුරු බත්තල් මහින් (බත්තල් වල ධාරිතාවය දළ වශයෙන් මෙට්‍රික්ටොන් 1500 - 2000 ප්‍රමාණයක් වේ.) ජැටිය දක්වා ප්‍රවාහනය කරන අතර බත්තල් වල ඇති ගල් අඟුරු ක්‍රේන් (ධාරිතාවය පැයකට මෙට්‍රික්ටොන් 500 බැගින් වූ) මහින් ගල් අඟුරු Conveyor Belt එකට යවනු ලැබේ. සාමාන්‍යයෙන් දිනකට බත්තල් 9 ක් 10 ක් අතර සංඛ්‍යාවක් මහින් දිනකට ගල් අඟුරු මෙට්‍රික්ටොන් 15,000 – 20,000 ක් පමණ ප්‍රවාහනය කරනු ලැබේ. මෙම ගල් අඟුරු අක්කර 41 ක භූමි ප්‍රමාණයක තැන්පත් කරන අතර, මෙම අංගනය ආවරණය කරන ලද හා විවෘත වශයෙන් ආකාර දෙකකින් පවතී. මෙහෙයුම් ක්‍රියාවලියට අවශ්‍ය ගල් අඟුරු මෙම අංගන මහින් ලබාගෙන ගල් අඟුරු Bunkers වල තැන්පත් කර ගනී. මෙගාවොට් 300 ක විදුලිබල උත්පාදනය සඳහා මෙවැනි Bunkers 5 ක ගල් අඟුරු ගබඩා කර තබාගන්නා අතර මෙම එක් බත්තරයක ධාරිතාවය දළ වශයෙන් මෙට්‍රික්ටොන් 350 ක් වේ. එක ඒකකයක ගබඩාකර ඇති ගල්අඟුරු පැය 10 ක කාලයක් සඳහා යොදා ගත හැකි අතර මෙගාවොට් 300 ක් නිපදවීම සඳහා අවශ්‍ය වන්නේ බත්තර 05 ක් බත්තර 4 ක් පමණි.

පසුගිය වර්ෂ 5ක ආනයනය කරන ලද ගල් අඟුරු නැව් ප්‍රමාණයන් හා ආනයනික රටවල් පිළිබඳ විස්තර පහත දැක්වේ.

වගු අංක 08 - 2013 වර්ෂයේ සිට 2017 වර්ෂය දක්වා ගල් අඟුරු ආනයනික රට සහ නැව් වාර සංඛ්‍යාව

ආනයනික රට	නැව් වාර සංඛ්‍යාව				
	2013	2014	2015	2016	2017
ඉන්දුනීසියාව	7	18	11	-	-
රුසියාව	-	-	21	4	-
දකුණු අප්‍රිකාව	2	-	-	25	37
එකතුව	9	18	32	29	37

රූප සටහන් 04- ගල් අඟුරු අංගනය සහ ගල් අඟුරු ප්‍රවාහනය කරන Conveyor Belt



-ගල් අඟුරු ගබඩා කර ගැනීම -

7.3.4.4 ත්‍රිකුණාමලයේ සිට බලාගාරය වෙත දුම්‍රිය මගින් ගල් අඟුරු ප්‍රවාහනය කිරීමට ඇති හැකියාව සම්බන්ධයෙන් 2015 හා 2016 වර්ෂවල ප්‍රවාහන හා සිවිල් ගුවන් සේවා අමාත්‍යතුමා, විදුලිබල හා පුනර්ජනනීය බලශක්ති අමාත්‍යාංශය, ලංකා ගල් අඟුරු සමාගම, ශ්‍රී ලංකා දුම්‍රිය දෙපාර්තමේන්තුව සහ හොල්සිම් ලංකා පුද්ගලික සමාගම යන ආයතනවල නිලධාරීන් සමඟ සාකච්ඡා පවත්වා තිබුණි.

7.4 ගල් අඟුරු වල පැවතිය යුතු ගුණාත්මකභාවය

7.4.1 2017 සැප්තැම්බර් මස සිට 2019 අප්‍රේල් මස දක්වා ලක්විජය බලාගාරයේ මෙහෙයුම් ක්‍රියාවලිය වෙනුවෙන් අවශ්‍ය ගල් අඟුරු ප්‍රමාණය සැපයීම සඳහා වූ ප්‍රසම්පාදන කාර්යය වෙනුවෙන් ලංකා විදුලි බල මණ්ඩලය හා ලංකා ගල් අඟුරු සමාගම එකඟ වූ ලංසු ලේඛන අංක LCC/16/T/1 හි ඇතුළත් උප ලේඛන 2 B කොටස යටතේ හා ලක්විජය බලාගාරය විසින් විගණනය සඳහා ඉදිරිපත් කරන ලද තොරතුරු (ඇමුණුම - 19) ප්‍රකාරව 2013 වර්ෂයේ සිට 2017 වර්ෂය දක්වා ගල් අඟුරුවල පැවතිය යුතු ගුණාත්මක අවශ්‍යතා පහත පරිදි දක්වා තිබුණි.

වගු අංක 09 - ගල් අඟුරු වල අපේක්ෂිත ගුණාත්මක අවශ්‍යතා

පරාමිතිය	ඒකකය	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
දහනය මගින් ලැබෙන ශක්තිය (GCV value)	Kcal/kg	6300 (ප්‍රතික්ෂේපිත අගය 5800 ට අඩු)	6300 (ප්‍රතික්ෂේපිත අගය 5900 ට අඩු)	6300 (ප්‍රතික්ෂේපිත අගය 5900 ට අඩු)	6300 (ප්‍රතික්ෂේපිත අගය 5900 ට අඩු)	6,150 (ප්‍රතික්ෂේපිත අගය 5900 ට අඩු)

තෙතමනය (Total moistures)	% wt	12 (ප්‍රතික්ෂේපිත අගය 16% ට වැඩි)	12 (ප්‍රතික්ෂේපිත අගය 16% ට වැඩි)	12 (ප්‍රතික්ෂේපිත අගය 16% ට වැඩි)	12 (ප්‍රතික්ෂේපිත අගය 16% ට වැඩි)	12 හෝ ඊට පහළ (ප්‍රතික්ෂේපිත අගය 16% ට වැඩි)	
අන්තර්ගත අළු ප්‍රමාණය (Ash content)	% wt	11 (ප්‍රතික්ෂේපිත අගය 16 ට වැඩි)	11 (ප්‍රතික්ෂේපිත අගය 16 ට වැඩි)	11 (ප්‍රතික්ෂේපිත අගය 16 ට වැඩි)	11 (ප්‍රතික්ෂේපිත අගය 16 ට වැඩි)	11 හෝ ඊට පහළ (ප්‍රතික්ෂේපිත අගය 16 ට වැඩි)	
නිර කාබන් (Fixed Carbon)	% wt	39	39	49.5	49.5	49.5	
වාෂ්පශීලී බව (Volatile matter)	% wt	42 (ප්‍රතික්ෂේපිත අගය 22 ට අඩු)	42 (ප්‍රතික්ෂේපිත අගය 22 ට අඩු, 39.9 ට වැඩි)	27 (ප්‍රතික්ෂේපිත අගය 22 ට අඩු, 39.9 ට වැඩි)	27 (ප්‍රතික්ෂේපිත අගය 22 ට අඩු, 39.9 ට වැඩි)	31 (ප්‍රතික්ෂේපිත අගය 22 ට අඩු, 39.9 ට වැඩි)	
ගන්දුගම් සංයුතිය (Sulphur content)	% wt	0.9 (ප්‍රතික්ෂේපිත අගය 1.2 ට වැඩි)	0.9 (ප්‍රතික්ෂේපිත අගය 1 ට වැඩි)	0.5 (ප්‍රතික්ෂේපිත අගය 1 ට වැඩි)	0.5 (ප්‍රතික්ෂේපිත අගය 1 ට වැඩි)	0.5 හෝ ඊට පහළ (ප්‍රතික්ෂේපිත අගය 1 ට වැඩි)	
ප්‍රමාණය (size consist)	m m	50 ට වැඩි	3 % ට අඩු (ප්‍රතික්ෂේපිත අගය 5% ට වැඩි)	3 % ට අඩු (ප්‍රතික්ෂේපිත අගය 5% ට වැඩි)	5 % ට අඩු (ප්‍රතික්ෂේපිත අගය 5% ට වැඩි)	5 % ට අඩු (ප්‍රතික්ෂේපිත අගය 5% ට වැඩි)	3% හෝ ඊට පහළ (ප්‍රතික්ෂේපිත අගය 5% ට වැඩි)
		2 ට අඩු	25% ට අඩු (ප්‍රතික්ෂේපිත අගය 30% ට වැඩි)	25% ට අඩු (ප්‍රතික්ෂේපිත අගය 30% ට වැඩි)	30% ට අඩු (ප්‍රතික්ෂේපිත අගය 30% ට වැඩි)	30% ට අඩු (ප්‍රතික්ෂේපිත අගය 30% ට වැඩි)	15% හෝ ඊට පහළ 25% ට අඩු (ප්‍රතික්ෂේපිත අගය 30% ට වැඩි)
ඇඹරීමට ඇති හැකියාව (hard grove grind ability med)	°H	45 (ප්‍රතික්ෂේපිත අගය 40 ට අඩු)	45 (ප්‍රතික්ෂේපිත අගය 40 ට අඩු, 59 ට වැඩි)	50 (ප්‍රතික්ෂේපිත අගය 40 ට අඩු, 59 ට වැඩි)	51 (ප්‍රතික්ෂේපිත අගය 40 ට අඩු, 59 ට වැඩි)	50 (ප්‍රතික්ෂේපිත අගය 40 ට අඩු, 59 ට වැඩි)	

				අඩුවන පදනම (Reducing)		
අළු වියළන උෂ්ණත්වය (Ash fusion tempest)-IDT	°C			1,250 (ප්‍රතික්ෂේපිත අගය 1150 ට අඩු, 1300 ට වැඩි)	1,250 (ප්‍රතික්ෂේපිත අගය 1150 ට අඩු, 1300 ට වැඩි)	1,250 (ප්‍රතික්ෂේපිත අගය 1150 ට අඩු, 1300 ට වැඩි)
අළු වියළන උෂ්ණත්වය (Ash fusion tempest)-Fluid				1325 (ප්‍රතික්ෂේපිත අගය 1250 ට අඩු, 1500 ට වැඩි)	1325 (ප්‍රතික්ෂේපිත අගය 1250 ට අඩු, 1500 ට වැඩි)	1,325 (ප්‍රතික්ෂේපිත අගය 1250 ට අඩු, 1500 ට වැඩි)

මේ අනුව 2013 වර්ෂයේ සිට 2017 වර්ෂය දක්වා ආනයනය කරන ලද ගල් අඟුරු වල අපේක්ෂිත ගුණාත්මක අවශ්‍යතා හා පැවති තත්ත්වයන් පරීක්ෂාවේදී නිරීක්ෂණය වූ කරුණු පහත දැක්වේ.

- 2013, 2014 සහ 2015 වර්ෂ වලට අදාලව ආනයනය කරන ලද ගල් අඟුරුවල පැවති ගුණාත්මක තත්ත්වයන් පහත පරිදි නිරීක්ෂණය විය.

වගු අංක 10 – 2013-2017 දක්වා අපේක්ෂිත ගුණාත්මක අවශ්‍යතා වලින් අපගමනය වූ ගල් අඟුරු ප්‍රමාණයන්

පරාමිතිය	ගුණාත්මක අවශ්‍යතාවලින් බැහැර වූ ගල් අඟුරු ප්‍රමාණය (මෙට්‍රික් ටොන්)				
	2013	2014	2015	2016	2017
දහනය මගින් ලැබෙන තාප ශක්තිය {GCV(below 5900)}	-	460,900	-	-	-
තෙතමනය (Moisture)	-	55,270	-	-	-
වාෂ්පශීලී බව (Volatile matter)	-	57,530	-	-	-
සල්ෆර් (Sulpher)	-	114,269	-	-	-
ප්‍රතික්ෂේපිත මට්ටමේ පැවති මුළු ප්‍රමාණය	-	575,169	-	-	-
මුළු ගල් අඟුරු මිලදී ගැනීම	1,003,545	1,849,726	2,191,529	2,209,983	2,117,165
ප්‍රතික්ෂේපිත මට්ටමේ පැවති ප්‍රමාණය, මුළු ගල් අඟුරු මිලදී ගැනීමේ ප්‍රතිශතයක් ලෙස	0%	31.09%	0%	0%	0%

7.4.2 2017 වර්ෂයේ සිට 2019 වර්ෂය කාලපරිච්ඡේදය දක්වා වූ ලංසු ලේඛන 3.4.3(අ) ට අනුව ආනයනික ගල් අඟුරු තොග අපේක්ෂිත පිරිවිතරයන්ට නොමැති වුවහොත් මිල ගණන් ගැලපීම මඟින් එම තොග භාරගැනීම සඳහා ප්‍රතිපාදන සලසා ඇති අතර, සැපයුම්කරුවන් එහෙය වූ මිල ක්‍රමය වූ නැව තෙක් නොමිලේ (FOB) යන මිල ක්‍රමය යටතේ සැපයුම්කරුවන්ගේ වගකීම පැටවුම් වරායෙන් පසු අවසන් වේ. (ඇමුණුම -20)

7.4.3 ලංසු ලේඛන 3.5.2 ට අනුව ආනයනික ගල් අඟුරු තොග වල ගුණත්වය පරීක්ෂාව සඳහා ස්ථායීතා පරීක්ෂකවරු පැටවුම් වරායේදී හා ගොඩබෑන වරායේදී පත්කර තිබුණි. පැටවුම් වරායේදී එම පරීක්ෂකවරු විසින් ගල් අඟුරු නැවට පැටවීමෙන් පසු ලබා ගන්නා නියදිය පරීක්ෂා කර වාර්තාව නිකුත් කරනු ලැබේ. මෙම වාර්තාව ගල් අඟුරු නැවට පැටවීම සම්පූර්ණ වී දින 03 ක් ඇතුළත විද්‍යුත් හුවමාරුවක් මඟින් ගැනුම්කරු වෙත ලබා දිය යුතුය. (ඇමුණුම -21)

7.4.4 ගල් අඟුරු මිලදී ගැනීම සඳහා පත් කර ඇති විශේෂ ස්ථාවර අමාත්‍ය මණ්ඩල ප්‍රසම්පාදන කමිටුවට (SSCAPC) සහාය වීම සඳහා සාමාජිකයින් 07 දෙනෙකුගෙන් යුත් ස්ථාවර තාක්ෂණික ඇගයීම් මණ්ඩලයක් පත් කර තිබුණි. (ඇමුණුම - 22)

7.4.5 ගල් අඟුරු මිලදී ගැනීමේදී අවම මිල ගණන් ඇගයීමට ලක්කර ආර්ථික වාසි වැඩි වශයෙන් ලැබෙන සමාගමක් තෝරා ගත යුතු මෙන්ම ගල් අඟුරු දහනයේදී පරිසරයට ඇතිවන බලපෑමද ඇගයීමට ලක් කිරීම තුළ ඇතිවිය හැකි පාරිසරික ගැටළු අවම කරගත හැකිය.

7.4.6 ගල් අඟුරු රැගෙන එන නැව් වලින් බත්තල් වලට ගල් අඟුරු පැටවීමේදී ඒ අවට මුහුදු පතුල හා ජෛව අසල ගල් අඟුරු වැටී තැන්පත් වීම සිදුවේ.

7.5 ගල් අඟුරු දහනයේ අතුරු ඵල (පියාසර අළු සහ යටි අළු)

7.5.1 විදුලි බල නිෂ්පාදන ක්‍රියාවලිය සඳහා ගල් අඟුරු දහනයේදී ප්‍රධාන වශයෙන් අතුරුඵල දෙකක් උත්පාදනය වන අතර එය පියාසර අළු (Fly Ash) සහ යටි අළු (Bottom Ash) වශයෙන් හැඳින්වේ. මෙසේ ජනිත වන්නා වූ අළු අතරින් පියාසර අළු පරිසරයට මුදා හැරීම වැළැක්වීම සඳහා ස්ථිති විද්‍යුත් අවක්ෂේපණය යොදා ගනී. ස්ථිති විද්‍යුත් අවක්ෂේපණය (Electro Static Precipitator - ESP) යනු ප්‍රතිවිරුද්ධ ආරෝපණ රැගත් තහඩු පෙරණයක් වූ අතර මෙමඟින් පියාසර අළු අංශුවලින් සියයට 99.3 ක් පෙරීම සිදු කරයි. පෙරනය කරන ලද පියාසර අළු අවක්ෂේපකයේ තහඩු මත තැන්පත් වන අතර සවිකර ඇති කම්පක (Vibrators) මඟින් පියාසර අළු වෙන් කොටගෙන විශාල බඳුන් (Bin) තුළ තැන්පත් කරයි. මෙහෙයවීමට 900 ක විදුලි බලයක් නිපදවීමේ දී දෛනිකව උපරිම වශයෙන් මෙට්‍රික්ටොන් 900 ක පමණ පියාසර අළුද (Fly Ash), මෙට්‍රික්ටොන් 180 ක් පමණ යටි අළු (Bottom Ash) ද, අතුරු ඵලයක් ලෙස නිපදවේ. මෙම ව්‍යාපෘතිය සැලසුම් අදියරේදී අළු බැහැර කිරීමේ ක්‍රමවේදය තුළ පියාසර අළු සීමෝනි නිෂ්පාදකයන් විසින් රැගෙන යාමත් යටි අළු බලාගාරයේ අළු අංගනයේ අවුරුදු 30 ක කාලයක් දක්වා ගබඩා කර තැබීමට කටයුතු කරන බවත්

දක්වා තිබුණි. මෙම අළු අංගනය දළ වශයෙන් අක්කර 25 ක පමණ භූමි ප්‍රමාණයකින් යුක්තවේ. බලාගාරයේ ක්‍රියාත්මක වන එක් ඒකකයක අපේක්ෂිත ජීව කාලය වසර 35 ක් ලෙස සැලැස්සුම් අදියරේදී හඳුනාගෙන තිබූ අතර මේ අනුව 2018 වර්ෂයේ සිට ඉදිරියට එම ඒකක 03 සියයට 65 ක (ඡේද අංක 7.9.3) කාර්යක්ෂමතාවයකින් ක්‍රියාත්මක වන්නේ යැයි උපකල්පනය මත උත්පාදනය විය හැකි පියාසර අළු හා යටි අළු ප්‍රමාණය පහත පරිදි ගණනය කරන ලදී.

වගු අංක 11 – 2018 වර්ෂයේ සිට ඉදිරියට ජනිත විය හැකි පියාසර අළු ප්‍රමාණය

	ආරම්භක වර්ෂය	වසර 35 ක ජීව කාලය සම්පූර්ණ වන වර්ෂය	2018 වර්ෂයේ සිට ඉදිරියට ඇති වර්ෂ ගණන	(65 % ක කාර්යක්ෂමතාවය) දිනකට ජනිත වන පියාසර අළු (මෙට්‍රික් ටොන්)	වර්ෂයකට ජනිත විය හැකි පියාසර අළු (මෙට්‍රික් ටොන්)	2018 වර්ෂයේ සිට ඉදිරියට ජනිත විය හැකි පියාසර අළු (මෙට්‍රික් ටොන්)
ඒකක 1	2011	2046	28	195	71,175	1,992,900
ඒකක 2	2014	2049	31	195	71,175	2,206,425
ඒකක 3	2014	2049	31	195	71,175	2,206,425
මුළු එකතුව						6,405,750

වගු අංක 12 – 2018 වර්ෂයේ සිට ඉදිරියට ජනිත විය හැකි යටි අළු ප්‍රමාණය

	ආරම්භක වර්ෂය	වසර 35 ක ජීව කාලය සම්පූර්ණ වන වර්ෂය	2018 වර්ෂයේ සිට ඉදිරියට ඇති වර්ෂ ගණන	(65 % ක කාර්යක්ෂමතාවය) දිනකට ජනිත වන යටි අළු (මෙට්‍රික් ටොන්)	වර්ෂයකට ජනිත විය හැකි යටි අළු (මෙට්‍රික් ටොන්)	2018 වර්ෂයේ සිට ඉදිරියට ජනිත විය හැකි යටි අළු (මෙට්‍රික් ටොන්)
ඒකක 1	2011	2046	28	39	14,235	398,580
ඒකක 2	2014	2049	31	39	14,235	441,285
ඒකක 3	2014	2049	31	39	14,235	441,285
මුළු එකතුව						1,281,150

ඉහත සඳහන් වූ මෙම අතුරු ඵලයන් බැහැර කිරීමේ ක්‍රමවේදයට අදාළව සිදු කරන ලද විගණන පරීක්ෂාවේදී නිරීක්ෂණය වූ කරුණු පහත දැක්වේ.

රූප සටහන් අංක 05 - අළු අංගනය



7.5.2 2015 වර්ෂයේ සිට 2018 මැයි මස 10 වන දින දක්වා පියාසර අළු (Fly Ash) මෙට්‍රික්ටොන් 425,008 ක් පමණ අලෙවි කර ඇති අතර මෙම කාලපරිච්ඡේදය තුළ ඉතිරි වූ පියාසර අළු (Fly Ash) මෙට්‍රික්ටොන් 443,909 ක් පමණ අළු අංගනයේ තැන්පත් කර තිබුණි. (ඇමුණුම - 23)

7.5.3 පියාසර අළු (Fly Ash) සීමෙන්ති කර්මාන්තයට සහ අනෙකුත් ඉදිකිරීම් කටයුතු සඳහා යොදා ගැනීමට සුදුසු බවට ශ්‍රී ලංකා ජාතික ඉංජිනේරු පර්යේෂණ සහ සංවර්ධන මධ්‍යස්ථානය (NERDC) නිර්දේශ කර තිබුණි. තවද පියාසර අළු සහ යටි අළු භාවිතා කර සිදු කරනු ලබන නිෂ්පාදනයන් අලෙවි කිරීමට හා ප්‍රවර්ධනය කිරීමටත් ඒ සඳහා අවශ්‍ය වන්නා වූ තාක්ෂණික දැනුම සුළු හා මධ්‍ය පරිමාණ කර්මාන්තකරුවන්ට ලබාදීම සඳහාත් එම ආයතනය හා ලංකා විදුලිබල මණ්ඩලය සමඟ 2017 අගෝස්තු 08 වන දින අවබෝධතා ගිවිසුමකට එළඹී තිබුණි.(ඇමුණුම - 24)

7.5.4 2017 අප්‍රේල් 20 දිනැති පුවත්පත් දැන්වීම් (ඇමුණුම - 25) මඟින් දෛනිකව මෙගාවොට් 900 ක විදුලි බලයක් නිපදවීමේදී අතුරු ඵලයක් ලෙස ඉතිරිවන පියාසර අළු බැහැර කිරීම සඳහා ලංසු කැඳවා තිබුණ අතර ආයතන 08 ක් තත්ත්ව අංක 01 හා තත්ත්ව අංක 02 යටතේ පියාසර අළු මිලදී ගැනීම සඳහා 2018 සිට 2022 දක්වා වසර 05 ක කාලයක් සඳහා ගිවිසුම් වලට එළඹී තිබුණි. (ඇමුණුම -26)

- 7.5.5** 2017 නොවැම්බර් 22 දින පැවැත්වූ අමාත්‍ය මණ්ඩල රැස්වීමේදී ටෙන්ඩර් අංක LV/CEPD/FLY/Ash/02 යටතේ මුදල් හා ජන මාධ්‍ය ඇමතිතුමාගේ නිරීක්ෂණවල නියම කර දක්වා ඇති කොන්දේසිවලට යටත්ව, අමාත්‍ය මණ්ඩල සංදේශයේ 7 වන ඡේදයේ 7.1 සිට 7.9 දක්වා වන යෝජනා වලට අනුව වසර 05 ක කාලයක් අළු අලෙවි කිරීම සඳහා අනුමැතිය ලබාදීමට තීරණය කර තිබුණි. (ඇමුණුම - 27)
- 7.5.6** ඉහත සඳහන් යෝජනා වලට අදාළව ගිවිසුම් ක්‍රියාත්මක වීම සිදු වුවහොත් වාර්ෂිකව ඉවත් වන අළු ප්‍රමාණය මෙට්‍රික් ටොන් 480,000 ක් හා එමඟින් රු. මිලියන 874.95 ක ආදායමක් ඉපයීමට ඇස්තමේන්තු කර තිබුණි. (ඇමුණුම - 28)
- 7.5.7** ඒ අනුව 2015 වර්ෂයේ සිට 2018 වර්ෂය දක්වා යටි අළු (Bottom Ash) කියුබ් 30ක් හා ලෝඩ් 858 ක් අලෙවි කිරීම මඟින් රු. 438,335 ක ආදායමක් බලාගාරය විසින් උපයා තිබුණි. (ඇමුණුම 29)
- 7.5.8** බලාගාරයේ ඉතිරි වන පියාසර අළු (Fly Ash) සහ යටි අළු (Bottom Ash) බලාගාරය අසල අක්කර 25 ක පමණ භූමි ප්‍රමාණයක් තුළ තැන්පත් කරනු ලැබේ. සුළං අධික කාල වල(වාරකන් මැයි, ජූනි, ජූලි, අගෝස්තු හා සැප්තැම්බර් මාස) මෙම පියාසර අළු පරිසරයට එකතු වේ.
- 7.5.9** අළු තැන්පත් කර ඇති භූමිය භෞතික පරීක්ෂාවේදී මෙම අළු වර්ග දෙක වෙන වෙනම තැන්පත් කර තිබුණු බව නිරීක්ෂණය විය.
- 7.5.10** පියාසර අළු (Fly Ash) අංගනයේ තැන්පත් කිරීමේදී වතුර සමඟ මිශ්‍ර කොට ටීපර් රට් මඟින් ප්‍රවාහනය කර තැන්පත් කරනු ලබන අතර එම අළු සහ වූ ද්‍රව්‍යයක් (Slurry) වශයෙන් දැනට අක්කර 7 කට ආසන්න ප්‍රමාණයක් ආවරණය කර ඇත. 2018 මැයි 10 දින වන විට තැන්පත් කර ඇති අළු අංගනයේ උස මීටර් 10 කට ආසන්න බව ද තැන්පත් කළ හැකි ධාරිතාවයේ උස දළ වශයෙන් මීටර් 25 ක් පමණ වන බවද බලාගාරයේ පාරිසරික ඉංජිනේරු නිලධාරී විසින් ප්‍රකාශ කරන ලදී.
- 7.5.11** ජලය සමඟ මිශ්‍ර වූ පියාසර අළු (Fly Ash) සහ වූ පසු සුළඟ සමඟ එකතු නොවීම හේතුවෙන් දූවිලි ලෙස වාතයට එකතු වීමක් සිදු නොවේ. නමුත් ජලය සමඟ මිශ්‍ර නොවූ පියාසර අළු දූවිලි ලෙස වාතයට එකතුවිය හැක.

7.5.12 යටි අළු (Bottom Ash) විදුලි බලය නිපදවීමේ ක්‍රියාවලියේදී ජලය සමඟ මුසු වීම හේතුවෙන් තෙත්ගතියක් පවතී.

රූප සටහන අංක 06- යටි අළු අංගනයේ තැන්පත් කිරීම



7.6 සංසරණ වායු තත්ත්ව ප්‍රමිති පවත්වාගෙන යාම

7.6.1 ගල් අඟුරු දහන ක්‍රියාවලියේදී උත්පාදනය වන සියුම් අළු අංශු රත් වූ වායුන් සමඟ පියාසර අළු ලෙස පැයකට ටොන් 12 ත් 14 ත් අතර පිට කෙරේ. මෙම විමෝචක වායු, ස්ථිති විද්‍යුත් අවක්ෂේපකයෙන් (ESP) පෙරීමෙන් පසු විමෝචක වායු ගෙන්දගම් වියුක්තකයට (FGD – Flue Gas Desulpherization) ඇතුළු වන අතර මෙම වායුව මුහුදු ජලය සමඟ මිශ්‍ර කිරීමෙන් ගෙන්දගම් දහනයෙන් සෑදෙන වායුව ඉවත් කර අනතුරුව මීටර් 150 ක් උස විමිනියක් මඟින් ඉහල අහසට මුදා හැරේ.

රූප සටහන අංක 07 - විමෝචක වායු ගෙන්දගම් වියුක්තකය සහ ඒකක තුනට අදාල විමිනි



7.6.2 1990 අංක 12 දරණ වයඹ පළාත් පාරිසරික ප්‍රඥප්තියට අනුව 2010 දෙසැම්බර් 21 දිනැති අංක 1685/11 (ඇමුණුම - 18) දරණ අති විශේෂ ගැසට් පත්‍රය මඟින් සංසරණ වායු තත්ත්ව නියෝග ප්‍රසිද්ධ කර ඇත. මේ යටතේ පළාත් පරිසර අධිකාරිය විසින් අනුමත කරන ලද උපකරණ භාවිතා කරමින් නියමිත වායු තත්ත්ව ප්‍රමිති පවත්වාගෙන යනු ලැබේද යන්න පරීක්ෂා කිරීම කළ යුතු වේ. මෙම නියෝග මඟින් ප්‍රධාන අපවිත්‍රකාරක 06 ක් හඳුනාගෙන ඇත. එනම්:

- 01. අංශුමය ද්‍රව්‍ය - PM₁₀ (වායුගතික විශ්කම්භය මයික්‍රො මීටර් 10 ට අඩු)
- 02. අංශුමය ද්‍රව්‍ය - PM_{2.5} (වායුගතික විශ්කම්භය මයික්‍රො මීටර් 2.5 ට අඩු)
- 03. නයිට්‍රජන් ඩයොක්සයිඩ් - NO₂
- 04. සල්ෆර් ඩයොක්සයිඩ් - SO₂
- 05. ඕසෝන් - O₃
- 06. කාබන් මොනොක්සයිඩ් - CO

ගල් අඟුරු දහනයේදී වායුගෝලයට මුදාහරින අපවිත්‍රකාරක කිහිපයක් පහත පරිදි හඳුනාගෙන ඇත.
(ඇමුණුම - 30)

- 01. අංශුමය ද්‍රව්‍ය - PM₁₀
- 02. අංශුමය ද්‍රව්‍ය - PM_{2.5}
- 03. නයිට්‍රජන් ඔක්සයිඩ් - NO_x
- 04. සල්ෆර් ඩයොක්සයිඩ් - SO₂
- 05. කාබන් ඩයොක්සයිඩ් - CO₂
- 06. මීතේන් - CH₄
- 07. රසදිය ඇතුළු බැර ලෝහයන්

7.6.3 2018 මැයි 21 දින සිට 2018 ජූනි 02 දක්වා සංසරණ වායු සම්බන්ධයෙන් ලක්විජය බලාගාරය විසින් විගණනය සඳහා ඉදිරිපත් කරන ලද දත්ත පරීක්ෂාවේදී වූ නිරීක්ෂණ පහත පරිදි වේ.

වගු අංක 13 - සංසරණ වායු නිරීක්ෂණ දත්ත

දිනය	ඒකක 1 (Unit 1)	ඒකක 2 (Unit 2)	ඒකක 3 (Unit 3)
	සංසරණ වායු - NO _x , SO ₂ , CO, CO ₂ , O ₂		
2018/05/21	ඒකකය වසා තිබුණි.	පරීක්ෂා කර ඇත.	පරීක්ෂා කර ඇත.
2018/05/23	පරීක්ෂාකර නැත.	පරීක්ෂා කර ඇත.	පරීක්ෂා කර ඇත.
2018/05/25	පරීක්ෂා කර ඇත.	පරීක්ෂා කර ඇත.	පරීක්ෂා කර ඇත.
2018/05/27	පරීක්ෂා කර ඇත.	ඒකකය වසා තිබුණි.	ඒකකය වසා තිබුණි.
2018/05/31	පරීක්ෂා කර ඇත.	ඒකකය වසා තිබුණි.	ඒකකය වසා තිබුණි.
2018/06/02	පරීක්ෂා කර ඇත.	පරීක්ෂා කර ඇත.	ඒකකය වසා තිබුණි.

(ඇමුණුම -31)

7.6.4 තවද මාලේ සම්මුතිය යටතේ අන්තර් දේශ සීමා වායු දූෂණය හේතුවෙන් අමල වැසි ඇති වීමේ හැකියාව හඳුනාගැනීම සහ අමල වැසි පාලන ව්‍යාපෘති ක්‍රියාත්මක කිරීම සඳහා වැසි ජලය සමූහ වශයෙන් එකතුකර ආම්ලිකතාවය සාණායන වාලක ස්වභාවය පරීක්ෂා කිරීම සිදු කල යුතුය. (ඇමුණුම -32)

7.6.5 දුම් කුළුණු හරහා බැහැර වන දහන වායුන්ගේ ගුණාත්මකභාවය අධ්‍යයනය කිරීම හා වායුවේ අන්තර්ගත සියුම් අංශු ඉවත්කරනු ලබන ස්ථිතික විද්‍යුත් අවක්ෂේපකයේ සහ විමෝචක වායු ගෙන්දගම් විද්‍යුත්කයේ කාර්යක්ෂමතාවය මැනීමේ කටයුතු ද ශබ්ද හා කම්පන (Noise and vibration) සහ ජලයේ ගුණත්වය පරීක්ෂාව සඳහා 2018 අප්‍රේල් 25 දින කාර්මික තාක්ෂණ ආයතනය වෙත LV/T/2018/127 දරණ ලිපිය මගින් රු. මිලියන 3.95 ක වටිනාකමක් සහිත කොන්ත්‍රාත්තුව ප්‍රදානය කර තිබුණි.

7.7 බලාගාරයේ සිසිලන පද්ධතිය සඳහා අවශ්‍ය ජලය ලබා ගැනීම සහ පිරිපහදුවෙන් පසු ජලය මුහුදට බැහැර කිරීමේ ක්‍රියාවලිය

7.7.1 බලාගාරයේ මෙහෙයුම් කටයුතු සඳහා භාවිතා කරන සිසිලන පද්ධතිය සඳහා (Cooling water system) මුහුදු ජලය උපයෝගී කරගනු ලබන අතර එක් ඒකකයක් (per 1 Unit) සඳහා පැයකට කියුබික් මීටර් 58,000 ක ප්‍රමාණයක ජලය ලබාගන්නා අතර එය දළ වශයෙන් තත්පරයකට කියුබික් මීටර් 1,000 කට ආසන්න ප්‍රමාණයකි.

රූප සටහන අංක 08- සිසිලන පද්ධතිය සඳහා අවශ්‍ය ජලය ලබා ගැනීම



7.7.2 මුහුදු ජලයේ පවතින ගුණත්වය (Raw water quality) පරීක්ෂා කිරීම සඳහා පරාමිතීන් 02 ක් භාවිතා කරන අතර ඒවා නම් ජලයේ ක්ෂාරීය අගය (PH) හා උෂ්ණත්වය (Temperature) වශයෙනි. ඉහත පරාමිතීන් පරීක්ෂා කිරීම මගින් නැවත එම ජලය මුහුදට බැහැරවන ස්ථානයේදී (Discharge point) පවත්වා ගත යුතු ගුණත්වයන් පාලනය සඳහා අවශ්‍ය වන්නා වූ ක්‍රියාමාර්ග ගැනීම සිදු කල හැකි වේ.

7.8 භූගත ජලය

7.8.1 2017 මාර්තු 16 දිනැති අංක 2010/23 දරණ ජල සම්පත් මණ්ඩලයේ අති විශේෂ ගැසට් පත්‍රය ප්‍රකාරව (ඇමුණුම -33) රාජ්‍ය ආයතන සිය ව්‍යාපෘතීන් සඳහා ස්වභාවික ජල උල්පතක් හෝ ගැඹුරු හෝ නොගැඹුරු භූගත ජලය භාවිතයට ගනු ලබන්නේ නම් ජල සම්පත් මණ්ඩලය විසින් දෙනු ලබන නියමයන්ට අනුකූලව එම ව්‍යාපෘති ක්‍රියාත්මක කළ යුතුය. බලාගාරය විසින් 2017 දෙසැම්බර් වන විට නොගැඹුරු ළිං 74 ක් භාවිතයට ගැනීම සඳහා ඉල්ලුම් කර තිබුණි.

7.8.2 2018 අප්‍රේල් 23 දින අංක LV/T/2018/0126 දරණ ලිපිය මඟින් බලාගාර පරිශ්‍රයේ හා අවට භූගත ජලයේ පවතින ගුණාත්මකභාවය පිළිබඳව අඛණ්ඩව පරීක්ෂාව සඳහා වූ කොන්ත්‍රාත්තුව ජල සම්පත් මණ්ඩලය වෙත පිරිනමා තිබූ අතර, එහි ඇස්තමේන්තු වටිනාකම රු.මිලියන 3.95ක් විය. (ඇමුණුම -34)

7.9 බලාගාරයේ කාර්ය සාධනය හා මෙහෙයුම් කාර්යයන් තාවකාලිකව නවතා දැමීම

7.9.1 බලාගාර සාධකය (Plant factor), ක්‍රියාත්මක වන බලාගාර සාධකය (Running Plant Factor) හා පවතින සාධකය (Available Factor) යනු විදුලි බල උත්පාදන කාර්යයේදී කාර්යය සාධනය මැනීමේ දර්ශක තුනකි. මෙම දර්ශක පහත පරිදි ගණනය කෙරේ.

• බලාගාර සාධකය =
$$\frac{\text{සත්‍ය බලශක්ති උත්පාදනය (නාමික කාලය තුළදී)}}{\text{සලකා බලන කාලය තුළදී විය හැකි බලශක්ති උත්පාදනය}}$$

• ක්‍රියාත්මක වන බලාගාර සාධකය
කාලපරිච්ඡේදය තුළ භාවිතයට ගත හැකි මුළු ධාරිතාවය උපයෝජනය කළේ නම් උත්පාදනය කළ හැකි නිෂ්පාදනයට සත්‍ය නිෂ්පාදනයේ දායකත්වය සලකා බැලේ.

• පවතින සාධකය
සැලැස්සුම් ගත නොවූ ක්‍රියාකාරීත්වයේ ඇණහිටීම් හෝ බලශක්ති නාස්ති වීම් අවම කිරීම සඳහා සැලැස්සුම් පිළියෙල කිරීම සිදු කළ හැකි අතර මෙමඟින් මෙහෙයුම් ක්‍රියාවලියේ කාර්යක්ෂමතාවය ඉහළ නංවා ගත හැක.

7.9.2 2016 වර්ෂයේ ලක් විජය බලාගාරයේ පළමු ඒකකයෙහි (Unit 1) බලාගාර සාධකය, ක්‍රියාත්මක වන බලාගාර සාධකය හා පවතින සාධකය පිළිවෙලින් සියයට 31.38 ක්, 38.93 ක් හා 48.23 ක් ලෙස වාර්තා වී තිබුණි. මෙය ඒකක දෙක හා ඒකක තුනට (Unit 2 and Unit 3) සාපේක්ෂව පහළ අගයක් විය. (ඇමුණුම -05)

7.9.3 පසුගිය වර්ෂ 03 කට අදාළව බලාගාරයේ නිෂ්පාදනය කළ හැකි ධාරිතාවය හා කාර්යය සාධනය පහත පරිදි වේ.

වගු අංක 14 - බලාගාරයේ නිෂ්පාදන ධාරිතාවය හා කාර්යය සාධනය

වර්ෂය	නිෂ්පාදනය කළ හැකි ධාරිතාවය මෙගාවොට්	නිෂ්පාදනය කළ හැකි ධාරිතාවය ගිගාවොට් පැය	සත්‍ය නිෂ්පාදනය ගිගාවොට් පැය	සත්‍ය නිෂ්පාදනය, නිෂ්පාදනය කළ හැකි ධාරිතාවයේ ප්‍රතිශතයක් ලෙස
2015	900	$900 \times 8,760 / 1,000 = 7,884$	4,443	56.35
2016	900	$900 \times 8,760 / 1,000 = 7,884$	5,047	64.01
2017	900	$900 \times 8,760 / 1,000 = 7,884$	5,103	64.72

7.9.4 2016 වර්ෂයේ ජනවාරි මස සිට 2018 අප්‍රේල් 30 දක්වා ලක්විජය බලාගාරයේ මෙහෙයුම් කටයුතු තාවකාලිකව නවතා දැමූ අවස්ථා පහත පරිදි නිරීක්ෂණය විය. (ඇමුණුම - 35)

වගු අංක 15 - බලාගාරයේ මෙහෙයුම් කටයුතු තාවකාලිකව නවතා දැමූ අවස්ථා

වර්ෂය	පළමු ඒකකය වසා තැබූ දින ගණන	දෙවන ඒකකය වසා තැබූ දින ගණන	තුන්වන ඒකකය වසා තැබූ දින ගණන
2016	223.52	17.58	21.54
2017	55.31	53.43	82.0
2018/04/30	13.02	23.52	-
එකතුව	291.85	94.53	103.54

මෙම තාවකාලික නවතා තැබීම් සඳහා ප්‍රධාන හේතු 5ක් හඳුනාගෙන තිබූ අතර ඒවා පහත පරිදි වේ.

1. ප්‍රධාන නඩත්තු කටයුත්තක් අවසන් කර පසු ඒකකයේ නිවැරදි ක්‍රියාකාරිත්වය සනාථ කර ගැනීමට පරීක්ෂණ සිදු කරන කාලපරිච්ඡේදය (Commissioning)
2. අභ්‍යන්තර දෝෂ (Internal fault)
3. බාහිර දෝෂ (External fault)
4. නඩත්තු කටයුතු (Maintenance)
5. පද්ධති පාලන ඉල්ලීම් (SCC request)

වගු අංක 16 - මෙහෙයුම් කටයුතු තාවකාලිකව නවතා දැමීමට හේතු සහ අවස්ථා (ඇමුණුම - 36)

ඒකකය සහ වර්ෂය		Commiss -onning	අභ්‍යන්තර දෝෂ	බාහිර දෝෂ	නඩත්තු කටයුතු	පද්ධති පාලන ඉල්ලීම්
		නවතා දැමූ කාලය දින	නවතා දැමූ කාලය දින	නවතා දැමූ කාලය දින	නවතා දැමූ කාලය දින	නවතා දැමූ කාලය දින
ඒකක 1	2016	9.68	137.49	29.38	40.89	6.07
	2017	-	55.31	-	-	-
	2018 මැයි 10 දක්වා	-	-	-	13.02	-
එකතුව		9.68	192.80	29.38	53.91	6.07
ඒකක 2	2016	-	5.63	11.95	-	-
	2017	-	53.21	0.22	-	-
	2018 මැයි 10 දක්වා	-	23.52	-	-	-
එකතුව		-	82.36	12.17	-	-
ඒකක 3	2016	-	6.14	15.40	-	-
	2017	-	71.14	-	10.86	-
	2018 මැයි 10 දක්වා	-	-	-	-	-
එකතුව		-	77.28	15.40	10.86	-
මුළු එකතුව		9.68	352.44	56.95	64.77	6.07

7.9.5 2018 වර්ෂයේ සිට 2021 වර්ෂය දක්වා බලාගාරය විසින් සිදුකළ යුතු ඉදිරි නඩත්තු සැලැස්ම පිළියෙල කර තිබුණි. ඒ අනුව 2019 වර්ෂයේදී ඒකක දෙකක ප්‍රධාන කාණ්ඩයේ නඩත්තු කටයුතුද එක් ඒකකයක දෙවන කාණ්ඩයේ නඩත්තු කටයුතුද සැලැස්ම කර ඇති අතර මෙවැනි අවස්ථාවකදී නඩත්තුව අවශ්‍ය වන සම්පූර්ණ ඒකකයම දළ වශයෙන් දින 100 ක කාලයක් හා දින 45 ක කාලයක් සඳහා නතර කිරීම සිදු කළ යුතුය. ජාතික විදුලිබල උත්පාදන ක්‍රියාවලිය සඳහා බලාගාරයේ දායකත්වය සියයට 35 කට ආසන්න ප්‍රමාණයක් 2017 වර්ෂයේදී ලබා දී ඇති අතර මෙවැනි නඩත්තු කටයුත්තකදී මෙම දායකත්වයේ ප්‍රමාණය අඩු විය හැක. (ඇමුණුම - 37)

7.10 කාලගුණික දත්ත

සුළඟේ වේගය සහ සුළං දිශාව මැනීම සඳහා බලාගාරයේ ක්‍රියාත්මක වූ කාලගුණික දත්ත රැස් කිරීමේ ඒකක ස්ථාන දෙකක සවිකර තිබූ අතර මෙමගින් ලබා ගන්නා දත්ත දෙසතියකට වරක් Pen Drive එකක් මගින් ලබාගෙන නිරීක්ෂණය කෙරේ. (ඇමුණුම -38)

7.11 පරිසර ගැටළු වලක්වා ගැනීමට ක්‍රියාත්මක වැඩසටහන් වල ප්‍රගතිය

පාරිසරික ගැටළු වලක්වා ගැනීම සඳහා බලාගාරය විසින් ක්‍රියාත්මක කිරීමට අපේක්ෂිත 2017 නොවැම්බර් මස 02 දිනැති අංක පීපීඑම්/එල්වීපී/සීවීල්/37-88 දරණ පුත්තලම දිස්ත්‍රික් ලේකම් අමතන ලද බලස්ථාන කළමනාකරුගේ ලිපියේ අඩංගු පහත සඳහන් කරුණු සම්බන්ධයෙන් 2018 මැයි 10 වන දින භෞතික විගණන පරීක්ෂාවේ දී හා 2018 ජූනි 05 දිනැති අංක එල්වීපීපී/පීපීඑම්/පොදු/6-148 දරණ (ඇමුණුම - 39) විගණකාධිපති වෙත යොමු කරන ලද ලිපියේ සඳහන් කරුණු පහත දැක්වේ.

- 7.11.1 ගැටළු 01-** ගල් අඟුරු අංගනයේ ඇති දුච්චි අංශු, සුළඟ සමඟ ව්‍යාප්ත වීම වැළැක්වීම.
- 7.11.1.1 ක්‍රියාමාර්ගය 01 -** ගල් අඟුරු අංගනය වටා සුළං බාධක ඉදිකිරීම.
- 7.11.1.1.1 නිරීක්ෂණය 01 -** ගල් අඟුරු අංගනය වටා දැනට පවතින සුළං බාධකය උස මීටර් 15ක් හා 460 දිගින් (ඇමුණුම - 40) යුක්තවේ.

රූප සටහන අංක 09 - ගල් අඟුරු අංගනය වටා ඇති සුළං බාධකය



7.11.1.1.2 නිරීක්ෂණය 02 - ලංකා විදුලි බල මණ්ඩලය විසින් 2016 සැප්තැම්බර් 29 වන දින පිළියෙල කරන ලද ඉදිකිරීමට යෝජිත දිගින් මීටර් 1183.5ක් වූ (ඇමුණුම - 41) සුළං බාධකය සඳහා ඇස්තමේන්තුගත පිරිවැය රු. මිලියන 600 ක් පමණ විය. 2017 ඔක්තෝබර් 05 වන දින සිට මෙම කාර්යය සඳහා ප්‍රසම්පාදන කටයුතු ආරම්භ කර තිබූ අතර 2018 පෙබරවාරි 05 දින රු.483,794,564 ක (ඇමුණුම - 42) වටිනාකමකට කොන්ත්‍රාත්තුව පිරිනමා තිබුණි.

7.11.1.2 ක්‍රියාමාර්ග 02 - ගල් අඟුරු අංගනයේ ජංගම ජල ඉසින යන්ත්‍ර හා ජල විසිරුම් පද්ධතිය ක්‍රියාත්මක කිරීම.

7.11.1.2.1 නිරීක්ෂණය - ගල් අඟුරු ගොඩ ගසා තිබියදී හා මෙහෙයුම් කටයුතු සඳහා අවශ්‍ය ගල් අඟුරු අංගනයෙන් ඉවත් කිරීමේදී එමගින් ඇතිවන දූවිලි අංශු ව්‍යාප්ත වීම අවම කිරීමට ගල් අඟුරු අංගනය තුළ ජල විසිරුම් ක්‍රමයන් ද දූවිලි අංශු ගම්මානය දෙසට ව්‍යාප්තවීම අවම කිරීම සඳහා ජංගම ජල ඉසින යන්ත්‍ර 02 ක් ද ක්‍රියාත්මක කිරීමට කටයුතු යොදා තිබුණි.

7.11.1.3 ක්‍රියාමාර්ග 03 - ගල් අඟුරු අංගනය හා ගම අතර ආරක්ෂක කලාපයක් ඉදිකිරීම.

7.11.1.3.1 නිරීක්ෂණය 01 - ගල් අඟුරු අංගනය පුළුල් කිරීම නිසා දැනට පවතින ස්චාරක්ෂක කලාපය (Buffer Zone) පටු වූ අතර එම නිසා ගල් අඟුරු කුඩු සුළඟ මගින් ඉතා ඉක්මනින් ව්‍යාප්තවීමේ අවස්ථාව වැඩි බව නිරීක්ෂණය විය. මෙම ස්චාරක්ෂක කලාපය (Buffer Zone) පුළුල් කිරීම සඳහා මීටර් 100 ක ඉඩම් තීරුවක් (අක්කර 25ක්) අළුතින් මිලදී ගැනීම වෙනුවෙන් 2017 වර්ෂයේ දී ක්‍රියාමාර්ග ආරම්භ කර තිබුණි.

7.11.1.3.2 නිරීක්ෂණය 02- ගල් අඟුරු දූවිලි අංශු අවට පරිසරය වෙත ව්‍යාප්ත වීම අවම කිරීම සඳහා මෙම කලාපය තුළ, හරිත ආවරණයක් නිර්මාණය කිරීම සඳහා විවිධ වෘක්ෂ රෝපණය කර තිබුණි.

7.11.1.4 ක්‍රියාමාර්ග 04 - භාවිතයට නොගන්නා ගල් අඟුරු නොගය රසායනික ද්‍රාවණයක් මගින් ආවරණය කිරීම.

රූප සටහන අංක 10- ගල් අඟුරු අංගනය



7.11.1.4.1 නිරීක්ෂණය - භූමි ප්‍රමාණය අක්කර 46 (360m X 510 m) ක් වන හා ගල් අඟුරු අතුරා තැබිය හැකි ධාරිතාවය මෙට්‍රික්ටොන් මිලියන 1.21 වන ගල් අඟුරු අංගනයේ ගබඩා කර ඇති ගල් අඟුරු මඟින් ජනිත වන දූවිලි අංශු අසල ගම්මානය වෙත ව්‍යාප්තවීම වැලැක්වීමටත්, ගල් අඟුරු තොග ගිනි ගැනීමට ඇති අවදානම අවම කිරීම සඳහාත් මෙම රසායනික ද්‍රාවණය යෙදිය හැකි බව ලක්විජය බලාගාරයේ ඉංජිනේරුවරයන් විසින් ප්‍රකාශ කරන ලද අතර ඒ සඳහා වර්ෂයකට වැයවේ යැයි අපේක්ෂිත පිරිවැය රු.මිලියන 35 කි.

7.11.2 ගැටළු 02- පියාසර අළු (Fly Ash) ව්‍යාප්ත වීම අවම කිරීම.

7.11.2.1 ක්‍රියාමාර්ගය 01 -අළු අංගනය වෙත ප්‍රවාහනයේදී හා නැවත ගැනීමේදී අළු තෙත තත්ත්වයෙන් තබාගැනීම.

7.11.2.1.1 නිරීක්ෂණය 01 - අංගනයේ ගොඩගැසෙන අළු, මට්ටම් කිරීම සඳහා යන්ත්‍ර සහ මිනිස් ශ්‍රමය යොදාගැනීමත් ජලය හා අළු මිශ්‍රිත දියරයක් (Slurry) භාවිතා කිරීමෙන් අළු අංගනය මතුපිට ආවරණය කිරීමත් (අංගනයේ කොටසක් සඳහා, ආසන්න වශයෙන් අක්කර 07) යන දෙයාකාරයට වර්ෂයකට වැයවේ යැයි අපේක්ෂිත පිරිවැය රු. මිලියන 55 කි.

රූප සටහන අංක 11- අළු අංගනය



7.11.2.2 ක්‍රියාමාර්ගය 02 -අළු අංගනයේ බටහිර සුළං දිශාවට (මුහුදු පිහිටා ඇති දිශාවට) සුළං බාධකයක් ඉදි කිරීම.

7.11.2.2.1 නිරීක්ෂණය 01 - මෝසම් කාලය තුළදී මෝසම් සුළං මඟින් අළු ගම්මානය දෙසට ව්‍යාප්ත වීමට අවස්ථාව පවතින අතර මේ සඳහා පියවරක් වශයෙන් අළු අංගනයේ බටහිර දිශාවේ සුළං බාධකයක් ඉදිකිරීමට බලාගාරය විසින් සැලැසුම් කර තිබුණි. මෙම කාර්යය සඳහා ඇස්තමේන්තුගත පිරිවැය රු. මිලියන 300 ක් පමණ වේ. ගල් අඟුරු අංගනයේ සුළං බාධකය ඉදිකිරීමේ ප්‍රගතිය මත මෙම ඉදිකිරීම ආරම්භ කිරීමට සැලැසුම් කර තිබුණි.

7.11.3 ගැටළු 03 - බලාගාරයේ සිසිලන පද්ධතියේ ජලය මුහුදට මුදා හැරීම නිසා සාගර සම්පතට හා කල්පිටිය ප්‍රදේශයේ ධීවර ජනතාවට ඇතිවන බලපෑම.

7.11.3.1 ක්‍රියාමාර්ග 01- සාගර ජලයේ උෂ්ණත්වය, පී.එච්.අගය, ද්‍රාව්‍ය ඔක්සිජන්, ජල ජලවාංග ඇතුළු අනෙකුත් ජීවීන්ගේ හැසිරීම හා ධීවර සම්පත් යන කටයුතු පිළිබඳව ජාතික ජල සම්පත් පර්යේෂණ සහ සංවර්ධන නියෝජිත ආයතනය (NARA) සමඟ අඛණ්ඩව පර්යේෂණ පැවැත්වීම .

7.11.3.2 ක්‍රියාමාර්ග 02- මුහුදු පතුළ සමීක්ෂණ කටයුතු සිදු කිරීම

7.11.3.2.1 නිරීක්ෂණය 01 - මුහුදු පතුළේ සිදු කරන සමීක්ෂණ කටයුතු මඟින් ගල් අඟුරු තැන්පත් වී ඇති ආකාරය හඳුනාගැනීම සඳහා මොරටුව විශ්ව විද්‍යාලය මඟින් පරීක්ෂණ කටයුතු සිදු කර ගැනීමට ඉල්ලීම් කර තිබුණි.

7.11.4 ගැටළු 04 - ඉලක්කඩය වෙරළ තීරය බාදනය වීම.

7.11.4.1 ක්‍රියාමාර්ගය 01- නිශ්චිත පරතරයක් සහිතව දිය කඩන ඉදි කිරීම.

7.11.4.1.1 නිරීක්ෂණය 01 - වෙරළ බාදනය වැලැක්වීම සඳහා වෙරළ සංරක්ෂණ දෙපාර්තමේන්තුව සමඟ සාකච්ඡා පවත්වා තිබුණි.

7.12 තෙවන පාර්ශවීය අදහස් දැක්වීම්

2018 මැයි මස 11 වන දින බලාගාරය අසල බෝග වගා කටයුතුවල නිරතව සිටි ගොවීන් කිහිපදෙනෙකු සහ ධීවර ගම්මානයේ ගම්වැසියන් සමඟ පවත්වන ලද සම්මුඛ සාකච්ඡාවලදී අනාවරණය වූ කරුණු පහත පරිදි වේ.

රූප සටහන අංක 12 - අවට ගම් වැසියන් කිහිපදෙනෙකු සමඟ පවත්වන ලද සම්මුඛ සාකච්ඡාව හා බලාගාරය අවට බෝග වගාව



7.12.1 අධික සුළං හමන කාලය වන මැයි මස අග සිට ඔක්තෝම්බර් දක්වා මාස 06ක කාල සීමාවේදී (වාරකන්) අළු අංගනයේ සහ ගල් අඟුරු අංගනයේ ඇති අළු සුළං සමඟ ගම්මානය දෙසට ගසාගෙන එන බැවින් නිවාස වලට, සෞඛ්‍යයට හා කෘෂි බෝගවලට සිදුවන හානිය වළක්වා ගැනීමට කටයුතු කරන්නේ නම්, තාප විදුලි බලාගාරයේ පිහිටීම ඔවුනට ගැටළුවක් නොවන බව බලාගාරය අසල බෝග වගා කටයුතු වල නියත ගොවීන්ගේ අදහස විය.

7.12.2 පුත්තලම දිස්ත්‍රික්කයේ සුළං විදුලි බලාගාරයක් හා ලක්විජය බලාගාරය ක්‍රියාත්මකව තිබුණද ගම්මාන වලට දවසේ පැය 24 පුරා නොකඩවා විදුලි බලය නොලැබීම ගම්වැසියන් මුහුණදෙන අනෙක් ප්‍රධාන ගැටළුවයි. එබැවින් කෘෂිකාර්මික කටයුතුවල යෙදීමේදී සහ දෛනික ජීවිතයට මෙම තත්ත්වය බාධාවක් බව ගම් වැසියන් කිහිපදෙනෙකු පවසන ලදී.

7.12.3 ධීවර කටයුතු කරගෙන යාමට ඔවුනට හිමිව තිබූ මුහුදු ප්‍රදේශය කුඩා වී ඇති බවත් ගල් අඟුරු නැව් සහ බත්තල් නිතර යාත්‍රා කිරීම නිසා ධීවර කටයුතු වලට බාධාවක් ඇති වී තිබෙන බව ධීවර ගම්මානයේ වැසියන්ගේ අදහස විය.

7.12.4 තාප බලාගාරයේ සිසිලන පද්ධතියෙන් පිට කරන උණුසුම් ජලය හේතුවෙන් මත්ස්‍යන්ට හා මුහුදු ජීවීන්ට හානි සිදු වන බව ධීවර ගම්මාන වැසියන්ගේ අදහස විය.

7.13 පුවත්පත් වාර්තා

බලාගාරයේ මෙහෙයුම් කටයුතු වලින් පාරිසරික හානි ඇති වන බවට පුවත්පත් වාර්තා කිහිපයකද, එම වාර්තා වල සඳහන් වූ ආකාරයටම පාරිසරික හානියක් ඇති වී නොමැති බවට තවත් පුවත්පත් කිහිපයකද, වාර්තා වී තිබුණි.

8. නිරීක්ෂණ

8.1 විදුලි බල උත්පාදනය සඳහා මූලාශ්‍ර දායකත්වය

පසුගිය වර්ෂ 04 ක විදුලි නිෂ්පාදන දත්ත පරීක්ෂාවේදී ලක්විජය බලාගාරයේ දායකත්වයේ සාමාන්‍ය සියයට 32.58 ක් හා ජල විදුලි සහ ඉන්ධන පිළිවෙලින් සියයට 28.08 ක් සියයට 13.80 ක් බව නිරීක්ෂණය විය. (7.1.3)

8.2 විදුලිබල ජනන පිරිවැය

විදුලිබල නිෂ්පාදන ක්‍රියාවලියේදී අවම පිරිවැය සහිත මූලාශ්‍රයන් යොදාගැනීම වෙනුවට ඉහල පිරිවැයක් සහිත මූලාශ්‍ර කෙරෙහි අවධානය යොමු කර ඇති බව නිරීක්ෂණය විය. (7.1.6)

8.3 ලක්විජය බලාගාරයේ විදුලිබල උත්පාදන ඒකකයක පිරිවැය හා බලාගාරයේ දායකත්වය

ලංකා විදුලිබල මණ්ඩලයේ විදුලි නිෂ්පාදනයෙන් 1/3 ක දායකත්වය හා අවම දෙවන සාමාන්‍ය ඒකක නිෂ්පාදන පිරිවැය සහිත මූලාශ්‍රය වන්නේ ගල් අඟුරු මඟින් විදුලිය නිෂ්පාදනය බව නිරීක්ෂණය විය. (7.2.4)

8.4 ලක්විජය තාප බලාගාරයේ විදුලි ජනන පිරිවැය සංසන්දනය.

කැලණිතිස්ස බලාගාරය හා සැසඳීමේදී, ගල් අඟුරු අමුද්‍රව්‍යක් ලෙස යොදා විදුලිය නිෂ්පාදනය කරනු ලබන ලක්විජය තාප බලාගාරය මඟින් රු.මිලියන 350,743 ක මුදලක් ලංකා විදුලි බල මණ්ඩලයට ඉතිරි කර ගැනීමට හැකි වූ අතර මෙම දළ ඉතිරි කිරීම් සඳහා ගිවිසුම් ගත මිල වූ රු.මිලියන 197,470 ක් ගැලපූ විට රු.මිලියන 153,273 ක ශුද්ධ ඉතිරියක් මණ්ඩලයට හිමි වී තිබුණි.(7.2.5)

8.5 1980 අංක 47 දරණ ජාතික පාරිසරික පනත හා 1990 අංක 12 දරණ වයඹ පළාත් පාරිසරික ප්‍රඥප්තියේ බලාත්මකභාවය

8.5.1 2018 මැයි 10 දින වන විට පාරිසරික ප්‍රඥප්තියේ 7 (1) (ක) වගන්තියට අනුකූලව වයඹ පළාත් පාරිසරික උපදේශක සභාව ක්‍රියාත්මක කර නොතිබුණු බව නිරීක්ෂණය විය. (7.3.1.2)

8.5.2 2011 වර්ෂයේ මෙහෙයුම් ක්‍රියාවලිය ආරම්භයේ සිට ලක්විජය බලාගාරයේ උද්ගතව තිබූ පාරිසරික ගැටළු සඳහා මධ්‍යම පරිසර අධිකාරියේ මැදිහත්වීමක් සිදු වී නොමැති බව නිරීක්ෂණය විය. (7.3.1.3)

8.6 පරිසර ආරක්ෂණ බලපත්‍රය නිකුත් කිරීම

8.6.1 පරිසර ආරක්ෂණ බලපත්‍රය වයඹ පළාත් පරිසර අධිකාරිය විසින් නිකුත් කර තිබුණු අතර මේ සඳහා මධ්‍යම පරිසර අධිකාරියේ මැදිහත් වීමක් හෝ පරීක්ෂාවක් සිදු කර නොතිබුණි. (7.3.2.2)

8.6.2 පළාත් පරිසර අධිකාරිය විසින් බලාගාරය වෙත නිකුත්කර තිබූ කොන්දේසි 22 කින් යුත් බලපත්‍රය අලුත් කිරීමේදී (Renewal) එම කොන්දේසිවල අවශ්‍යතා බලාගාරය විසින් සපුරා තිබේද යන්න හා

එහි නිරවද්‍යතාවය පසුපරම් කිරීම ප්‍රමාණවත් ආකාරයෙන් සිදු කිරීමකින් තොරව 2017 ජූනි 29 දින දක්වා එම බලපත්‍රය අලුත් කිරීමට (Renewal) කටයුතු කර තිබුණි. මේ අනුව බලාගාරයේ ක්‍රියාකාරකම් තුළින් ඇතිවිය හැකි පාරිසරික අවධානම් තත්ත්වයන් කෙරෙහි බලධාරීන්ගේ අවධානය යොමු වී නොතිබුණි. (7.3.2.3)

8.6.3 2017 ජූනි 29 දින සිට විගණන දිනය වන 2018 මැයි 10 දක්වාම ලක්විජය ගල් අඟුරු තාප බලාගාරයේ කටයුතු වලංගු පරිසර ආරක්ෂණ බලපත්‍රයකින් තොරව පවත්වාගෙන යන බවට නිරීක්ෂණය විය. 2017 අගෝස්තු 09 වන දින පළාත් පරිසර අධිකාරියේ වැඩ බලන අධ්‍යක්ෂක විසින් ලංකා විදුලිබල මණ්ඩලයේ සාමාන්‍යාධිකාරී වෙත යොමු කරන ලද අංක PEA/PKT/EPL/CH/H/149/2015 දරණ ලිපිය (ඇමුණුම -43) ප්‍රකාරව පරිසර ආරක්ෂණ බලපත්‍රය 2017/2018 වර්ෂය සඳහා අළුත් කිරීමට පෙර බලාගාරය විසින් ඉදිරිපත් කළ යුතු ලේඛන/වාර්තා හා විස්තර ප්‍රධාන කොටස් 06 ක් යටතේ දක්වා තිබුණි. මෙම අවශ්‍යතා සඳහා පාදක වූ පාරිසරික කරුණු 2017 වර්ෂය තුළදී පමණක් නිර්මාණය වූ පාරිසරික කරුණු නොවන අතර පෙර වර්ෂ වල සිට අවධානය යොමු කළ යුතුව තිබූ කරුණු බව විගණනයේදී නිරීක්ෂණය විය. (ඇමුණුම අංක 44 හි සඳහන් කරුණු මගින් තව දුරටත් ඒ බව පැහැදිලි වේ.) (7.3.2.4)

8.6.4 සංසරණ වායු තත්ත්ව නියෝග මගින් ඕසෝන් ස්ථරය තුනී කරන ද්‍රව්‍ය සහ පරිසර තත්ත්වයට තර්ජනකාරී ද්‍රව්‍ය ලෙස හඳුනාගත් වායු සම්බන්ධ නියෝග හා සංසරණ වායු තත්ත්ව නියෝග ඇතුළත් වුවද ගල් අඟුරු දහනයේදී පිටවන අනෙකුත් අහිතකර වායු කාරකයන් (උදා: රසදිය(Mercury), කාබන් ඩයොක්සයිඩ්(Carbon dioxide, CO₂)) පිළිබඳ සංසරණ වායු තත්ත්ව නියෝග ප්‍රසිද්ධ කර නොතිබුණු බව නිරීක්ෂණය විය. (7.3.2.6)

8.6.5 කොන්දේසි අංක 8 අනුව good quality හා low ash යන්න පැහැදිලිව නිර්වචනය වී නොතිබුණ අතර ආනයනික ගල් අඟුරු වල තිබිය යුතු ප්‍රමිතිය සම්බන්ධව විශේෂ අවධානයක් යොමු කර නොතිබුණි. (7.3.2.7)

8.6.6 කොන්දේසි අංක 13.5 ට අනුව ව්‍යාපෘතියේ මෙහෙයුම් කටයුතු වලදී උත්පාදනය වන අන්තරාදායී අපද්‍රව්‍ය ප්‍රමාණය හා එහි ගුණත්වය සම්බන්ධයෙන් වාර්තා පවත්වාගෙන එම වාර්තා පළාත් පරිසර අධිකාරිය වෙත වාර්ෂිකව යොමු කළ යුතු වුවද මෙම අවශ්‍යතාවය අඛණ්ඩව සිදු වී නොමැති අතර එම තත්ත්වය පළාත් පරිසර අධිකාරිය විසින් නිරීක්ෂණය කර නොතිබුණි. (7.3.2.8)

8.7 ජාතික පාරිසරික පනත අනුව නිකුත් කර තිබූ ප්‍රමිත හා උපමාන

ජාතික පාරිසරික පනතට අනුව නිකුත් කර තිබූ ප්‍රමිති හා උපමාන පාදක කර ගනිමින් වයඹ පළාත් සභාවේ පාරිසරික ප්‍රමිති හා උපමාන තීරණය කර තිබුණි. නමුත් කර්මාන්තය අනුව මෙම ප්‍රමිති හා උපමාන කාලීනව වෙනස් කිරීමේ අවශ්‍යතාවය පැන නැගෙන අතර ඒ සඳහා පළාත් පරිසර අධිකාරිය අවධානය යොමුකර නොතිබූ බව නිරීක්ෂණය විය. (7.3.3)

8.8 වාර්ෂික ගල් අඟුරු අවශ්‍යතාවය සහ ගොඩබෑම හා අංගනයට ප්‍රවාහනය තුළින් ඇතිවිය හැකි පාරිසරික බලපෑම් විග්‍රහය

8.8.1 බලාගාරයේ දැනට පවතින ජැටිය දිගින් අඩුවීම හේතුවෙන් ජැටියේ සිට කිලෝමීටර් 4 කට ආසන්න දුරකින් ගල් අඟුරු රැගත් නොකාවන් නැංගුරම්ලෑම සිදු කරනු ලබයි. තවද අධික සුළං හමන කාලපරිච්ඡේදයන්හි දී නොකා නොපැමිණෙන බැවින් එම කාලපරිච්ඡේදයන් සඳහා ද ගල් අඟුරු ගබඩා කර තැබීම හේතුවෙන් දූවිලි ව්‍යාප්ත වන බව නිරීක්ෂණය විය. (7.3.4.2 හා 7.3.4.3)

8.8.2 ත්‍රිකුණාමලයේ සිට බලාගාරය වෙත දුම්රිය මගින් ගල් අඟුරු ප්‍රවාහනය කිරීමට ඇති හැකියාව සම්බන්ධයෙන් ආයතන කිහිපයක් සමඟ සාකච්ඡා පවත්වා තිබුණද එය සාර්ථක වී නොතිබුණි. (7.3.4.4)

8.9 ගල් අඟුරු වල පැවතිය යුතු ගුණාත්මකභාවය

8.9.1 විගණනය සඳහා ඉදිරිපත් කරන ලද දත්ත ප්‍රකාරව 2014/2015 වර්ෂයේදී ආනයනය කරන ලද මුළු ගල් අඟුරු ප්‍රමාණයෙන් සියයට 31.09 ක ප්‍රමාණයක් අපේක්ෂිත ගුණත්වයෙන් බැහැර වී ඇති බව නිරීක්ෂණය විය. (ඇමුණුම - 45) (7.4.1)

8.9.2 අපේක්ෂිත පිරිවිතරයන්ගෙන් පරිබාහිරව ගල් අඟුරු තොග ලැබූ අවස්ථාවන් වලදී එම තොග මිල ගැලපීම් සිදු කර බලාගාරයට භාරගැනීම කෙරෙහි අවධානය යොමු කිරීම හේතුවෙන් ගුණත්වයෙන් තොර ගල් අඟුරු දහනය නිසා ඇතිවිය හැකි පාරිසරික හානි පිළිබඳ බලධාරීන් ප්‍රමාණවත් ලෙස සැලකිලිමත් වී නොතිබුණු බව නිරීක්ෂණය විය. (7.4.2)

8.9.3 ගල් අඟුරු තොග වල ප්‍රමිතිය සම්බන්ධයෙන් නිකුත් කරන වාර්තාවන්ට අදාළව නියැදි පරීක්ෂාවේදී එම වාර්තා නියමිත කාලය තුළ නිකුත් කිරීම සිදු නොවන බවත් ප්‍රමාදවීම් සිදුවන බවත් නිරීක්ෂණය විය. මෙම කාලය තුළදී ගල් අඟුරු රැගත් නොකාව පැටවුම් වරායෙන් පිටත් වන බැවින් පැටවුම් වරායේදී තොග අපේක්ෂිත ප්‍රමිතියෙන් නොමැති බව සනාථ වුවහොත් එම තොග එම අවස්ථාවේදීම ප්‍රතික්ෂේප කිරීමේ හැකියාව මේ නිසා අහිමි වන බව නිරීක්ෂණය විය. (7.4.3)

8.9.4 2016/2017 වර්ෂයන් වලදී මිලදී ගත් ගල් අඟුරු වල ගුණාත්මකභාවය පරීක්ෂා කිරීම සඳහා පත්කරන ලද ස්ථාවර තාක්ෂණික ඇගයීම් කමිටුවෙහි ගල් අඟුරු මගින් පරිසරයට ඇතිවන බලපෑම ඇගයීම සඳහා ඒ පිළිබඳ දැනුමක් සහිත සාමාජිකයකු ඇතුළත් කර නොතිබුණි. (7.4.4)

8.9.5 නැව් මගින් ප්‍රවාහනය කරනු ලබන ගල් අඟුරු බත්තල් වලට පැටවීමේදී ඒ අවට මුහුදු පතුලෙහි හා ජැටිය අසල ගල් අඟුරු වැටී තැන්පත් වී තිබුණු බව විගණනය සඳහා ඉදිරිපත් කරන ලද වීඩියෝ දර්ශනයකින් නිරීක්ෂණය විය. (7.4.6)

රූප සටහන අංක 13- මුහුදු පතුලේ ගල් අඟුරු වැටී තැන්පත් වී තිබුණු ආකාරය



8.10 ගල් අඟුරු දහනයේ අතුරු ඵල (පියාසර අළු සහ යටි අළු)

8.10.1 පියාසර අළු සහ යටි අළු භාවිතා කර සිදු කරනු ලබන නිෂ්පාදනයන් අලෙවි කිරීමට හා ප්‍රවර්ධනය කිරීමටත් ඒ සඳහා අවශ්‍ය වන්නා වූ තාක්ෂණික දැනුම සුළු හා මධ්‍ය පරිමාණ කර්මාන්තකරුවන්ට ලබාදීම සඳහා ආයතන කිහිපයක් සමඟ ලංකා විදුලිබල මණ්ඩලය 2017 අගෝස්තු 08 වන දින අවබෝධතා ගිවිසුමකට එළඹී තිබුණ ද එය සාර්ථකව ක්‍රියාත්මක කර නොතිබුණි.(7.5.3)

8.10.2 2018 මැයි 10 දින වන විටත් මෙම පියාසර අළු මිලදී ගැනීම සඳහා වූ යෝජනා වලට අදාළව ගිවිසුම් ක්‍රියාත්මක කර නොතිබුණි. (7.5.4)

8.10.3 පියාසර අළු සුළඟ සමඟ පරිසරයට එකතුවන බැවින් එය වැළැක්වීමට නිසි ක්‍රියාමාර්ග ගැනීම සිදු කල යුතු බව නිරීක්ෂණය විය.(7.5.8)

8.11 සංසරණ වායු තත්ත්ව ප්‍රමිති පවත්වාගෙන යාම

8.11.1 වයඹ පළාත් පරිසර අධිකාරිය විසින් ප්‍රසිද්ධ කර තිබූ නියෝග මඟින් ගල් අඟුරු දහනයේදී වායුගෝලයට මුදාහරිනු ලබන මිනේන් වායුව හා රසදිය ඇතුළු බැර ලෝහයන් ආවරණය වී නොතිබුණි. සංසරණ වායුගෝලීය තත්ත්වය පවත්වා ගැනීම සඳහා මූලාශ්‍ර සහිත වායු විමෝචන ප්‍රමිතීන් ගැසට් පත්‍රයන් මඟින් නිවේදනය කර නොතිබුණු බව නිරීක්ෂණය විය. (ඇමුණුම-46) (7.6.2)

8.11.2 ලක්විජය බලාගාරයට අදාළව විගණනය සඳහා ඉදිරිපත් කරන ලද අඛණ්ඩ වායු විමෝචන නිරීක්ෂණ දත්ත ප්‍රකාරව විදුලි බලය නිපදවීමේ ක්‍රියාවලියේදී වායු ගෝලයට පිටවන නයිට්‍රජන් ඔක්සයිඩ් (NO_x) සහ සල්ෆර් ඩයොක්සයිඩ් (SO₂) ප්‍රමාණයන් පිළිබඳව පමණක් පරීක්ෂාවට ලක් කර තිබුණු අතර ඉතිරි නිමාණයන් අඛණ්ඩ පරීක්ෂාවට ලක්කර නොතිබුණි. (7.6.3)

8.11.3 බලාගාරයේ සංසරණ වායු ගෝලීය තත්ත්වය සම්බන්ධ දත්ත විශ්ලේෂණය මධ්‍යම පරිසර අධිකාරිය විසින් සිදු කර නොතිබුණි. (7.6.4)

8.11.4 දුම් කුළුනු හරහා බැහැර වන දහන වායුන්ගේ ගුණාත්මකභාවය, ශබ්ද හා කම්පන සහ ජලයේ ගුණාත්මකභාවය පරීක්ෂා කිරීම සඳහා කාර්මික තාක්ෂණික ආයතනයට කොන්ත්‍රාත් ප්‍රදානය කර තිබුණද 2018 මැයි 10 දින වන විටත් කාර්මික තාක්ෂණ ආයතනය සමඟ ගිවිසුමකට එළඹී අපේක්ෂිත පරීක්ෂාවන් සිදුකිරීම සඳහා කටයුතු කර නොතිබුණි. (7.6.5)

8.12 බලාගාරයේ සිසිලන පද්ධතිය සඳහා අවශ්‍ය ජලය ලබා ගැනීම සහ පිරිපහදුවෙන් පසු ජලය මුහුදට බැහැර කිරීමේ ක්‍රියාවලිය

8.12.1 පලමු ඒකකයේදී (Unit 1) පමණක් මුහුදු ජලයේ ගුණත්වය මාර්ගගත අධීක්ෂණ සංවේදක (Online monitoring sensors) යොදා ගනිමින් මිනුම් කරනු ලබන අතර දෙවන සහ තුන්වන ඒකකයන් වලදී මෙම සංවේදක භාවිතා නොකරන බව නිරීක්ෂණය විය. (7.7.2)

8.12.2 බලාගාරයේ සිසිලන පද්ධතිය සඳහා භාවිතා කරනු ලැබූ මුහුදු ජලය පිරිපහදු කිරීමෙන් පසු එම ජලයෙන් කොටසක් ආපනශාලාවේ සියළු කටයුතු සඳහා යොදා ගනු ලැබූව ද එම ජලයේ ගුණත්වය පිළිබඳ අඛණ්ඩ පරීක්ෂාවන් සිදුකර නොතිබුණ බව නිරීක්ෂණය විය. (7.7.2)

8.12.3 පිරිපහදු කිරීමෙන් පසු මුහුදට මුදා හරින ජලය සම්බන්ධයෙන් 2016 හා 2017 වර්ෂවල අඛණ්ඩව රසායනාගාර පරීක්ෂණ සිදුකර නොතිබුණු අතර 2018 වර්ෂයේදී එම පරීක්ෂණ මාසිකව සිදුකර තිබුණු බව 2016 හා 2018 අප්‍රේල් දක්වා දත්ත පරීක්ෂාවේදී නිරීක්ෂණය විය. තවද, පිරිපහදු කිරීමෙන් පසු මුහුදට මුදා හරිනු ලබන ජලය (Discharge Point) 2018 මැයි 11 වන දින ප.ව. 6.30 ට පමණ භෞතිකව නිරීක්ෂණය කරන අවස්ථාවේ උෂ්ණත්වය 32 C° ක අගයක් විය. මෙය ධාරක සීමාව තුළ පැවතුනි. (ඇමුණුම - 47). (7.7.2)

රූප සටහන අංක 14- පිරිපහදු කිරීමෙන් පසු ජලය මුහුදට මුදා හැරීම හා එම ජලයේ ගුණත්වය පරීක්ෂා කිරීම



8.12.4 සිසිලන පද්ධතිය හරහා බැහැරවන ජලයේ ගුණාත්මකභාවය හා කාර්මික අපජල පිරිපහදුව, මළ අපවහන ජල පිරිපහදුව, ගල් අඟුරු සහ අළු අංගනය හරහා එකතුවන ජලය පිරියම් කිරීමේ පිරිපහදුව යන ජල පිරිපහදු පද්ධතීන් හරහා බැහැර වන ජලයේ ගුණාත්මකභාවය පිළිබඳ අධ්‍යයන කාර්මික තාක්ෂණ ආයතනය වෙත ප්‍රදානය කර තිබුණ ද 2018 මැයි 10 දින වනවිටත් ගිවිසුම් ගතවී නොතිබුණු බව නිරීක්ෂණය විය. (7.7.2)

8.13 භූගත ජලය

8.13.1 ලක්විජය බලාගාරය විසින් නොගැඹුරු ළිං භාවිතයට ගැනීම සඳහා පහත සඳහන් අවස්ථා වලදී ජල සම්පත් මණ්ඩලයෙන් අනුමැතිය ඉල්ලුම් කර තිබුණද ඒ සඳහා අවසරය ලබා දීමට කටයුතු කර නොතිබුණි. (7.8.1)

වගු අංක 17 - ලක්විජය බලාගාරය විසින් ජල සම්පත් මණ්ඩලයෙන් අනුමැතිය ඉල්ලුම් කර තිබුණ අවස්ථා

දිනය	ඉඩම් ප්‍රමාණය	ධාරිතාවය	ළිං ප්‍රමාණය	ලිපි අංකය	ජල සම්පත් මණ්ඩලයේ අනුමැතිය
2016.09.07	අක්කර 45 ක් පමණ	මීටර් 6 ක් පමණ ගැඹුරු සහ මතුපිට සිට මීටර් 3 ක් පමණ ගැඹුරින් ජල මට්ටම පිහිටා ඇති	නොගැඹුරු ළිං 67	LVPS/DGM/Civil/37-23	ලබා දී නොතිබුණි.
2017.02.15	අක්කර 100 ක් පමණ	මීටර් 6 ක් පමණ ගැඹුරු සහ මතුපිට සිට මීටර් 3 ක් පමණ ගැඹුරින් ජල මට්ටම පිහිටා ඇති	නොගැඹුරු ළිං 74	LVPS/DGM/Civil/37-55	ලබා දී නොතිබුණි.
2017.12.05	අක්කර 100 ක් පමණ	මීටර් 6 ක් පමණ ගැඹුරු සහ මතුපිට සිට මීටර් 3 ක් පමණ ගැඹුරින් ජල මට්ටම පිහිටා ඇති	නොගැඹුරු ළිං 74	LVPP/PPM/Gen/06-93	ලබා දී නොතිබුණි.

(ඇමුණුම - 48)

8.13.2 බලාගාර පරිශ්‍රයේ හා අවට පරිසරයේ භූගත ජලයේ පවතින ගුණාත්මකභාවය අධීක්ෂණය කිරීම සඳහා ජල සම්පත් මණ්ඩලයට රු. මිලියන 3.95 ක් වූ කොන්ත්‍රාත්තුව පිරිනමා තිබුණ ද 2018 මැයි 10 දින වන විටත් ජල සම්පත් මණ්ඩලය සමඟ ගිවිසුම්ගත වී පරීක්ෂණ කටයුතු ආරම්භ කිරීමට කටයුතු කර නොතිබුණි. (7.8.2)

8.14 බලාගාරයේ කාර්ය සාධනය හා මෙහෙයුම් කාර්යයන් තාවකාලිකව නවතා දැමීම

8.14.1 2015 වර්ෂයේ සිට 2017 වර්ෂය දක්වා දත්ත පරීක්ෂණ කිරීමේදී බලාගාරයේ කාර්යක්ෂමතාවයේ වර්ධනයක් නිරීක්ෂණය වූ නමුත් 2017 වර්ෂය වන විට එම ප්‍රමාණය උපරිම නිෂ්පාදන හැකියාවෙන් සියයට 65 ක් පමණක් විය. (7.9.3)

8.14.2 2016 වර්ෂයට සාපේක්ෂව 2017 වර්ෂයේදී 7.9.4 හි දක්වා ඇති විවිධ හේතූන් මත ඒකක 2 හි මෙහෙයුම් කටයුතු තාවකාලිකව නවතා දැමීම සියයට 204 ක් ද සහ ඒකක 3 හි සියයට 280 ක් ද වශයෙන් ඉහල ගොස් තිබුණි. තවද සලකා බලන කාලය තුළදී අභ්‍යන්තර හේතු සාධක නිසා පමණක් ඒකකයන් තුනෙන්ම දින 352.44 ක් එනම් පැය 8,458 ක විදුලි නිෂ්පාදනය සිදු කර නොතිබුණි. (7.9.4)

8.14.3 ජාතික විදුලි බල උත්පාදනයට සිදුවන බාධාවන් අවම වන ආකාරයට නඩත්තු කටයුතු සැලැස්ම කිරීම මඟින් ඇතිවිය හැකි ගැටළු අවම කර ගත හැකි බව නිරීක්ෂණය විය. (7.9.5)

8.15 කාලගුණික දත්ත

කාලගුණික දත්ත රැස් කිරීමේ එක් පද්ධතියක් 2017 ඔක්තෝබර් මස සිට 2018 මැයි 10 දක්වා කාලපරිච්ඡේදය තුළ අක්‍රියව තිබුණු බව නිරීක්ෂණය විය. තවද අධික සුළං සහිත කාල වලදී දවසේ පැය 24 තුළ සුළගේ දිශාව, සුළගේ වේගය මැනීම දැනට පවතින කාලගුණික දත්ත පද්ධතිය මඟින් සිදු නොවන බව නිරීක්ෂණය විය.(7.10)

8.16 පරිසර ගැටළු වළක්වා ගැනීමට ක්‍රියාත්මක වැඩසටහන් වල ප්‍රගතිය

8.16.1 දැනට පවතින සුළං බාධකය මඟින් ගල් අඟුරු අංගනයේ ඉදිරිපස සම්පූර්ණයෙන් ආවරණය නොවේ. මෝසම් සුළං ආරම්භයත් සමඟ සුළං හමන දිශාව සහ වේගය වෙනස් වන බැවින් ඉහත සුළං බාධකය මඟින් ගල් අඟුරු දුවිලි ව්‍යාප්ත වීම සම්පූර්ණයෙන්ම වැලැක්විය නොහැකි බව නිරීක්ෂණය විය. (7.11.1.1.1)

- 8.16.2 ඉදි කිරීම සඳහා යෝජිත සුළං බාධකයෙහි සැලැසුම තෙවන පාර්ශවීය බලපෑමක් මත වෙනස් කිරීමට සිදු වීම හේතුවෙන් 2018 මැයි 10 වන විට ද ඉදිකිරීම් කටයුතු ආරම්භ කර නොතිබුණි. මේ අනුව අපේක්ෂිත කාල රාමුව තුළ ඉදිකිරීම් අවසන් කිරීමට නොහැකි වන බව නිරීක්ෂණය වූ අතර අපේක්ෂිත ප්‍රතිඵලය ද ලඟා කරගැනීමට නොහැකි වන බව නිරීක්ෂණය විය.(7.11.1.1.2)
- 8.16.3 2018 මැයි 10 වන විට ජල විසිරුම් පද්ධතිය අක්‍රීයව පැවති අතර එම පද්ධතිය අළුත්වැඩියා කළයුතු තත්ත්වයෙහි පවතී. (7.11.1.2.1)
- 8.16.4 ස්චාරක්ෂක කලාපය පුළුල් කිරීම සඳහා අවශ්‍ය නව ඉඩම් මිලදී ගැනීමේ කටයුතු 2018 මැයි 10 වන විටත් අවසන් කර නොතිබුණි. (7.11.1.3.1)
- 8.16.5 බලාගාර පරිශ්‍රය වටා විවිධ වෘක්ෂ රෝපණය කර තිබුණද 2018 මැයි 10 වන විටත් දුච්චි අංශු රඳවා ගැනීමට හැකි වන සේ අපේක්ෂිත වන ආවරණය නිර්මාණය වී නොතිබුණු බව නිරීක්ෂණය විය. (7.11.1.3.2)
- 8.16.6 2018 මැයි 10 වන විට ගල් අඟුරු තොගයෙන් කොටසක් පමණක් රසායනික ද්‍රාවණයක් යෙදීම මගින් ආවරණය කර තිබුණි. (7.11.1.4.1)
- 8.16.7 අංගනයේ ගොඩගැසෙන අළු, මට්ටම් කිරීම සඳහා යන්ත්‍ර සහ මිනිස් ශ්‍රමය යොදාගැනීමත් ජලය හා අළු මිශ්‍රිත දියරයක් (Slurry) භාවිතා කිරීමෙන් අළු අංගනය මතුපිට ආවරණය කිරීමත් යන ක්‍රමයන් යොදා ගැනීම මගින් අළු සුළඟ මගින් ව්‍යාප්ත වීම අවම මට්ටමක පවත්වා ගැනීමට උත්සාහ දරන බව භෞතිකව නිරීක්ෂණය වූ අතර මෙම ක්‍රියාවලිය අඛණ්ඩ අධීක්ෂණයක් යටතේ පවත්වා ගැනීමට ක්‍රියා කල යුතු බව වැඩිදුරටත් නිරීක්ෂණය කෙරේ.(7.11.2.1.1)
- 8.16.8 අළු අංගනයේ බටහිර සුළං දිශාවට සුළං බාධකයක් ඉදිකිරීම 2018 මැයි 10 වන විටත් සිදු කර නොතිබුණි. (7.11.2.2.1)
- 8.16.9 සාගර ජලයේ උෂ්ණත්වය, පී.එච්. අගය, ද්‍රාව්‍ය ඔක්සිජන්, ජල ජලවාංග ඇතුළු අනෙකුත් ජීවීන්ගේ හැසිරීම හා ධීවර කටයුතු සම්බන්ධයෙන් ජාතික ජල සම්පත් පර්යේෂණ සහ සංවර්ධන නියෝජිත ආයතනය (NARA) සමඟ සම්බන්ධ වී 2017 වර්ෂය සඳහා පමණක් අධ්‍යයන වාර්තාවක් ඉදිරිපත් කර ඇති බව නිරීක්ෂණය විය. (7.11.3.1)
- 8.16.10 මුහුදු පතුලේ ගල් අඟුරු තැන්පත් වී ඇති ආකාරය හඳුනා ගැනීම සඳහා මොරටුව විශ්ව විද්‍යාලය මගින් පරීක්ෂණ කටයුතු සිදු කර ගැනීමට ඉල්ලීම් කර තිබුණ ද 2018 මැයි 10 වන විටත් එම පරීක්ෂණ කටයුතු ආරම්භ කර නොතිබුණි. (7.11.3.2.1)
- 8.16.11 වෙරළ බාදනය වැලැක්වීම සඳහා වෙරළ සංරක්ෂණ දෙපාර්තමේන්තුව සමඟ සාකච්ඡා පවත්වා තිබුණ ද 2018 මැයි 10 වන විටත් එම කාර්යය අවසන් කර නොතිබුණි. (7.11.4.1.1)

8.17 තෙවන පාර්ශවීය අදහස් දැක්වීම්

බලාගාරය ඉදිකර තිබුණද ගම්වැසියන්ගේ අවශ්‍යතාවයන් සඳහා දවසේ පැය 24 පුරා විදුලිය නොලැබෙන බව නිරීක්ෂණය විය. (7.12.2)

8.18 පුවත්පත් වාර්තා

මාධ්‍ය මඟින් සිදුකරන ප්‍රචාරයන් සඳහා තොරතුරු ලබා දීමට බලාගාරයේ වගකිව යුතු පුද්ගලයෙකු නම්කර නොතිබුණු බැවින් විවිධ තොරතුරු විවධ පුද්ගලයන් විසින් පුවත්පත් වාර්තාකරුවන් වෙත ලබා දීම නිසා බලාගාරය පිළිබඳ සත්‍ය තොරතුරු මාධ්‍ය මඟින් හෙළිදරව් වීමක් සිදු නොවිය හැකි අතර එවැනි තොරතුරු ලබාදීමේ වගකීම සම්බන්ධයෙන් නිශ්චිත පුද්ගලයෙකු හඳුනාගැනීමට නොහැකි වන බව නිරීක්ෂණය විය. (7.13)

9. නිර්දේශ


- 9.1 වයඹ පළාත් පාරිසරික උපදේශක සභාව ක්‍රියාත්මක කිරීම. (8.5.1)
- 9.2 පාරිසරික බලපත්‍ර අළුත් කිරීමේ ක්‍රියාවලියේදී බලාගාරයෙන් ඉදිරිපත් කරනු ලබන තොරතුරු වල නිරවද්‍යතාවයන් තහවුරු කරගැනීම සඳහා වයඹ පළාත් පරිසර අධිකාරියේ නිලධාරීන්ට වගකීම පැවරීම. (8.6.6)
- 9.3 වර්තමානයේදී මධ්‍යම පරිසර අධිකාරිය මගින් ප්‍රසිද්ධ කර ඇති වායු විමෝචන නියෝග සඳහා ගල් අඟුරු දහනයේ දී පිටවන වායු විමෝචනය සම්බන්ධයෙන් වැදගත් ප්‍රමිත හා උපමාන හඳුනාගැනීම හා ඇතුළත් කිරීම. (8.7)
- 9.4 වාරකත් කාලය තුළදී ප්‍රයෝජනයට ගැනීම සඳහා අධික ලෙස ගල් අඟුරු තොග ගබඩා කර ගැනීම වෙනුවට විකල්ප ක්‍රම මගින් ගල් අඟුරු ප්‍රවාහනය කිරීමේ හැකියාව හා යටිතල පහසුකම් වර්ධනය කිරීම පිළිබඳ ශක්‍යතා අධ්‍යයනයක් සිදු කිරීම. (8.8.1, 8.8.2)
- 9.5 ආනයනය කරන ලද ගල් අඟුරු අපේක්ෂිත පිරිවිතරයන්ගෙන් පරිබාහිර වුවද ඒ සඳහා මිල ගැලපීම් මගින් එම තොග බාරගැනීම වෙනුවට එකඟ වූ පිරිවිතරයන්ට අනුකූලවම ගල් අඟුරු ප්‍රසම්පාදනයක් සිදු කිරීමට කටයුතු කිරීම. (8.9.1, 8.9.2)
- 9.6 ගල් අඟුරු මිලදී ගැනීම සඳහා පත්කරනු ලබන තාක්ෂණික ඇගයීම් මණ්ඩලයේ සාමාජිකයන් අතරට පාරිසරික දැනුමක් සහිත සාමාජිකයකු ඇතුළත් කිරීමට කටයුතු කිරීම. (8.9.4)
- 9.7 නැව් වලින් බත්තල් වලට ගල් අඟුරු ගොඩබැරීමේදී මුහුදට ගල් අඟුරු වැටීම අවම වන ආකාරයේ සුදුසු වැඩ පිළිවෙලක් ආරම්භ කර ක්‍රියාත්මක කිරීම. (8.9.5)
- 9.8 අළු අංගනය පිහිටුවා ඇති භූමිය තුළ පියාසර අළු (Fly Ash) හා යටි අළු (Bottom Ash) තැන්පත් කිරීම වෙනුවට එම අළු බැහැර කිරීමේ ක්‍රමවේදය කඩිනම් කිරීමටත්, අංගනයේ තැන්පත් කර ඇති අළු ප්‍රමාණය පරිසර හිතකාමී ලෙස ඉක්මනින් ඉවත් කිරීම සඳහා ශ්‍රී ලංකා ජාතික ඉංජිනේරු පර්යේෂණ සහ සංවර්ධන මධ්‍යස්ථානය සමඟ එළඹී තිබූ අවබෝධතා ගිවිසුම ක්‍රියාත්මක කිරීම කඩිනම් කිරීමට නිලධාරීන්ගේ අවධානය යොමු කිරීම. (8.10.2) (8.10.3)
- 9.9 තාප බලාගාරයෙන් ජනිත වන අළු හා අංගනයේ ගබඩා කර ඇති අළු ප්‍රයෝජනයට ගනිමින් විවිධ නිෂ්පාදනයන් කළ හැකි ආයෝජකයන්ට මෙම අළු ලබාදෙන බවට දැනුවත් කිරීම. (8.10.3)

- 9.10 බලාගාරයේ වායු දූෂණ කාර්යයන් අධීක්ෂණය (monitoring) සිදු කිරීම හා බැර ලෝහ පරීක්ෂාව සඳහා සුදුසු ක්‍රමවේදයක් හඳුන්වාදීම. (8.11.2)
- 9.11 මුහුදු ජලයේ ගුණත්වය පරීක්ෂා කිරීම සඳහා දෙවන සහ තුන්වන ඒකක වල මාර්ගගත අධීක්ෂණ සංවේදක යොදා ගැනීමට කටයුතු කිරීම. (8.12.1)
- 9.12 බලාගාර පරිශ්‍රයේ ඇති ආපනශාලා වලට යොදා ගන්නා ජලයේ ගුණත්වය පරීක්ෂා කිරීම සඳහා නිසි ක්‍රමවේදයක් සකස් කිරීම. (8.12.2, 8.12.3)
- 9.13 බලාගාරය හා බලාගාරය අවට භූගත ජලයේ ගුණාත්මකභාවය පරීක්ෂාව ජාතික වැදගත්කමකින් යුත් කාර්යයක් සේ සලකා කඩිනමින් ආරම්භ කර අධීක්ෂණ ක්‍රියාත්මක කිරීමත් ඒ සම්බන්ධ දත්ත පද්ධතියක් පවත්වා ගනිමින් කාලීනව සමාලෝචනය කිරීමට කටයුතු කිරීම. (8.13.2)
- 9.14 බලාගාරයේ වර්තමානයේ ක්‍රියාත්මක වන නිෂ්පාදන හැකියාව උපරිම කාර්යක්ෂම අයුරින් ලබා ගැනීම සඳහා අවශ්‍ය ක්‍රියාමාර්ග ගැනීම. (8.14.1)
- 9.15 ජාතික විදුලි බල පද්ධතියට බාධාවක් නොවන ආකාරයෙන් නඩත්තු කටයුතු සැලැස්ම කිරීම. (8.14.3)
- 9.16 මාර්ග ගත කාලගුණික දත්ත පද්ධතියක්(Online System) භාවිතා කරමින් අධික සුළං සහිත කාල වලදී පැය 24 පුරා සුළගේ දිශාව හා සුළගේ වේගය මැනීම සඳහා ක්‍රමවේදයක් පිළියෙල කිරීම. (8.15)
- 9.17 ගල් අඟුරු අංගනයෙන් සිදුවන පාරිසරික හානිය අවම කිරීම සඳහා දැනට පවතින සුළං බාධකය පුළුල් කිරීමට කටයුතු කිරීම. (8.16.1, 8.16.2)
- 9.18 ජල විසිරුම් පද්ධතිය ක්‍රියාත්මක තත්ත්වයට පත් කිරීම. (8.16.3)
- 9.19 ස්චාරක්ෂක කලාපය පුළුල් කිරීම සඳහා අවශ්‍ය කටයුතු කඩිනම් කිරීම. (8.16.4)
- 9.20 වන ආවරණය ඇති කිරීම සඳහා ප්‍රදේශයට සුදුසු ශාක රෝපණය කිරීම. (8.16.5)
- 9.21 අළු අංගනය සඳහා සුළං බාධකයක් ඉදි කිරීම. (8.16.8)
- 9.22 මොරටුව විශ්ව විද්‍යාලය මගින් මුහුදු පතුළේ ගල් අඟුරු තැන්පත් වී ඇති ආකාරය සමීක්ෂණ කටයුතු සිදු කිරීම ආරම්භ කිරීමට අවශ්‍ය කටයුතු සිදු කර ගැනීම. (8.16.10)
- 9.23 වෙරළ බාදනය වැළැක්වීම සඳහා වෙරළ සංරක්ෂණ දෙපාර්තමේන්තුව සමඟ සම්බන්ධ වී වෙරළ තීරය ආරක්ෂාව සඳහා කටයුතු කිරීම. (8.16.11)

- 9.24 බලාගාරය අවට ගම් වැසියන් සඳහා දවසේ පැය 24 තුළ අඛණ්ඩව විදුලිබලය සැපයීම මගින් බලාගාරය වෙත ගම් වැසියන්ගේ විරෝධතාවය අවම කර ගැනීම. (8.17)
- 9.25 වැරදි තොරතුරු සමාජගත වීම වැලැක්වීම සඳහා පුවත්පත් වලට තොරතුරු සැපයීමට බලාගාරය විසින් නම් කරන ලද නියෝජිතයකු පත් කිරීම හා බලාගාරයේ වැදගත්කම පිළිබඳ මහජනතාව දැනුවත් කිරීම. (8.18)
- 9.26 මෙම බලාගාරයෙන් අපේක්ෂිත අරමුණු සාක්ෂාත් කර ගැනීම උදෙසා පිළියෙල කරන ලද සැලැස්ම ක්‍රියාවලිය තුළ අඩංගු ඉලක්ක අත්පත්කර ගැනීමේදී අපේක්ෂා කරන ලද පාරිසරික වගවීම කාලානුරූපව නිර්වචනය වී නොතිබුණු අතර එහි ප්‍රතිඵලයක් ලෙස ව්‍යාපෘතියෙන් අනපේක්ෂිත පාරිසරික ගැටළු උද්ගත වී ඇති බව නිරීක්ෂණය විය. මේ නිසා පාරිසරික ගැටළු සඳහා වැයවන ආර්ථික, සාමාජීය හා පාරිසරික පිරිවැය අවම කර බලාගාරයෙන් ජාතික ආර්ථිකයට හා සමාජයට ඉහල ප්‍රතිලාභයක් අත්කර දීමට කටයුතු කිරීම.

10. නිගමන

- 10.1 බලාගාරයේ ක්‍රියාකාරකම් මඟින් උත්පාදනය වන පියාසර අළු හා යටි අළු නිසි පරිදි කළමනාකරණය කිරීමටත් ගල් අඟුරු අංගනය තුළ ඇති දුටුලි පාලනය කිරීම සඳහා ප්‍රමාණවත් ක්‍රියාමාර්ග ගැනීමටත් ලංකා විදුලි බල මණ්ඩලය කාලීනව ක්‍රියා නොකිරීම හේතුවෙන් පාරිසරික වශයෙන් අහිතකර බලපෑම් සිදුවී ඇති බව නිගමනය කෙරේ.
- 10.2 බලාගාරයේ දැනට එකතුවී ඇති පියාසර අළු හා යටි අළු යොදා ආරම්භ කළ හැකි කර්මාන්ත පිළිබඳ හඳුනාගෙන එම පාර්ශවයන් සමඟ ගිවිසුම් ගත වී තිබුණද ඒවා සාර්ථකව ක්‍රියාත්මක වී නොතිබුණු අතර ඒ සඳහා ලංකා විදුලි බල මණ්ඩලයේ අවධානය යොමුවීම ප්‍රමාණවත් නොවන බව නිගමනය කෙරේ.
- 10.3 අළු ව්‍යාප්තිය මඟින් සිදු වන පාරිසරික හානිය අවම කිරීම සඳහා නිර්මාණය කර තිබූ ස්ථාවරක්ෂක කලාපය සාර්ථකව සිදුකර නොතිබූ බව නිගමනය කෙරේ.
- 10.4 වයඹ පළාත් පරිසර අධිකාරිය විසින් ලක්විජය බලාගාරයේ පරිසර ආරක්ෂණ බලපත්‍රය අළුත් කිරීමේදී බලාගාරයේ ක්‍රියාකාරකම් තුළින් පරිසරයට විය හැකි අහිතකර බලපෑම් අවම කිරීම සඳහා අවශ්‍ය වන්නා වූ පරීක්ෂණ වාර්තා සමාලෝචනය කිරීම හා ඒ සඳහා අවශ්‍ය ක්‍රියාමාර්ග ගැනීම සඳහා ලබා දී තිබූ දායකත්වය ප්‍රමාණවත් නොවන බව නිගමනය කෙරේ.
- 10.5 ඉහල ගුණත්වයෙන් යුත් ගල් අඟුරු භාවිතා නොකිරීම හේතුවෙන් ගල් අඟුරු දහනයේදී ජනිත වන අළු ප්‍රමාණය ඉහල ගොස් තිබුණු අතර ඒ මඟින් පාරිසරික හානිය ද ඉහල යාමත් සිදු වී ඇති බව නිගමනය කෙරේ.
- 10.6 ජාතික ආර්ථිකයට සැලකිය යුතු දායකත්වයක් ලබා දෙන මෙම ව්‍යාපෘතියේ අහිතකර පාරිසරික බලපෑම් මඟ හරවා ගැනීම සඳහා අවශ්‍ය කටයුතු සිදු කර මෙම ව්‍යාපෘතිය පවත්වාගෙන යාම ආර්ථිකමය වශයෙන් ඵලදායී බව නිගමනය කෙරේ.


එච්.එම්. ගාමිණී විජේසිංහ
විගණකාධිපති

2019 මාර්තු 29 දින

1. நிறைவேற்றுப் பொழிப்பு

வடமேல் மாகாணத்தின் கற்பிட்டி - நுரைச்சோலை பிரதேசத்தில் தாபிக்கப்பட்டுள்ள 900 மெகாவொட் இயலளவுடன் கூடிய இலங்கை மின்சார சபைக்குரிய இலங்கையின் முதலாவது மற்றும் ஒரே நிலக்கரி அனல் மின்சார நிலையம் லக்விஜய நிலக்கரி அனல் மின்சார நிலையம் ஆகும். 2006 ஆம் ஆண்டின் போது 300 மெகாவொட்டுடன் முதலாவது கட்டமும் 2010 ஆம் ஆண்டின் போது 600 மெகாவொட்டுடன் இரண்டாம் கட்டமும் ஆரம்பிக்கப்பட்டதுடன் 2011 மற்றும் 2014 ஆம் ஆண்டுகளின் போது முறையே முதலாவது மற்றும் இரண்டாவது கட்டங்களிலிருந்து 900 மெகாவொட் தேசிய மின்சார முறைமைக்கு சேர்க்கப்பட்டிருந்தது. இலங்கையின் தற்போதைய மின் உற்பத்திக்காக இலங்கை மின்சார சபையின் கீழ் 26 பிரதான மின் நிலையங்கள் (தனியார் துறை மின் நிலையங்கள் தவிர) பங்களிப்பொன்றும் 247 மொத்த உப நிலையங்களின் கீழ் 2017 ஆம் ஆண்டின் போது உற்பத்தி செய்யப்பட்ட மொத்த உற்பத்தி 14,671.2 கெகாவொட் மணித்தியாலங்களாக இருந்ததுடன் இந்த உற்பத்திக்காக லக்விஜய நிலையத்தின் பங்களிப்பு 34.78% சதவீதமாக இருந்தது. மின்சார உற்பத்திக்காக பயன்படுத்தப்படும் பிரதான தோற்றுவாயான நீர், எரிபொருள் மற்றும் நிலக்கரி என்பவற்றிற்கு இடையே நிலக்கரி மூலம் உற்பத்தி இரண்டாவது குறைந்த சராசரி அலகுக் கிரயத்துடன் கூடிய தோற்றுவாயாக இருப்பது அவதானிக்கப்பட்டது.

இந் நிலையத்தின் செயற்பாட்டு நடவடிக்கைகள் மற்றும் அதன் சுற்றாடல் தாக்கத்தை இனங்காணும் நோக்காக கொண்டு இந்த அறிக்கை தயாரிக்கப்பட்டது. 2015 ஆம் ஆண்டின் போது வடமேல் மாகாண சுற்றாடல் அதிகாரசபையினால் லக்விஜய அனல் மின்நிலையத்திற்காக முதலாவது சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரம் வழங்கப்பட்டிருந்ததுடன், அதற்காக மத்திய சுற்றாடல் அதிகாரசபையின் ஈடுபாடொன்று இடம் பெற்றிருக்கவில்லை. 2017/2018 ஆம் ஆண்டிற்காக அனுமதிப்பத்திரத்தை புதுப்பிப்பதற்காக நிலையத்தினால் 2017 யூன் 14 ஆந் திகதி மாகாண சுற்றாடல் அதிகாரசபைக்கு விண்ணப்பம் சமர்ப்பிக்கப்பட்டிருந்த போதிலும் 2018 மே 10 ஆந் திகதி வரையில் சுற்றாடல் அனுமதிப்பத்திரம் வழங்கப்பட்டிருக்கவில்லை. சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரத்தினை வழங்கும் நோக்கத்தினை நிறைவேற்றிக் கொள்வதற்காக மின் நிலையத்தின் தொழிற்பாடு செயற்பாடுகள் தொடர்பாக மாகாண சுற்றாடல் அதிகாரசபையின் கவனம் போதியளவில் செலுத்தப்படாதிருந்தமை அதற்காக பொறுப்பான ஏனைய நிறுவனங்களின் செயற்திறனின்மை காரணமாக பாதகமான சுற்றாடல் தாக்கங்கள் இடம் பெற்றுள்ளதாக அவதானிக்கப்பட்டது.

லக்விஜய மின் நிலையத்தின் மூலம் மின்சார உற்பத்தி செயற்பாட்டின் போது ஈடுபடுத்தப்பட்டுள்ள பிரதான மூலப் பொருளான நிலக்கரியில் காணப்பட வேண்டிய தரம் தொடர்பாக விஷேட கவனம் செலுத்தாதிருந்தமை ஏற்பட்டிருந்த சுற்றாடல் சிக்கல்களுக்கு பிரதான காரணமாக இருந்தது. அவ்வாறே நிலக்கரி எரியும் போது உற்பத்தியாகும் பறக்கும் சாம்பல் மற்றும் கீழ் சாம்பல்களாக உப பொருட்களை வெளியேற்றும் நடைமுறை, செயற்திட்டத்தின் திட்டமிடும் கட்டத்தின் போது இனங்காணப்பட்டிருந்த போதிலும் இச் செயற்பாடு போதியளவில் மேற்கொள்ளப்படாமையால் சுற்றாடல் சிக்கல்கள் உருவானமை அந்தப் பிரச்சினையை கட்டுப்படுத்துவதற்காக நடவடிக்கைகளை எடுக்கும் போது மின்நிலையத்தினால் செலவிடப்பட வேண்டிய கிரய அதிகரிப்பொன்று இடம்பெறுவதாகவும் அவதானிக்கப்பட்டது. சுற்றாடல் ரீதியான பிரச்சினையொன்றான பறக்கும் சாம்பல், பிரிவில் படிவாக வைத்திருப்பதற்குப் பதிலாக துரித படிமுறையொன்றினால் பிரிவிலிருந்து அகற்றி இனங்காணப்பட்ட வேறு உற்பத்திகளுக்காக மூலப் பொருளாக பயன்படுத்தும் தேவைப்பாடு அவசியமென அவதானிக்கப்பட்டது. மாகாண சுற்றாடல் அதிகாரசபையினால் பிரசித்தப்படுத்தப்பட்ட சுற்றோட்ட வளி நிலைமை தொடர்பான நியமங்களுக்கு

இணங்க மின்நிலையத்தின் செயற்பாட்டு நடவடிக்கைகள் மேற்கொள்ளப்படுகின்றதா என மாகாண சுற்றாடல் சபையினால் தொடர்ந்து கண்காணிக்கப்படாமல் இருந்தமை அவதானிக்கப்பட்டது.

நிலக்கரியை எரிக்கும் போது உருவாகும் சுற்றாடல் நிலைமைக்கு பாதகமான வாயுக்கள் மற்றும் பாரஉலோகங்கள் வெளியேற்றப்படும் செயற்பாடு, மின்நிலையத்தின் செயற்பாட்டு தொழிற்பாடுகளுக்காக பயன்படுத்தப்படும் கடல் நீர் சுத்திகரிப்பின் பின்னர் மீண்டும் கடலுக்குள் வெளியேற்றும் செயற்பாடு மற்றும் நிலக்கீழ் நீர் தொடர்ச்சியாக மேற்பார்வை செய்யும் தேவைப்பாடு கணக்காய்வின் போது அவதானிக்கப்பட்டது. மேலும் வெளியேறும் புகை தொடர்பாக வெளியாகும் கந்தகமாக பறக்கும் சாம்பல் தொடர்பாக மின் நிலையியல் வீழ்படிவாக்கியின் செயற்திறன்தன்மையை தொடர்ந்து மேற்பார்வை செய்யப்பட வேண்டுமென அவதானிக்கப்பட்டது. மின் நிலையத்தின் பராமரிப்பு நடவடிக்கைகள் திட்டமொன்றின் பிரகாரம் மேற்கொள்வது மற்றும் நிலக்கரி பிரிவில் உள்ள தூசு துணிக்கைகள் காற்றுடன் பரவுவதை தவிர்ப்பதற்காக நிலக்கரி பிரிவினை சுற்றி தற்போது உள்ள காற்று தடையை விரிவாக்குவதற்கும் தற்போது பிரிவில் குவித்து வைக்கப்பட்டுள்ள சாம்பல் கிராமப் புறத்திற்கு பரவுவதை தவிர்ப்பதற்காக தேவையான நடவடிக்கைகளை எடுப்பதும் மேற்கொள்ளப்பட வேண்டும்.

நிலையத்தின் செயற்பாடுகள் மூலம் மீன் பிடி சமூகத்திற்கான தாக்கத்தை குறைப்பதற்கும் கடலினுள்ளே ஆய்வு நடவடிக்கைகளை மேற்கொள்வதன் மூலம் நிலக்கரி படிந்திருக்கும் அளவினையும் அவ்வாறு படிவதை குறைப்பதற்காக தேவையான நடவடிக்கைகளைத் திட்டமிடவும் வேண்டியுள்ளது. கடலரிப்பினை குறைப்பதற்காகவும் கடற்கரையின் பாதுகாப்பிற்கு தேவையான நடவடிக்கைகள் எடுக்கப்பட வேண்டுமென அவதானிக்கப்பட்டது. மேலே குறிப்பிட்ட சகல நடவடிக்கைகளை எடுப்பதற்கும் சுற்றாடல் சேதத்தை குறைத்து சுற்றாடலுக்கு சாதகமான கைத்தொழிலொன்றாகவும் தேசிய பொருளாதாரத்திற்கு பெறுமதி சேர்க்கப்பட்ட மின் உற்பத்தி கைத்தொழிலொன்றாக பங்களிப்பினை வழங்கும் இயலுமை உள்ளதாக அவதானிக்கப்பட்டது.

2. அறிக்கையின் பின்னணி மற்றும் தன்மை

வடமேல் மாகாணத்தின் கற்பிட்டி - நுரைச்சோலை பிரதேசத்தில் தாபிக்கப்பட்டுள்ள 900 மெகா வொட் இயலளவுடன் கூடிய இலங்கை மின்சார சபைக்குரிய இலங்கையின் முதலாவது மற்றும் ஒரே நிலக்கரி அனல் மின்சார நிலையம் லக்விஜய நிலக்கரி அனல் மின்சார நிலையம் ஆகும். 2006 ஆம் ஆண்டின் போது 300 மெகாவொட்டுடன் முதலாவது கட்டமும் 2010 ஆம் ஆண்டின் போது 600 மெகாவொட்டுடன் இரண்டாம் கட்டமும் ஆரம்பிக்கப்பட்டதுடன் 2011 மற்றும் 2014 ஆம் ஆண்டுகளின் போது முறையே முதலாவது மற்றும் இரண்டாவது கட்டங்களிலிருந்து 900 மெகாவொட் தேசிய மின்சார முறைமைக்கு சேர்க்கப்பட்டிருந்தது. இலங்கையின் முதலாவது மற்றும் ஒரே நிலக்கரி அனல் மின்சார நிலையம் லக்விஜய நிலக்கரி அனல் மின்சார நிலையத்தின் மூலம் 1/3 இற்கு அண்மித்த பங்களிப்பொன்றை வழங்குவதும் அதன் ஊடாக ஏற்படும் பொருளாதார சமூக பெறுமானத்தை இனங்காண்பது அவசியமாக உள்ளது. அம்மின் நிலையத்தின் செயற்பாட்டின் போது ஏற்படும் சுற்றாடல் பிரச்சினைகள் மற்றும் அவற்றை தவிர்ப்பதற்காக எடுக்கப்பட்டுள்ள நடவடிக்கைகள் எதிர்காலத்தில் செயற்படுத்துவதற்கும் எதிர்பார்க்கப்பட்ட முன்மொழிவுகள் மற்றும் அதன் செயற்பாடுகள் தொடர்பாக சுற்றாடல் கணக்காய்வு அறிக்கையொன்றை தயாரித்தலின் தேவைப்பாட்டின் பிரகாரம் இந்த அறிக்கை தயாரிக்கப்பட்டது.

3. நோக்கெல்லை

லக்விஜய மின் நிலையத்தின் 2016, 2017 ஆம் ஆண்டுகள் மற்றும் 2018 மே 10 ஆந் திகதி வரை தொழிற்பாட்டுச் செயற்பாடு, மின் நிலையத்தின் பராமரிப்பு நடவடிக்கைகள் மற்றும் தற்போது முகங்கொடுத்துள்ள சுற்றாடல் நிலைமைகளையும் இது தொடர்பாக அக்கரை செலுத்தும் தரப்பினரால் வழங்கப்பட்ட பரிசோதனை மற்றும் கணிப்பீட்டு அறிக்கைகளும் பரீட்சிக்கப்பட்டன.

4. நோக்கெல்லையை வரையறுத்தல்.

இந்த அறிக்கையில் சுட்டிக் காட்டப்பட்டுள்ள அவதானிப்புக்கள் மூலம் தீர்மானத்திற்கு வரும் போது எனது நோக்கெல்லை கீழே குறிப்பிடப்பட்ட வரையறைகளுக்கு உட்பட்டிருப்பதாக கவனத்தில் கொள்ளப்படல் வேண்டும்.

4.1. மின் நிலையத்தினால் கொள்வனவு செய்யப்பட்டிருந்த நிலக்கரி இருப்பு மற்றும் பிரிவில் ஒதுக்கி வைக்கப்பட்டுள்ள பறக்கும் சாம்பல் மற்றும் கீழ் சாம்பல் என்பன மெய்யமையாய்வு செய்யப்படாமை காரணமாக நிலக்கரி பிரிவு மற்றும் சாம்பல் பிரிவின் இயலளவு தொடர்பாக திட்டவட்டமாக வெளியிட முடியாமை.

4.2. தற்போது மின் நிலையத்தின் வளவில் காணப்படும் மண்ணின் தன்மைக்காக நிலையத்தின் ஆரம்பம் முதல் இடம் பெற்றிருந்த தொழிற்பாட்டு நடவடிக்கைகளின் தாக்கத்தை மதிப்பீடு செய்ய முடியாதிருந்தமையால் சத்தம் மற்றும் அதிர்வின் ஊடாக எதிர்காலத்தில் ஏற்படக்கூடிய தாக்கங்களை எதிர்வு கூற முடியாதிருந்தமை.

4.3. நிலக்கரி மின் நிலையத்தின் நிர்மாணங்களுக்குரிய வடிவமைப்பு திட்டமிடல் பரீட்சிக்கப்படாமை காரணமாக சுற்றாடல் பிரச்சினைகளுக்கு காரணமான திட்ட பலவீனங்கள் இனங்காணப்படாமை.

4.4. இலங்கை மின்சார சபையினால் மின் உற்பத்திகாக பயன்படுத்தப்படும் நீர், மின், எரிபொருள், காற்று மற்றும் தனியார் துறையினரிடமிருந்து பெற்றுக்கொண்ட மின்சாரத்திற்குரிய சகல தோற்றுவாய்களினதும் செயலாற்றல் பரீட்சிக்கப்படாமை.

4.5. கணக்காய்வு பரிந்துரை மற்றும் தீர்மானங்களுக்கு வரும் போது அறிக்கையில் குறிப்பிடப்பட்ட ஏனைய தரப்பினரிடமிருந்து பெற்றுக்கொள்ளப்பட்ட தரவுகள் மற்றும் தகவல்களை அடிப்படையாக கொள்ளப்பட்டமை.

5. அறிக்கை தயாரிக்கும் செயற்பாடு

இவ்வறிக்கையை தயாரிக்கும் போது பின்வரும் நடைமுறைகள் பின்பற்றப்பட்டமை.

5.1. ஆவணங்கள் பரிசோதனை

5.1.1. 1980 இன் 47 ஆம் இலக்க தேசிய சுற்றாடல் சட்டம்

5.1.2. 1990 இன் 12 ஆம் இலக்க வடமேல் மாகாண சுற்றாடல் நியதிச்சட்டம்

5.1.3. இலங்கை மின்சார சபை மற்றும் லங்கா நிலக்கரி கம்பனிக்கு இடையே 2017 செப்தம்பர் முதல் 2019 ஏப்ரல் வரை நிலக்கரி வழங்குவதற்கான கேள்வி ஆவணங்கள்.

5.1.4. 2018 சனவரி 8 ஆந் திகதி இலங்கை பொதுப் பயன்பாடுகள் ஆணைக்குழுவினால் சமர்ப்பிக்கப்பட்டிருந்த லக்விஜய நிலக்கரி மின் நிலையத்தின் மூலம் இடம்பெறும் சுற்றாடல் தாக்கங்களை முடியுமான வரை குறைப்பதற்காக செயற்படுத்தப்பட்ட திட்டங்கள் மற்றும் பரிந்துரைகள்.

5.1.5. தேசிய நீர்வளங்கள் ஆராய்ச்சி மற்றும் அபிவிருத்தி முகவராண்மை நிறுவனத்தினால் வழங்கப்பட்டிருந்த பரிந்துரை

5.1.6. இலங்கை சனநாயக சோசலிசக் குடியரசின் அதி விஷேட வர்த்தமானிப் பத்திரம் 2006 (கரையோரப் பாதுகாப்புத் திணைக்களம்)

5.1.7. 2017 மார்ச் 16 ஆந் திகதிய 2010/23 ஆம் இலக்க தேசிய வளங்கள் சபை கட்டளை அதிவிஷேட வர்த்தமானி பத்திரம்.

5.1.8. வடமேல் மாகாண சுற்றாடல் அதிகாரசபையினால் பேணப்பட்டு வரும் பதிவேடுகள்.

5.1.9. லக்விஜய நிலக்கரி மின் நிலையத்தின் மின் உற்பத்தி மற்றும் ஆராய்ச்சி தரவுகள் 2016, 2017 மற்றும் 2018 மே 10 ஆந் திகதி வரை.

5.1.10. லக்விஜய நிலக்கரி மின் நிலையத்தின் செயலாற்றல் அறிக்கை.

5.1.11. இலங்கை மின்சார ச. செயலாற்றல் அறிக்கை

5.1.12. பொதுப் பயன்பாட்டு ஆணைக்குழுவின் பரிந்துரை

5.1.13. சுற்றாடல் சிக்கல்களுக்குரிய வழங்கப்பட்டுள்ள பத்திரிகை அறிவித்தல் மற்றும் ஏனைய நிறுவங்களினால் வழங்கப்பட்ட அறிக்கைகள்.

5.2. ஏனைய பரிசோதனைகள்

5.2.1. நிலையப் பரிசோதனை - லக்ஷிய மின் நிலைய வளவு

5.2.2. தாரக்கல்லிய, பனிஅடிய, கிராமத்தில் வசிப்போருடன் மேற்கொள்ளப்பட்ட நேர்முக கலந்துரையாடல்.

6. செயற்பாட்டினை அறிமுகப்படுத்துதல்

- 6.1. தற்போது இலங்கையில் மின்சாரத்திற்கான கேள்வி மற்றும் மின் உற்பத்தி லக்ஷிய மின்நிலையம் தொடர்பான அறிமுகம் மற்றும் அதன் சுற்றாடல் தாக்கத்தை இனங்காணுதல்.
- 6.2. நிலக்கரியில் காணப்பட வேண்டிய தன்மைகள் நிலக்கரி எரிவின் உப விளவுகள் மற்றும் சுற்றோட்ட வாயு நிலைமை நியமத்தை பேணிச் செல்லல்.
- 6.3. மின் நிலையத்தின் குளிர்ட்டும் முறைமைக்காக தேவையான நீரைப் பெற்றுக் கொள்ளல், சுத்திகரிப்பின் பின்னர் நீரை கடலுக்குள் வெளியேற்று செயற்பாடு மற்றும் நிலக்கீழ் நீரின் தற்போதைய நிலைமையை அறிந்து கொள்ளல்.
- 6.4. மின்நிலையத்தின் செயலாற்றல், தொழிற்பாட்டு பணிகளுக்காக மின் நிலையத்தினை தற்காலிகமாக நிறுத்துவதற்குரிய தரவு பகுப்பாய்வு.
- 6.5. சுற்றாடல் பிரச்சினைகளை தவிர்ந்துக் கொள்வதற்காக செயற்படுத்தப்பட்ட நிகழ்ச்சித்திட்டங்களின் தற்போதைய நிலைமைகள் சுற்றாடல் சிக்கல்கள் தொடர்பாக மூன்றாம் தரப்பினரிடமிருந்து கருத்துக்கள் மற்றும் அது தொடர்பாக செய்திப்பத்திரிகைகளில் அறிக்கையின் நிலைமைகளை தெளிவுபடுத்துதல்.

7. செயற்பாடு

7.1. இலங்கையின் தற்போதைய மின்சாரத்திற்கான கேள்வியும் மின்சார உற்பத்தியும்

7.1.1 இலங்கையில் மின்சாரத்திற்கான கேள்வி

2002 ஆம் ஆண்டு முதல் 2016 ஆம் ஆண்டு வரை கடந்த 15 ஆண்டுகளில் மின்சாரத்திற்கான கேள்வியை கருத்திற்கொள்ளும் போது சராசரி வருடாந்த அதிகரிப்பு 6 சதவீதமாக இருந்தமை அவதானிக்கப்பட்டது. 2015 ஆம் ஆண்டின் போது 11,786 மெகாவோட் மணித்தியாலங்களான மின்சாரத்திற்கான கேள்வி 2016 ஆம் ஆண்டின் போது 12,785 மெகாவோட்களாக இருந்தன. மேலும் 2018 ஆம் ஆண்டு முதல் 2022 ஆம் ஆண்டு வரையான எஞ்சிய 5 வருடங்களுக்கான எதிர்வு கூறப்பட்ட சராசரி கேள்வி 5.9 சதவீதமாக இருந்ததுடன் 2018 ஆம் ஆண்டு முதல் 2042 ஆம் ஆண்டு வரையான எஞ்சிய 25 ஆண்டுகளுக்காக 4.8 சதவீத சாதாரண அதிகரிப்பு வேகமொன்றுடன் கூடிய கேள்வியொன்று உருவாகும் என எதிர்பார்க்கப்படுகின்றது.

மூலங்கள் - [Generation Expansion plan -2017] பின்னிணைப்பு - 01

7.1.2 இலங்கையின் தற்போதைய மின்சார உற்பத்தி தோற்றுவாய்

இலங்கையின் பிரதான மின் சக்தி வழங்குனர் இலங்கை மின்சார சபையாகும். 2017 ஆம் ஆண்டின் இறுதியளவில் உற்பத்தி செய்யப்பட்ட இயலாவு 4,087 மெகாவொட்டாக இருந்ததுடன் 247 உப நிலையங்களின் மூலம் மின்சாரம் விநியோகம் மேற்கொள்ளப்பட்டிருந்தது. மேலும் இந்த உப நிலையங்களுக்கு இடையே 26 நிலையங்களின் உரித்து மற்றும் செயற்பாடு இலங்கை

மின்சார சபையின் கீழாக இருந்ததுடன் 2017 ஆம் ஆண்டின் மின் சக்தி உற்பத்தி தரவுகளின் பிரகாரம் இலங்கையிடமுள்ள மின் நிலையங்களின் எண்ணிக்கை கீழே காட்டப்பட்டுள்ளவாறாகும். (பின்னிணைப்பு - 02)

அட்டவணை இலக்கம் 01 - இலங்கையின் மின் உற்பத்தி நிலையங்கள் 2017

மின் நிலையங்களின் வகை	மின் நிலையங்களின் எண்ணிக்கை
நீர் மின் நிலையங்கள் (Hydro Power)	17
அனல் மின்சார நிலையங்கள் (Thermal)	8
காற்று மின்சார நிலையங்கள்	1
தனியார் உரித்தின் கீழ்	
அனல் மின் நிலையங்கள்	6
சிறு அளவிலான உரிமை	
ஏனையவை	215

மூலங்கள்- [CEB Statistical Digest 2017] பின்னிணைப்பு - 02

7.1.3 மின் உற்பத்திக்காக தோற்றுவாய்களின் பங்களிப்பு

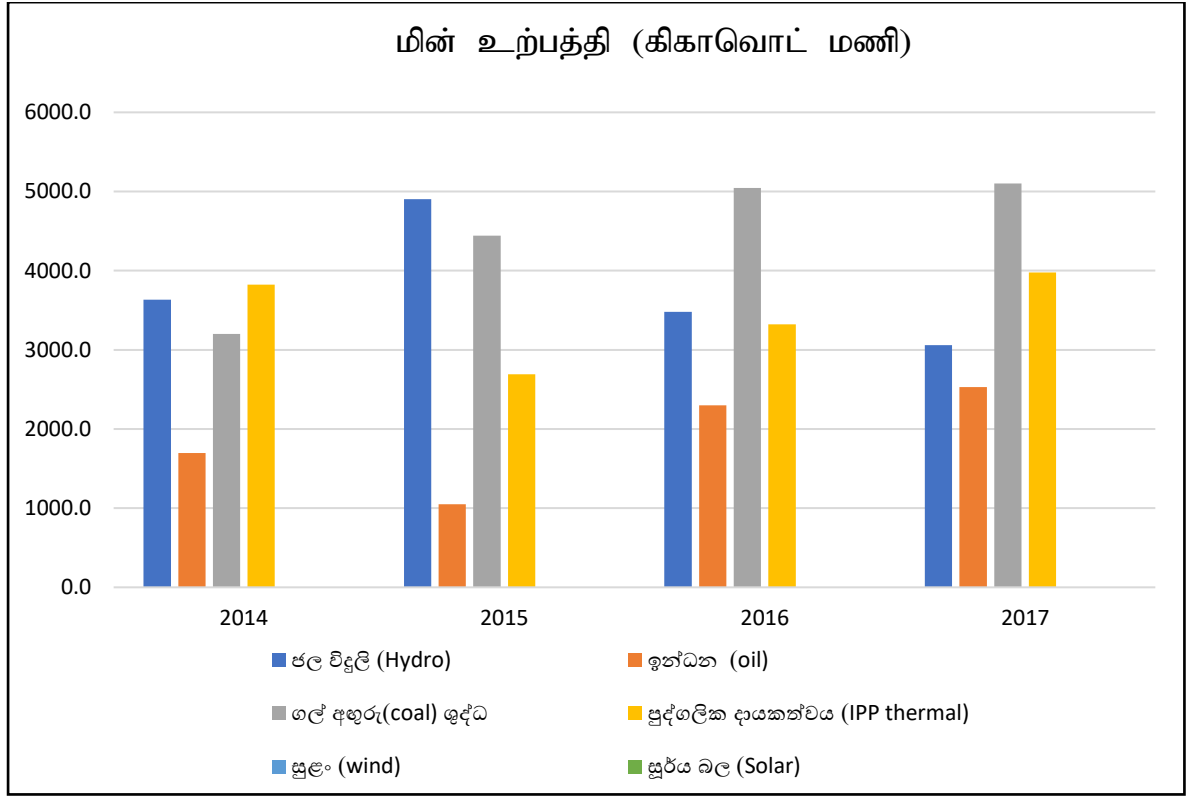
“எமது மரபுரிமைகளுக்கு இணையாக முழு இலங்கைக்கும் செயற்திறனான வசதியான மற்றும் சிக்கனமான மின்சார வழங்கலொன்றை அபிவிருத்தி செய்து பேணிச் செல்லல்” என்ற அடிப்படை செயற்பணியின் (பின்னிணைப்பு 03) கீழ் ஆரம்பிக்கப்பட்ட இலங்கை மின்சார சபையின் ஓட்டு மொத்த மின் உற்பத்திக்காக கடந்த 4 ஆண்டுகளில் மின் நிலையங்களின் பங்களிப்பு கீழே காட்டப்பட்டுள்ளன.

அட்டவணை இலக்கம் 02 - மின் உற்பத்திக்காக தோற்றுவாய்களின் பங்களிப்பு 2014- 2017

ஆண்டு	மின் உற்பத்தி (கெகாவொட் மணி)						மொத்த உற்பத்தி (கெகாவொட் மணி)	மின் உற்பத்திக்காக லக்விஜய மின் நிலையத்தின் பங்களிப்பு %
	நீர்மின் (Hydro)	எரிபொருள் (oil)	நிலக்கரி (coal) தூய	தனியார் பங்களிப்பு (IPP thermal)	காற்று (wind)	சூரிய சக்தி (Solar)		
2014	3,632.0	1,696.0	3,202.0	3,825.0	2.1	-	12,357.1	25.91%
2015	4,904.0	1,050.0	4,443.0	2,691.0	1.1	-	13,089.1	33.94%
2016	3,481.0	2,297.0	5,047.0	3,322.0	2.1	-	14,149.1	35.67%
2017	3,059.0	2,529.0	5,103.0	3,978.0	2.2	-	14,671.2	34.78%

மூலங்கள்- [CEB Statistical Digest 2014,2015,2016,2017] பின்னிணைப்பு - 04

வரைபட இலக்கம் 01 – வெவ்வேறு தோற்றவாய்களின் கீழ் மின்சார உற்பத்தி



7.1.4 மின் உற்பத்தியின் செயற்திறன் மதிப்பீடு

மின்சார உற்பத்தியின் செயற்திறனை மதிப்பீடு செய்யும் போது பயன்படுத்தப்பட்ட செயலாற்றல் குறிகாட்டிகள் சில கீழே காட்டப்பட்டுள்ளன.

- i. நிலைய காரணி (Plant Factor)
- ii. செயற்படுத்தப்படும் நிலைய காரணி(Running Plant Factor)
- iii. பிறப்பிக்கும் கிரயம் (Generation Cost)
- iv. சராசரி அலகுக் கிரயம் (Average Unit Cost)
- v. கிடைக்கக் கூடிய காரணி (Availability Factor)

மூலம் [Generation Performance in Sri Lanka – 2016 – PUCSL] பின்னிணைப்பு - 05

2016 ஆம் ஆண்டில் இச் செயலாற்றல் காரணிகளுக்கு உரிய பிரதான மின் நிலையங்களின் செயன்முன்னேற்றம் கீழே காட்டப்பட்டுள்ளன.

அட்டவணை 03 - மின் உற்பத்தி செயலாற்றல் காரணிகளுக்குரிய பிரதான நிலையங்களின் செயன்முன்னேற்றம்

மின் நிலையத்தின் வகை	செயலாற்றல் காரணி					
	வருடாந்த உற்பத்தி கிகா வொட் மணி	பின்நிலைய காரணி (Plant Factor) சதவீதம் %	செயற் படுத்தப்படும் மின் நிலைய காரணி (Running Plant Factor) சதவீதம் %	பிறப்பிக்கும் கிரயம் (Generation Cost) (ரூபா மில்லியன்)	சராசரி அலகுக் கிரயம் (Average Unit Cost) மொத்த கிரயம்) இ. மி.ச (ரூபா / கிலோ வொட் (மணி)	உள்ள காரணி (Availability Factor) சதவீதம். %
நீர் மின்சாரம்						
விக்டோரியா	588.93	31.9	64	2,345	3.98	83
			64			88
லக்ஷ்பான (புதிய)	432.18	42.4	50	1,630	2.44	87
			48	லக்ஷ்பான (புதிய/ பழைய)		91
பொல்பிட்டிய	325.04	49.3	54	2,201	5.09	85
			62			89
ரந்தெனிகல	323.44	30.2	85	2,021	4.34	88
			92	(ரந்தெனிகல / ரந்தம்பே)		89
சமனல வெவ	260.54	24.7	56	1,868	7.17	90
			59			89
நிலக்கரி - லக்விஜய						
லக்விஜய - பிரிவு -1	826.96	31.38	38.93	33,349	6.61	48.23
லக்விஜய - பிரிவு 2	2,383.01	90.43	95.2		6.61	93.63
லக்விஜய - பிரிவு 3	2,365.48	89.76	94.11		6.61	92.7

எரிபொருள்						
களனி திஸ்ஸ மின் நிலையம் (KCCP)	780.71	55.2	GT – 89	19,845 (CCY)	38.71 (PS GTS)	70 (GT)
			ST - 94		25.42 (CCY)	64 (ST)
சப்புக்கந்தB	474.70	77.6	84	10,969	23.11	85
கப்பலில் ஏற்றப்பட்ட மின் நிலையம் (Barge CEB)	356.11	67.6	100	7,783	21.86	98

மூலம் - [Generation Performance in Sri Lanka – 2016 – பொ.ப.ஆ.இ. மற்றும் இ.மி.ச] பின்னிணைப்பு - 05

7.1.5. மின்சார பிறப்பித்தல் கிரயம் - 2015/2016

மின்சார உற்பத்தியின் போது ஒரு அலகு மின்சாரத்தை பிறப்பிப்பதற்காக ஒவ்வொரு தொழில்நுட்பத்தின் மூலமான பங்களிப்பு கடந்த 2 ஆண்டுகளுக்காக கீழே காட்டப்பட்டுள்ளன.

அட்டவணை 04 - உற்பத்திக்காக சராசரி கிரயம் 2015/ 2016												
தொழில் நுட்பம்	எரிபொருள் கிரயம் ரூபா மில்லியன்		உதிரி பாகங்கள் மற்றும் பராமரிப்புக் கிரயம் ரூபா மில்லியன்		ஏனைய செயற்பாட்டு மற்றும் பராமரிப்பு செலவினம் ரூபா மில்லியன்		முழு பிறப்பித்தல் கிரயம் ரூபா மில்லியன்		அலகு கிகாவொட் மணி		ஒரு அலகு உற்பத்திக்காக சராசரி கிரயம் ரூபா / கிலோவொட் மணி	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
அனல் - எரி பொருள்	22,802	49,516	1,087	1,677	6,322	6,412	30,211	57,605	1,085	2,362	27.84	24.38
அனல் - நிலக்கரி	21,304	20,762	748	762	10,631	11,978	32,682	33,502	4,457	5,066	7.33	6.61
நீர் மின்சாரம்	-	-	532	364	7,608	7,980	8,140	8,344	4,925	3,501	1.65	2.38
மொத்த அளவு	44,106	70,278	2,367	2,803	24,561	26,370	71,033	99,451	10,467	10,930	6.79	9.10

மூலம் - [Annual Report – 2015/2016 – CEB] பின்னிணைப்பு - 06

7.1.6. மின் உற்பத்தி தோற்றுவாய் விலகல்

கடந்த 03 ஆண்டுகளின் மின் உற்பத்திக்காக பயன்படுத்தப்பட்ட நீர் மின் (Hydro) மூலத்தின் விலகல்களுக்கு ஒப்பாக ஏனைய மின் உற்பத்தி மூலங்களை பயன்படுத்துவது தொடர்பான தகவல்கள் கீழே காட்டப்பட்டுள்ளன.

அட்டவணை 05 - மின் உற்பத்தி தோற்றுவாய் விலகல்

ஆண்டு	நீர் மின்சாரம் கிகா வொட் மணி	விலகலின் சதவீதம் %	எரி பொருள் கிகா வொட் மணி	விலகலின் சதவீதம் %	நிலக்கரி கிகா வொட் மணி	விலகலின் சதவீதம் %	தனியார் பங்களிப்பு கிகா வொட் மணி	விலகலின் சதவீதம் %	ஏனைய காற்று மற்றும் சூரிய சக்தி)	விலகலின் சதவீதம் %	மொத்த உற்பத்தி_கிகா வொட்
2015	4,904		1,050		4,443		2,691		1.1		13,089
2016	3,481	(37.62)	2,297	140.85	5,047	14.85	3,322	47.82	2.1	100	14,149
2017	3,059		2,529		5,103		3,978		2.2		14,671

மூலம்- [CEB Statistical Digest 2014,2015,2016,2017] பின்னிணைப்பு - 04

2015 ஆம் ஆண்டு முதல் 2017 ஆம் ஆண்டு வரை மின் உற்பத்தி செயற்பாட்டின் போது நீர் மின் மூலத்தின் (Hydro) மூலம் மின் உற்பத்தி மொத்த உற்பத்தியின் 37.46 சதவீதமாகும். $(4,904/13,089*100)$ முதல் 20.85 $(3,059/14,671*100)$ வரை குறைவொன்று அறிக்கையிடப்பட்டிருந்ததுடன் நீர் மூலத்தை (Hydro) மாத்திரம் கருத்திற் கொள்ளும் போது மின் உற்பத்தி 37.62 சதவீதத்தினால் குறைவடைந்திருந்தது. இக்காலப்பகுதியில் மின்சாரத்திற்கான கேள்வியை சமாளிப்பதற்காக எரிபொருள் மூலம் (oil) பயன்படுத்தப்பட்டு மின் உற்பத்தி 140.85 சதவீதத்தினாலும் தனியார் துறையிடமிருந்து (IPP) மின் கொள்வனவு 47.82 சதவீதத்தினாலும் அதிகரித்திருந்தமை அவதானிக்கப்பட்டது. இலங்கை மின்சார சபையின் மின் உற்பத்தி தோற்றுவாய்க்கு இடையே ஆகக் குறைந்த இரண்டாவது அலகு கிரயத்துடன் கூடிய தோற்றுவாயான நிலக்கரி பயன்படுத்தப்பட்டு இக்காலப்பகுதியில் உற்பத்தி செய்யப்பட்ட மின் அலகுகளின் அதிகரிப்பு 14.85 சதவீதம் மாத்திரமாக இருந்தது.

7.2. லக்ஷிய மின் நிலையம் தொடர்பான அறிமுகம்

7.2.1. அமைவிடம் மற்றும் உற்பத்தி இயலளவு

வடமேல் மாகாணத்தின் கற்பிட்டி - நுரைச்சோலை பிரதேசத்தில் தாபிக்கப்பட்டுள்ள இலங்கை மின்சார சபைக்குரிய இலங்கையின் முதலாவது மற்றும் ஒரே நிலக்கரி அனல் மின்சார நிலையம் லக்ஷிய நிலக்கரி அனல் மின்சார நிலையம் ஆக இருந்ததுடன் அந்நிலையத்தின் இயலளவு 900 மெகா வொட்டாக இருந்தது. புத்தளம் கடற் பரப்பிலிருந்து 100 மீற்றருக்கு அண்மித்த அளவில் தரைப்பகுதி மற்றும் பதிஅடிய மற்றும் நாரக்கல்லிய கிராமங்களுக்கு அண்மித்ததாக புத்தளம் நகரிலிருந்து பிரதான வீதியூடாக 12 கிலோமீற்றர் தூரத்தில் நகரத்திற்கு மேற்குப் பக்கமாக இந்த மின் நிலையம் அமைந்துள்ளது. 2011 மார்ச் மாதத்தின் போது முதலாவது கட்டமும் 2014 மே மற்றும் செப்தம்பர் ஆகிய மாதங்களின் போது

இரண்டாம் கட்டத்தினதும் வேலைகள் பூர்த்தி செய்யப்பட்டிருந்ததுடன் மின் நிலையம் 300 மெகாவொட் இயலளவுடன் கூடிய 03 அலகுகளின் கீழ் செயற்படுகின்றன.

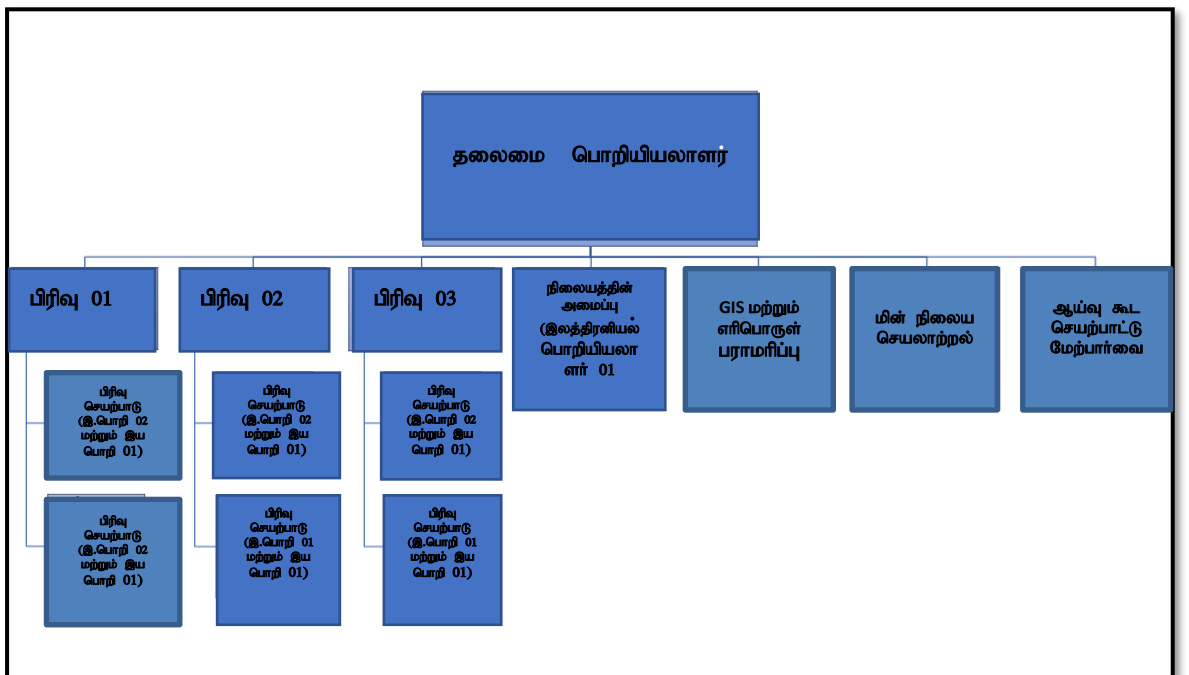
7.2.2. மின் நிலையத்தின் அமைப்பு

மின் நிலையம் அமைந்துள்ள பூமி அளவு அண்ணளவாக 470 மீற்றர் அகலத்துடனும் 2000 மீற்றர் நீளத்துடன் கூடியதாக இருந்தது. இந்த மின் நிலையத்தின் நிர்மாணம் 02 கட்டங்களின் கீழ் பூர்த்தி செய்யப்பட்டுள்ளதுடன் முதலாவது கட்டத்தில் 300 மெகாவொட் இயலளவிலும் இரண்டாவது கட்டம் 600 மெகாவொட் இயலளவுடன் கூடியதாக இருந்தது. 300 மெகாவொட் இயலளவுடன் கூடிய ஒரு பிரிவிற்கு 01 பொயிலர், 01 புகை குழாய், நிலை மின்னியல் வீழ்படிவாக்கி, வெளியிடப்படும் கந்தக அகற்றுக்கை மற்றும் 150 உயரத்திலான புகை கூடு என்பவற்றை உள்ளடக்கியிருந்தன. நிலக்கரி எரிக்கப்படும் போது நைதரசனீரொசைட் வெளியேறுவதை குறைக்கும் வகையில் வெப்பத்தை சமப்படுத்தும் விஷேட தயாரிப்பொன்று (Low No_x Burners) உடனான மின் நிலையம் நிர்மாணிக்கப்பட்டுள்ளது. அதற்கு மேலதிகமாக அவ்விடத்தில் 46 ஏக்கர்களுடன் கூடிய நிலக்கரி பிரிவொன்றும் 25 ஏக்கர் அளவிலான கீழ் சாம்பல்கள் இடப்படும் பிரிவும் காணப்பட்டன. இந்த மின் நிலையத்தின் மின் உற்பத்தி மூலம் 20 கிலோ வோட் (KV) அளவிலான மின் உற்பத்தி செய்யப்படுவதுடன் மாற்றி மூலம் அது 220 (KV) கிலோவோட்டிற்கு அதிகரித்து 117 கிலோ வோட் மற்றும் 100 மீற்றர் நீளத்துடன் கூடிய இரண்டு வயர்களுடன் ஊடாக தேசிய மின்சார முறைமைக்கு முறையே வெயாங்கொட மற்றும் அநுராதபுரம் உப மின்நிலைகளின் ஊடாக தொடர்புபடுத்தப்பட்டுள்ளது.

7.2.3. மின் நிலையத்தின் நிர்வாக அதிகாரம்.

லக்ஷிய மின் நிலையம் பிரதான பொறியியலாளர் ஒருவரின் கீழ் இயங்கி வருவதுடன் அதன் ஒழுங்கமைப்பு வரைபடம் கீழே காட்டப்பட்டுள்ளது.

வரைபடம் 02 - லக்ஷிய மின் நிலையம் ஒழுங்கமைப்பு



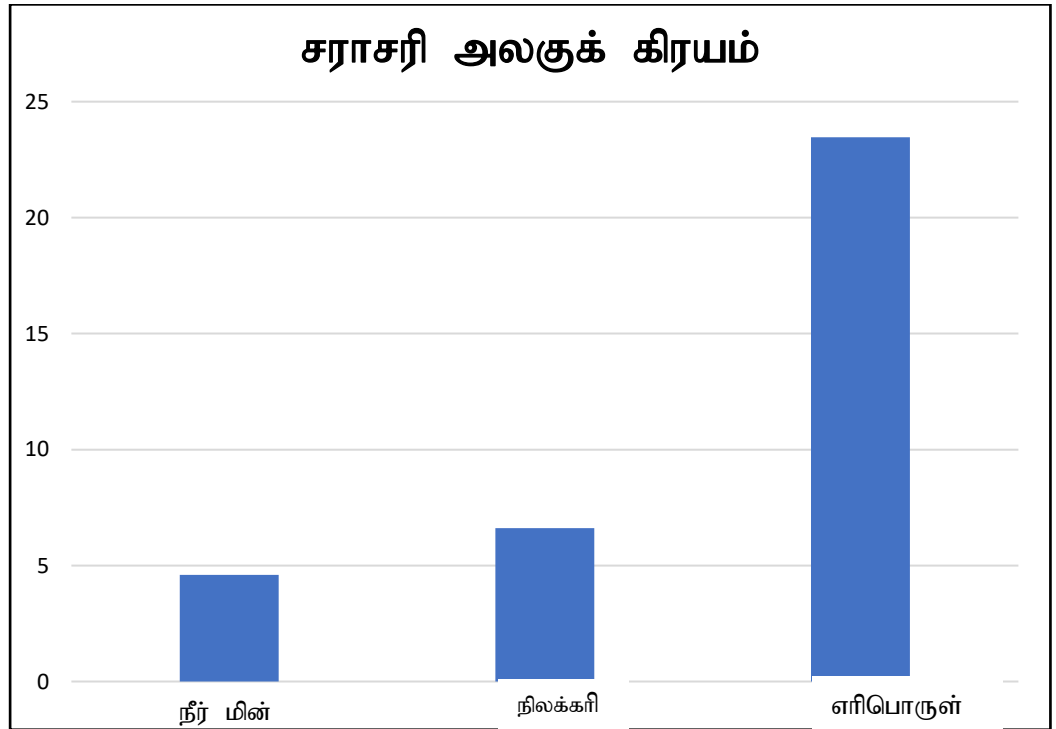
7.2.4. ஒரு அலகு மின்சாரத்தின் கிரயம் மற்றும் தேசிய முறைமைக்குள்ள பங்களிப்பு

இலங்கை மின்சார சபையினால் மின் உற்பத்தியின் போது பயன்படுத்தப்படும் தோற்றுவாய்கள் பிரதானமாக நீர் மின்சாரம், நிலக்கரி மற்றும் எரிபொருள் என வகைப்படுத்தப்படுவதுடன் அத் தோற்றுவாய்களை பயன்படுத்தி 2017 ஆம் ஆண்டில் மேற்கொள்ளப்பட்ட பங்களிப்பு மற்றும் ஒரு அலகிற்கான கிரயம் கீழே காட்டப்பட்டுள்ளது.

அட்டவணை இல 6 - ஒரு அலகு மின் உற்பத்திக்கான கிரயம் மற்றும் தேசிய மின் உற்பத்தி பங்களிப்பு - 2016

தோற்றுவாய்கள்	ஒரு அலகிற்கான சராசரிக் கிரயம் (கிலோ வொட் 1 மணித்தியாலத்திற்காக ரூபா)	மின் உற்பத்தி
நீர் மின்சாரம்	4.60	24.6%
நிலக்கரி	6.61	35.7%
எரிபொருள்	23.46	16.2%

வரைபடம் 02 - சராசரி அலகுக் கிரயம்



மூலம் - [Generation Performance in Sri Lanka – 2016 – PUCSL, CEB Statistical Digest 2016 மற்றும் இ.மி.ச] - பின்னிணைப்பு 07

7.2.5. லக்ஷிய அனல் மின்சார நிலையத்தின் மின் உற்பத்தி கிரய ஒப்பீடு

லக்ஷிய அனல் மின்சார நிலையத்தின் மூலம் 2017 ஆம் ஆண்டு வரை பிறப்பிக்கப்பட்ட கிகாவெட் மணித்தியாலம் (GWH) அளவினை அம் மின் நிலையத்தில் உற்பத்தி செய்வதற்கும்

அந்த கிகாவெட் மணித்தியாலம் (GWH) அளவினை எரிபொருள் பயன்படுத்தப்பட்டு இணைந்த சுற்று (Combine Cycle) மூலம் மின் உற்பத்தி செய்கின்ற களனிதிஸ்ஸ மின் நிலையத்தில் உற்பத்தி செய்வதற்கு செலவாகும் கிரய ஒப்பீடு தொடர்பான தகவல் கீழே காட்டப்பட்டுள்ளன.

அட்டவணை இலக்கம் 07 - லக்விஜய அனல் மின் நிலையத்தில் மின் உற்பத்திக் கிரயம் களனிதிஸ்ஸ மின் நிலையத்தின் கிரயத்துடனான ஒப்பீடு

	விபரம்	அலகு	முதலாவது கட்டம்	இரண்டாம் கட்டம்	மொத்தம்
	லக்விஜய அனல் மின்சார நிலையம்				
I	தேறிய மின் உற்பத்தி	கிகாவெட் மணித்தியாலம்	8,787.87	13,681.28	22,469.15
II	ஒரு அலகு மின்சாரத்திகாக செயற்பாட்டு மற்றும் பராமரிப்புக் கிரயம்	ரூபா	8.39	8.39	8.39
III	அண்மித்த மின் உற்பத்திக் கிரயம்	ரூபா மில்லியன்	73,730.00	114,785.94	188,515.94
IV	உடன்படிக்கை செய்யப்பட்ட விலை	ரூபா மில்லியன்	70,525.00	126,945.00	197,470.00
	களனிதிஸ்ஸ மின் நிலையத்தில் இணைந்த சுற்று (Combine Cycle) மூலம் மின் உற்பத்தி				
V	லக்விஜய அனல் மின்சார நிலையத்தின் மூலம் மேற்கொள்ளப்படும் தேறிய மின் உற்பத்தி	கிகாவெட் மணித்தியாலம்	8,787.87	13,681.28	22,469.15
VI	ஒரு அலகுக்காக செயற்பாட்டு மற்றும் பராமரிப்புக் கிரயம்	ரூபா	24.00	24.00	24.00
VII	களனிதிஸ்ஸ மின் நிலையத்தில் இணைந்த சுற்று (Combine Cycle) மூலம் 8787.87 GWh மின் உற்பத்தி செய்யப்பட்டால் உற்பத்திக் கிரயம்	ரூபா மில்லியன்	210,908.94	328,350.72	539,259.66
VIII	இதன் பிரகாரம் லக்விஜய அனல் மின்சார நிலையத்தின் மூலம் மின் உற்பத்தி செய்தமையால் உரித்தான மொத்த சேமிப்பு (VII-III)	ரூபா மில்லியன்	137,178.69	213,564.78	350,743.47
	தேறிய சேமிப்பு (VIII-IV)	ரூபா மில்லியன்	66,653.69	86,619.78	153,273.00

பின்னிணைப்பு 08

மேற்குறித்த தகவல்களின் பிரகாரம் 2017 ஆம் ஆண்டு வரை லக்விஜய அனல் மின்சார நிலையத்தின் மூலம் உற்பத்தி செய்யப்பட்ட 22,469 கிகா வெட் (Gwh) உற்பத்திக்காக அம்மின்நிலையத்திற்கு ரூபா 188,516 மில்லியன் உற்பத்தி செலவினமொன்று செலவாகியிருந்தது. அவ்வாறே அந்த கிகா வெட் (Gwh) மணித்தியால அளவு களனி திஸ்ஸ மின் நிலையத்தின் இணைந்த சுற்றின் (Combine Cycle) மூலம் உற்பத்தி செய்யப்பட்டால் ரூபா 539,260 மில்லியன் செலவாகின்றமை கணிப்பீட்டின் மூலம் தெளிவாகின்றது.

7.3 லக்விஜய மின் நிலையம் மற்றும் அதன் சுற்றாடல் தாக்கங்கள்

7.3.1 1980 இன் 47 ஆம் இலக்க தேசிய சுற்றாடல் சட்டம் மற்றும் 1990 இன் 12 ஆம் இலக்க வடமேல் மாகாண சுற்றாடல் சாசனத்தின் அமுலாக்கம்

7.3.1.1 1980 இன் 47 ஆம் இலக்க தேசிய சுற்றாடல் சட்டத்தின் (பின்னிணைப்பு 9) கீழ் 1981 ஆம் ஆண்டு மத்திய சுற்றாடல் அதிகாரசபை உருவாக்கப்பட்டதுடன் இலங்கையின் அபிவிருத்திச் செயற்பாடுகள் மற்றும் சுற்றாடல் நடவடிக்கைகளை ஒன்றிணைக்கும் நோக்கில் 2001 ஆம் ஆண்டு உருவாக்கப்பட்ட சுற்றாடல் மற்றும் இயற்கை வளங்கள் அமைச்சினால் (தற்பொழுது மஹாவலி அபிவிருத்தி மற்றும் சுற்றாடல் அமைச்சு) மத்திய சுற்றாடல் அதிகாரசபையுடன் தொடர்புடைய சகல பொறுப்புகளும் நிறைவேற்றப்படுகின்றன. மத்திய சுற்றாடல் அதிகாரசபையின் சட்டரீதியான அதிகாரம் 1988 ஆம் ஆண்டின் 56 ஆம் இலக்க மற்றும் 2000 இன் 53 ஆம் இலக்க தேசிய சுற்றாடல் (திருத்தப்பட்ட) சட்டங்களின் கீழ் (பின்னிணைப்பு - 09) விரிவுபடுத்தப்பட்டுள்ளது. தேசிய சுற்றாடல் சட்டத்திற்கமைவாக பிரதான 09 மாகாணங்களும் உள்ளடங்கும் வகையில் 25 உப காரியாலயங்களும் நிறுவப்பட்டிருந்தன. மேலும் இதன் கீழ் வடமேல் மாகாணம் உள்ளடங்கும் வகையில் குருநாகல் மற்றும் புத்தளம் ஆகிய மாவட்டங்களுக்காக 02 உப காரியாலயங்கள் நிறுவப்பட்டிருந்தன. இந்த 02 உப காரியாலயங்களின் மூலமும் நிர்மாணிப்புதற்கு உத்தேசிக்கப்பட்டுள்ள கட்டிடங்களுக்கான சுற்றாடல் பரிந்துரைப்புகளை பெற்றுக்கொடுத்தல், சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரங்களை விநியோகித்தல் மற்றும் சுற்றாடல் முகாமைத்துவ செயற்பாடுகள் மேற்கொள்ளப்பட்டிருந்தன. (பின்னிணைப்பு - 10)

7.3.1.2 அதேபோன்று 1987 ஆம் ஆண்டின் 13 ஆவது அரசியல்யாப்பின் கீழான மாகாண சபை அதிகாரங்களின் மீது 1990 இன் 12 ஆம் இலக்க வடமேல் மாகாண சுற்றாடல் சாசனத்தின் பின்னிணைப்பு - 11) 1 ஆம் பிரிவின் 2(i) உப பிரிவின் கீழ் வடமேல் மாகாண சுற்றாடல் அதிகாரசபை நிறுவப்பட்டுள்ளது. சாசனத்தின் 07(i) உப பிரிவிற்கமைய மாகாண சுற்றாடல் ஆலோசனை சபையொன்று நிறுவப்பட வேண்டியுள்ளதுடன் அதன் அங்கத்தவர்கள் விடயப் பொறுப்பு அமைச்சரினால் நியமிக்கப்படுகின்ற அல்லது அவர்களிலிருந்து நியமிக்கப்பட்ட ஒரு தொகை உறுப்பினர்களைக் கொண்டு அமைக்கப்பட்டிருக்க வேண்டும். சாசனத்தின் 07(i)(க) பிரிவிற்கமைய ஒரு அங்கத்தவர் மத்திய சுற்றாடல் அதிகாரசபையினைப் பிரதிநிதித்துவப்படுத்துதல் வேண்டும். பின்னிணைப்பு - ii)

7.3.1.3 மேலும் வடமேல் மாகாணத்தில் நிர்மாணச் செயற்பாடுகளின் மூலம் ஏற்படும் சுற்றாடல் நிலைமைகளுக்காக மாகாண சபை நேரடியாக பொறுப்புக் கூற வேண்டுமென 2006 ஆம் ஆண்டு உயர் நீதிமன்றத்தில் 226/2006 ஆம் இலக்க (பின்னிணைப்பு - 12) அடிப்படை உரிமைகள் மீதான வழக்கில் குறிப்பிடப்பட்டுள்ளதுடன் இதன் மூலம் 1980 இன் 47 ஆம் இலக்க தேசிய சுற்றாடல் சட்டம் வடமேல் மாகாணத்தினுள் செயற்படுத்தப்படுவதற்கான செல்லுபடி இடைநிறுத்தப்பட்டது.

7.3.2 சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரம் வழங்கல்

7.3.2.1 ஏதேனுமொரு நிலையான நிர்மாணம்/செயற்பாடு தொடர்பில் குறித்த நிறுவனத்தினால் பெறப்பட வேண்டிய அனுமதிப்பத்திரம் சம்பந்தமாக இலக்க தேசிய சுற்றாடல் சட்டத்தின் 23 (ஆ)(1) பிரிவின் பின்னிணைப்பு - 09) கீழும் வடமேல் மாகாண சுற்றாடல் சாசனத்தின் V ஆம் பிரிவின் 21(1) பிரிவின் (பின்னிணைப்பு- 13) கீழும் அறிவிக்கப்பட்டுள்ளதுடன் அவ்வனுமதிப்பத்திரத்தினை மத்திய சுற்றாடல் அதிகாரசபை/ மாகாண சுற்றாடல் அதிகாரசபை மூலம் பெற்றுக் கொள்ள வேண்டும். இது சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரம் என அழைக்கப்படுவதுடன் நிர்மாணத்தின் தன்மைக்கேற்ப அவ்வனுமதிப்பத்திரத்தினை வழங்கும் நிறுவனமும் அனுமதிப்பத்திரத்தின் செல்லுபடிக் காலமும் தீர்மானிக்கப்படும். மத்திய சுற்றாடல் அதிகாரசபை / மாகாண சுற்றாடல் அதிகாரசபையினால் நிர்ணயிக்கப்பட்டுள்ள தரம் மற்றும் அளவுகளுக்கமைவாகவன்றி சூழலில்

கழிவுகளை வெளியேற்றுதல், சேர்த்து வைத்தல் அல்லது சூழலில் எரித்தல் அல்லது சுற்றாடல் மாசடைதல் அல்லது ஒலி மாசடைதல் அல்லது அதிர்வுகள் ஏற்படல் அல்லது ஏற்படுவதற்கு ஏதுவாகவுள்ள சந்தர்ப்பங்களில் செயற்படாமலிருத்தல் இந்த அனுமதிப்பத்திரத்தினை வழங்குவதன் முக்கிய நோக்கமாக இருந்தது.

- 7.3.2.2 2015 ஆம் ஆண்டின் ஜூன் 30 ஆந் திகதிய 3536/2015 ஆம் இலக்கத்தின் (பின்னிணைப்பு - 14) கீழ் 2015 ஜூன் 30 தொடக்கம் 2016 ஜூன் 29 ஆந் திகதி வரை மின் நிலையத்திற்கான முதல் சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரம் வடமேல் மாகாண சுற்றாடல் அதிகாரசபையினால் வழங்கப்பட்டிருந்தது.
- 7.3.2.3 2016 ஜூன் 29 ஆந் திகதியின் பின்னர் முதலாவது புதுப்பித்தலுக்காக மின் நிலையத்தினால் விண்ணப்பிக்கப்பட்டிருந்ததுடன் அதிகார சபையினால் 2016 ஜூன் 30 ஆந் திகதி அனுமதி வழங்கப்பட்டிருந்தது. (பின்னிணைப்பு - 15)
- 7.3.2.4 2017/2018 ஆண்டிற்காக சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரத்தினைப் புதுப்பிப்பதற்கான விண்ணப்பப்படிவம் மின் நிலையத்தினால் 2017 ஜூன் 14 ஆந் திகதி பின்னிணைப்பு - 16) வழங்கப்பட்டிருந்த போதும் கணக்காய்வுத் திகதியான 2018 மே 10 ஆந் திகதி வரை மாகாண சுற்றாடல் அதிகாரசபையினால் அதற்கான அங்கீகாரம் வழங்கப்பட்டிருக்கவில்லை.
- 7.3.2.5 2016 ஜூன் 30 ஆந் திகதி முதல் 2017 ஜூன் 29 ஆந் திகதி வரையிலான காலப்பகுதி தொடர்பாக வெளியிடப்பட்ட 3536/2016 R1 ஆம் இலக்க அனுமதிப்பத்திரத்தின் 06 ஆம் இலக்க நிபந்தனைக்கமைவாக (பின்னிணைப்பு - 17) “மின் நிலையத்தின் செயற்பாடு அல்லது ஏனைய செயற்பாடுகளுக்காக நீர் வளங்கள் சபையின் பூர்வாங்க அனுமதியின்றி நிலக்கீழ் நீரினைப் பயன்படுத்தக் கூடாதெனக்” குறிப்பிடப்பட்டிருந்தது.
- 7.3.2.6 1990 இன் 12 ஆம் இலக்க வடமேல் மாகாண சுற்றாடல் சாசனத்தின் 20, 21 பிரிவுகளுடன் வாசிக்கப்பட வேண்டிய அந்த சாசனத்தின் 61 ஆவது பிரிவின் கீழ் அமைச்சரினால் விடுக்கப்பட்ட கட்டளை 2010 திசம்பர் 21 ஆந் திகதிய 1685/11 இலக்கத்தையுடைய வர்த்தமானியின் மூலம் (பின்னிணைப்பு - 18) பகிரங்கப்படுத்தப்பட்டுள்ளது. இவ்வர்த்தமானி அறிவித்தலில் குறிப்பிடப்பட்டிருந்த சஞ்சரிக்கும் வாயு தரக் கட்டளைகளை மின் நிலையத்தினால் கண்டிப்பாக நடைமுறைப்படுத்த வேண்டுமென அனுமதிப்பத்திரத்தின் 07 ஆம் இலக்க நிபந்தனையில் (பின்னிணைப்பு - 17) குறிப்பிடப்பட்டிருந்தது.
- 7.3.2.7 அனுமதிப்பத்திரத்தின் 8 ஆம் இலக்க நிபந்தனைக்கமைவாக (பின்னிணைப்பு - 17) மின் நிலையத்தின் தொழிற்பாட்டு நடவடிக்கைகளுக்காகப் பயன்படுத்தப்படும் எரிபொருள்களில் காணப்பட வேண்டிய குணவியல்புகள் பின்வருமாறு குறிப்பிடப்பட்டிருந்தது. good quality, low ash coal with sulfur content of 1% or less by weight shall be used for the operation of the plant.
- 7.3.2.8 சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரத்தின் 13.5 ஆவது நிபந்தனைக்கமைவாக செயற்திட்டத்தின் தொழிற்பாட்டு நடவடிக்கைகளில் உற்பத்தியாகின்ற ஆபத்தான கழிவுகள் மற்றும் அதன் குணவியல்புகள் சம்பந்தமாக அறிக்கைகளைப் பேணி அவ்வறிக்கைகளை மாகாண சுற்றாடல் அதிகா சபைக்கு வருடாந்தம் சமர்ப்பிக்க வேண்டும்.

7.3.3 தேசிய சுற்றாடல் சட்டத்திற்கமைவாக வழங்கப்பட்டிருந்த நியமங்கள் மற்றும் அளவுகள்

தேசிய சுற்றாடல் சட்டத்திற்கமைவாக வழங்கப்பட்டிருந்த சஞ்சரிக்கும் வாயு தரக் கட்டளைகளை மையப்படுத்தி வடமேல் மாகாண சபையின் சுற்றாடல் நியமம் மற்றும் அளவுகள் தீர்மானிக்கப்பட்டிருந்தன.

7.3.4 வருடாந்த நிலக்கரித் தேவை, இறக்கல் மற்றும் களஞ்சியத்திற்கு போக்குவரத்துச் செய்தல் ஆகியவற்றால் ஏற்படக்கூடிய சுற்றாடல் தாக்க பகுப்பாய்வு.

7.3.4.1 300 மெகா வொட் மின்சாரத்தினை உற்பத்தி செய்வதற்கு சராசரியாக ஒரு மணித்தியாலத்திற்கு 110 – 114 மெற்றிக் தொன் நிலக்கரி தேவைப்படுவதுடன், 900 மெகா வொட் மின்சாரத்தினை உற்பத்தி செய்வதற்கு சராசரியாக ஒரு வருடத்திற்கு 2,250,000 மெற்றிக் தொன் நிலக்கரி தேவைப்படுமென மதிப்பிடப்பட்டுள்ளது. மின் நிலையத்திற்கு நிலக்கரி விநியோகம் செய்தல் ஒவ்வொரு வருடத்திலும் ஜனவரி முதல் ஏப்ரல் மாதம் வரையிலும் செப்தம்பர் முதல் திசெம்பர் மாதம் வரையிலும் நடைபெறுவதுடன் இந்நிலக்கரியினை போக்குவரத்து செய்கின்ற ஒரு கப்பலின் கொள்ளளவு சராசரியாக 65,000 மெற்றிக் தொன்னாகும். இதனடிப்படையில் ஒரு வருடத்தில் எதிர்பார்க்கப்படும் கப்பல் பிரயாணங்களின் எண்ணிக்கை சராசரியாக 35 ஆகும்.

7.3.4.2 1998 மார்ச் மாதம் தயாரிக்கப்பட்டிருந்த சுற்றாடல் தாக்க மதிப்பீட்டு அறிக்கையில் 2.2.3 பிரிவின் பிரகாரம் இறக்குமதி செய்யப்பட்ட நிலக்கரியினை களஞ்சியசாலையில் இறக்குவதற்கான வசதி கருதி ஒரு இறங்குதுறையினை அமைப்பதற்கு 02 மாற்று வழிகள் குறிப்பிடப்பட்டிருந்தன. ஒன்று 4.2 கி.மீ. நீளமான இறங்குதுறையொன்றும் இரண்டாவது மாற்றுவழி 500 மீற்றர் நீளமான ஒரு இறங்குதுறையை நிர்மாணிப்பதாகும். மின் நிலையம் 500 மீற்றர் நீளமான இறங்குதுறையை அமைக்கும் மாற்றுவழியை தேர்ந்தெடுத்திருந்தது.

7.3.4.3 இறக்குமதி செய்யப்பட்ட நிலக்கரியினை பத்தல்களாக (வள்ளங்களின் கொள்ளளவு சராசரியாக சுமார் 1500 – 2000 மெற்றிக் தொன் அளவாகும்) இறங்குதுறை வரை போக்குவரத்துச் செய்வதுடன், பத்தல்களிலுள்ள நிலக்கரி கிரேன் (கொள்ளளவு ஒரு மணித்தியாலத்திற்கு 500 மெட்ரிக் டொன்) மூலமாக நிலக்கரி Coveyor Belt இற்கு அனுப்பப்படுகிறது. சராசரியாக ஒரு நாளைக்கு 9 இற்கும் 10 இற்கும் இடைப்பட்ட பத்தல்கள் என்ற ரீதியில் நாளாந்தம் 15,000 தொடக்கம் 20,000 மெற்றிக் தொன் நிலக்கரி போக்குவரத்து செய்யப்படுகின்றது. இந்நிலக்கரி 41 ஏக்கர் விஸ்தீரணமான ஒரு நிலத்தில் களஞ்சியப்படுத்தப்படுவதுடன், இக்களஞ்சியசாலை மூடிய, திறந்த எனும் இரு அமைப்புகளிலும் காணப்படுகின்றது. தொழிற்பாட்டுக்கு தேவையான அளவு நிலக்கரி இக்களஞ்சியசாலையிலிருந்து பெறப்பட்டு நிலக்கரி Bunker களில் சேர்த்து வைக்கப்படுகின்றது. 300 மெகா வொட் மின்சாரத்தினை உற்பத்தி செய்வதற்கு இவ்வாறான 5 Bunkers களில் நிலக்கரி களஞ்சியப்படுத்தப்படுவதுடன், இவ்வாறான ஒரு Bunker இன் கொள்ளளவு சராசரியாக 350 மெற்றிக் தொன் ஆகும். ஒரு பிரிவில் சேமிக்கப்பட்டுள்ள நிலக்கரியினைக் 10 மணித்தியாலங்களுக்குப் பயன்படுத்த முடியுகின்ற அதேவேளை, 300 மெகா வொட் மின்சாரத்தினை உற்பத்தி செய்வதற்கு 5 பங்கர்களில் 4 பங்கர்கள் மாத்திரமே தேவைப்படுகின்றன.

கடந்த 5 ஆண்டுகளில் இறக்குமதி செய்யப்பட்ட நிலக்கரி கப்பல்கள் அளவுகள் இறக்குமதி நாடுகள் தொடர்பான விபரங்கள் கீழே காட்டப்பட்டுள்ளன.

அட்டவணை இல. 08 – 2013 ஆம் ஆண்டு முதல் 2017 ஆம் ஆண்டு வரை நிலக்கரி இறக்குமதி நாடுகள் மற்றும் கப்பல்கள் வருகையின் எண்ணிக்கை

இறக்குமதி நாடு	கப்பல் வருகை எண்ணிக்கை				
	2013	2014	2015	2016	2017
இந்தோனேசியா	7	18	11	-	-
ரஷ்யா	-	-	21	4	-
தென் ஆபிரிக்கா	2	-	-	25	37
மொத்தம்	9	18	32	29	37

வரைபடம் -4 நிலக்கரி தொகுதி மற்றும் நிலக்கரி போக்குவரத்து செய்யப்படும் Conveyor Belt



- நிலக்கரி களஞ்சியப்படுத்தல் -

7.3.4.4 திருகோணமலையிலிருந்து மின் நிலையத்திற்கு புகையிரதம் மூலம் நிலக்கரியை போக்குவரத்து செய்வதற்குள்ள இயலுமை தொடர்பாக 2015 மற்றும் 2016 ஆம் ஆண்டுகளில் போக்குவரத்து மற்றும் சிவில் விமான சேவைகள் அமைச்சர், மின்சக்தி மற்றும் புதுப்பிக்கத்தக்க அமைச்சு, லங்கா நிலக்கரி கம்பனி, இலங்கை புகையிரத திணைக்களம் மற்றும் ஹொல்சீம் லங்கா தனியார் கம்பனி போன்ற நிறுவனங்களின் உத்தியோகத்தர்களுடன் கலந்துரையாடல் நடாத்தப்பட்டிருந்தன.

7.4 நிலக்கரியில் காணப்பட வேண்டிய தரம்

7.4.1 2017 செப்டெம்பர் மாதம் முதல் 2019 ஏப்ரல் மாதம் வரை லக்விஜய நிலையத்தின் தொழிற்பாட்டுச் செயற்பாட்டிற்காக தேவையான நிலக்கரி அளவினை வழங்குவதற்கான பெறுகை செயற்பாட்டிற்காக இலங்கை மின்சார சபை மற்றும் லங்கா நிலக்கரி கம்பனி இணங்கிய கேள்வி ஆவண இல LCC/16/T/1 இல் குறிப்பிடப்பட்ட உப பதிவேடுகள் 2 B பகுதியின் கீழ் மற்றும் லக்விஜய மின் நிலையத்தினால் கணக்காய்விற்காக சமர்ப்பிக்கப்பட்ட தகவல்கள் (பின்னிணைப்பு - 19) இன் பிரகாரம் 2013 ஆம் ஆண்டு முதல் 2017 ஆம் ஆண்டு வரை நிலக்கரியில் காணப்பட வேண்டிய தரத்தின் தேவைப்பாடு கீழே காட்டப்பட்டுள்ளவாறு குறிப்பிடப்பட்டிருந்தது.

அட்டவணை இல. 09 நிலக்கரியில் எதிர்பார்க்கப்பட்ட தரத் தேவைப்பாடு

வரையரை	பிரிவு	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
எரிவின் மூலம் கிடைக்கும் அனல் சக்தி (GCV value)	Kcal/kg	6300 (நிராகரிக்கப்பட்ட பெறுமதி 5800 இற்கு கீழ்)	6300 (நிராகரிக்கப்பட்ட பெறுமதி 5900 இற்கு கீழ்)	6300 (நிராகரிக்கப்பட்ட பெறுமதி 5900 இற்கு கீழ்)	6300 (நிராகரிக்கப்பட்ட பெறுமதி 5900 இற்கு கீழ்)	6,150 (நிராகரிக்கப்பட்ட பெறுமதி 5900 இற்கு கீழ்)
ஈரப்பதன் (Total moistures)	% wt	12 (நிராகரிக்கப்பட்ட பெறுமதி 16% இற்கு மேல்)	12 (நிராகரிக்கப்பட்ட பெறுமதி 16% இற்கு மேல்)	12 (நிராகரிக்கப்பட்ட பெறுமதி 16% இற்கு மேல்)	12 (நிராகரிக்கப்பட்ட பெறுமதி 16% இற்கு மேல்)	12 அல்லது அதற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 16% இற்கு மேல்)
உள்ளடக்கப் பட்ட சாம்பல் அளவு (Ash content)	% wt	11 (நிராகரிக்கப்பட்ட பெறுமதி 16 இற்கு மேல்)	11 (நிராகரிக்கப்பட்ட பெறுமதி 16 இற்கு மேல்)	11 (நிராகரிக்கப்பட்ட பெறுமதி 16 இற்கு மேல்)	11 (நிராகரிக்கப்பட்ட பெறுமதி 16 இற்கு மேல்)	11 அல்லது அதற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 16 இற்கு மேல்)
நிலையான காபன் (Fixed Carbon)	% wt	39	39	49.5	49.5	49.5
ஆவியாதல் (Volatile matter)	% wt	42 (நிராகரிக்கப்பட்ட பெறுமதி 22 இற்கு கீழ்)	42 (நிராகரிக்கப்பட்ட பெறுமதி 22 இற்கு கீழ் 39.9 இற்கு மேல்)	27 (நிராகரிக்கப்பட்ட பெறுமதி 22 இற்கு கீழ் 39.9 இற்கு மேல்)	27 (நிராகரிக்கப்பட்ட பெறுமதி 22 இற்கு கீழ் 39.9 இற்கு மேல்)	31 (நிராகரிக்கப்பட்ட பெறுமதி 22 இற்கு கீழ் 39.9 இற்கு மேல்)
கந்தகம் உள்ளடக்கம் (Sulphur content)	% wt	0.9 (நிராகரிக்கப்பட்ட பெறுமதி 1.2 இற்கு மேல்)	0.9 (நிராகரிக்கப்பட்ட பெறுமதி 1. இற்கு மேல்)	0.5 (நிராகரிக்கப்பட்ட பெறுமதி 1. இற்கு மேல்)	0.5 (நிராகரிக்கப்பட்ட பெறுமதி 1. இற்கு மேல்)	0.5 அல்லது அதற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 1 இற்கு மேல்)
அளவு (size consist)	மீம் 50	3% இற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 5% இற்கு மேல்)	3% இற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 5% இற்கு மேல்)	5 % இற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 5% இற்கு மேல்)	5 % இற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 5% இற்கு மேல்)	3% அல்லது அதற்கு கீழ் (நிராகரிக்கப்பட்ட பெறுமதி 5% இற்கு மேல்)

		2 இற்கு கீழ்	25%இற்கு கீழ் (நிராகரிக்க ப்பட்ட பெறுமதி 30% இற்கு மேல்)	25% இற்கு கீழ் 25% இற்கு கீழ் (நிராகரிக்கப் பட்ட பெறுமதி 30% இற்கு மேல்)	30% இற்கு கீழ் 25% இற்கு கீழ் (நிராகரிக்கப் பட்ட பெறுமதி 30% இற்கு மேல்)	30% இற்கு கீழ் 25% இற்கு கீழ் (நிராகரிக்கப் பட்ட பெறுமதி 30% இற்கு மேல்)	15% அல்லது அதற்கு கீழ் 25% இற்கு கீழ் (நிராகரிக்கப் பட்ட பெறுமதி 30% இற்கு மேல்)
அரைப்பதற்கு உள்ள இயலாவு (hard grove grind ability med)	°H		45 (நிராகரிக்க ப்பட்ட பெறுமதி 40 இற்கு கீழ்)	45 (நிராகரிக்கப் பட்ட பெறுமதி 40 இற்கு கீழ் 59 இற்கு மேல்)	50 (நிராகரிக்கப் பட்ட பெறுமதி 40 இற்கு கீழ், 59 இற்கு மேல்)	51 (நிராகரிக்கப் பட்ட பெறுமதி 40 இற்கு கீழ் 59 இற்கு மேல்)	50 (நிராகரிக்கப் பட்ட பெறுமதி 40 இற்கு கீழ் 59 இற்கு மேல்)
					குறையும் அடிப்படை (Reducing)		
சாம்பல் காயும் வெப்பம் (Ash fusion tempest)- IDT	°C				1,250 (நிராகரிக்கப் பட்ட பெறுமதி 1150 இற்கு கீழ் 1300 இற்கு மேல்)	1,250 (நிராகரிக்கப் பட்ட பெறுமதி 1150 இற்கு கீழ் 1300 இற்கு மேல்)	1,250 (நிராகரிக்கப் பட்ட பெறுமதி 1150 இற்கு கீழ் 1300 இற்கு மேல்)
சாம்பல் காயும் வெப்பம் (Ash fusion tempest)- Fluid					1325 (நிராகரிக்கப் பட்ட பெறுமதி 1250 இற்கு கீழ் 1500 இற்கு மேல்)	1325 (நிராகரிக்கப் பட்ட பெறுமதி 1250 இற்கு கீழ் 1500 இற்கு மேல்)	1,325 (நிராகரிக்கப் பட்ட பெறுமதி 1250 இற்கு கீழ் 1500 இற்கு மேல்)

இதன் பிரகாரம் 2013 ஆம் ஆண்டு முதல் 2017 ஆண்டு வரை இறக்குமதி செய்யப்பட்ட நிலக்கரியில் எதிர்பார்க்கப்பட்ட தர தேவைப்பாடு மற்றும் காணப்பட்ட நிலைமைகளை பரீட்சித்த போது அவதானிக்கப்பட்ட விடயங்கள் கீழே காட்டப்பட்டுள்ளது.

- 2013, 2014 மற்றும் 2015 ஆம் ஆண்டுகளுக்குரிய இறக்குமதி செய்யப்பட்ட நிலக்கரியில் காணப்பட்ட தர நிலைமைகள் கீழே காட்டப்பட்டுள்ளவாறு அவதானிக்கப்பட்டது.

அட்டவணை 10 – 2013–2017 வரை எதிர்பார்க்கப்பட்ட தர தேவைப்பாடுகளின் நியம நிலக்கரி அளவுகள்

வரையரை	தர தேவைப்பாடுகளிலிருந்து விலகிய நிலக்கரி அளவு (மெற்றிக் தொன்)				
	2013	2014	2015	2016	2017
எரிவின் மூலம் கிடைக்கும் அனல் சக்தி {GCV(below 5900)}	-	460,900	-	-	-
ஈரப்பதன் (Moisture)	-	55,270	-	-	-
ஆவியாதல்(Volatile matter)	-	57,530	-	-	-
சல்பர் (Sulpher)	-	114,269	-	-	-
நிராகரிக்கப்பட்ட நிலைமையில் காணப்பட்ட மொத்த அளவு	-	575,169	-	-	-
மொத்த நிலக்கரி கொள்வனவு	1,003,545	1,849,726	2,191,529	2,209,983	2,117,165
நிராகரிக்கப்பட்ட நிலைமையில் காணப்பட்ட அளவு, மொத்த நிலக்கரி கொள்வனவின் சதவீதமாக	0%	31.09%	0%	0%	0%

7.4.2 2017 ஆம் ஆண்டு முதல் 2019 ஆம் ஆண்டு வரையான காலப்பகுதி வரையின் கேள்வி ஆவணங்கள் 3.4.3. (அ) இன் பிரகாரம் இறக்குமதி செய்யப்பட்ட நிலக்கரி இருப்பு எதிர்பார்க்கப்பட்ட விவரக்குறிப்புகளுக்கு இல்லாதிருந்தால் விலை விபரங்கள் சீராக்கப்பட்டு இருப்பினை பொறுப்பேற்பதற்காக நிதி ஏற்பாடு மேற்கொள்ளப்பட்டிருந்ததுடன் வழங்குனர்கள் இணங்கிய விலை முறைமையான கப்பல் வரை மட்டும் இலவசம் (FOB) என விலை முறையின் கீழ் வழங்குனரின் பொறுப்பு ஏற்றும் துறைமுகத்தில் முடிவடைகின்றது. (பின்னிணைப்பு 20)

7.4.3 கேள்வி ஆவணங்கள் 3.5.2 இன் பிரகாரம் இறக்குமதி செய்யப்பட்ட நிலக்கரி இருப்புக்களின் தரத்தை பரிசோதிப்பதற்காக சுயாதீன பரிசோதகர்கள் ஏற்றும் போதும் இறக்கும் போதும் நியமிக்கப்பட்டிருந்தனர். ஏற்றும் போது அப்பரிசோதகர்களால் நிலக்கரி கப்பலுக்கு ஏற்பட்டதன் பின்னர் பெற்றுக் கொண்ட மாதிரியை பரிசோதித்து அறிக்கை வழங்கப்படும். இந்த அறிக்கை நிலக்கரி ஏற்றப்பட்டு முடிவடைந்த 03 நாட்களுக்குள் இலத்திரனியல் பரிமாற்றத்தின் மூலம் கொள்வனவாளருக்கு வழங்கப்படுதல் வேண்டும். (பின்னிணைப்பு 21)

7.4.4 நிலக்கரி கொள்வனவிற்காக நியமிக்கப்பட்டுள்ள விஷேட அமைச்சரவை பெறுகை குழுவிற்கு (SSCAPC) ஒத்துழைப்பு வழங்குவதற்காக 07 அங்கத்தவர்களுடன் கூடிய நிரந்தர தொழில்நுட்ப மதிப்பீட்டுக் குழுவொன்று நியமிக்கப்பட்டிருந்தது. (பின்னிணைப்பு 22)

7.4.5 நிலக்கரி கொள்வனவின் போது குறைந்த விலை விபரங்களை மதிப்பீட்டிற்கு உட்படுத்தி பொருளாதார நலன்கள் கூடுதலாக கிடைக்கும் கம்பனியொன்று தெரிவுசெய்யப்பட வேண்டியதுடன் நிலக்கரி இறக்குமதியின் போது சுற்றாடலுக்கு ஏற்படும் தாக்கங்களை மதிப்பீட்டிற்கு உட்படுத்துவதன் மூலம் ஏற்படக்கூடிய சுற்றாடல் சிக்கல்களை குறைத்துக்கொள்ளலாம்.

7.4.6 சாம்பல் படிந்துள்ள நிலத்தை பௌதீக ரீதியாக பரீட்சித்த போது இந்த இரண்டு வகை சாம்பலும் வெவ்வேறாக படிந்திருந்தமை அவதானிக்கப்பட்டது.

7.5 நிலக்கரி தகனத்தின் பக்க விளைவுகள் (பறக்கும் சாம்பல் மற்றும் கீழ்சாம்பல்)

7.5.1 மின் உற்பத்தி செயன்முறைக்காக நிலக்கரி எரிக்கப்படும் சந்தர்ப்பத்தில் பிரதானமாக இரண்டு பக்க விளைவுகள் ஏற்படுவதுடன் அவை பறக்கும் சாம்பல் (Fly Ash) மற்றும் கீழ் சாம்பல் (Bottom Ash) என அழைக்கப்படுகின்றன. இவ்வாறு வெளியேற்றப்படும் சாம்பல் வகைகளில் பறக்கும் சாம்பல் சூழலுக்கு விடுவிக்கப்படுவதைத் தடுக்கும் வகையில் இலத்திரனியல் அசைவற்ற வீழ்படிவாக்கல் முறை பயன்படுத்தப்படுகின்றது. லத்திரனியல் அசைவற்ற வீழ்படிவாக்கல் முறை (Electro Static Precipitator ESP) எனப்படுவது எதிர்க்கவர்ச்சி கொண்ட தகரத்தினாலான ஒரு வடியாக இருப்பதுடன் இதன்மூலம் பறக்கும் சாம்பல் துணிக்கைகளில் 99.3 வீதம் வடிகட்டப்படுகின்றது. வடிகட்டப்பட்ட பறக்கும் சாம்பலானது வீழ்படிவாக்கல் தகரத்தின் மீது படிந்து நிற்கின்ற அதேவேளை பொருத்தப்பட்டுள்ள அதிர்வாக்கிகள் (Vibrators) மூலம் பறக்கும் சாம்பல் வேறாக்கப்பட்டு பெரிய தொட்டிகளில் (Bin) வைக்கப்படுகின்றது. 900 மெகா வொட் மின்சாரத்தினை உற்பத்தி செய்கையில் தினந்தோறும் அதிகூடிய அளவான சுமார் 900 மெற்றிக் தொன் பறக்கும் சாம்பலும், (Fly Ash) சுமார் 180 மெற்றிக் தொன் கீழ் சாம்பலும் (Bottom Ash) பக்க விளைவாக உற்பத்தியாகின்றன. இத்திட்டத்தின் திட்டமிடலின் போது பறக்கும் சாம்பல் சீமெந்து உற்பத்தியாளர்களால் கொண்டுசெல்லப்படும் எனவும் கீழ் சாம்பல் மின் நிலையத்தின் சாம்பல் களஞ்சியத்தில் 30 வருடங்கள் வரை சேமித்து வைப்பதற்கான நடவடிக்கை எடுக்கப்படும் எனவும் குறிப்பிடப்பட்டிருந்தது. இச் சாம்பல் களஞ்சியம் சுமார் 25 ஏக்கர் விஸ்தீரணமான நிலத்தில் அமைந்துள்ளது. மின் நிலையத்தில் இயங்குகின்ற ஒரு பிரிவின் எதிர்பார்க்கப்படும் ஆயுட்காலம் சுமார் 35 வருடங்கள் என திட்டமிடலின் போது இனங்காணப்பட்டிருந்ததுடன், இதனடிப்படையில் 2018 ஆம் ஆண்டின் பின்னர் இந்த 03 பிரிவுகளும் 65 வீதமான (பந்தி இல. 7.9.3) வினைத்திறனுடன் செயற்படுவது என்ற எடுகோளின் கீழ் உற்பத்தியாகக் கூடிய பறக்கும் சாம்பல் மற்றும் கீழ் சாம்பல் தொகையானது பின்வருமாறு கணக்கிடப்பட்டது.

அட்டவணை 11 - 2018 ஆம் ஆண்டு முதல் எதிர்காலத்தில் உருவாகக்கூடிய பறக்கும் சாம்பலின் அளவு

	ஆரம்ப ஆண்டு	35 ஆண்டு ஆயுட்காலம் பூர்த்தி செய்யப்படும் ஆண்டு	2018 ஆம் ஆண்டு முதல் முன் கொண்டு வரப்படும் ஆண்டுகளின் அளவு	(65% செயற்திறன்) நாளொன்றில் உருவாகும் பறக்கும் சாம்பல் (மெற்றிக் தொன்)	ஒரு ஆண்டில் உருவாகும் பறக்கும் சாம்பல் (மெற்றிக் தொன்)	2018 ஆம் ஆண்டு முதல் எதிர்காலத்தில் உருவாகக் கூடிய பறக்கும் சாம்பல் (மெற்றிக் தொன்)
பிரிவு 1	2011	2046	28	195	71,175	1,992,900
பிரிவு 2	2014	2049	31	195	71,175	2,206,425
பிரிவு 3	2014	2049	31	195	71,175	2,206,425
மொத்தம்						6,405,750

அட்டவணை 12 - 2018 ஆம் ஆண்டு முதல் எதிர்காலத்தில் உருவாகக்கூடிய கீழ் சாம்பல் அளவு

	ஆரம்ப ஆண்டு	35 ஆண்டு ஆயுட்காலம் பூர்த்தி செய்யப்படும் ஆண்டு	2018 ஆம் ஆண்டு முதல் முன் கொண்டு வரப்படும் ஆண்டுகளின் அளவு	(65%) நாளொன்றில் உருவாகும் கீழ் சாம்பல் (மெற்றிக் தொன்)	ஒரு ஆண்டில் உருவாகும் கீழ் சாம்பல் (மெற்றிக் தொன்)	2018 ஆம் ஆண்டு முதல் எதிர்காலத்தில் உருவாகக் கூடிய கீழ் சாம்பல் (மெற்றிக் தொன்)
பிரிவு 1	2011	2046	28	39	14,235	398,580
பிரிவு 2	2014	2049	31	39	14,235	441,285
பிரிவு 3	2014	2049	31	39	14,235	441,285
மொத்தம்						1,281,150

மேலே குறிப்பிடப்பட்ட உப பொருட்களை வெளியேற்றும் நடைமுறைக்கு உரித்தாக மேற்கொண்ட கணக்காய்வு பரிசோதனையின் போது அவதானிக்கப்பட்ட விடயங்கள் கீழே காட்டப்பட்டுள்ளன.

வரைபட இலக்கம் 05 சாம்பல் தொகுதி



7.5.2 2015 ஆம் ஆண்டு முதல் 2018 மே 10 ஆந் திகதி வரை 425,008 மெற்றிக் தொன் அளவில் பறக்கும் சாம்பல் (Fly Ash) விற்பனை செய்யப்பட்டிருந்ததுடன் இக்காலப்பகுதியில் எஞ்சிய 443,909 மெற்றிக் தொன் அளவிலான பறக்கும் சாம்பல் (Fly Ash) சாம்பல் தொகுதியில் படிந்து காணப்பட்டது. (பின்னிணைப்பு - 23)

7.5.3 பறக்கும் சாம்பலை (Fly Ash) சீமெந்து கைத்தொழில் மற்றும் ஏனைய நிர்மாண நடவடிக்கைகளுக்கு பயன்படுத்துவது பொருத்தமானதொன இலங்கை தேசிய பொறியியல்

ஆய்வு மற்றும் அபிவிருத்தி மத்திய நிலையம் (NERDC) பரிந்துரைத்திருந்தது. மேலும் பறக்கும் சாம்பல் மற்றும் கீழ் சாம்பலைப் பயன்படுத்தி மேற்கொள்ளப்படும் உற்பத்திகளை விற்பனை செய்வதற்கும் அபிவிருத்தி செய்வதற்கும் அதற்குத் தேவையான தொழில்நுட்ப அறிவினை சிறிய மற்றும் நடுத்தர கைத்தொழில் முயற்சியாளர்களுக்குப் பெற்றுக் கொடுக்கவும் அந்நிறுவனம் இலங்கை மின்சார சபையுடன் 2017 ஆகஸ்ட் 08 ஆம் திகதி ஒரு புரிந்துணர்வு ஒப்பந்தத்தினைக் கைச்சாத்திட்டிருந்தது. (பின்னிணைப்பு - 24)

- 7.5.4 2017 ஏப்ரல் 20 ஆந் திகதிய பத்திரிகை விளம்பரத்தின் மூலம் (பின்னிணைப்பு - 25) தினந்தோறும் 900 வொட் மின்சாரத்தினை உற்பத்தி செய்கையில் பக்க விளைவாக எஞ்சுகின்ற பறக்கும் சாம்பலினை அகற்றுவதற்கு விலைமனு கோரப்பட்டிருந்ததுடன் 08 நிறுவனங்கள் நிலைமை இலக்கம் 01 மற்றும் நிலைமை இலக்கம் 02 இன் கீழ் பறக்கும் சாம்பலைக் கொள்வனவு செய்வதற்காக 2018 தொடக்கம் 2022 வரையிலான 05 வருட காலப்பகுதிக்கான ஒப்பந்தங்களைக் கைச்சாத்திட்டிருந்தன. பின்னிணைப்பு - 26)
- 7.5.5 2017 நவம்பர் 22 ஆந் திகதி நடந்த அமைச்சரவைக் கூட்டத்தில் விலைமனு இலக்கம் LV/CEPD/FLY/Ash/02 இன் கீழ் நிதி மற்றும் ஊடகத்துறை அமைச்சரின் அவதானிப்புகளில் இனங்காணப்பட்டுக் குறிப்பிடப்பட்டுள்ள நிபந்தனைகளின் அடிப்படையில் அமைச்சரவை விஞ்ஞாபனத்தின் 7 ஆவது பந்தியின் 7.1 முதல் 7.9 வரையிலான ஆலோசனைகளுக்கு அமைவாக 05 வருட காலம் சாம்பல் விற்பனைக்காக அங்கீகாரத்தைப் பெற்றுக் கொடுப்பதற்கு தீர்மானிக்கப்பட்டிருந்தது. பின்னிணைப்பு - 27)
- 7.5.6 மேற்குறிப்பிட்ட ஆலோசனைகளுக்கு அமைவாக ஒப்பந்தங்கள் அமுல்படுத்தப்படுவது நடைமுறைப்படுத்தப்பட்டால் வருடாந்தம் ஒதுக்கப்படுகின்ற சாம்பலின் அளவு 480,000 மெற்றிக் தொன் எனவும் அதன் மூலம் ஈட்டப்படக்கூடிய வருமானம் ரூபா 874.95 மில்லியன் எனவும் மதிப்பிடப்பட்டிருந்தது. (பின்னிணைப்பு - 28)
- 7.5.7 அதனடிப்படையில் 2015 ஆம் ஆண்டு முதல் 2018 ஆம் ஆண்டு வரை கீழ் 30 கியூப் மற்றும் 858 லோட் கீழ் சாம்பல் (Bottom Ash) விற்பனையின் மூலம் ரூபா. 438,335 வருமானம் மின் நிலையத்தினால் பெறப்பட்டிருந்தது. (பின்னிணைப்பு - 29)
- 7.5.8 மின் நிலையத்தில் எஞ்சுகின்ற பறக்கும் சாம்பல் (Fly Ash) மற்றும் கீழ் சாம்பல் (Bottom Ash) மின் நிலையத்தின் அருகில் சுமார் 25 ஏக்கர் விஸ்தீரணமான ஒரு காணியில் சேர்க்கப்படுகின்றது. காற்று அதிகமாக வீசுகின்ற காலங்களில் (மே, ஜூன், ஜூலை, ஆகஸ்ட் மற்றும் செப்டெம்பர் ஆகிய மாதங்களில்) பறக்கும் சாம்பல் சூழலுடன் கலக்கின்றது.
- 7.5.9 சாம்பல் வைக்கப்பட்டுள்ள நிலத்தில் பௌதீக பரிசோதனையின் போது இந்த இரு வகையும் வெவ்வேறாக வைக்கப்பட்டிருந்தமை அவதானிக்கப்பட்டது.
- 7.5.10 பறக்கும் சாம்பல் (Fly Ash) பிரிவில் படியும் போது நீருடன் கலந்து டிபர் பிரிவு வண்டிகள் மூலம் போக்குவரத்து செய்யப்பட்டு போடப்பட்டு வருவதுடன் அச் சாம்பல் திண்மான பொருளொன்றாக (Slurry) தற்போது 7 ஏக்கர்களுக்கு அண்மித்த அளவினை மேவுகை செய்துள்ளது. 2018 மே 10 ஆந் திகதி வரை இடப்பட்டுள்ள சாம்பல் பிரிவின் உயரம் 10 மீற்றருக்கு அண்மித்து உள்ளதாகவும் படிவாக வைக்கப்படக் கூடிய உயரம் அண்ணளவாக 25 மீற்றர் எனவும் மின்நிலையத்தின் சுற்றாடல் உத்தியோகத்தரால் குறிப்பிடப்பட்டிருந்தது.

7.5.11 நீருடன் கலந்து பறக்கும் சாம்பல் (Fly Ash) திண்மமானதன் பின்னர் காற்றுடன் சேராத காரணத்தினால் தூசாக காற்றுடன் கலத்தல் இடம்பெறாது எனினும் நீருடன் கலந்து கலவையாகாது பறக்கும் தூளாக காற்றுடன் சேர்ந்து கொள்ளலாம்.

7.5.12 கீழ் சாம்பல் (Bottom Ash) மின் சக்தி உற்பத்தி செயற்பாட்டின் போது நீருடன் சேர்வதால் ஈரத்தன்மையுடன் காணப்படுகின்றது.

வரைபட இலக்கம் 06 சாம்பல் படிவாக வைக்கப்படல்



7.6. சுற்றோட்ட வாயு நிலைமையை நியமத்தில் பேணிச் செல்லல்

7.6.1 நிலக்கரி எரிவு செயற்பாட்டின் போது உருவாகும் சகல சாம்பல் தூசு துணிக்கைகள் சூடான காற்றுடன் பறந்து சாம்பலாக ஒரு மணித்தியாலத்திற்கு 12 மற்றும் 14 தொன்னிற்கும் இடைப்பட்ட அளவில் வெளியேறுகின்றது. இந்த வெளியிடல் வாயு நிலைமின்னியல் வீழ்படிவாக்கியின் செயற்திறன்தன்மையை (ESP) வடிகட்டலுடன் வெளியிடப்படும் வாயு கந்தக வாயு நீக்கி (FGD – Flue Gas Desulpherization) உட்புகுவதுடன் இவ்வாயு கடல் நீருடன் கலந்து கந்தகம் எரிவதால் உருவாகும் வாயுவை அகற்றி பின்னர் 150 மீற்றர் உயரமான புகை கோபுரத்தின் மூலம் மேல் வானத்திற்கு விடப்படுகின்றது.

வரைபட இலக்கம் 07 வெளியேறும் எரி வாயு கந்தகத்தை அகற்றும் மூன்று பிரிவுகளுக்குரிய புகைக்கூடு



12 ஆம் இலக்க வடமேல் மாகாண சுற்றாடல் சாசனத்தின் பிரகாரம் 2010 திசெம்பர் 21 ஆந் திகதிய 1685/11 ஆம் இலக்க (பின்னிணைப்பு - 18) வர்த்தமானி மூலம் சுற்றோட்டத்தின் வாயு நிலைமை கட்டளை பிரசித்தப்படுத்தப்பட்டிருந்தது. இதன் கீழ் மாகாண சுற்றாடல் அதிகார சபையால் அங்கீகரிக்கப்பட்ட உபகரணங்கள் பயன்படுத்தப்பட்டு நிர்ணயிக்கப்பட்ட வாயு நிலைமை நியமம் பேணப்பட்டு வருகின்றதா என பரீட்சிக்கப்படல் வேண்டும். இந்த கட்டளை மூலம் பிரதான 06 மாசுக்கள் இனங்காணப்பட்டுள்ளது.

01	துணிக்கை	PM ₁₀ (வாயு விட்டம் 10 மைக்ரோ மீற்றருக்கு கீழ்)
02	துணிக்கை	PM _{2.5} (வாயு விட்டம் 10 மைக்ரோ மீற்றருக்கு கீழ்)
03	நைதரசன் டயொக்சைட்	NO ₂
04	சல்பல்யர் ஓக்சைட்	SO ₂
05	ஓசோன்	- O ₃
06	காபன் மொனொக்சைட்	- CO

நிலக்கரி எரிவின் போது வளிமண்டலத்திற்கு விடுவிக்கப்படும் கழிவுகள் சில பின்வருமாறு இனங்காணப்பட்டுள்ளது. (பின்னிணைப்பு -30)

01	துணிக்கை	- PM ₁₀ (வாயு விட்டம் 10 மைக்ரோ மீற்றருக்கு கீழ்)
02	துணிக்கை	- PM _{2.5}
03	நைதரசன் ஓக்சைட்	- NO ₂
04	சல்பல்யர் ஓக்சைட்	- SO ₂
05	கானீரொட்சைட்	- CO ₂
06	மிதென்	- CH ₄
07	இரசம் உட்பட பார உலோகங்கள்	

- 7.6.3. 2018 மே 21 ஆந் திகதி முதல் 2018 யூன் 02 வரை சுற்றோட்டத்திலுள்ள வாயு தொடர்பாக லக்ஷிய மின் நிலையத்தினால் கணக்காய்விற்காக சமர்ப்பிக்கப்பட்ட தரவு பரிசோதனையின் போது அவதானிப்புக்கள் கீழே காட்டப்பட்டுள்ளன.

அட்டவணை 13 - சுற்றோட்டத்திலுள்ள வளி அவதானிப்பு தரவுகள்

திகதி	பிரிவு 1 (Unit 1)	பிரிவு 2 (Unit 2)	பிரிவு 3 (Unit 3)
	சுற்றோட்டத்திலுள்ள வாயு - NOx ,SO ₂ ,CO, CO ₂ ,O ₂		
2018/05/21	பிரிவு மூடப்பட்டிருந்தது.	பரிசோதிக்கப்பட்டிருந்தது	பரிசோதிக்கப்பட்டிருந்தது
2018/05/23	பரிசோதிக்கப்பட்டிருக்கவில்லை	பரிசோதிக்கப்பட்டிருந்தது	பரிசோதிக்கப்பட்டிருந்தது
2018/05/25	பரிசோதிக்கப்பட்டிருந்தது	பரிசோதிக்கப்பட்டிருந்தது	பரிசோதிக்கப்பட்டிருந்தது
2018/05/27	பரிசோதிக்கப்பட்டிருந்தது	பிரிவு மூடப்பட்டிருந்தது.	பிரிவு மூடப்பட்டிருந்தது.
2018/05/31	பரிசோதிக்கப்பட்டிருந்தது	பிரிவு மூடப்பட்டிருந்தது.	பிரிவு மூடப்பட்டிருந்தது.
2018/06/02	பரிசோதிக்கப்பட்டிருந்தது	பரிசோதிக்கப்பட்டிருந்தது	பிரிவு மூடப்பட்டிருந்தது.

(பின்னிணைப்பு - 31)

- 7.6.4 மேலும் மாலே மாநாட்டின் கீழ் சர்வதேச எல்லை வளி மாசடைதல் காரணமாக அமில மழை ஏற்படும் இயலுமையை இனங்காணுதல் மற்றும் அமில மழை கட்டுப்பாட்டு செயற்பாடுகளை செயற்படுத்துவதற்காக மழை நீரை முழுமையாக சேகரித்து அமில காரம் தன்மை பரிட்சிப்பு மேற்கொள்ளப்பட வேண்டும். (பின்னிணைப்பு - 32)
- 7.6.5 புகை தூண் ஊடாக வெளியேற்றப்படும் எரியும் வாயுக்களின் தன்மையை ஆய்வு செய்தல் மற்றும் வாயுக்களில் உள்ளடங்கியுள்ள துணிக்கைகள் கலக்கும் வாயுக்களின் தரம் சப்தம் மற்றும் அதிர்வு (Noise and Vibration) மற்றும் நீரின் தரத்தினை பரிட்சிப்பதற்காக 2018 ஏப்ரல் 25 ஆந் திகதி தொழில்நுட்ப பயிற்சி நிலையத்திற்கு LV/T/2018/127 ஆம் இலக்க கடிதத்தின் மூலம் ரூபா 3.95 மில்லியன் பெறுமதியான ஒப்பந்தம் வழங்கப்பட்டிருந்தது.
- 7.7 மின்நிலையத்தின் குளிரூட்டும் முறைமையின் தேவைக்காக நீரைப் பெற்றுக் கொள்ளல் மற்றும் சுத்திகரிப்பின் பின்னர் நீர் கடலுக்குள் விடப்படும் செயற்பாடு.
- 7.7.1 நிலையத்தின் செயற்பாட்டு நடவடிக்கைகளுக்காக பயன்படுத்தப்படும் குளிரூட்டி முறைமைக்காக (Cooling Water System) கடல் நீர் பயன்படுத்தப்படுவதுடன் அலகு ஒன்றிற்கு (Per 1 Unit) மணித்தியாலமொன்றுக்கு 58,000 மீற்றர் அளவிளான நீர் பெற்றுக்கொள்ளப்படுவதுடன் அது அண்ணளவாக ஒரு செக்கனுக்கு 1,000 கியூபிக் மீற்றருக்கு அண்மித்த அளவொன்றாகும்.

வரைபட இலக்கம் 08 குளிர்நீரும் முறைமையின் தேவைக்காக நீரைப் பெற்றுக் கொள்ளல்



7.7.2 கடல் நீரில் காணப்படும் தரத்தை (Raw Water Quality) பரீட்சிப்பதற்கு 02 வரையறைகள் பயன்படுத்தப்பட்டு வருவதுடன் அவையாவன நீரின் கார்ப் பெறுமதி (PH) மற்றும் வெப்பம் (Temperature) ஆகியவையாகும் மேற்குறித்த வரையறைகள் பரீட்சிப்பதன் மூலம் மீண்டும் அந்நீர் கடலுக்கு வெளியேற்றப்படும் இடத்தில் (Discharge Point) பேணப்பட வேண்டிய தரங்களை கட்டுப்படுத்துவதற்காக தேவையான நடவடிக்கைகளை எடுக்க வேண்டியுள்ளது.

7.8 நிலக்கீழ் நீர்

7.8.1 2017 மார்ச் 16 ஆந் திகதி 2010/23 ஆம் இலக்க நீர் வளங்கள் சபையின் அதி விஷேட வர்த்தமானியின் பிரகாரம் (பின்னிணைப்பு - 33) அரசு நிறுவனங்கள் தனது செயற்திட்டங்களுக்காக இயற்கையான நீர் ஊற்றொன்று அல்லது ஆழமான அல்லது ஆழமற்ற நிலக்கீழ் நீரை பயன்பாட்டிற்கு எடுத்தால் நீர் வளங்கள் சபையினால் வழங்கப்படும் நியதிகளுக்கு இணங்க அச் செயற்திட்டங்கள் செயற்படுத்தப்படல் வேண்டும். மின் நிலையத்தினால் 2017 திசெம்பர் வரையிலும் 74 ஆழமற்ற கிணறுகளை பயன்படுத்துவதற்காக விண்ணப்பிக்கப்பட்டிருந்தது.

7.8.2 2018 ஏப்ரல் 23 ஆந் திகதி LV/T/2018/0126 ஆம் இலக்க கடிதத்தின் மூலம் நிலையத்தின் வளவிலும் சுற்றுப்புற நிலக்கீழ் நீரில் காணப்படும் தரத்தன்மை தொடர்பாக தொடர்ச்சியான பரிசோதனைக்கான ஒப்பந்தம் நீர் வளங்கள் சபைக்கு வழங்கப்பட்டிருந்ததுடன் அதன் மதிப்பீட்டுப் பெறுமதி ரூபா 3.95 மில்லியன் ஆக இருந்தது. (பின்னிணைப்பு - 34)

7.9 மின் நிலையத்தின் செயலாற்றல் மற்றும் தொழிற்பாட்டு செயற்பாடுகளை தற்காலிகமாக நிறுத்துதல்.

7.9.1 மின்நிலைக் காரணி (Plant Factor) செயற்படுத்தப்படும் ஓட்ட நிலையக் காரணி (Running Plant Factor) மற்றும் காணப்படும் காரணி (Available Factor) போன்ற மின்சக்தி உற்பத்தி செயற்பாட்டின் போது செயலாற்றல் மதிப்பீடு செய்யும் மூன்று காரணிகளாகும். இந்த கூட்டென் பின்வருமாறு கணிப்பிடப்படுகின்றது.

$$\bullet \text{ மின்நிலைய காரணி} = \frac{\text{உள்ளவாறான மின் உற்பத்தி (பெயரளவுக் காலத்தினுள்)}}{\text{கருத்திற் கொள்ளப்பட்ட காலப்பகுதியில் பிறப்பிக்கக்கூடிய மின் உற்பத்தி}}$$

- செயற்படுத்தப்படும் மின்நிலைய காரணி
காலப்பகுதியினுள் பாவனைக்கு எடுக்க முடியுமான மொத்த இயலளவு பயன்படுத்தப்பட்டால் உற்பத்தி செய்யக்கூடிய உற்பத்திக்கு உள்ளவாறான உற்பத்தியின் பங்களிப்பு கருத்திற் கொள்ளப்படும்.
- காணப்படும் காரணி
திட்டமிடப்படாத தொழிற்பாடுகள் தடைப்படுதல் மின்சக்தி வீணாகுவதை தவிர்ப்பதற்காக திட்டங்கள் தயாரிக்க முடியுமாக இருந்ததுடன் இதன் மூலம் தொழிற்பாட்டு செயற்பாட்டின் விளைத்திறனை அதிகரித்துக் கொள்ளலாம்.

7.9.2 2016 ஆம் ஆண்டில் லக்ஷிய மின்நிலையத்தின் முதலாவது பிரிவில் (Unit 1) நிலையக் காரணி செயற்படுத்தப்படும் நிலையக் காரணி மற்றும் காணப்படும் காரணிகள் முறையே 31.38, 38.93 மற்றும் 48.23 என அறிக்கையிடப்பட்டிருந்தது. இந்த இரண்டு பிரிவுகள் மற்றும் மூன்று பிரிவுகளுக்கு (Unit 2 and Unit 3) ஒப்பாக கீழான பெறுமதியொன்றாக இருந்தது. (பின்னிணைப்பு - 05)

7.9.3 கடந்த 03 ஆண்டுகளுக்குரித்தாக மின் நிலையத்தின் உற்பத்தி செய்யக்கூடிய இயலளவு மற்றும் செயலாற்றல் கீழேயுள்ளவாறு இருந்தது.

அட்டவணை இல. 14 மின் நிலையத்தில் உற்பத்தி செய்யக்கூடிய இயலளவு மற்றும் செயலாற்றல்

ஆண்டு	உற்பத்தி செய்யக்கூடிய இயலளவு மெகா வொட்	உற்பத்தி செய்யக்கூடிய இயலளவு கிகா வொட் மணித்தியாலம்	உள்ளவாறு உற்பத்தி கிகா வொட் மணித்தியாலம்	உள்ளவாறு உற்பத்தி செய்யக்கூடிய இயலளவின் சதவீதமாக
2015	900	$900 \times 8,760 / 1,000 = 7,884$	4,443	56.35
2016	900	$900 \times 8,760 / 1,000 = 7,884$	5,047	64.01
2017	900	$900 \times 8,760 / 1,000 = 7,884$	5,103	64.72

7.9.4 2016 ஆம் ஆண்டின் ஜனவரி மாதம் முதல் 2018 ஏப்ரல் 30 வரை லக்ஷிய மின் நிலையத்தின் செயற்பாட்டு நடவடிக்கைகள் தற்காலிகமாக இடைநிறுத்தப்பட்டிருந்த சந்தர்ப்பங்கள் கீழே காட்டப்பட்டுள்ளவாறு அவதானிக்கப்பட்டது. (பின்னிணைப்பு - 35)

அட்டவணை இல. 15 - மின் நிலையத்தின் செயற்பாட்டு நடவடிக்கைகள் தற்காலிகமாக நிறுத்தப்பட்டிருந்த சந்தர்ப்பங்கள்

ஆண்டு	முதலாவது பிரிவு மூடப்பட்ட நாட்களின் எண்ணிக்கை	இரண்டாவது பிரிவு மூடப்பட்ட நாட்களின் எண்ணிக்கை	மூன்றாவது பிரிவு மூடப்பட்ட நாட்களின் எண்ணிக்கை
2016	223.52	17.58	21.54
2017	55.31	53.43	82.0
2018/04/30	13.02	23.52	-
மொத்தம்	291.85	94.53	103.54

இவ்வாறு தற்காலிகமாக நிறுத்தி வைப்பதற்காக பிரதான 5 காரணங்கள் இனங்காணப்பட்டிருந்ததுடன் அவை பின்வருமாறு காணப்பட்டது.

- 1) பிரதான பராமரிப்பு நடவடிக்கை ஒன்றை பூர்த்தி செய்யப்பட்டதன் பின்னர் பிரிவின் சரியான செயற்பாட்டை உறுதிப்படுத்துவதற்கு பரிசோதனை இடம்பெறும் காலப்பகுதி (Commissioning)
- 2) உள்ளக வழக்கங்கள் (Internal fault)
- 3) வெளியக வழக்கங்கள் (External fault)
- 4) பராமரிப்பு நடவடிக்கைகள் (Maintenance)
- 5) முறைமைகள் கட்டுப்பாடு கோரல் (SCC request)

அட்டவணை 16 - செயற்பாட்டு நடவடிக்கைகளை தற்காலிகமாக நிறுத்தி வைப்பதற்கான காரணங்களும் சந்தர்ப்பங்களும் (பின்னிணைப்பு - 36)

பிரிவு மற்றும் ஆண்டு		Commiss- -onning	உள்ளக வழக்கங்கள்	வெளியக வழக்கங்கள்	பராமரிப்பு நடவடிக்கைகள்	முறைமைகள் கட்டுப்பாடு கோரல்
		நிறுத்தி வைக்கப்பட்ட காலம் நாட்கள்	நிறுத்தி வைக்கப்பட்ட காலம் நாட்கள்	நிறுத்தி வைக்கப்பட்ட காலம் நாட்கள்	நிறுத்தி வைக்கப்பட்ட காலம் நாட்கள்	நிறுத்தி வைக்கப்பட்ட காலம் நாட்கள்
பிரிவு 1	2016	9.68	137.49	29.38	40.89	6.07
	2017	-	55.31	-	-	-
	2018 மே 10 வரை	-	-	-	13.02	-
மொத்தம்		9.68	192.80	29.38	53.91	6.07
பிரிவு 2	2016	-	5.63	11.95	-	-
	2017	-	53.21	0.22	-	-
	2018 மே 10 வரை	-	23.52	-	-	-
மொத்தம்		-	82.36	12.17	-	-
பிரிவு 3	2016	-	6.14	15.40	-	-
	2017	-	71.14	-	10.86	-
	2018 மே 10 வரை	-	-	-	-	-
மொத்தம்		-	77.28	15.40	10.86	-
மொத்தம்		9.68	352.44	56.95	64.77	6.07

7.9.5 2018 ஆம் ஆண்டு முதல் 2021 ஆம் ஆண்டு வரை மின்நிலையத்தினால் எதிர்கால பராமரிப்புத் திட்டம் தயாரிக்கப்பட்டிருந்தது. அதன் பிரகாரம் 2019 ஆம் ஆண்டில் போது இரண்டு பிரிவிலும் பிரதான வகை பராமரிப்பு நடவடிக்கையும் திட்டமிடப்பட்டிருந்ததுடன் இவ்வாறான சந்தர்ப்பத்தின் போது பராமரிப்பிற்கு தேவையான முழுப்பிரிவும் அண்ணளவாக 100 நாட்கள் காலத்திற்காகவும் 45 நாட்கள் காலத்திற்காகவும் நிறுத்தல் இடம் பெற வேண்டியுள்ளது. தேசிய மின் உற்பத்தி செயற்பாட்டிற்காக மின் நிலையத்தின் பங்களிப்பு 35 சதவீதத்திற்கு அண்மித்த அளவொன்று 2017 ஆம் ஆண்டின் போது வழங்கப்பட்டிருந்ததுடன் இவ்வாறான பராமரிப்பு நடவடிக்கைகளின் போது இந்த பங்களிப்பு அளவு குறைவடையலாம். (பின்னிணைப்பு - 37)

7.10 காலநிலை தரவுகள்

காற்றின் வேகம் மற்றும் காற்றின் திசையை அளப்பதற்காக மின் நிலையத்தில் செயற்படுத்தப்பட்ட காலநிலை தரவு சேகரித்தல் பிரிவுகள் இரண்டு இடங்களில் பொருத்தப்பட்டிருந்ததுடன் இதன் மூலம் பெற்றுக்கொண்ட தரவுகள் இரண்டு வாரங்களுக்கு ஒருமுறை Pen Drive மூலம் பெற்றுக் கொள்ளப்பட்டு அவதானிக்கப்பட்டது (பின்னிணைப்பு - 38)

7.11 சுற்றாடல் சிக்கல்களை தவிர்ப்பதற்கு செயற்படுத்தப்படும் நிகழ்ச்சித்திட்டங்களின் செயன் முன்னேற்றம்
சுற்றாடல் சிக்கல்களை தவிர்ப்பதற்கு மின்நிலையத்தினால் செயற்படுத்துவதற்கு எதிர்பார்க்கப்பட்ட 2017 நவம்பர் 02 ஆந் திகதி பீபீஎம்/எல்வீசி/சிவில்/37-88 ஆம் இலக்க புத்தளம் மாவட்ட செயலகம் தொடர்புபடுத்தப்பட்ட அலுவலக முகாமையானரின் கடிதத்தில் உள்ளடக்கப்பட்ட பின்வரும் விடயங்கள் தொடர்பாக 2018 மே 10 ஆந் திகதி பௌதீக பரிசோதனையின் போதும் 2018 யூன் 05 ஆந் திகதி எல்பீபீ/பீபீஎம்/பொது/6-148 ஆம் இலக்க (பின்னிணைப்பு - 39) கணக்காய்வாளர் தலைமை அதிபதிக்கு தொடர்புபடுத்தப்பட்ட கடிதத்தில் குறிப்பிடப்பட்ட விடயங்கள் கீழே காட்டப்பட்டுள்ளன.

7.11.1 சிக்கல் - 01 நிலக்கரி தொகுதியில் உள்ள தூசு துணிக்கைகள், காற்றுடன் பரவுவதை தடுத்தல்

7.11.1.1 செயற்பாடு 01 - நிலக்கரி தொகுதியினை சுற்றி காற்றுத்தடையை நிர்மாணித்தல்.

7.11.1.1.1 அவதானிப்பு - 01 நிலக்கரி தொகுதியினை சுற்றி 15 மீற்றர் உயரம் மற்றும் 460 மீற்றர் (பின்னிணைப்பு - 40) நீளம் உடையது.

வரைபு இலக்கம் 09 நிலக்கரி தொகுதியை சுற்றியுள்ள காற்று தடை



7.11.1.1.2 **அவதானிப்பு - 2** இலங்கை மின்சார சபையினால் 2016 திசெம்பர் 29 ஆந் திகதி தயாரிக்கப்பட்டு நிர்மாணிப்பதற்கு உத்தேசிக்கப்பட்ட 1183.5 மீற்றர் நீளமான (பின்னிணைப்பு - 41) காற்றுத் தடைக்கான மதிப்பிடப்பட்ட கிரயம் ரூபா 600 மில்லியன் அளவில் இருந்தது. 2017 ஒக்தோபர் 05 ஆந் திகதி முதல் இந்த செயற்பாட்டிற்காக பெறுகை நடவடிக்கைகள் ஆரம்பிக்கப்பட்டிருந்ததுடன் 2018 ஜனவரி 05 ஆந் திகதி ரூபா 483,794,564 (பின்னிணைப்பு -42) பெறுமதிக்கு ஒப்பந்தம் வழங்கப்பட்டிருந்தது.

7.11.1.2 **நடைமுறை 2** நிலக்கரி தொகுதியின் நடமாடும் நீர் தெளிக்கும் இயந்திரங்கள் மற்றும் நீர் தெளிப்பு முறைமை செயற்படுத்தல்

7.11.1.2.1 **அவதானிப்பு** - நிலக்கரி குவித்து வைக்கப்பட்டிக்கையிலும் செயற்பாட்டு நடவடிக்கைகளுக்காக தேவையான நிலக்கரி தொகுதியிலிருந்து அகற்றும் போதும் அதன் மூலம் ஏற்படும் தூசு துணிக்கைகள் பரவுவதை குறைப்பதற்காக நிலக்கரி தொகுதியில் நீர் தெளிக்கும் முறையிலும் தூசு துணிக்கைகள் கிராமப்புறத்திற்கு பரவுவதை குறைப்பதற்காக 02 நடமாடும் நீர் தெளிக்கும் இயந்திரங்களையும் செயற்படுத்துவதற்கு நடவடிக்கை எடுக்கப்பட்டுள்ளது.

7.11.1.3 **நடைமுறை 03** - நிலக்கரி தொகுதி மற்றும் கிராமத்திற்கு இடையே பாதுகாப்பு வலயமொன்றை நிர்மாணித்தல்

7.11.1.3.1 **அவதானிப்பு 1** - நிலக்கரி தொகுதியை விரிவு படுத்தப்பட்டமையால் தற்போது காணப்படும் சுய பாதுகாப்பு வலயம் (Buffer Zone) சிறியதாக இருந்ததுடன் அதனால் நிலக்கரி தூள் காற்று மூலம் மிக விரைவில் பரவும் சந்தர்ப்பம் அதிகரிப்பது அவதானிக்கப்பட்டது. இந்த சுய பாதுகாப்பு வலயத்தை (Buffer Zone) விரிவாக்குவதற்கான 100 மீற்றர் காணி துண்டொன்று (25 ஏக்கர்) புதிதாக கொள்வனவு செய்வதற்காக 2017 ஆம் ஆண்டின் போது நடவடிக்கைகள் ஆரம்பிக்கப்பட்டன.

7.11.1.3.2 **அவதானிப்பு 02** - நிலக்கரி தூசு துணிக்கைகள் சுற்றியுள்ள சூழலுக்கு பரவுவதை குறைப்பதற்காக இந்த வலயத்தில் பசுமை மேவுகையொன்று வடிவமைப்பதற்காக விவேட தாவரங்கள் நடப்பட்டிருந்தன.

7.11.1.4 **நடைமுறை 04** - பாவனைக்கு எடுக்கப்படாத நிலக்கரி இருப்பு இரசாயன கரைசலொன்றின் மூலம் மேவுகை செய்தல்.

வரைபு இலக்கம் - 10 நிலக்கரி தொகுதி



7.11.1.4.1 **அவதானிப்பு:** 46 ஏக்கர் (360m x 510m) நில அளவிலான நிலக்கரியை பரப்பி வைக்கக்கூடிய இயலாவு 1.21 மில்லியன் மெற்றிக்தொன் நிலக்கரி தொகுதியில் களஞ்சியப்படுத்தப்பட்டுள்ள நிலக்கரி மூலம் உருவாகும் தூசு துணிக்கை கிராமத்தினால் பரவுவதை தவிர்ப்பதற்கும், நிலக்கரி தீ பிடிப்பதற்கும் உள்ள ஆபத்தை குறைப்பதற்காகவும் இந்த இரசாயன கரைசலைப் பயன்படுத்த முடியுமென லக்விஜய மின்நிலையத்தின் பொறியியலாளர் ஒருவரினால் குறிப்பிடப்பட்டிருந்ததுடன் அதற்காக ஓராண்டிற்கு செலவாகுமென எதிர்பார்க்கப்பட்ட கிரயம் ரூபா 35 மில்லியனாக இருந்தது.

7.11.2 **சிக்கல் 02** - பறக்கும் சாம்பல் (Fly Ash) பரவுவதை குறைத்தல்

7.11.2.1 **படிமுறை 01** - சாம்பல் தொகுதிக்கு போக்குவரத்து செய்யும் போதும் மீள எடுக்கும் போதும் சாம்பலை ஈரமான நிலையில் வைத்துக்கொள்ளல்

7.11.2.1.1. **அவதானிப்பு 01** - தொகுதியில் குவித்து வைக்கப்பட்டுள்ள சாம்பலை மட்டப்படுத்துவதற்காக இயந்திர மற்றும் மனித உழைப்பினை பயன்படுத்துவதும் நீர் மற்றும் சாம்பல் கலந்த திரவமொன்று (Slurry) பயன்படுத்தப்பட்டு சாம்பல் தொகுதியை சுற்றுப்புறமாக மேவுகை செய்வதற்கும் (பிரிவின் பகுதியொன்றுக்காக அண்மித்த வகையில் 07 ஏக்கர்) போன்ற இரண்டு வகையில் ஆண்டொன்றிற்கு செலவாகும் என எதிர்பார்க்கப்பட்ட கிரயம் ரூபா 55 மில்லியனாகும்.

வரைபு இலக்கம் - 11 - நிலக்கரி தொகுதி



7.11.2.2. **படிமுறை 02** - சாம்பல் தொகுதியின் மேற்கு காற்று திசைக்கும் (கடல் அமைந்துள்ள திசைக்கு) காற்றுத் தடையொன்றை நிர்மாணித்தல்

7.11.2.2.1 **அவதானிப்பு 1** - பருவப் பெயர்ச்சிக் காலங்களில் பருவக் காற்று மூலம் சாம்பல் கிராமப்பகுதிக்கு பரவுவதற்கு சந்தர்ப்பம் காணப்படுவதுடன், இதற்காக படிமுறையொன்றாக சாம்பல் தொகுதியில் மேற்கு திசையில் காற்று தடையை நிர்மாணிப்பதற்கு மின் நிலையத்தினால் திட்டமிடப்பட்டிருந்த இச் செயற்திட்டத்திற்காக மதிப்பீடு செய்யப்பட்ட கிரயம் ரூபா 300 மில்லியன் அளவாக இருந்தது. நிலக்கரி தொகுதியின் காற்று தடை நிர்மாணித்தல் செயன் முன்னேற்றத்தின் அடிப்படையில் இந்நிர்மாணத்தை ஆரம்பிப்பதற்கு திட்டமிடப்பட்டிருந்தது.

7.11.3 **சிக்கல் - 03** நிலையத்தின் குளிர்நீரும் முறைமையின் நீர் கடலுக்குள் விடப்படுவதால் கடல் வளங்களுக்கும் கற்பிட்டி பிரதேசத்தின் மீன்பிடி சமூகத்திற்கும் ஏற்படும் தாக்கம்

7.11.3.1 **படிமுறை - 01** - கடல் நீரின் வெப்பம் பீ.எச். பெறுமதி, திரவ ஓட்சிசன், நீர் மீன்வளங்கல் உட்பட ஏனைய உயிரினங்களின் நடத்தை மற்றும் மீன்பிடி வளங்கள் போன்ற நடவடிக்கைகள் தொடர்பாக தேசிய நீர் வளங்கள் ஆராய்ச்சி மற்றும் அபிவிருத்தி முகாமை நிறுவகத்தின் (NARA) தொடர்ச்சியாக ஆராய்ச்சிகளை நடாத்துதல்.

7.11.3.2 படிமுறை 02 – கடலின் அடிப்பகுதியில் கணிப்பீட்டு நடவடிக்கைகளை மேற்கொள்ளல்

7.11.3.2.1 அவதானிப்பு 01 - கடலின் உள்ளே மேற்கொள்ளப்படும் ஆராய்ச்சி நடவடிக்கைகள் மூலம் நிலக்கரி படிந்திருக்கும் முறையை இனங்காண்பதற்காக மொறட்டுவ பல்கலைக்கழகத்தின் மூலம் பரிசோதனை நடவடிக்கைகளை மேற்கொள்வதற்கு வேண்டுகோள் விடப்பட்டிருந்தது.

7.11.4 சிக்கல் 04 - இலங்கடிய கடற்கரை அரிப்பிற்குட்படல்

7.11.4.1 படிமுறை 01- திட்டவட்டமான இடைவெளிகளுடன் அலைதாங்கி நிர்மாணித்தல்.

7.11.4.1.1 அவதானிப்பு 01 – கடல் அரிப்பினை தவிர்ப்பதற்காக கரையோர பாதுகாப்பு திணைக்களத்துடன் கலந்துரையாடல் நடாத்தப்பட்டிருந்தது.

7.12 மூன்றாம் தரப்பினரின் கருத்துரைகள்

2018 மே மாதம் 11 ஆந் திகதி நிலையத்திற்கு அண்மையில் பயிர்ச்செய்கை நடவடிக்கைகளில் ஈடுபட்டிருந்த சில விவசாயிகளுடனும் மீன்பிடி கிராம விவசாயிகளுடன் நடாத்தப்பட்ட கலந்துரையாடல்களில் வெளிப்படுத்தப்பட்ட விடயங்கள் கீழே காட்டப்பட்டுள்ளன.

வரைபட இல 12- சுற்றுப்புரத்தில் வசிக்கும் கிராம வாசிகளுடன் நடாத்தப்பட்ட நேர்முக கலந்துரையாடல் மற்றும் மின்நிலையத்தை சுற்றிய பயிர்ச் செய்கை



7.12.1 அதிக காற்று வீசும் காலமான மே மாத இறுதி முதல் ஒக்தோபர் வரை 06 மாத கால எல்லையின் போது (வாடைக்காற்று) சாம்பல் தொகுதியிலும் நிலக்கரி தொகுதியிலும் உள்ள சாம்பல் காற்றுடன் கிராமப்புறத்திற்கு வீசுவதால் வீடுகளுக்கும் சுகாதாரத்திற்கும் விவசாய பயிர்களுக்கும் ஏற்படும் சேதங்களை தவிர்ப்பதற்கு நடவடிக்கை எடுத்தால் அனல் மின்சார நிலையத்தின் அமைவு அவர்களுக்கு சிக்கலொன்றல்ல என மின்நிலையத்தை சுற்றி பயிர்ச்செய்கை நடவடிக்கைகளில் ஈடுபட்டிருந்த விவசாயிகளின் கருத்தாக இருந்தது.

7.12.2 புத்தளம் மாவட்டத்தில் காற்றிலான மின்நிலையமொன்றும் லக்ஷிய மின்நிலையமும் செயற்பாட்டில் இருந்த போதிலும் கிராமங்களுக்கு நாளின் 24 மணித்தியாலங்கள் பூராகவும் மின்சாரம் கிடைக்காமை கிராம மக்கள் முகங்கொடுக்கும் மற்றைய பிரதான சிக்கலொன்றாகும். ஆதலால் விவசாய

நடவடிக்கைகளில் ஈடுபடும் போது நாளாந்த வாழ்க்கை நிலைமைக்கு இந்நிலைமை தடையொன்றாக கிராம மக்களால் தெரிவிக்கப்பட்டது.

7.12.3 மீன்பிடி நடவடிக்கை மேற்கொள்வதற்கு அவர்களுக்கு உரித்தான கடல் பிரதேசம் சிறியதாக இருப்பதாகவும் நிலக்கரி கப்பல் மற்றும் வள்ளங்கள் அடிக்கடி வருவதால் மீன்பிடி செயற்பாடுகளுக்கு தடையொன்றாக உள்ளதாக மீன்பிடிச் சமூகத்தினரின் கருத்தாக இருந்தது.

7.12.4. அனல் மின் நிலையத்தின் குளிர்நீர் முறைமையிலிருந்து வெளியேறும் சூடான நீர் காரணமாக மீன்களுக்கும், கடல்வாழ் உயிரினங்களுக்கும் பாதிப்புக்கள் ஏற்படுவதாக மீன்பிடி கிராமவாசிகளின் கருத்தாக இருந்தது.

7.13. பத்திரிகை அறிக்கைகள்

மின்நிலையத்தின் செயற்பாட்டு நடவடிக்கைகளால் சுற்றாடல் பாதிப்புக்கள் ஏற்படுவதாக சில பத்திரிகை அறிக்கைகள் பலவும் அந்த அறிக்கைகளில் குறிப்பிடப்பட்ட வகையிலே சுற்றாடல் பாதிப்பொன்று ஏற்பட்டிருக்கவில்லை என சில பத்திரிகை அறிக்கைகளில் அறிக்கையிடப்பட்டிருந்தன.

8. அவதானிப்புக்கள்

8.1. மின் உற்பத்திக்கான மூல உள்ளீடு மற்றும் தோற்றுவாய் பங்களிப்பு

கடந்த நான்கு ஆண்டுகளாக உற்பத்தி தரவு பரிசோதனையில் லக்விஜய மின் நிலையத்தின் பங்களிப்பு நூற்றுக்கு 32.58% ஆக இருந்தது, அதே சமயம் நீர்மின் மற்றும் எரிபொருளின் பங்களிப்பு முறையே நூற்றுக்கு 28.08%, 13.80% எனக் அவதானிக்கப்பட்டது. (7.1.3)

8.2. மின்சார உற்பத்தி செலவுகள்

மின்சார பிறப்பித்தல் செயற்பாட்டின் போது குறைந்த கிரயத்தையுடைய தோற்றுவாய்களை பயன்படுத்துவதற்குப் பதிலாக, அதிக விலையுடைய தோற்றுவாய்கள் தொடர்பில் கவனம் செலுத்தப்பட்டது என்பது அவதானிக்கப்பட்டது. (7.1.6)

8.3. லக்விஜய மின் நிலையத்தில் மூல உள்ளீடு பிரிவின் செலவுகள் மற்றும் மின் நிலையத்தின் பங்களிப்பு

இலங்கை மின்சார சபையின் மின் உற்பத்தியில் 1/3 பங்கு பங்களிப்பு மற்றும் குறைந்த இரண்டாவது சாதாரண பிரிவின் செலவுகளுடன் கூடிய தோற்றுவாய் நிலக்கரி ஊடாக மின்சாரம் உற்பத்தி என அவதானிக்கப்பட்டது (7.2.4)

8.4. லக்விஜய அனல் மின் உற்பத்தி நிலையத்தின் பிறப்பித்தலுக்கான செலவு ஒப்பீடு

களனிதில்ஸ் மின் உற்பத்தி நிலையத்துடன் ஒப்பிடுகையில், நிலக்கரியை மூலப் பொருளாகக் கொண்டு லக்விஜய அனல் மின் உற்பத்தி நிலையத்தினால் உற்பத்தி செய்யப்படும் மின் உற்பத்தி மூலம் ரூபா 350,743 மில்லியன் பணத்தை இலங்கை மின்சார சபையினால் மீதப்படுத்திக் கொள்ள முடிந்ததுடன் இவ் இழிவான சேமிப்புக்காக ஒப்பந்தம் செய்யப்பட்ட பெறுமதியான ரூபா 197,470 மில்லியனை பொருத்திப் பார்க்கையில் ரூபா 153,273 மில்லியன் நிகர சேமிப்பு சபைக்கு உரித்தாகி இருந்தது. (7.2.5)

8.5. 1980 ஆம் ஆண்டின் 47 ஆம் இலக்க தேசிய சுற்றாடல் சட்டம் மற்றும் 1990 இன் 12 ஆம் இலக்க வடமேல் மாகாண சுற்றாடல் சட்டத்தின் அமுலாக்கம்

8.5.1 2018 மே 10 ஆம் திகதி அளவில் சுற்றாடல் சாசனத்தின் பிரிவு 7 (1) (க) பிரிவின் படி வடமேல் மாகாண சுற்றாடல் ஆலோசனைச் சபை செயல்படுத்தப்படவில்லை என்பது அவதானிக்கப்பட்டது. (7.3.1.2)

8.5.2 2011 ஆம் ஆண்டில் தொழிற்பாட்டு நடவடிக்கை ஆரம்பிக்கப்பட்டதிலிருந்து லக்விஜய மின் நிலையத்தின் சுற்றாடல் சிக்கல்களில் மத்திய சுற்றாடல் அதிகாரசபை தலையிடவில்லை எனக் அவதானிக்கப்பட்டது. (7.3.1.3)

8.6. சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திர வெளியீடு

8.6.1 வடமேல் மாகாண சுற்றாடல் அதிகாரசபையினால் சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரம் வழங்கப்பட்டு இருந்ததுடன் இதற்கு மத்திய சுற்றாடல் அதிகாரசபையின் தலையீடு அல்லது பரிசோதனை எதுவும் நடத்தப்பட்டு இருக்கவில்லை. (7.3.2.2)

8.6.2. மாகாண சுற்றாடல் அதிகாரசபையினால் மின் நிலையத்திற்கு வெளியிடப்பட்டு இருந்த 22 நிபந்தனைகளுடன் கூடிய அனுமதிப்பத்திர புதுப்பித்தலின் போது அந் நிபந்தனைகளின் தேவைப்பாடுகள் அந்த மின் நிலையத்தினால் பூர்த்தி செய்யப்பட்டிருந்ததா எனவும் அதன் சரியானதன்மை பின்தொடர் நடவடிக்கை எடுத்தல் போதுமான அளவில் மேற்கொள்ளாமல் 2017 ஜூன் மாதம் 29 ஆம் திகதி

வரை அவ் அனுமதிப்பத்திரத்தை புதுப்பித்தல் தொடர்பில் நடவடிக்கைகள் மேற்கொள்ளப்பட்டு இருந்தது. இதன் படி, மின் நிலையத்தின் செயற்பாடுகளின் ஊடாக ஏற்படக் கூடிய சுற்றாடல் ஆபத்துக்கள் தொடர்பில் அதிகாரிகளின் கவனம் செலுத்தவில்லை (7.3.2.3)

8.6.3 2017 ஜூன் 29 ஆம் திகதியிலிருந்து கணக்காய்வு தினமான 2018 மே 10 ஆம் திகதி வரை லக்ஷிய அனல் மின் நிலையத்தின் செயற்பாடுகள் அனுமதிக்கப்பட்ட சுற்றாடல் அனுமதிப்பத்திரம் இன்றி நடாத்தப்பட்டு உள்ளதாக அவதானிக்கப்பட்டது. 2017 ஆகஸ்ட் 09 ஆம் திகதி மாகாண சுற்றாடல் அதிகாரசபையின் பதில் கடமையாற்றும் பணிப்பாளரால் இலங்கை மின்சார சபையின் பொது முகாமையாளருக்கு அனுப்பப்பட்ட இல PEA/PKT/EPL/CH/H/149/2015 உடைய கடிதத்தின் (பின்னிணைப்பு - 43) படி 2017/2018 ஆம் ஆண்டிற்கான சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரம் புதுப்பிக்கப்பட முன்னர் மின் நிலையத்தினால் முன் வைக்கப்பட வேண்டிய ஆவணங்கள், அறிக்கைகள் மற்றும் தகவல்கள் பிரதான 06 பகுதிகளின் கீழ் குறிப்பிடப்பட்டு இருந்தன. இந்த தேவைப்பாடுகளுக்கு அடிப்படையாக இருந்த சுற்றாடல் விடயங்கள் 2017 ஆம் ஆண்டினுள் மாத்திரம் உருவாகிய சுற்றாடல் விடயங்கள் அல்ல என்பதுடன் முன்னைய ஆண்டுகளில் இருந்து கவனம் செலுத்த தேவையாக இருந்த விடயங்கள் என கணக்காய்வின் போது அவதானிக்கப்பட்டது. (பின்னிணைப்பு இல 44 இல் குறிப்பிடப்பட்டுள்ள விடயங்கள் ஊடாக மேலும் தெளிவாகின்றது) (7.3.2.4)

8.6.4 சுற்றோட்ட வாயு நிலைமை கட்டளைகள் மூலம் ஓசோன் படலத்தை மெல்லியதாக்குகின்ற பொருட்கள் மற்றும் சுற்றுப்புறச் சூழலுக்கு அபாயத்தை ஏற்படுத்தும் பொருட்கள் என அடையாளம் காணப்பட்ட வளி சம்பந்தமான கட்டளை மற்றும் சுற்றோட்ட வாயு நிலைக் கட்டளை என்பன உள்ளடக்கப்பட்ட போதிலும் நிலக்கரி எரிப்பின் போது வெளியாகின்ற ஏனைய பாதகமான வாயுக்கள் (உதாரணமாக பாதரசம் (Mercury), கார்பனாட்சைட் (Carbon dioxide, CO₂) தொடர்பில் சுற்றோட்ட வாயு நிரல் கட்டளையானது பிரபல்யமடைந்து இருக்கவில்லை என்பது அவதானிக்கப்பட்டது. (7.3.2.6)

8.6.5 நிபந்தனை இலக்கம் 8 இன் படி நல்ல தரம் மற்றும் குறைந்தளவிலான சாம்பல் வெளியீடு என்பன தெளிவாக வரைவிக்கண்படுத்தப்பட்டு இருக்கவில்லை என்பதுடன் இறக்குமதி செய்யப்படும் நிலக்கரியில் காணப்பட வேண்டிய தரம் தொடர்பில் விசேட கவனம் செலுத்தப்பட்டு இருக்கவில்லை. (7.3.2.7)

8.6.6 நிபந்தனை இலக்கம் 13.5 இன் படி திட்டத்தின் செயற்பாட்டு நடவடிக்கைகளின் போது உள்ளீடு செய்யப்படும் கழிவுகளின் அளவு மற்றும் அதன் தன்மை தொடர்பில் அறிக்கைகள் மேற்கொள்ளப்பட்டு அவ் அறிக்கைகளை மாகாண சுற்றாடல் அதிகாரசபைக்கு வருடாந்தம் முன்வைக்க வேண்டி இருந்த போதிலும் இத் தேவைப்பாடுகள் முழுமையாக செய்யப்படவில்லை என்பதுடன் அந் நிலை மாகாண சுற்றாடல் அதிகாரசபையினால் அவதானிக்கப்பட்டும் இருக்கவில்லை. (7.3.2.8)

8.7 தேசிய சுற்றாடல் சட்டத்தின் கீழ் வழங்கப்பட்டு இருந்த நியமங்கள் மற்றும் தேர்வளவுகள்

தேசிய சுற்றாடல் சட்டத்தின் படி வழங்கப்பட்டு இருந்த நியமங்கள் மற்றும் தேர்வளவுகளின் அடிப்படையில் வடமேல் மாகாண சபையின் சுற்றாடல் நியமங்கள் மற்றும் தேர்வளவுகள் தீர்மானிக்கப்பட்டு இருந்தது. ஆனால் கைத்தொழிலின் அடிப்படையில் இந்த நியமங்கள் மற்றும் தேர்வளவுகள் காலத்திற்கு ஏற்றாற் போல மாற்றிக் கொள்ள வேண்டிய தேவைப்பாடு ஏற்பட்டு இருப்பதுடன் அதற்காக மாகாண சுற்றாடல் அதிகாரசபை தமது கவனத்தினை செலுத்தவில்லை என்பது அவதானிக்கப்பட்டது. (7.3.3)

8.8 வருடாந்த நிலக்கரி தேவைப்பாடு மற்றும் தரையிறக்கம் மற்றும் களஞ்சிய சாலைக்கு போக்குவரத்து செய்வதன் ஊடாக ஏற்படும் சுற்றாடல் பாதிப்புக்களுக்கான விளக்கம்

8.8.1 மின் நிலையத்தில் தற்போது இருக்கின்ற ஜெட்டி ஆனது தொடர்ந்து நீளத்தில் குறைந்து செல்வதன் காரணத்தினால் ஜெட்டியில் இருந்து 4 கிலோமீற்றர் வரையான தூரத்தில் நிலக்கரியைக் கொண்ட கப்பல்கள் வருகை தராமையால் மேலும் அதிக காற்று வீசும் காலப்பகுதியில் கப்பல்கள் வருவதில்லை என்பதால் அக் காலப்பகுதிகளுக்கும் சேர்த்து நிலக்கரி களஞ்சியப்படுத்திக் கொள்ள வேண்டிய காரணத்தினால் தூசு பரவுவது அவதானிக்கப்பட்டது. (7.3.4.2 மற்றும் 7.3.4.3)

8.8.2 திருகோணமலையில் இருந்து மின் நிலையம் வரை புகையிரதம் மூலம் நிலக்கரி போக்குவரத்து செய்யக்கூடிய இயலுமை தொடர்பிலும் பல நிறுவனங்களுடன் கலந்துரையாடப்பட்டபோதிலும் அது வெற்றியளிக்கவில்லை. (7.3.4.4)

8.9 நிலக்கரியில் காணப்பட வேண்டிய தன்மைகள்

8.9.1 கணக்காய்வுக்கு சமர்ப்பிக்கப்பட்ட தரவுகளின் அடிப்படையில் 2014/2015 ஆண்டில் இறக்குமதி செய்யப்பட்ட மொத்த நிலக்கரி அளவில் நூற்றுக்கு 31.09 அளவு எதிர்பார்க்கப்பட்ட தன்மையில் இருந்து விலகியிருப்பதாக அவதானிக்கப்பட்டது. (பின்னிணைப்பு – 45) (7.4.1)

8.9.2 எதிர்பார்க்கப்பட்ட விவரக்குறிப்புகளுக்கு புறம்பான நிலக்கரி அளவு கிடைத்த சந்தர்ப்பங்களில் அந்த மொத்த விலை சீராக்கம் செய்யப்பட்டு மின்நிலையத்தினால் பொறுப்பேற்றல் தொடர்பில் கவனம் செலுத்தப்பட்ட காரணத்தினால் தரமில்லாத நிலக்கரி எரிப்பினால் ஏற்படத்தக்க சுற்றாடல் பாதிப்பு தொடர்பில் அதிகாரிகள் போதுமானளவு கவனம் செலுத்தவில்லை என அவதானிக்கப்பட்டது. (7.4.2)

8.9.3 மொத்த நிலக்கரியின் தரம் தொடர்பில் வெளியிடுகின்ற அறிக்கைகளுக்கு ஏற்ப மாதிரி பரிசோதனையின் போது அவ் அறிக்கை குறிப்பிட்ட காலத்திற்குள் வெளியிடப்படவில்லை எனவும் காலதாமதம் ஏற்படுவதாகவும் அவதானிக்கப்பட்டது. இக் காலப்பகுதியில் நிலக்கரி கொண்டு வரும் கப்பல்கள் ஏற்றுமதுறைமுகத்தில் இருந்து பிரயாணத்தை ஆரம்பிக்கின்ற படியால் ஏற்றும் துறைமுகத்தில் வைத்து இருப்புக்கள் எதிர்பார்க்கப்பட்ட தரம் அற்றது என உறுதிப்படுத்தப்பட்டால் அந்த இருப்பினை அவ்விடத்தில் வைத்தே நிராகரிக்கும் இயலுமை இதனால் இழக்கப்படுகின்றது என அவதானிக்கப்பட்டது. (7.4.3)

8.9.4 2016/2017 ஆம் ஆண்டுகளில் கொள்வனவு செய்யப்பட்ட நிலக்கரியின் தன்மையானது பரிசோதிக்கப்படுவதற்காக தாபிக்கப்பட்ட நிலையான தொழிநுட்ப கணிப்பீட்டு குழுவினால் நிலக்கரி மூலம் சுற்றாடலுக்கு ஏற்படத்தக்க பாதிப்புக்களை கணிப்பிடுவதற்காக அது தொடர்பில் அறிவுள்ள ஒரு உறுப்பினரை உள்ளடக்கி இருக்கவில்லை. (7.4.4)

8.9.5 கப்பல் மூலம் போக்குவரத்து செய்யப்படுகின்ற நிலக்கரி ஓடங்களுக்கு ஏற்றும் போது அதைச் சுற்றி இருக்கும் கடலோரம் மற்றும் சுவர்த்தூணின் அருகில் நிலக்கரி விழுவதுடன் அவை அதில் தங்கியிருப்பதாகவும் கணக்காய்விற்காக முன்வைக்கப்பட்ட காணொளி காட்சி ஒன்றின் மூலம் அவதானிக்கப்பட்டது. (7.4.6)

உருவப்படக் குறிப்பு இலக்கம் 13 – கடலோரத்தில் நிலக்கரி தங்கியிருக்கும் விதம்



8.10 நிலக்கரி தகனத்தின் மூலமான பக்க விளைவுகள் (பறக்கின்ற சாம்பல் மற்றும் கீழ் சாம்பல்)

8.10.1 பறக்கின்ற சாம்பல் மற்றும் கீழ் சாம்பலைப் பயன்படுத்தி செய்யப்படுகின்ற உற்பத்திகளை விற்பதற்கு மற்றும் விற்பனை மேம்படுத்தலை செய்வதற்கும் அதற்கு தேவையான தொழிநுட்ப அறிவு சிறிய மற்றும் நடுத்தர அளவு கைத்தொழிலாளர்களுக்கு வழங்குவதற்காக பல நிறுவனங்களுடன் இலங்கை மின்சார சபை 2017 ஆகஸ்ட் 08 ஆம் திகதி புரிந்துணர்வு ஒப்பந்தம் ஒன்றில் கைச்சாத்திடப்பட்டு இருந்த போதிலும் அதனை வெற்றிகரமாக செயற்படுத்தி இருக்கவில்லை. (7.5.3)

8.10.2 2018 மே 10 ஆம் திகதி வரைக்கும் இந்த பறக்கும் சாம்பலைக் கொள்வனவு செய்வதற்கான யோசனைகளுடன் கூடிய ஒப்பந்தத்தை செயற்படுத்தி இருக்கவில்லை. (7.5.4)

8.10.3 பறக்கும் சாம்பல் காற்றுடன் சுற்றாடலுக்கு சேர்கின்ற படியால் அதைத் தடுப்பதற்கு சரியான நடவடிக்கைகள் எடுக்கப்பட வேண்டும் என அவதானிக்கப்பட்டது. (7.5.8)

8.11 சுற்றோட்ட வாயு நிலைமை தரத்தினை தொடர்ந்து கொண்டு செல்லல்

8.11.1 வடமேல் மாகாண சுற்றாடல் அதிகாரசபையினால் வெளியிடப்பட்டு இருந்த கட்டளை மூலம் நிலக்கரி எரிப்பின் போது வளிமண்டலத்திற்கு வெளியிடப்படுகின்ற மிதேன் வாயு மற்றும் பாதரசம் போன்ற பார உலோகங்கள் உள்ளடக்கப்பட்டு இருக்கவில்லை. சுற்றோட்ட வளி மண்டல நிலையை தக்க வைத்துக் கொள்வதற்காக தோற்றுவாய்களுடன் கூடிய வாயு உமிழ்வு தரங்கள் வர்த்தமானி மூலம் பிரசுரிக்கப்பட்டு இருக்கவில்லை என்பது அவதானிக்கப்பட்டது. (பின்னிணைப்பு – 46) (7.6.2)

8.11.2 லக்ஷிய மின் நிலையத்திற்கான கணக்காய்விற்சா க முன்வைக்கப்பட்ட முழுமையான வாயு உமிழ்வு அவதானிப்பு தரவுகளின் அடிப்படையில் மின் சக்தியை பிறப்பிக்கும் செயற்பாட்டின் போது வளி மண்டலத்திற்கு வெளியிடப்படுகின்ற நைதரசன் ஓட்சைட்டு (NOx) மற்றும் சல்பர் டயொக்சைட் (SO₂) அளவு தொடர்பில் மட்டும் பரிசோதனைக்கு உட்படுத்தப்பட்டு இருந்ததுடன், மீதமுள்ள அளவுகளை முழுமையாக பரிசோதனைக்கு உள்ளாக்கி இருக்கவில்லை. (7.6.3)

8.11.3 மின் நிலையத்தின் சுற்றுப்புற வளிமண்டல நிலைமை தொடர்பில் தரவுப் பகுப்பாய்வு மத்திய சுற்றாடல் அதிகாரசபையின் மூலம் நடாத்தப்பட்டு இருக்கவில்லை. (7.6.4)

8.11.4 புகைக் கோபுரம் ஊடாக வெளியேறுகின்ற எரிக்கப்பட்ட வாயுவின் தன்மை, சப்தம் மற்றும் அதிர்ச்சி மற்றும் நீரின் தன்மையை சோதிப்பதற்காக கைத்தொழில் தொழிநுட்ப நிறுவனத்திற்கு ஒப்பந்தம் வழங்கப்பட்டு இருந்த போதிலும் 2018 மே மாதம் 10 ஆம் திகதியாகும் வரை கைத்தொழில்

தொழிநுட்ப நிறுவனத்துடன் ஒப்பந்தம் ஒன்று செய்து கொண்டு எதிர்பார்க்கப்பட்ட பரிசோதனைகளை செய்வதற்கான நடவடிக்கைகளை செய்திருக்கவில்லை. (7.6.5)

8.12 மின் ஆலைகளின் குளிர்நீரும் முறைமைக்குத் தேவையான நீரினைப் பெற்றுக் கொள்ளல் மற்றும் சுத்திகரிப்பின் பின்னர் நீரினை கடலினுள் வெளியேற்றும் செயற்பாடு

8.12.1 முதலாம் பிரிவில் (Unit 1) மட்டும் கடல் நீரின் தன்மையானது ஒன்லைன் கண்காணிப்பு உணர்வுகருவிகளைப் (Online monitoring sensors) பயன்படுத்தி அளவிடப்படுவதுடன் இரண்டாம் மற்றும் மூன்றாம் பிரிவுகளில் இவ் உணர்வுகருவிகள் பயன்படுத்தப்படுவது இல்லை என அவதானிக்கப்பட்டது. (7.7.2)

8.12.2 மின் ஆலைகளின் குளிர்நீரும் முறைமைக்கு பயன்படுத்திய கடல் நீர் சுத்திகரிப்பின் பின்பு அந்நீரின் ஒரு பகுதி சிற்றுண்டிச்சாலையின் சகல தேவைகளுக்கும் பயன்படுத்தப்பட்ட போதிலும் அந் நீரின் தரம் குறித்து முழுமையான பரிசோதனைகள் நடாத்தப்படவில்லை என அவதானிக்கப்பட்டது. (7.7.2)

8.12.3 சுத்திகரிப்பின் பின்பு கடலுக்கு விடப்படுகின்ற நீர் தொடர்பில் 2016 மற்றும் 2017 ஆம் ஆண்டுகளில் முழுமையான ஆய்வுகூட பரிசோதனை நடாத்தப்படவில்லை என்பதுடன் 2018 ஆம் ஆண்டில் அப் பரிசோதனை மாதாந்தம் நடாத்தப்பட்டுள்ளது என்பது 2016 மற்றும் 2018 ஏப்ரல் மாதம் வரையான தரவு பரிசோதனையின் போது அவதானிக்கப்பட்டது. மேலும் சுத்திகரிப்பின் பின்பு கடலுக்கு விடப்படும் நீர் (Discharge Point) 2018 மே மாதம் 11 ஆம் திகதி பி.ப 6.30 அளவில் பெளதீக கண்காணிப்பு செய்யப்படுகின்ற வேளையில் வெப்பநிலையான 32C° ஆக இருந்தது. இது இயலாவு எல்லைக்குள் காணப்பட்டது (பின்னிணைப்பு – 47) (7.7.2)

வரைபட இலக்கம் 14 சுத்திகரிப்பின் பின்பு கடலுக்கு விடப்படுகின்ற நீர் கடலுக்குள் விடல் மற்றும் அந்நீரின் தரப் பரிசோதனை



8.12.4 குளிர்நீரும் முறைமை ஊடாக வெளியாக்கப்படும் நீரின் தரம் மற்றும் தொழில்நுட்ப கழிவு நீர் சுத்திகரிப்பு, மல வடிகால் நீர் சுத்திகரிப்பு, நிலக்கரி மற்றும் சாம்பல் நீட்டளவு ஊடாக சேர்கின்ற நீரை பதப்படுத்தும் சுத்திகரிப்பு போன்ற நீர் பதப்படுத்தல் முறைமை ஊடாக சேரும் நீரை சுத்திகரிக்கும் சுத்திகரிப்பு ஆகிய நீர் சுத்திகரிப்பு முறைமை ஊடாகவெளியேறும் நீரின் தன்மை தொடர்பிலான ஆய்வானது கைத்தொழில் தொழிநுட்ப நிறுவனத்துக்கு வழங்கப்பட்டு இருந்த போதிலும் 2018 மே மாதம் 10 ஆம் திகதி வரையில் உடன்படிக்கை கைச்சாத்திடப்படாதிருந்தமை அவதானிக்கப்பட்டது. (7.7.2)

8.13 நிலக்கீழ் நீர்

8.13.1 லக்ஷிய மின் நிலையத்தால் ஆழமற்ற கிணறுகளை பாவிப்பதற்காக கீழ் குறிப்பிடப்பட்டுள்ள சந்தர்ப்பங்களில் நீர் வளங்கள் சபையின் அனுமதியை வேண்டி விண்ணப்பித்து இருந்த போதிலும் அதற்கான அனுமதி வழங்குவதற்கு நடவடிக்கை எடுக்கப்பட்டு இருக்கவில்லை. (7.8.1)

8.13.2 மின் ஆலை வளாகத்தினுள் மற்றும் அதைச் சுற்றியுள்ள சூழலில் காணப்படுகின்ற நிலத்தடி நீரின் தரமானது முழுமையாக பரிசோதனை செய்வதற்காக நீர் வளங்கள் சபைக்கு ரூ. 3.95 மில்லியன் தொகையான ஒப்பந்தம் ஒன்று வழங்கப்பட்டு இருந்த போதிலும் 2018 மே 10 ஆம் திகதி வரையில் நீர் வளங்கள் சபையுடன் ஒப்பந்தத்தில் ஈடுபட்டு பரிசோதனை நடவடிக்கைகளை ஆரம்பிப்பதற்கு நடவடிக்கை எடுக்கப்பட்டிருக்கவில்லை. (7.8.2)

அட்டவணை இல 17 - லக்ஷிய மின் நிலையத்தினால் நீர் வளங்கள் சபையிடமிருந்து அங்கீகாரம் கோரப்பட்ட சந்தர்ப்பங்கள்

திகதி	காணி அளவு	இயலளவு	கிணறின் அளவு	கடித இலக்கம்	நீர் வளச் சபையின் அனுமதி.
2016.09.07	45 ஏக்கர் அளவில்	6 மீற்றர் ஆழமான சுற்றுப்புறத்திலிருந்து 3 மீற்றர் ஆழத்தில் நீர் மட்டம் அமைந்துள்ள	67 ஆழமற்ற கிணறுகள்	LVPS/DGM/Civil/37-23	வழங்கப்பட்டிருக்கவில்லை
2017.02.15	100 ஏக்கர் அளவில்	6 மீற்றர் ஆழமான சுற்றுப்புறத்திலிருந்து 3 மீற்றர் ஆழத்தில் நீர் மட்டம் அமைந்துள்ள	74 ஆழமற்ற கிணறுகள்	LVPS/DGM/Civil/37-55	வழங்கப்பட்டிருக்கவில்லை
2017.12.05	100 ஏக்கர் அளவில்	6 மீற்றர் ஆழமான சுற்றுப்புறத்திலிருந்து 3 மீற்றர் ஆழத்தில் நீர் மட்டம் அமைந்துள்ள	74 ஆழமற்ற கிணறுகள்	LVPP/PPM/Gen/06-93	வழங்கப்பட்டிருக்கவில்லை

(பின்னிணைப்பு - 48)

8.14 மின் நிலையத்தின் செயற்திறன் மற்றும் செயற்பாட்டு நடவடிக்கைகளை தற்காலிகமாக நிறுத்தி வைத்தல்

8.14.1 2015 ஆம் ஆண்டு தொடக்கம் 2017 ஆம் ஆண்டு வரையான தரவுகளை பரீட்சித்து பார்க்கும் போது மின் நிலையத்தின் செயற்திறனில் அதிகரிப்பொன்று காணப்பட்ட போதிலும் 2017 ஆம் ஆண்டளவில் அந்த அளவு அதிகபட்ச உற்பத்தி இயலுமையில் நூற்றுக்கு 65 ஆக இருந்தது. (7.9.3)

8.14.2 2016 ஆம் ஆண்டுடன் ஒப்பிடுகையில் 2017 ஆம் ஆண்டில் 7.9.4 இல் குறிப்பிடப்பட்டுள்ள வெவ்வேறுபட்ட காரணங்களின் அடிப்படையில் பிரிவு 2 இல் செயற்பாட்டு நடவடிக்கைகள் தற்காலிகமாக நிறுத்தப்படல் ஆனது நூற்றுக்கு 204 மற்றும் பிரிவு 3 இல் நூற்றுக்கு 280 வரை வளர்ச்சியடைந்து இருந்தது. மேலும் கருத்திற் கொள்ளப்பட்ட காலத்தினுள் உள்ளக காரணிகளால் மட்டும் மூன்று பிரிவுகளிலும் 352.44 நாட்கள் அதாவது 8,458 மணித்தியாலங்கள் மின் உற்பத்தி நடைபெற்று இருக்கவில்லை. (7.9.4)

8.14.3 தேசிய மின்சார உற்பத்திக்கு ஏற்படுகின்ற தடைகளை குறைத்துக் கொள்ளும் வகையில் பராமரிப்பு நடவடிக்கைகளை திட்டமிட்டுக் கொள்வதன் ஊடாக ஏற்படக் கூடிய பிரச்சினைகளை குறைத்துக் கொள்ள முடியும் என அவதானிக்கப்பட்டது. (7.9.5)

8.15 காலநிலைத் தரவுகள்

காலநிலைத் தரவுகளை சேகரிப்பதற்கான முறைமை ஒன்று 2017 ஒக்டோபர் மாதத்திலிருந்து 2018 மே 10 வரையான காலப்பகுதிக்குள் செயற்பாதிருந்தமையானது அவதானிக்கப்பட்டது. மேலும் அதிக காற்றுடன் கூடிய காலங்களில் 24 மணித்தியாலங்களுக்குள் காற்றின் திசை, காற்றின் வேகத்தினை அளத்தல் என்பன தற்போது காணப்படுகின்ற காலநிலைத் தரவு முறைமை ஊடாக நடைபெறுவதில்லை என அவதானிக்கப்பட்டது. (7.10)

8.16 சுற்றாடல் சிக்கல்களை தவிர்த்துக் கொள்வதற்கு செயற்படுத்தப்படும் நிகழ்ச்சித்திட்டங்களின் செயன்முன்னேற்றம்

8.16.1 தற்போது காணப்படும் காற்று தடைகள் மூலம் நிலக்கரி பிரிவின் முன்பகுதி முழுமையாக மேவுகை செய்யப்படவில்லை. பருவக் காற்று ஆரம்பத்துடன் காற்று வீசும் திசை மற்றும் வேகம் மாறுபடுவதால் மேற்குறித்த காற்று தடைகள் மூலம் நிலக்கரி தூசுகள் பரவுவதை முழுமையாக தவிர்க்க முடியாதென அவதானிக்கப்பட்டது. (7.11.1.1.1)

8.16.2 நிர்மாணத்திற்காக உத்தேச காற்று தடைகள் முன்றாவது தரப்பினரின் அழுத்தங்களின் அடிப்படையில் மாற்றுவதற்கு நேர்தமையால் 2018 மே 10 ஆந் திகதி வரையிலும் நிர்மாண நடவடிக்கைகள் ஆரம்பிக்கப்பட்டிருக்கவில்லை. இதன் பிரகாரம் எதிர்பார்க்கப்பட்ட காலச் சட்டகத்தினுள் நிர்மாணங்களைப் பூர்த்தி செய்வதற்கு முடியாதென அவதானிக்கப்பட்டதுடன் எதிர்பார்க்கப்பட்ட பெறுபேறுகளை அடைந்துகொள்ள முடியாதிருந்ததாக அவதானிக்கப்பட்டது. (7.11.1.1.2)

8.16.3 2018 மே 10 ஆந் திகதி வயையில் நீர் விசிரல் முறைமை இயங்காமல் காணப்பட்டதுடன் அம்முறைமை திருத்தம் செய்ய வேண்டிய நிலைமையில் காணப்பட்டது. (7.11.1.2.1)

8.16.4 சுயபாதுகாப்பு வலயத்தினை விரிவுபடுத்துவதற்காக தேவையான காணிக் கொள்வனவு நடவடிக்கைகள் 2018 மே 10 ஆந் திகதி வரையில் பூர்த்தி செய்யப்பட்டிருக்கவில்லை. (7.11.1.3.1)

- 8.16.5 மின்நிலையத்தை சுற்றி பல்வேறு வகையான மரங்கள் நடப்பட்டிருந்த போதிலும் 2018 மே 10 ஆந் திகதி வரையில் வரையிலும் தூசு துணிக்கைகள் தடுத்து வைக்கப்படக்கூடிய வகையில் எதிர்பார்க்கப்பட்ட மேவுகை வடிவமைக்கப்படாதிருந்தமை அவதானிக்கப்பட்டது. (7.11.1.3.2)
- 8.16.6 2018 மே 10 ஆந் திகதி வரையில் நிலக்கரி இருப்பின் பகுதியொன்றின் மாத்திரம் இரசாயன கரைசலொன்று இடுவதன் மூலம் மேவுகை செய்யப்பட்டிருந்தது. (7.11.1.4.1)
- 8.16.7 பிரிவில் குவத்து வைக்கப்பட்டிருந்த சாம்பலை மட்டப்படுத்துவதற்காக இயந்திரங்கள் மற்றும் மனித உழைப்பு பயன்படுத்தப்பட்டு நீர் மற்றும் சாம்பல் கரைசலொன்று (Slurry) பயன்படுத்துதல் சாம்பல் தொகுதியின் சுற்றுப்புறத்தை மேவுகை செய்வது போன்ற முறைமைகள் பயன்படுத்துவதன் மூலம் சாம்பல் காற்றுடன் பரவுவதை குறைந்த மட்டத்தில் பேணுவதற்கு முயற்சி எடுக்கப்பதாக பௌதீக ரீதியாக அவதானிக்கப்பட்டதுடன், இச்செயற்பாடு தொடர்ச்சியான மேற்பார்வையொன்றின் கீழ் பேணிச் செல்வதற்கு நடவடிக்கை எடுக்கப்படல் வேண்டுமென மேலும் அவதானிக்கப்பட்டது. (7.11.2.1.1)
- 8.16.8 சாம்பல் தொகுதியின் மேற்கு காற்று திசைக்கு காற்றுத் தடையொன்று நிர்மாணித்தல் 2018 மே 10 ஆந் திகதி வரையில் மேற்கொள்ளப்பட்டிருக்கவில்லை. (7.11.2.2.1)
- 8.16.9 கடல் நீரின் வெப்ப நிலை பீ.எச். பெறுமதி, திரவ ஓட்சிசன், நீர் மீன் வளங்கல் உட்பட ஏனைய உயிரினங்களின் நடத்தை மற்றும் மீன்பிடி நடவடிக்கைகள் போன்ற நடவடிக்கைகள் தொடர்பாக தேசிய நீர் வளங்கள் ஆராய்ச்சி மற்றும் அபிவிருத்தி முகாமை நிறுவகத்துடன் (NARA) தொடர்புபட்டு 2017 ஆம் ஆண்டிற்காக மாத்திரம் ஆராய்ச்சி அறிக்கைகள் சமர்ப்பிக்கப்பட்டிருந்தமை அவதானிக்கப்பட்டது. (7.11.3.1)
- 8.16.10 கடலின் உள்ளே நிலக்கரி படிந்திருக்கும் முறையை இனங்காண்பதற்காக மொறட்டுவ பல்கலைக்கழகத்தின் மூலம் பரிசோதனை நடவடிக்கைகளை மேற்கொள்வதற்கு வேண்டுகோள் விடப்பட்டிருந்த போதிலும் 2018 மே 10 ஆந் திகதி வரையில் அப்பரிசோதனை நடவடிக்கைகள் ஆரம்பிக்கப்பட்டிருக்கவில்லை. (7.11.3.2.1)
- 8.16.11 கடல் அரிப்பினை தவிர்ப்பதற்காக கரையோர பாதுகாப்பு திணைக்களத்துடன் கலந்துரையாடல் நடாத்தப்பட்டிருந்த போதிலும் 2018 மே 10 ஆந் திகதி வரையில் அச்செயற்பாடு பூர்த்தி செய்யப்பட்டிருக்கவில்லை. (7.11.4.1.1)
- 8.17 மூன்றாம் தரப்பினரின் கருத்துரைகள்**
- மின்நிலையமொன்று நிர்மாணிக்கப்பட்டிருந்த போதிலும் கிராம மக்களின் தேவைகளுக்காக நாளின் 24 மணித்தியாலங்கள் பூராகவும் மின்சாரம் கிடைக்காதிருந்தமை அவதானிக்கப்பட்டது. (7.12.2)
- 8.18 பத்திரிகை அறிக்கைகள்**
- ஊடகங்களின் மூலம் மேற்கொள்ளப்படும் பிரச்சாரங்களுக்காக தகவல்கள் வழங்குவதற்கு மின்நிலையத்தின் பொறுப்பு வாய்ந்த உத்தியோகத்தொருவர் பெயரிடப்படாதிருந்தமையால் பல்வேறு தகவல்கள் பல்வேறு நபர்களால் பத்திரிகை நிருபர்களுக்கு வழங்குவதால் மின்நிலையம் தொடர்பாக உண்மையான தகவல்கள் ஊடகங்கள் மூலம் வெளிப்படுத்தப்படாமை இடம்பெறக்கூடியதாக இருந்ததுடன் அவ்வாறான தகவல்கள் வழங்குவதன் பொறுப்பு தொடர்பாக குறிப்பான நபரொருவர் இனங்காண முடியாதிருந்தமை அவதானிக்கப்பட்டது. (7.13)

9. பரிந்துரை

- 9.1 வடமேல் மாகாண சுற்றாடல் மதியுரை சபையை செயற்படுத்தல். (8.5.1)
- 9.2 சுற்றாடல் அனுமதிப்பத்திரத்தை புதுப்பிக்கும் செயற்பாட்டின் போது மின் நிலையத்தினால் சமர்ப்பிக்கப்படுகின்ற தகவல்களின் சரியானதன்மையை உறுதிப்படுத்துவதற்காக வடமேல் மாகாண சுற்றாடல் அதிகாரசபையின் உத்தியோகத்தருக்கு பொறுப்புகளை கையளித்தல். (8.6.6)
- 9.3 தற்போது மத்திய சுற்றாடல் அதிகாரசபை மூலம் பிரசித்தப்பட்டுள்ள புகை வெளியீட்டு நியமங்களுக்காகக் நிலக்கரி எரிதலின் போது வெளியிடப்படும் வாயு புகை வெளியீடு தொடர்பாக முக்கியமான நியமங்கள் மற்றும் நியதிகளை இனங்கானுதலும் உள்ளடக்குதலும் (8.7)
- 9.4 காற்றுக் காலங்களில் பயன்பாட்டிற்கு எடுப்பதற்கு அதிகளவில் நிலக்கரி இருப்பினை களஞ்சியப்படுத்துவதற்குப் பதிலாக மாற்று முறைமை மூலம் நிலக்கரி போக்குவரத்துச் செய்யும் இயலுமை மற்றும் உட்கட்டமைப்பு வசதிகளை மேம்படுத்துவது தொடர்பாக சாத்தியவள ஆய்வொன்றினை மேற்கொள்ளுதல் (8.8.1, 8.8.2)
- 9.5 இறக்குமதி செய்யப்பட்ட நிலக்கரி எதிர்பார்க்கப்பட்ட விவரக் குறிப்புக்களிலிருந்து விலகியிருந்த போதிலும் அதற்கு பதிலாக விலை சீராக்கம் மூலம் இந்த இருப்பினை கையேற்பதற்கு பதிலாக இணங்கிய விவரக்குறிப்புகளுக்கு இணங்க நிலக்கரி பெறுகையை மேற்கொள்ள நடவடிக்கை எடுத்தல். (8.9.1, 8.9.2)
- 9.6 நிலக்கரி கொள்வனவிற்காக நியமிக்கப்படுகின்ற தொழில்நுட்ப மதிப்பீட்டுக் குழுவின் உறுப்பினர்களுக்கு இடையே சுற்றாடல் அறிவுடன் கூடிய உறுப்பினர் ஒருவரை உள்ளடக்குவதற்கு நடவடிக்கை எடுத்தல் (8.9.4)
- 9.7 கப்பல்களிலிருந்து வள்ளங்களுக்கு நிலக்கரி இறக்கும் போது கடலுக்குள் நிலக்கரி விழுவதை தவிர்க்கும் வகையில் பொருத்தமான வேலைத்திட்டமொன்று ஆரம்பிப்பதற்கு நடவடிக்கை எடுத்தல். (8.9.5)
- 9.8 சாம்பல் தொகுதி அமைந்துள்ள பூமியில் பறக்கும் சாம்பல் மற்றும் கீழ் சாம்பல் Bottom Ash படிவாக இருப்பதற்கு பதிலாக அந்த சாம்பலை வெளியேற்றும் நடைமுறையொன்றை துரிதப்படுத்துவதற்கும் தொகுதியில் படிந்துள்ள சாம்பல் அளவினை சுற்றாடலுக்கு சாதகமான வகையில் துரிதமாக அகற்றுவதற்காக இலங்கை தேசிய பொறியியலாளர் ஆராய்ச்சி அபிவிருத்தி நிலையத்துடன் கைச்சாத்திடப்பட்டிருந்த புரிந்துணர்வு உடன்படிக்கையை செயற்படுத்துவதை துரிதப்படுத்துவதற்கு உத்தியோகத்தரிகளின் கவனத்தை செலுத்தல் (8.10.2 , 8.10.3)
- 9.9 அனல் மின் நிலையத்திலிருந்து உருவாகும் சாம்பல் மற்றும் தொகுதியில் களஞ்சியப்படுத்தப்பட்டுள்ள சாம்பலை பயன்பாட்டிற்கு எடுப்பதற்கும் வெவ்வேறு உற்பத்தி செய்யக்கூடிய முதலீட்டாளர்களுக்கு இச்சாம்பலை வழங்குவதாக தெரியப்படுத்தல் (8.10.3)
- 9.10 மின் நிலையத்தின் வளி மாசடைதல் செயற்பாடுகளை தொடர்ச்சியாக மதிப்பீடு செய்வதற்கும் (Monitoring) பார உலோக பரிசோதனைகளுக்குமாக பொருத்தமான நடைமுறையொன்றை அறிமுகப்படுத்துதல் (8.11.2)
- 9.11 கடல் நீரின் தரத்தை பரீட்சிப்பதற்காக இரண்டாவது மற்றும் மூன்றாவது பிரிவுகளில் இணைய வழியில் (Online) மேற்பார்வை மூலம் பயன்படுத்துவதற்கு நடவடிக்கை எடுத்தல் (8.12.1)

- 9.12 மின்நிலையத்தின் வளவில் உள்ள சிற்றுண்டிச்சாலைக்கு பயன்படுத்தப்படும் நீரின் தன்மையை பரீட்சிப்பதற்காக முறையான நடைமுறையொன்றை தயாரித்தல் (8.12.2, 8.12.3)
- 9.13 மின்நிலையம் மற்றும் மின்நிலையத்தைச் சுற்றி நிலக்கீழ் நீரின் தரத்தை பரிசோதித்தல் தேசிய முக்கியத்துவமான செயற்பாடுகளாக கருதி ஆரம்பிக்கப்பட்டு தொடர்ச்சியாக செயற்படுத்துவதற்கும் அது தொடர்பாக தரவு முறையொன்றை பேணுவதற்கு உரிய காலத்தில் மீளாய்வு செய்வதற்கு நடவடிக்கை எடுத்தல். (8.13.2)
- 9.14 நிலையத்தில் தற்போது செயற்படுத்தப்பட்டு வரும் உற்பத்தி இயளலவை கூடிய செயற்திறனான வகையில் மேற்கொள்வதற்காக தேவையான நடவடிக்கைகளை எடுத்தல் (8.14.1)
- 9.15 தேசிய மின்சார முறைமைக்கு தடங்கல் ஏற்படாத வகையில் பராமரிப்பு நடவடிக்கைகளை திட்டமிடல் (8.14.3)
- 9.16 வழியிலான காலநிலை தரவுகள் முறையொன்று (Online System) பயன்படுத்தி அதிகமாக காற்று வீசும் காலங்களில் 24 மணித்தியாலங்கள் காற்றின் திசை மற்றும் காற்றின் வேகத்தை அளப்பதற்காக முறைமையொன்று தயாரித்தல். (8.15)
- 9.17 நிலக்கரி தொகுதியிலிருந்து இடம்பெறும் சுற்றாடல் சேதங்களை குறைப்பதற்காக தற்போது காணப்படும் சுற்றாடல் தடைகளை விரிவாக்குவதற்காக நடவடிக்கை எடுத்தல். (8.16.1, 8.16.2)
- 9.18 நீர் தெளிப்பான் முறைமையை செயற்படுத்தும் நிலைமைக்கு உட்படுத்துதல். (8.16.3)
- 9.19 சுயபாதுகாப்பு வலயத்தை விரிவாக்குவதற்காக தேவையான நடவடிக்கைகளை துரிதப்படுத்துதல்.(8.16.4.)
- 9.20 காடுகளை மேவுகை செய்வதற்குள்ள பிரதேசத்திற்குப் பொருத்தமான மரங்களை நடுதல்.(8.16.5)
- 9.21 சாம்பல் தொகுதிக்காக காற்று தடையொன்றை நிர்மாணித்தல். (8.16.8)
- 9.22 மொறட்டுவ பல்கலைக்கழகத்தின் மூலம் கடலின் உள்ளே நிலக்கரி படிந்திருக்கும் முறையை முறை தொடர்பான கணிப்பீட்டு நடவடிக்கைகள் மேற்கொள்வதை ஆரம்பிப்பதற்கு தேவையான நடவடிக்கை எடுத்தல். (8.16.10)
- 9.23 கடல் அரிப்பினை தவிர்ப்பதற்காக கரையோர பாதுகாப்பு திணைக்களத்துடன் கலந்துரையாடி கடற் கரையை பாதுகாப்பதற்காக நடவடிக்கை எடுத்தல். (8.16.11)
- 9.24 மின்நிலையத்தை சுற்றி கிராமவாசிகளுக்காக தேவையான 24 மணித்தியாலங்களும் தொடர்ச்சியாக மின்சாரத்தை வழங்குவதன் மூலம் மின்நிலையத்திற்கு கிராமவாசிகளின் எதிர்ப்பினைக் குறைத்துக் கொள்ளலாம் (8.17)
- 9.25 தவறான தகவல் சமூகமயப்படுத்தப்படுவதை தவிர்ப்பதற்காக பத்திரிகைகளுக்கு தகவல்களை வழங்குவதற்கு மின்நிலையத்தினால் பெயரிடப்பட்ட முகவரொருவரை நியமித்தல் மற்றும் மின்நிலையத்தின் முக்கியத்துவம் தொடர்பாக மக்களை அறிமுகப்படுத்துதல் (8.18)

9.26 இந்நிலையத்திலிருந்து எதிர்பார்க்கப்பட்ட நோக்கங்களை நிறைவேற்றுவதற்காக தயாரிக்கப்பட்ட திட்ட செயற்பாட்டினுள் உள்ளடங்கியுள்ள இலக்கினை கையேற்கும் போது எதிர்பார்க்கப்பட்ட சுற்றாடல் பொறுப்புக்களை காலரீதியில் வரைவிலக்கணப் படுத்தாதிருந்ததுடன் அதன் பெறுபேறொன்றாக செயற்திட்டத்திலிருந்து எதிர்பார்க்கப்படாத சுற்றாடல் சிக்கலொன்று உருவாகியிருந்தமை அவதானிக்கப்பட்டது. இதனால் சுற்றாடல் சிக்கல்களுக்காக செலவாகும் பொருளாதார, சமூக மற்றும் சுற்றாடல் கிரயத்தை குறைத்து மின்நிலையத்திலிருந்து தேசிய பொருளாதாரத்திற்கும் சமூகத்திற்கும் கூடிய பெறுமதியொன்றை கையேற்பதற்கு நடவடிக்கை எடுத்தல்.

10. தீர்மானங்கள்

- 10.1 மின்நிலையத்தின் செயற்பாடுகளின் மூலம் உருவாகும் பறக்கும் சாம்பல் மற்றும் கீழ் சாம்பல் என்பவற்றை முறைப்படி முகாமை செய்வதற்கும் நிலக்கரி தொகுதியில் உள்ள தூசியை கட்டுப்படுத்துவதற்காக போதியளவு நடவடிக்கை எடுப்பதற்கும் இலங்கை மின்சார சபை உரிய நேரத்தில் செயற்படாத காரணத்தினால் சுற்றாடல் ரீதியாக பாதகமான தாக்கம் ஏற்பட்டுள்ளதாக தீர்மானிக்கப்படுகின்றது.
- 10.2 மின்நிலையத்தில் தற்போது சேர்ந்துள்ள பறக்கும் சாம்பல் மற்றும் கீழ் சாம்பல் என்பவற்றைப் பயன்படுத்தி ஆரம்பிக்கக்கூடிய கைத்தொழில் தொடர்பாக இனங்காணப்பட்டு அத்தரப்பினருடன் உடன்படிக்கை செய்யப்பட்டிருந்த போதிலும் அவை வெற்றிகரமாக செயற்படுத்தப்படாமல் இருந்ததுடன் அதற்காக இலங்கை மின்சார சபையின் கவனம் செலுத்தப்படுவது போதியளவில் இல்லையென தீர்மானிக்கப்பட்டிருந்தது.
- 10.3 சாம்பல் செயற்திட்டத்தின் மூலம் இடம்பெறும் சுற்றாடல் சேதத்தைக் குறைப்பதற்காக வடிவமைக்கப்பட்டிருந்த சுயபாதுகாப்பு வலயம் வெற்றிகரமாக மேற்கொள்ளப்படாதிருந்ததாக தீர்மானிக்கப்பட்டிருந்தது.
- 10.4 வடமேல் மாகாண சுற்றாடல் அதிகாரசபையினால் லக்விஜய மின்நிலையத்தினால் சுற்றாடல் பாதுகாப்பு அனுமதிப்பத்திரத்தை புதுப்பிக்கும் போது மின்நிலையத்தின் செயற்பாடுகள் ஊடாக சுற்றாடலுக்கு ஏற்படக்கூடிய பாதகமான தாக்கங்களை குறைப்பதற்காக தேவையான பரிசோதனை அறிக்கை மீளாய்வுசெய்தல் மற்றும் அதற்காக தேவையான நடைமுறைகளை எடுப்பதற்காக வழங்கப்பட்டிருந்த பங்களிப்பு போதியளவில் இல்லையென தீர்மானிக்கப்பட்டது.
- 10.5 உயர் தரத்திலான நிலக்கரி பயன்படுத்தாததன் காரணமாக நிலக்கரி எரிவின் போது உருவாகும் சாம்பல் அதிகரித்திருந்ததுடன் அதன் மூலம் சுற்றாடல் பாதிப்பும் அதிகரித்துச் செல்வதாக தீர்மானிக்கப்பட்டிருந்தது.
- 10.6 தேசிய பொருளாதாரத்திற்கு கருத்திற் கொள்ளக்கூடிய பங்களிப்பொன்று வழங்கும் இச்செயற்திட்டத்தின் பாதகமான சுற்றாடல் தாக்கத்தை தவிர்ப்பதற்காக தேவையான நடவடிக்கைகள் மேற்கொள்ளப்பட்டு இச்செயற்திட்டத்தினை பேணிச் செல்வதற்காக பொருளாதார ரீதியாக ஆக்கபூர்வமானதென தீர்மானிக்கப்பட்டது.

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கணக்காய்வாளர் தலைமை அதிபதி

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கணக்காய்வாளர் தலைமை அதிபதி

2019 மார்ச் 29

Operations of the Lakvijaya Power Station and its Environmental Impact

1. Executive Summary

Lakvijaya Power Plant belongs to the Ceylon Electricity Board is one and only coal power station in Sri Lanka with the capacity of 900 MW established at Kalpitiya – Norochchele in the North Western Province. The first stage with 300 MW in the year 2006 and the second stage with 600 MW in the year 2010 had been commenced and 900 MW from the first and the second stages was added to the national grid in the years 2011 and 2014 respectively. With a contribution from 26 power stations (except private power stations) under the Ceylon Electricity Board for the present electricity generation of Sri Lanka and a contribution from 247 sub stations, the total electricity production in the year 2017 was 14,671.2 Gwh. The contribution of the Lakvijaya Power Plant for this production was 34.78 per cent. It was observed that, of the main sources of water, fuel and coal used for the production of electricity, coal is the second source of minimum average unit cost for the production of electricity.

This report has been prepared with the objective of the identification of operations of this power plant and its environmental impact. The first Environment Protection Licence had been issued by the North Western Provincial Environmental Authority for the Lakvijaya Power Plant in the year 2015 but the Central Environmental Authority had not intervened in this connection. Even though, the application for the renewal of licence for the year 2017/2018 had been forwarded on 14 June 2017, to the Provincial Environmental Authority by the power station, it had not been issued even by 10 May 2018. As sufficient attention of the Provincial Environmental Authority had not been drawn in respect of the process of operation of power plant for the achievement of objective of issuing the Environmental Protection Licence and the inefficiency of other responsible entities it was observed that environment had adversely affected.

As a special attention was not paid in respect of the quality of coal which is the principle raw material used for the production of electricity by the Lakvijaya Power Plant had also caused a foremost factor for adverse environmental issues. Similarly, even though the disposal methodology of by products produced as fly ash and bottom ash while coal being combusted had been identified at the planning stage, that process had not been adequately implemented and as such it was observed that it would pose environmental problems and increase the cost to be incurred by the power plant in taking action to control such problems. It was observed that instead of depositing fly ash in the yard which is an environmental problem, requirement of another identified raw material for the electricity generation having being disposed of ash from the yard by an expeditious cause of action. It was further observed

that the Provincial Environmental Authority had not continuously monitored to ensure whether the operations of the power plant were carried out in accordance with the ambient air quality standards published by the Provincial Environmental Authority.

The requirement of continuous supervision of the disposal of toxic air and solid waste emitted in the process of coal combustion and harmful to the environment, process of discharging refined sea water used for the operation activities of the power station, into the sea again and the continuous supervision of under ground water etc. were observed in audit. It was further observed that efficiency of flue gas desulphurization (FGD) in respect of emission air and electro static precipitator (ESP) in respect of fly ash should be continuously monitored. Necessary action should be taken to carry out the maintenance function of the power station in accordance with a proper plan and to widen the wind barrier now existing round the coal yard in order to prevent the dusty particles available in the coal yard with wind and to prevent in spreading ash clustered now in the coal yard to the country side.

Action has to be taken for the minimization of impact caused to fisher – folk through the operation of power station, and planning necessary action to find the quantity of coal deposited in the sea bed and minimize such deposit by carrying out the seabed surveys. It was also observed that necessary action should be taken to minimize coastal erosion and to protect the coastal line. In following all these processes, production of electricity can contribute as a value added industry to the national economy as well as an environmental friendly industry by minimizing environmental damages.

2. Background and nature of the report

Lakvijaya power station belongs to the Ceylon Electricity Board is one and only coal power station in Sri Lanka with the capacity of 900 MW established at Kalpitiya – Norochchale in the North Western Province. The first stage with 300 MW in the year 2006 and the second stage with 600 MW in the year 2010 had been commenced and 900 MW from the first and the second stages was added to the national grid in the years 2011 and 2014 respectively. Lakvijaya power station is one and only coal power station in Sri Lanka contributing one third of the total electricity generation and is important to identify economic and social values arisen thereby. This report had been prepared on the requirement of preparing an environmental audit report in respect of environmental issues arisen in the operation of that power station and action taken to prevent them, anticipated proposals to be implemented in future and its operation etc.

3. Scope

Operating activities of the Lakvijaya Power Station in the years 2016, 2017 and up to 10 May 2018, maintenance function of the power station, environmental issues faced at present, tests and survey reports issued by the stakeholders interested there upon had been examined.

4. Scope Limitations

In arriving at conclusions based on the observations indicated in this report, it is brought up that my scope had been subjected to the under mentioned limitations.

- 4.1.** Capacities of coal yard and fly ash and bottom ash yard could not be specifically stated as the stock of coal purchased by the power station and the fly ash and bottom ash spread in the yard had not been physically verified.
- 4.2.** It was unable to forecast future effect by sound and vibration and also unable to assess the impact of the operations from the inception of the power station for the quality of soil existed in the power station premises at present.
- 4.3.** Unable to identify planning weaknesses caused to environmental problems as the construction designs relating to the construction of power station had not been examined.
- 4.4.** Non-examination of performance of all sources of obtaining electricity, using waterfalls, wind and private sector by the Ceylon Electricity Board to generate electricity.
- 4.5.** In arriving audit recommendations and conclusions, information and data obtained from other parties had been based.

5. Methodology in the preparation of report

The following methodologies had been followed in the preparation of this report.

5.1. Examination of documents.

- 5.1.1.** National environmental Act No. 47 of 1980
- 5.1.2.** North Western Provincial Environmental Statute No. 12 of 1990
- 5.1.3.** Bidding documents for the supply of coal during the period from September 2017 to April 2019 between the Ceylon Electricity Board and the Lanka Coal Company (PVT) Ltd.

- 5.1.4. Action plan and recommendations made for the minimization of environmental effect as much as possible by the Lakvijaya Thermal Power Station presented by the Public Utilities Commission of Sri Lanka.
- 5.1.5. Recommendations made by the National Water Resources Research and Development Agency
- 5.1.6. Gazette notification extra ordinary 2006 of the Democratic Socialist Republic in Sri Lanka. (Department of Coastal Conservation)
- 5.1.7. Gazette notification extra ordinary No 2010/23 dated 16 March 2017 orders of the Water Resources Board.
- 5.1.8. Registered maintained by the North Western Provincial Environmental Authority
- 5.1.9. Electricity generation and research data of the Lakvijaya power station 2016, 2017 and up to 10 May 2018
- 5.1.10. Performance reports of the Lakvijaya Coal Power Station.
- 5.1.11. Performance report for the Ceylon Electricity Board
- 5.1.12. Recommendation of the Public Utilities Commission of Sri Lanka
- 5.1.13. Media reports and reports issued by other entities relating to environmental issues

5.2. Other Tests

- 5.2.1. Spot inspections – Lakvijaya Power Station premises
- 5.2.2. Interviews had with few villages of Narakkalliya, Paniadiya

6. Introduction to the process

- 6.1. Electricity demand and generation in Sri Lanka at present, introduction to Lakvijaya Power Station and identification of its impact
- 6.2. Quality of coal to be existed, by products of coal combustion and maintenance of ambient air quality standards.
- 6.3. Ascertainment of water, required for the cooling system of the power plant, process of disposing refined water into the sea and identification of current position of underground water.
- 6.4. Performance of the power station and analysis of data relating to the temporary suspension of the power station for operations.
- 6.5. Present positions of the programs implemented to prevent environmental problems, third party comments on the environment issues and the explanation of media reports publish thereabout.

7. The Process

7.1. Current electricity demand and electricity generation in Sri Lanka

7.1.1. Electricity demand in Sri Lanka

In considering the electricity demand for the last 15 years from 2002 to 2016, it was observed that the annual average growth rate stands at 6 per cent. The electricity demand of GWh 11,786 in the year 2015 had risen to GWh 12,785 in the year 2016. The average demand, forecasted for the 5 years from 2018 to 2022 would be 5.9 per cent whereas it would be anticipated that the average growth rate of demand for the ending 25 years from 2018 to 2042 would be 4.8 per cent.

(Source: Generation Expansion Plan 2017) – Annexe 01

7.1.2. Electricity generation sources in Sri Lanka at present

The foremost electricity suppliers in Sri Lanka is the Ceylon Electricity Board. By the year end 2017 the total generation capacity amounted to MW 4087 and the electricity had been distributed through 247 sub stations. Of these substations, ownership and operations of 26 substations belonged to the Ceylon Electricity Board and the number of power stations belonged to Sri Lanka in the year 2017 according to the electricity generation data are as follows. (Annexe - 02)

Table No 01 - Power Stations generated electricity in Sri Lanka - 2017

<u>Type of power station</u>	<u>Number of power stations</u>
Hydro power	17
Thermal	8
Wind	1
<u>Under the private ownership</u>	
Thermal	6
<u>Small scale ownership</u>	
Others	215

Source: [CEB statistical Digest – 2017] – Annexe 02

7.1.3. Source contribution for electricity Generation

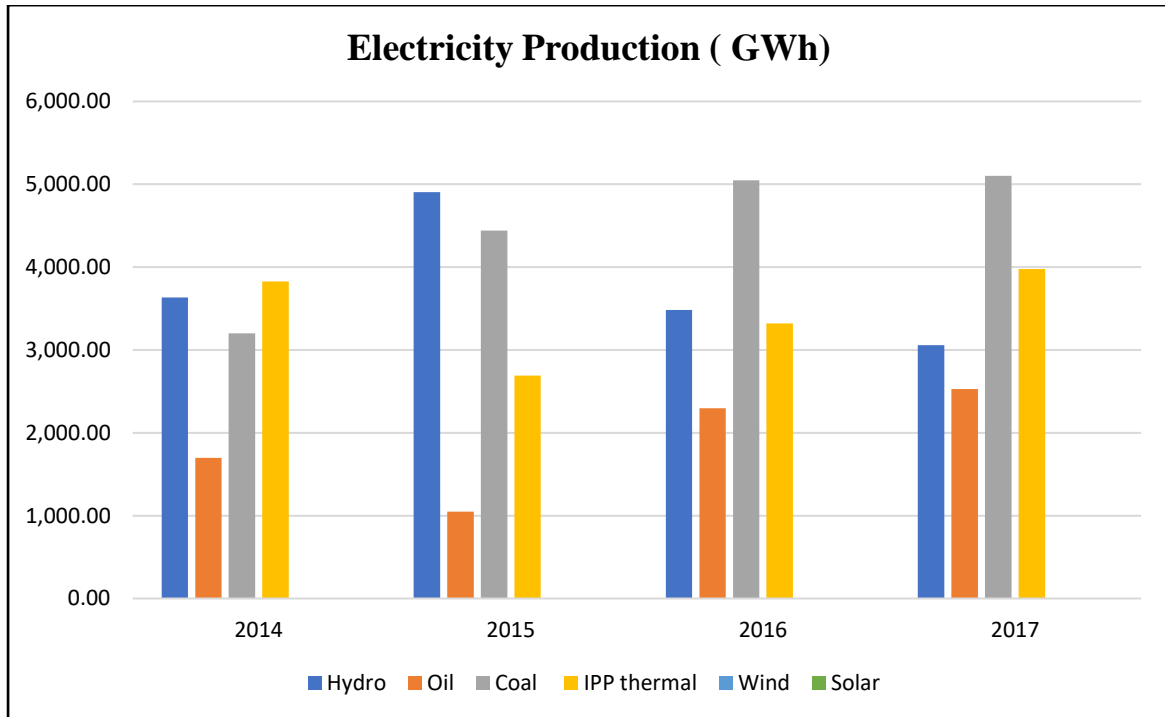
The Ceylon Electricity Board had been established under the principle vision of “maintenance of a develop efficient , co-operative and an economical electricity supply to the entire Sri Lanka , conforming to our values and ethics” (Annexe - 03) and the contribution of the power stations to the cumulative electricity production of the Ceylon Electricity Board during the past 4 years is as follows.

Table No 02 - Sources contribution to the Electricity generation 2014 – 2017

Year	Electricity production (GWh)						Total production (GWh)	Contribution of the Lakvijaya Power Station to the Electricity Production %
	Hydro	oil	coal (Net)	IPP thermal	wind	Solar		
2014	3,632.0	1,696.0	3,202.0	3,825.0	2.1	-	12,357.1	25.91%
2015	4,904.0	1,050.0	4,443.0	2,691.0	1.1	-	13,089.1	33.94%
2016	3,481.0	2,297.0	5,047.0	3,322.0	2.1	-	14,149.1	35.67%
2017	3,059.0	2,529.0	5,103.0	3,978.0	2.2	-	14,671.2	34.78%

Source - [CEB Statistical Digest 2014,2015,2016,2017] Annexe – 04

Picture/ Diagram No 01 – Electricity production under various sources



7.1.4. Efficiency measurements of Electricity Generation

Certain indicators used in the measurement of efficiency of the electricity generation are as follows.

- i. Plant Factor
- ii. Running Plant Factor
- iii. Generation Cost
- iv. Average Unit Cost
- v. Availability Factor

Source [Generation Performance in Sri Lanka - 2016 - PUCSL] Annexe - 05

The progress of few power stations relating to these performance indicators during the year 2016 is as follows.

Table No 03 - Progress of few power stations relating to the performance indicators of Electricity Generation

Power Plant	Performance Indicator					
	Annual generation (GWh)	Plant Factor Percentage %	Running Plant Factor Percentage %	Generation Cost (Rs. Million)	Average Unit Cost (Total cost – CEB) (Rs./ KWh)	Availability Factor Percentage %
<u>Hydro Power</u>						
Victoria	588.93	31.9	64	2,345	3.98	83
			64			88
Lakshapana - New	432.18	42.4	50	1,630 (Lakshapana New/ Old)	2.44	87
			48			91
Polpitiya	325.04	49.3	54	2,201	5.09	85
			62			89
Randenigala	323.44	30.2	85	2,021 (Randenigala/ Rantambe)	4.34	88
			92			89
Samanalawewa	260.54	24.7	56	1,868	7.17	90
			59			89
<u>Coal Power - lakvijaya</u>						
Lakvijaya - Unit 1	826.96	31.38	38.93	33,349	6.61	48.23
Lakvijaya - Unit 2	2,383.01	90.43	95.2		6.61	93.63
Lakvijaya- Unit 3	2,365.48	89.76	94.11		6.61	92.7

Fuel						
Kelanithissa Power Station (KCCP)	780.71	55.2	GT – 89	19,845 (CCY)	38.71 (PS GTS)	70 (GT)
			ST - 94		25.42 (CCY)	64 (ST)
Sapugaskanda B	474.70	77.6	84	10,969	23.11	85
Barge CEB	356.11	67.6	100	7,783	21.86	98

Source - [Generation Performance in Sri Lanka - 2016 - PUCSL & CEB] Annexe – 05

7.1.5. Cost of Electricity generation – 2015 / 2016

Contribution by each technology for the generation of one unit of electricity for the last two years appear below.

Table No 04 – Cost of Electricity Generation 2015/2016

Technology	Cost of fuel		Cost of spare parts and other maintenance materials		Other operating and maintenance cost		Total generation cost		Unit		Average cost for the generation of one unit	
	Rs. Mn		Rs. Mn		Rs. Mn		Rs. Mn		GWh		Rs/KWh	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Thermal-Oil	22,802	49,516	1,087	1,677	6,322	6,412	30,211	57,605	1,085	2,362	27.84	24.38
Thermal - Coal	21,304	20,762	748	762	10,631	11,978	32,682	33,502	4,457	5,066	7.33	6.61
Hydro power	-	-	532	364	7,608	7,980	8,140	8,344	4,925	3,501	1.65	2.38
Total	44,106	70,278	2,367	2,803	24,561	26,370	71,033	99,451	10,467	10,930	6.79	9.10

Source - [Annual Report - 2015/2016 - CEB] Annexe – 06

7.1.6. Variances of Electricity generating sources

As compared with the variiances of hydraulic power source used for the production of electricity during the past 3 years, statistics in respect of using other sources of electricity generation appear below.

Table No 05 – Variiances of Electricity generating sources

<u>Year</u>	<u>Hydro Power GWh</u>	<u>Percentage of variance %</u>	<u>Oil GWh</u>	<u>Percentage of variance %</u>	<u>Coal GWh</u>	<u>Percentage of variance %</u>	<u>Private contribution GWh</u>	<u>Percentage of variance %</u>	<u>Others (Wind and solar) GWh</u>	<u>Percentage of variance %</u>	<u>Total Production GWh</u>
2015	4,904		1,050		4,443		2,691		1.1		13,089
2016	3,481	(37.62)	2,297	140.85	5,047	14.85	3,322	47.82	2.1	100	14,149
2017	3,059		2,529		5,103		3,978		2.2		14,671

Source [CEB Statistical Digest 2014,2015,2016,2017] Annexe -04

In the generation of electricity from the year 2015 to 2017, the electricity generation from hydraulic power source had recorded a decline from 37.46 (4,904/13,089x100) per cent to 20.85 (3,059/14,671x100) per cent and when considered only hydro power source, it had dropped by 37.62 per cent. It was observed that the electricity generation by using oil source and the electricity purchases from the private sector (IPP) during this period had risen by 140.85 per cent and 47.82 per cent respectively, to satisfy the electricity demand during that period. The increase of number of units generated during this period using coal, incurring the second minimum unit cost source out of the electricity generation sources of Ceylon Electricity Board had been only 14.85 per cent.

7.2. Introduction to Lakvijaya Power Station

7.2.1. Establishment and production capacity

One and only thermal power station belongs to the Ceylon Electricity Board located at Kalpitiya – Norochhole area in the North Western Province is the Lakvijaya coal power station which has the capacity of 900 MW. This power station had been located nearly 100 meters towards the highland from Puttalam, maritime adjacent to Paniyadi and Narakkalliya villages, a distance of about 12 Km via main road and Western direction of the town. Construction works of the first and the second stages had been completed in March 2011 and May and September 2014 respectively, and the power station is operated under 3 units with the capacity of 300 MW in each unit.

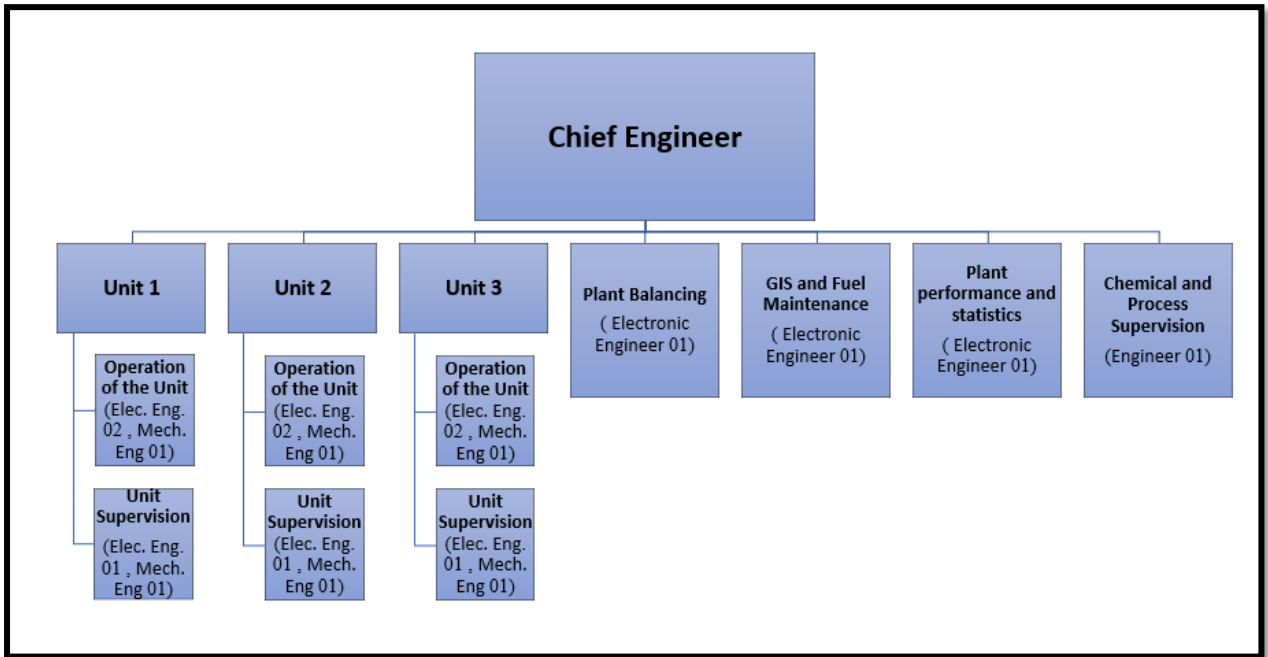
7.2.2. Skeleton of the power plant premises

The extent of the area where power station is located consists of 470 meters in width and 2000 meters in length approximately. One unit with the capacity of 300 MW contains 01 boiler, 01 steam turbine, one static electro precipitator (ESP) one flue gas desulphurization (FGD) and a chimney with a length of 150 meters. The power station had been invented with “Low NOx Burners which was a special formation being regulated the temperature in a manner that minimizes Nitrogen Oxide exhausted in coal combustion. In addition, a coal yard, 46 Acres in extent and a yard to deposit bottom ash, 25 Acres in extent had existed in that premises. This power station generates 20 Kw of electricity and it will increase up to 220 Kw through the transformer and linked to the National Grid via 2 transmission lines consisting of 2 circuits, the lengths of 117 Km and 100 Km through the Veyangoda and Anuradhapura sub – stations respectively.

7.2.3. Administrative powers of the power station

The Lakvijaya power station operates under a Chief Engineer and its organizational hierarchy is as follows.

Picture/ Diagram No 02 - Organizational Hierarchy of the Lakvijaya Power Station



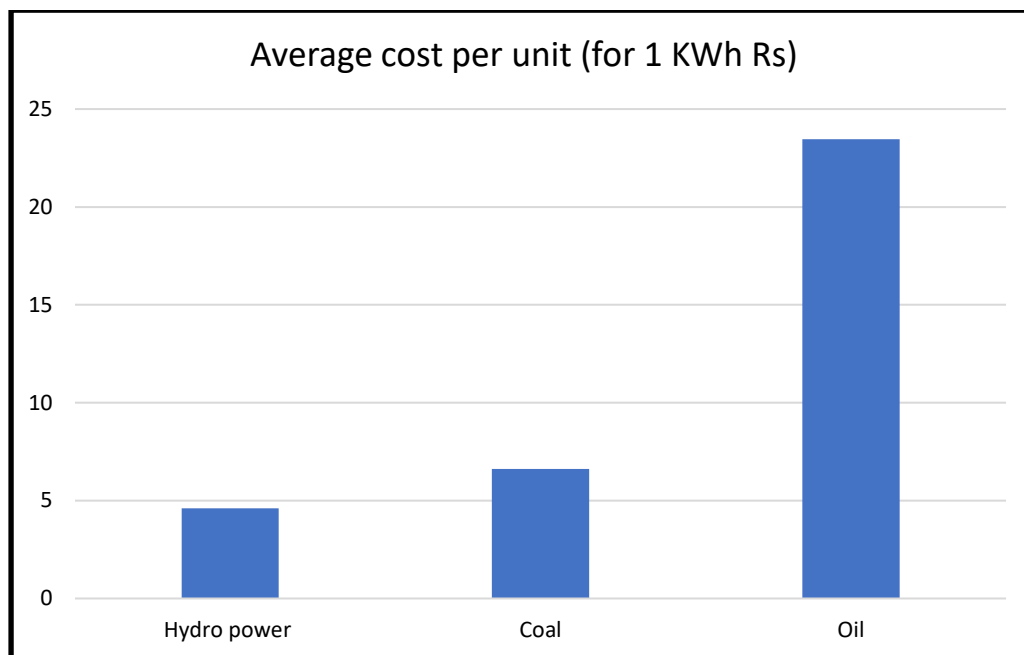
7.2.4. Cost per unit of electricity and contribution to National grid

Sources mainly used for the production of electricity by the Ceylon Electricity Board are classified as hydraulic power coal and oil and the contribution made by using those sources during the year 2016 and the generating cost per unit is as follows.

Table No 06 - Electricity generating cost per unit and the generating contribution – 2016

Source	Average cost per unit (for 1 KWh Rs)	Electricity generation
Hydro power	4.60	24.6%
Coal	6.61	35.7%
Oil	23.46	16.2%

Picture/ Diagram No 03 - Average unit cost –Rs (kwh) - 2016



Source – (Generation Performance in Sri Lanka - 2016 - PUCSL, CEB Statistical Digest 2016 and CEB) Annexe -07

7.2.5. Comparison of electricity generation cost of the Lakvijaya thermal power station

Comparison data in respect of cost incurred for the number of Gwh generated by the Lakvijaya power station up to the year 2017 and the cost to be incurred for the production of electricity of the same number of Gwh by the Kelanithissa power station which generates electricity by using oil through the combine cycle is given below.

Table No 07- Comparison of generated cost of the Lakvijaya Power Station with the generated cost of the Kelanitissa Power Station

	Description	Unit	1st stage	2nd stage	Total
Lakvijaya Thermal Power Station					
I	Net electricity generation	Gwh	8,787.87	13,681.28	22,469.15
II	Operating and maintenance costs per unit of electricity	Rs .	8.39	8.39	8.39
III	Approximate electricity generating cost	Rs. Mn	73,730.00	114,785.94	188,515.94
IV	Agreed price	Rs. Mn	70,525.00	126,945.00	197,470.00

<u>Combine Cycle electricity generation of Kelanitissa Power station</u>					
V	Net electricity generated by Lakvijaya Power Station	Gwh	8,787.87	13,681.28	22,469.15
VI	Operating and maintenance costs per unit	Rs.	24.00	24.00	24.00
VII	Generating cost had 8787.87 Gwh of electricity been generated by combine cycle of the Kelanitissa power station	Rs. Mn	210,908.94	328,350.72	539,259.66
VIII	As such, the total savings as a result of generating electricity by lakvijaya power station (VII-III)	Rs. Mn	137,178.69	213,564.78	350,743.47
	Net Savings (VIII-IV)	Rs. Mn	66,653.69	86,619.78	153,273.00

Annexe - 08

According to the above information, an expenditure of Rs.188,516 million had been incurred for the production of 22,469 Gwh by the Lakvijaya Thermal Power Station by the year 2017. Similarly, had the same number of Gwh been produced by the combine cycle of the Kelanithissa power station, the above computation established that a sum of Rs.539, 260 million had to be incurred.

7.3. Lakvijaya power station and its environmental impact

7.3.1. Empowerment of the National Environmental Act No 47 of 1980 and North Western Province Environmental Statute No 12 of 1990

7.3.1.1. The Central Environment Authority had been established under the National Environmental Act No 47 of 1980 (Annexe 09) in the year 1981. Then the Ministry of Environment and Natural Recourses (Currently the Ministry of Mahaveli Development and Environment) established in the year 2001 in view of the objectives of integrating development process of Sri Lanka and environmental affairs, is responsible for all functions connected with the Central Environmental Authority. The legal powers of the Central Environment Authority had been broadened under the National Environmental (Amendment) Act No 56 of 1988 and Act No 53 of 2000 (Annexe -09). in compliance with National Environmental Act, 25 sub offices had been established to cover all 09 provinces. In addition, 2 sub offices for the Kurunegala and Puttalam districts in the North Western Province had been established. Making recommendations for industries proposed to be constructed, issue of Environmental Protection Licences and environmental management functions had been carried out by those 2 offices as well. (Annexe - 10)

7.3.1.2. Similarly, North Western Province Environmental Authority had been established in terms of sub – section 2 (i) of part 1 of the North Western Province Environmental Statute No 12 of 1990 (Annexe 11) under the Provincial Councils powers vested in the 13th Amendment of the Constitution of the Democratic Socialist Republic of Sri Lanka in the year 1987. In terms of sub – section 07 (i) of the Statute, a Provincial Environmental Consultancy Council should be established and its members should be appointed by the Minister in charge of the subject or among them a number of members should be appointed. In terms of Section 7 (1) (m) of the Statute, one member should represent the Central Environment Authority (Annexe - 11)

7.3.1.3. The fundamental case No 226/2006 (Annexe - 12) of the Supreme Court in 2006 stated that the Provincial Council was directly responsible for the environmental problems arisen from industrial processes in the North Western Province and accordingly the validity of the National Environmental Act, No 47 of 1980 had been suspended within the North Western Province.

7.3.2. Issue of Environmental Protection Licence

7.3.2.1. Under Section 23 (B) (i) of the National Environment Act (Annexe - 09) and Section 21 (1) of part (v) of the North Western Province Environmental Ordinance (Annexe – 13) the Licence to be obtained by specific industries / processors had been annunciated and that licence should be obtained from the Central Environmental Authority / Provincial Environmental Authority. According to the nature of the industry and the entity to which this environmental licence is issued, the validity period of the licence is determined. The primary intention of the issue of this licence is the bearer of this licence is authorized to discharge /deposit waste and or emit noise, vibrations, air emissions which may arise as a result of the operation of the industry or process in accordance with the standards and criteria prescribed by the Central Environmental Authority / the Provincial Environmental Authority.

7.3.2.2. The first Environment Protection Licence had been issued on 30 June 2015 bearing No 3536/2015 dated 30 June 2015 (Annexe – 14) by the North Western Province Environmental Authority for the period 30 June 2015 to 29 June 2016 for the Power Station.

- 7.3.2.3.** The power station had requested the first renewal of the licence after 29 June 2016 and the approval had been granted by the Authority on 30 June 2016 (Annexe - 15)
- 7.3.2.4.** Even though the application for the renewal of Environment Protection Licence for the year 2017/2018 had been presented on 14 June 2017 by the power station (Annexe - 16), the approval had not been granted by the Provincial Environmental Authority even up to the date of audit on 10 May 2018.
- 7.3.2.5.** In terms of condition No 06 (Annexe - 17) of the licence bearing No 3536/2016 R1 issued for the period 30 June 2016 to 29 June 2017 it was stated that the ground water should not be used for the operations or any other activities of the power station without obtaining the prior approval of the Water Resources Board.
- 7.3.2.6.** Under Section 61 of the North Western Province Environmental Statute No 12 of 1990 read in conjunction with section 20 and 21 of the said Statute, regulations made by the Minister had been promulgated by the gazette No 1685/11 dated 21 December 2010 (Annexe – 18). The condition No 07 (Annexe - 17) of the licence emphasized that the power station should strictly adhere to orders in respect of ambient air quality as stated in this gazette notification.
- 7.3.2.7.** In terms of regulation No 8 of the licence, (Annexe - 17) the quality of fuel to be used for the operation of the power station is stated as “good quality, low ash coal with Sulphur content of 1% or less by weight shall be used for the operation of the plant.
- 7.3.2.8.** In terms of conditions 13.5 of the Environment Protection Licence, records in respect of the quantity of dangerous waste generated by operation of the project and its quality should be maintained and such reports should be referred to the Provincial Environmental Authority annually.
- 7.3.3. Standards and criteria issued in accordance with the National Environmental Act**
Based on the ambient air quality regulations issued in accordance with the National Environment Act, the environmental standards and criteria of the North Western Province had been determined.

7.3.4. Analysis of Environmental impact on landing and transportation of coal to yard and the annual coal requirement

7.3.4.1. For the production of 300 MW capacity electricity, 110-114 metric tons of coal per hour approximately is required and for the production of 900 MW capacity of electricity, it was estimated that approximately 2,250,000 metric tons of coal is required annually. Coal for the power station is supplied during the period from January to April and September to December every year and the capacity of a vessel which transports coal is approximately 65,000 metric tons. Accordingly, the number of expected shipments per annum is 35 approximately.

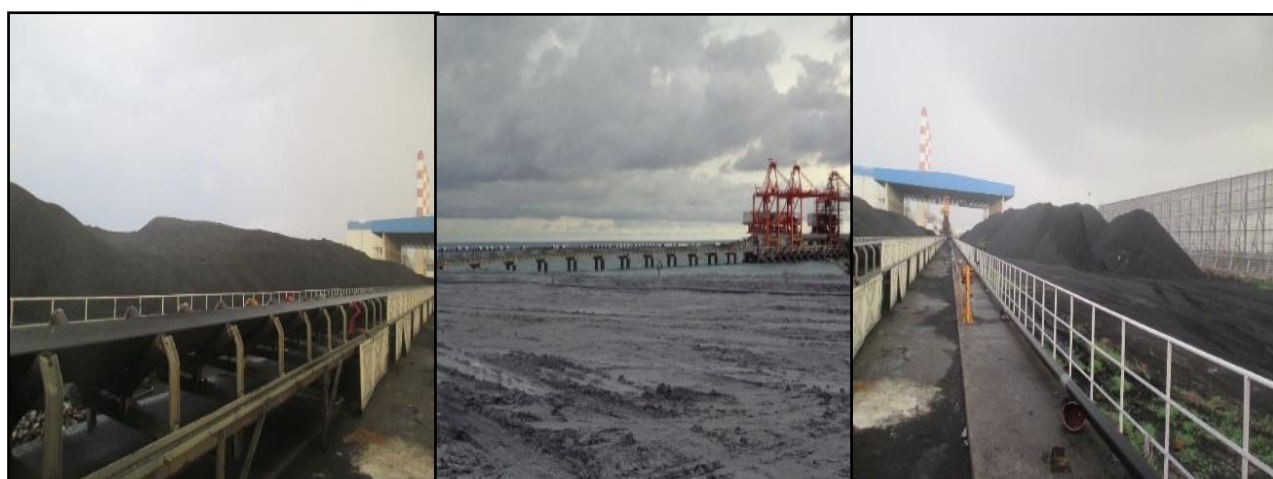
7.3.4.2. According to the paragraph 2.2.3 of the environmental effect evaluation study report prepared in March 1998, alternatives had been proposed to build a jetty for the facilitation of loading imported coal to the yard. One alternative was to build a jetty with the length of 4.2 Km and another alternative was to build a jetty with the length of 500 meters. The power station had selected the alternative of construction of a jetty with 500 meters in length.

7.3.4.3. Imported coal is transported to the jetty by barges (Capacity of a barge is approximately 1500-2000 metric tons) and the coal contains in the barge is passed on to the conveyor belt through the cranes. (Capacity of 500 metric tons per hour) Metric tons of 15,000 – 20,000 are transported daily by average number of barges from 9 to 10 per day. This coal is deposited in a yard, 41 acres in extent and this yard consist of 2 types viz: open and close. Coal required for the operating process obtained from these yards and deposited in coal bunkers. For the generation of 300 MW of electricity coal is stored in 5 such bunkers and the capacity of one such bunker amounts to 350 metric tons approximately. Coal deposited in one unit can be utilized for a period of 10 hours and to generate 300MW, only 4 bunkers out of 5 are required. Particulars of number of vessels and the countries of imports for the last 5 years are as follows.

Table No 8 - Coal Imported country and number of arrivals of vessels from 2013 to 2017

Imported county	Number of arrivals of vessels				
	2013	2014	2015	2016	2017
Indonesia	7	18	11	-	-
Russia	-	-	21	4	-
South Africa	2	-	-	25	37
Total	9	18	32	29	37

Picture/ Diagram No 04 - Coal yard and Conveyer belt by which coal is transported



7.3.4.4. The Minister of Transport and Civil Aviation had held discussions with the officials of the Ministry of Power and Renewable Energy, Lanka Coal Company, Department of Sri Lanka Railways and Holcim Lanka (PVT) Ltd. in the years 2015 and 2016 in respect of the ability to transport coal by train from Trincomalee to the power station.

7.4. Quality to be available in coal

7.4.1. In terms of schedule 2.B of the bid document No LCC /16/T/1 agreed upon with the Lanka Coal Ltd. by the Ceylon Electricity Board in respect of the procurement process and the supply of quantity of coal required for the operation process of the Lakvijaya power station during the period September 2017 to April 2019, quality of coal to be existed from the year 2013 to 2017 according to the information made available to audit by the Lakvijaya Power Station was stated as follows. (Annexe – 19)

Table No 09 - Anticipated qualitative requirement of coal

Parameter	unit	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	
GCV value	Kcal/kg	6300 (Rejected Value , less than 5800)	6300 (Rejected Value , less than 5900)	6300 (Rejected Value , less than 5900)	6300 (Rejected Value , less than 5900)	6,150 (Rejected Value , less than 5900)	
Total moistures	% wt	12 (Rejected Value More than 16%)	12 (Rejected Value More than 16%)	12 (Rejected Value More than 16%)	12 (Rejected Value More than 16%)	12 or less (Rejected Value More than 16%)	
Ash content	% wt	11 (Rejected value more than 16)	11 (Rejected value more than 16)	11 (Rejected value more than 16)	11 (Rejected value more than 16)	11 or less (Rejected value more than 16)	
Fixed Carbon	% wt	39	39	49.5	49.5	49.5	
Volatile matter	% wt	42 (Rejected Value Less than 22)	42 (Rejected Value Less than 39.9)	27 (Rejected Value Less than 39.9)	27 (Rejected Value Less than 39.9)	31 (Rejected Value Less than 39.9)	
Sculpture content	% wt	0.9 (Rejected value more than 1.2)	0.9 (Rejected value more than 1)	0.5 (Rejected value more than 1)	0.5 (Rejected value more than 1)	0.5 or Less (Rejected value more than 1)	
Size consist	m m	Mo re tha n 50	Less than 3 % (Rejected value more than 5%)	Less than 3 % (Rejected value more than 5%)	Less than 5 % (Rejected value more than 5%)	Less than 5 % (Rejected value more than 5%)	3% or less (Rejected value more than 5%)
		Le ss tha n 2	Less than 25% (Rejected	Less than 25% Less than 25%	Less than 30% Less than 25% (Rejected	Less than 30% Less than 25% (Rejected	15% or less, less than 25% (Rejected

			value more than 30%)	(Rejected value more than 30%)	value more than 30%)	value more than 30%)	value more than 30%)
Hard grove grind ability med	°H	45	(Rejected value less than 40)	45 (Rejected value less than 40 more than 59)	50 (Rejected value less than 40 more than 59)	51 (Rejected value less than 40 more than 59)	50 (Rejected value less than 40 more than 59)
					Reducing basis		
Ash fusion tempest - IDT	°C				1,250 (Rejected value less than 1150, more than 1300)	1,250 (Rejected value less than 1150, more than 1300)	1,250 (Rejected value less than 1150, more than 1300)
Ash fusion tempest - Fluid					1325 (Rejected value less than 1250, more than 1500)	1325 (Rejected value less than 1250, more than 1500)	1,325 (Rejected value less than 1250, more than 1500)

Accordingly, in the examination the anticipated qualitative requirements and the existed qualities of imported coal during the period 2013 to 2017 the following were observed.

- Quality of coal imported in the years 2013,2014 and 2015 were observed as follows.

Table No 10 - Quantity of coal deviated from qualitative requirements – 2013-2017

Parameter	Quantity of coal deviated from qualitative requirements (metric tons)				
	2013	2014	2015	2016	2017
GCV (below 5900)	-	460,900	-	-	-
Moisture	-	55,270	-	-	-
Volatile matter	-	57,530	-	-	-
Sulphur	-	114,269	-	-	-
Total quantity existed at a rejected level	-	575,169	-	-	-
Total coal purchases	1,003,545	1,849,726	2,191,529	2,209,983	2,117,165
Quantity existed at a rejected level as a percentage of total coal purchases	0%	31.09%	0%	0%	0%

7.4.2 In terms of section 3.4.3 (a) of the bid documents for the period 2017 to 2019, is the imported stock of coal not in accordance with the expected specifications, provisions had been made to accept those stocks by adjusting prices. The responsibility of the suppliers is terminated at the port of loading under the ‘FOB’ pricing method agreed upon by suppliers (Annexe - 20)

7.4.3 According to the bid document 3.5.2, the independent inspectors had been appointed to check the quality of imported coal stock at the port of loading and port of landing. The inspectors check samples of coal taken after being loaded to the ship at the port of loading and issue reports. These reports should be transmitted to the buyer via E- mail message within 3 days after the completion of loading (Annexe - 21)

7.4.4 In order to assist the Special Standing Cabinet Appointed Procurement Committee (SSCAPC) for the purchase of coal, a standing Technical Evaluation Board ,consisting of 7 members had been appointed.(Annexe – 22)

7.4.5 In purchasing coal, a company should be selected by evaluating the minimum quotations to get more economic benefit as well as in a manner to minimize the effect on environment arisen while coal being combusted.

7.4.6 In loading imported coal from the ship to the barges, coal fallen and are deposited around the seabed and near the jetty.

7.5 By products of coal combustion (fly ash and bottom ash)

7.5.1 In the combustion for the electricity production process two main by products are created as denoted fly ash and bottom ash. In order to prevent discharging fly ash in to environment Electro Static Precipitator (ESP) is used. This instrument (ESP) is a plated filter containing opposite charges and it filters 99.3 per cent of fly ash particles. Filtered fly ash is deposited on the plate of the precipitator and fly ash is separated through vibrators fixed into it and deposited in large bins. In generating 900 MW of electricity about a maximum 900 metric tons of fly ash and 180 metric tons of bottom ash are daily created as by products. At the planning stage of the project, it was stated within the discharge methodology of ash that fly ash is taken by cement manufactures and action would be taken to store bottom ash in the ash yard of the power station for a period of 30 years. This ash yard is about 25 acres in extent. The anticipated life time of one unit operated in the power station had been identified as 35 years at the planning stage and as such the quantity of fly ash and bottom ash probable to be created form the year 2018 onwards on the assumption that those 3 units would be operated at an efficiency level of 65 per unit (para No -7.9.3) is calculated as follows.

Table No 11- Quantity of fly ash probable to be created since 2018 and onwards

Unit	Beginning year	Year to be completed the life time of 35 years	Number of years available from 2018 onwards	(Efficiency level 65%) quantity of fly ash created per day (Metric tons)	Quantity of fly ash probable to be created per year (Metric tons)	Quantity of fly ash probable to be created form 2018 onwards (Metric tons)
1	2011	2046	28	195	71,175	1,992,900
2	2014	2049	31	195	71,175	2,206,425
3	2014	2049	31	195	71,175	2,206,425
Total						6,405,750

Table No 12- Quantity of bottom ash probable to be created since 2018 and onwards

Unit	Beginning year	Year to be completed the life time of 35 years	Number of years available from 2018 onwards	(Efficiency level 65%) quantity of fly ash created per day (Metric tons)	Quantity of fly ash probable to be created per year (Metric tons)	Quantity of fly ash probable to be created form 2018 onwards (Metric tons)
1	2011	2046	28	39	14,235	398,580
2	2014	2049	31	39	14,235	441,285
3	2014	2049	31	39	14,235	441,285
Total						1,281,150

Observations made in the audit examination carried out relating to the discharging methodology of by products stated above appear bellow.

Picture/ Diagram No 05 - Ash yard



7.5.2 About 425,008 metric tons of fly ash had been sold during the period 2015 to 10 may 2018 and the balance metric tons of 443,909 fly ash had been deposited in the ash yard (Annexe – 23)

7.5.3 The National Engineering Research Development Center (NERDC) had recommended that fly ash is suitable for the use of manufacturing cement and other construction work. Furthermore, this center had entered in to a Memorandum of Understanding on 08 August 2017 with the Ceylon Electricity Board to give technical knowhow to the small and medium scale

Industrialists for promoting and selling the products manufactured by using fly ash and bottom ash (Annexe – 24)

- 7.5.4** Bids were called for the disposal of fly ash produced as a by product of combustion of coal in the generation of 900 MW of electricity daily through the news paper advertisement, published on 20 April 2017 (Annexe – 25) and 8 entities had entered into agreements to purchase fly ash for a period of 5 years form 2018 to 2022 under quality No 1 and quality No – 2.(Annexe – 26)
- 7.5.5** Subject to the conditions stipulated in the observations made by the Ministry of Finance and Mass Media under Tender No - LV/CEPD/FLY/Ash/02 at the meeting of the Cabinet of Ministers held on 22 November 2017, the approval had been granted for the sale of ash for a period of 5 years in terms of paragraph 7.1 to 7.9 of the Cabinet Memorandum. (Annexe – 27)
- 7.5.6** Had the agreements relating to the above proposals been executed, the quantity of ash exhausted annually amounted to 480,000 metric tons and an income of 874.95 million had been estimated to earn therefrom. (Annexe – 28)
- 7.5.7** According by 30 cubes of bottom ash and 858 loads had been sold during the period from 2015 to 2018 and earned an income of Rs.438,335 by the power station. (Annexe – 29)
- 7.5.8** The remaining fly ash and bottom ash in the power station is deposited in a land near the power station, 25 acres in extent. When the wind is getting up (May, June, July, August and September off season), fly ash is accumulated to the environment.
- 7.5.9** When physically verified the land where ash was deposited, it was observed that these two types of ash had been separately deposited.
- 7.5.10** When the fly ash is deposited in the yard, it mixes up with water and deposited being transported by tippers and such ash had covered on the area of about 7 acres now as a ‘slurry’ which is a hardened waste. The Environmental Engineer of the power station said that the height of the yard deposited ash by 10 may 2018 was nearly 10 meters and the height of the capacity in which ash could be deposited was about 25 meters.

7.5.11 When fly ash, mixed up with water is hardened, it does not add up to air as dust. However, fly ash not mixed up with water can add to the air as dust.

7.5.12 In the electricity generating process, bottom ash would be wetness due to mix up with water.

Picture/ Diagram No 06 - Bottom ash being deposited in the yard



7.6 Maintenance of ambient air quality standards

7.6.1 Micro ash particulates generated in the process of coal combustion are emitted as fly ash with heated air between the quantity of 12 to 14 tons per hour. This emitted air after being filtered by ESP is entered in to the Flue Gas Desulphurization and this air is mixed up with sea water and remove the air created by sulfur combustion and subsequently released to the high sky through a chimney, 150 meters in height.

Picture/ Diagram No -07 Flue Gas Desulphurization and chimneys related to 3 units



7.6.2 According to the North Western Environmental Statute No 12 of 1990, ambient air quality standard regulations had been gazetted by gazette notification extra ordinary No-1685/11 dated 21 December 2010. (Annexe – 18) Under this, tests to be carried out to ensure whether specific air quality standards are maintained by using equipment approved by the Provincial Environmental Authority. Six pollutants had been identified by this regulation viz:

- 01. Particulate matters - PM₁₀ (Air dynamic diameter less than 10 micro meters)
- 02. Particulate matters -PM_{2.5} (Air dynamic diameter less than 2.5 micro meters)
- 03. Nitrogen dioxide - NO₂
- 04. Sulfur dioxide - SO₂
- 05. Ozone - O₃
- 06. Carbon Monoxide -CO

Few pollutants released to the atmosphere in the coal combustion are identified as follows (Annexe – 30)

- 01. Particulate matters - PM₁₀
- 02. Particulate matters - PM_{2.5}
- 03. Nitrogen Oxide – NO_x
- 04. Sulfur dioxide - SO₂
- 05. Carbon dioxide - CO₂
- 06. Methane - CH₄
- 07. Heavy metals including mercury

7.6.3 Observations made in the examination of data made available to audit by the lakvijaya power station in respect of ambient air for the period from 21 may 2018 to 02 June 2018 are as follows.

Table No 13 – Ambient air observation data

Date	Unit 1	Unit 2	Unit 3
	Ambient air - NO _x ,SO ₂ ,CO, CO ₂ ,O ₂		
21.05.2018	Unit shut down	Tested	Tested
23.05.2018	Not tested	Tested	Tested
25.05.2018	Tested	Tested	Tested
27.05.2018	Tested	Unit shut down	Unit shut down
31.05.2018	Tested	Unit shut down	Unit shut down
02.06.2018	Tested	Tested	Unit shut down

(Annexe – 31)

7.6.4 Moreover, under the “MALE” convention, rain water be collected in batches for the identification of the possibility of occurring acid rain due to inter border limit air pollution and to implement the acid rain control projects and the quality of acidity minus kinetic should be tested (Annexe – 32)

7.6.5 The contract valued at Rs. 3.95 million had been awarded to the Industrial Technology Institute on 25 April 2018 by letter No-LV/T/2018/127 for carrying out a study on the quality of combusted gases discharge through smoke pillars, efficiency measurement of the electro static precipitator (ESP) which discharges micro particulates contained in the atmosphere and the flue gas desulphurization (FGD) and to test noise, vibration and the quality of water.

7.7 Water supply for the cooling water system of the power station and the disposal process of water in to the sea after being refined

7.7.1 Sea water is used for the cooling water system used for the operations of the power station and 58,000 cubic meters of water per unit per hour is obtained and it is approximately 1,000 cubic meters per second.

Picture/ Diagram No 08 - Supply of water for the cooling water system



7.7.2 Tow parameters namely PH value and temperature are used for the raw water quality test. Action to be taken to control the quality to be maintained at the discharging point of water in to the sea again by testing those parameters.

7.8 Underground water

7.8.1 In terms of gazette extra ordinary No- 2010/23 of 16 March 2017 of the Water Resources Board (Annexe – 33) if government entities use a natural water spring or deep or shallow underground water for their projects such projects should be implemented in compliance with directions given by the Water Resources Board. The power station had requested to use 74 shallow wells by December 2017.

7.8.2 The contract for continuous ground water monitoring of surrounding area of the power station had been awarded to the Water Resources Board by letter No – LV/T/2018/0126 of 23 April 2018 and its estimated value amounted to Rs. 3.95 million (Annexe – 34)

7.9 Performance of the power station and temporary suspension of operations.

7.9.1 Plant factor, Running plant factor and Available factor are the three indicators for the measurement of performance in the electricity generation process. These indicators are calculated as follows.

- Plant factor =
$$\frac{\text{actual energy production during the nominal period}}{\text{potential energy production during the period}}$$

- Running plant factor

The running plant factor of a generation unit is the ratio of the actual energy output of a generation unit over a period of time to its potential output if it had operated at full nameplate capacity during the period in which it has been operated.

- Availability factor =
$$\frac{\text{duration in which the generation unit was available for operation}}{\text{total length of the period}}$$

This would identify the causes of unplanned or forced energy losses. Reducing outages increases the number of operating hours, therefore, increases the plant availability factor.

7.9.2 The plant factor, running factor and the available factor of unit 1 of the lakvijaya power station in the year 2016 had been recorded as 31.38 per cent, 39.93 per cent 48.23 per cent respectively. This had been a low value as compared with the unit 2 and unit 3 (Annexe – 5)

7.9.3 Doable production capacity and the performance of the power station relating to the past 3 years is as follows.

Table No 14 – Production capacity and the performance of the power station.

Year	Doable production capacity MW	Doable production capacity Gwh	Actual production capacity Gwh	Actual production as a percentage of doable capacity
2015	900	$900 \times 8,760 / 1,000 = 7,884$	4,443	56.35
2016	900	$900 \times 8,760 / 1,000 = 7,884$	5,047	64.01
2017	900	$900 \times 8,760 / 1,000 = 7,884$	5,103	64.72

7.9.4 Instances where operations of the lakvijaya power station had been temporary shut down during the period from January 2016 to 30 April 2018 were observed as follows (Annexe – 35)

Table No 15 – Instances where operations of the power station had been shut down

Year	No.of days shut down by unit 1	No.of days shut down by unit 2	No.of days shut down by unit 3
2016	223.52	17.58	21.54
2017	55.31	53.43	82.0
30/04/2018	13.02	23.52	-
Total	291.85	94.53	103.54

Five main reasons had been identified for these temporary stoppages as follows.

1. Commissioning – Testing period to ensure the correct activation of the unit after a major maintenance works
2. Internal fault
3. External fault
4. Maintenance
5. System Control Calls (SCC request)

Table No 16 – Reasons for temporary stoppages of operations and occasions. (Annexe - 36)

Unit and year		Commiss- -onning	Internal faults	External fault	Maintenance Work	System Control requests
		Shut down period - days	Shut down period - days	Shut down period - days	Shut down period - days	Shut down period - days
Unit 1	2016	9.68	137.49	29.38	40.89	6.07
	2017	-	55.31	-	-	-
	Up to 10 may 2018	-	-	-	13.02	-
Total		9.68	192.80	29.38	53.91	6.07
unit 2	2016	-	5.63	11.95	-	-
	2017	-	53.21	0.22	-	-
	Up to 10 may 2018	-	23.52	-	-	-
Total		-	82.36	12.17	-	-
unit 3	2016	-	6.14	15.40	-	-
	2017	-	71.14	-	10.86	-
	Up to 10 may 2018	-	-	-	-	-
Total		-	77.28	15.40	10.86	-
Grand total		9.68	352.44	56.95	64.77	6.07

7.9.5 The Maintenance program to be carried out by the power station from the year 2018 to 2021 had been prepared. Accordingly, maintenance of work of main category in 2 units and the second category in one unit had been planned in the year 2019. During this maintenance period, the entire unit for which maintenance is required has to be stopped approximately 100 days and 45 days. The power station had made a contribution of nearly 35 per cent to the national energy generation process in the year 2017 but during such maintenance period the contribution probably be reduced. (Annexe – 37)

7.10 Meteorological data

Weather data collection units operated in the power station for the measurement of wind speed and wind direction had been installed in 2 places and the data obtained from these units via a pen drive and being observed (Annexe – 38)

7.11 Progress of programmes, implemented to prevent environmental complications.

Matters observed at the physical verification carried out on 10 May 2018 in respect of steps expected to be implemented by the power station for the prevention of environmental issues contained in the letter No –PPM/LVC/සීඒ/37-88 of 02 November 2017 to the Power Plant Manager addressed to the District Secretary, Puttalm and the issues stated in the letter No-LVPP/PPM/පාදු-6/148 of 05 June 2018 (Annexe – 39) addressed to the Auditor General are as follows.

7.11.1 Problem 01- prevention of expanding dust particles available in the coal yard with the wind

7.11.1.1 Action 01 – putting up wind barriers around the coal yard.

7.11.1.1.1 Observation 01- The existing wind barrier around the coal yard comprises 15 meters in high and 460 meters in length. (Annexe – 40)

Picture/ Diagram No -09 Wind barrier existed around the coal yard



7.11.1.1.2 Observation 02 – The estimated cost of the wind barrier (Annexe – 41) proposed to be constructed with a length of 1,183.5 meters prepared by the Ceylon Electricity Board on 29 September 2016 amounted to Rs.600 million approximately. The procurement process had been initiated for this purpose since 05 October 2017 and this contract had been awarded on 05 February 2018 for a value of Rs.483,794,564 (Annexe – 42)

- 7.11.1.2 Action 02** – Implementation of mobile water sprinkle machine and the water scattering system of the coal yard.
- 7.11.1.2.1 Observation** – Action had been taken to operate water scattering systems within the coal yard in order to minimize the expansion of dust particulates generated while coal was stacked and in removing coal from the coal yard for operating purposes and two mobile sprinkle machines to minimize the expansion of dust particulates to the village.
- 7.11.1.3 Action 03** – Construction of a security zone between the coal yard and the village.
- 7.11.1.3.1 Observation 01** – As the coal yard had been broadened, the existing buffer zone had narrowed and as such it was observed that there were more chances of expanding coal power quickly by wind. Action had been initiated in the year 2017 to purchase a new 100 meters land strip (25 acres) to broaden this buffer zone.
- 7.11.1.3.2 Observation 02** – In order to minimize expanding coal dust particulates to environment, various trees had been planted to create a green cover within this zone.
- 7.11.1.4 Action 04** – Covering the non usable coal stock by a chemical slurry.

Picture/ Diagram No 10 – Coal yard



7.11.1.4.1 Observation - In order to prevent expanding dust particulates to the village by near, generated from coal stored in the coal yard, 46 acres (360m x 510m) in extent and stores capacity of 1.21 million metric tons and the Engineers of the power station said that this chemical slurry could be used to minimize the risk of catching fire the coal stock and the annual probable cost to be incurred thereon amounted to Rs.35 million.

7.11.2 Problem 02 – Minimization of extending fly ash

7.11.2.1 Action 01 – keep ash with moistness while being transported to the ash yard and reloading.

7.11.2.1.1 Observations 01 – The anticipated cost for two type of methods viz: use of machines and man power for levelling ash accumulated in the yard and covering the surfus of the ash yard by using slurry mixed up with water and ash (a part of the yard about 7 acres) amounted to Rs.55 million per year.

Picture/ Diagram No 11 – Ash yard



7.11.2.2 Action 02 – Putting up a wind barrier to the west wind direction of the ash yard (direction to the sea)

7.11.2.3

7.11.2.3.1 Observation 01 - There was a chance of expanding ash towards the village by monsoon wind during the monsoon season and as a precaution, the power station had planned to

construct a wind barrier in the west direction of the ash yard. The estimated cost thereof amounted to about Rs.300 million. Along with the progress of the construction of the wind barrier in the coal yard. it was planned to commence this construction work as well.

7.11.3 Problem 03 - Impact on the oceanic resource and the fishermen in Kalpitiya area as a result of discharging water form the water-cooling system of the power station.

7.11.3.1 Action 01 – Conducting continuous researches with the National Aquatic Resources and Development Agency (NARA) on sea water temperature, PH value, solute oxygen, plankton, inducing the behavior of other living beings.

7.11.3.2 Action 02 – Conducting sea bed surreys.

7.11.3.2.1 Observation 01 – Requests had been made from the University of Moratuwa to get surveys done for the identification of the manner how coal was deposited in the sea bed by carrying out sea bed surveys.

7.11.4 Problem 04 – Erosion of Ilanthadiya coastal line

7.11.4.1 Action 01 – Putting up break waters keeping a specific gap.

7.11.4.1.1 Observation 01 - Discussions had been held with the Department of Coast Conservation for the prevention of coastal erosion’

7.12 Comments of the third parties

Matters revealed at the interview held on 11 May 2018 with certain farmers, cultivating near the power station and few fishermen living in the fisheries village are as follows.

Picture/ Diagram 12 - Interview held with few villages around the power station and the cultivation around the power station.



7.12.1 Opinion of the farmers who were cultivating near the power station is that if an action is taken to prevent damages caused to their houses, health and agricultural crops, as ash in the coal yard and the ash yard is carried away towards the village during the off season of 6 months from May to October which is a more windy period, the location of the thermal power station is not a problem to them.

7.12.2 Another main problem the villagers face is that villages residing near the power station are not getting electricity continuously throughout 24 hours a day even though a wind power station and the lakvijaya power station are in operation in the Puttalam District. As such, a few villagers said that this station was a hindrance to their day to day life and engage in agricultural activities.

7.12.3 Opinion of the people in the fisheries village is that the sea area belongs to them for fishing had become smaller and their fishing are obstructed as coal ships and barges are always sailing here and there.

7.12.4 Opinion of the fisherman is that as a result of discharging hot water from the water-cooling system of the power station, fish and sea lives is damaged.

7.13 Media reports

Certain newspapers had reported that environment world be damaged by operations of the thermal power station whereas some other newspapers had reported that such a damage reported those news papers was not caused there from.

8 Observations

8.1 Source contribution for electricity generation

In the examination of electricity production data for the last 4 years, it was observed that the average contribution of the lakvijaya power station is 32.58 per cent and contribution of hydro and fuel is 28.08 per cent and 13.80 per cent respectively. (7.1.3)

8.2 Electricity generation cost

Instead of using sources with minimum cost, it was observed that attention was drawn to high cost sources (7.1.6)

8.3 Electricity generation cost per unit in the lakvijaya power station and its contribution

It was observed that one third contribution of electricity production of the Ceylon Electricity Board and the source with minimum second average cost of production per unit represents the production of electricity by coal. (7.2.4)

8.4 Comparison of electricity generation cost of the lakvijaya power station

As compared with the Kelanitissa power station, a sum of Rs.350,743 million could be able to save by the Ceylon Electricity Board from the lakvijaya thermal power station which generates electricity using coal as a raw-material, when the contractual value of Rs. 197,470 million was adjusted to this gross savings, the Board had sustained a net saving of Rs. 153,273 million (7.2.5)

8.5 Enforceability of the National Environmental Act No 47 of 1980 and the North Western Province Environment Statue No 12 of 1990

8.5.1 It was observed that the North Western Province Environment Consultancy Council had not been implemented even by 10 May 2018 in terms of section 7(1)(k) of the Environmental Statute (7.3.1.2)

8.5.2 It was observed that the Central Environment Authority had not intervened for environmental issues arisen in the lakvijaya power station since the inception of operating process in the year 2011(7.3.1.3)

8.6 Issue of Environmental Protection Licence

8.6.1 The Environment Protection Licence had been issued by the North Western Province Environmental Authority but intervention or any tests had not been carried out by the Central Environment Authority (7.3.2.2)

- 8.6.2** In the renewal of the licence with 22 conditions issued by the Provincial Environmental Authority to the power station, without being verified whether such conditions had been satisfied and sufficient follow up of its accuracy had been carried out, that licence had been renewed up to 29 June 2017. Accordingly, the attention of the authorities had not been drawn in respect of probable environmental risk which would arise with the operations of the power station. (7.3.2.3)
- 8.6.3** It was observed in audit that functions of the Lakvijaya Coal Power Station had been operated without a valid Environmental Protection Licence during the period from 29 June 2017 to 10 May 2018 the date of audit. In terms of letter No. PEA/PKT/EPL/CH/H/149/2015 (Annexe - 43) addressed to the General Manager of the Ceylon Electricity Board by the Acting Director of the Provincial Environmental Authority dated 09 August 2017, before the renewal of Environment Protection Licence for the year 2017/ 2018, it was stated that documents / reports to be submitted by the power station under 6 main parts. It was observed in Audit that the environmental issues based on these requirements were not created only the year 2017 but they were the issues for which attention should have been paid since the prior years. (It is further cleared by issues stated in Annexe No 44) (7.3.2.4)
- 8.6.4** Even though ambient air quality regulations had included regulations respect of air identified as materials attenuating ozone layer and air which would threaten environmental condition, it was observed that ambient air quality regulations in respect of other pollutant air causes exhausted while coal combustion process (eg :- Mercury, Carbon dioxide CO₂) had not been published. (7.3.2.6)
- 8.6.5** According to the condition No 06 “good quality” and “low ash coal” had not been clearly defined and special attention was not paid on the standard permissible in the imported coal (7.3.2.7)
- 8.6.6** In terms of condition No 13.5, the quantities and quality of hazardous waste generated at the plant premises should keep the Provincial Environmental Authority informed on an annual basis. However, this requirement had not been fulfilled continuously and it had not been observed by the Provincial Environmental Authority. (7.3.2.8)

8.7 Standards and criteria issued in terms of National Environment Act

Based on the standards and criteria issued in terms of the National Environmental Act, environmental standards and criteria had been determined by the North Western Province. However, it was observed that attention was not paid for the requirement arising for changing those standards and criteria periodically in terms of industry by the Provincial Environmental Authority. (7.3.3)

8.8 Annual coal requirement, landing and analysis of probable environmental impact by transporting coal to the yard.

8.8.1 As the existing Jetty of the power station is shorter in length, vessels which carry coal had been anchored nearly 4 Km away from the jetty. Furthermore, as vessels do not arrive during more windy seasons, it was observed that during such periods coal is stored and as such dust is spread. (7.3.4.2 & 7.3.4.3)

8.8.2 Even though discussions had been held with certain institutions in respect of the ability to transport coal by train from Trincomalee to the power station, it was failed. (7.3.4.4)

8.9 Quality prevalent to coal

8.9.1 According to the data made available to audit, it was observed that 31.09 per cent of the total quantity of coal imported in the years 2014/2015 had deviated from the specific standards. (Annexe - 45) (7.4.1)

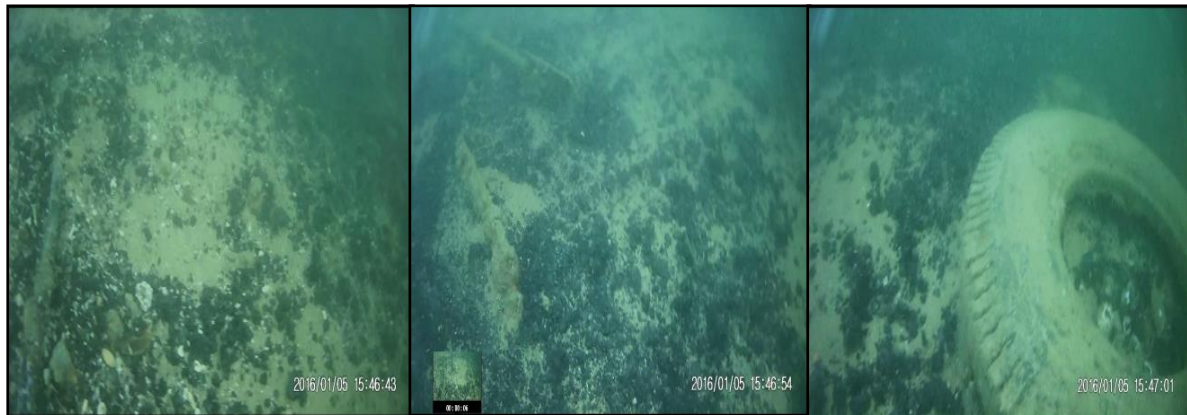
8.9.2 It was observed that attention had been drawn to take over stock of coal by the power station by adjusting the prices when the stock of coal was received exterior to expected specifications, the authorities had not sufficiently considered about the environmental damage due to combustion of substandard coal. (7.4.2)

8.9.3 It was observed at a test examination relating to reports issued in respect of quality of stock of coal that those reports were not issued within the specific periods and there were abnormal delays as well. Since vessels carrying coal, leave from the loading port during this period hence it was observed that the opportunity to reject the coal stock at the loading port itself, is deprived of if it is established that coal stock is not up to the specific standard. (7.4.3)

8.9.4 In the standing Technical Evaluation Committee appointment to check the quality of coal purchased in the years 2016 and 2017 no member who had the expertise knowledge in evaluating the impact caused to environment from coal, had been included. (7.4.4)

8.9.5 A Video picture made available to audit observed that coal had dropped into the sea and deposited near the jetty and the sea bed when coal transported from ships is loaded to the barges (7.4.6)

Picture/ Diagram No 13 – The manner coal was dropped and deposited in the sea bed



8.10 By products of coal combustion (Fly ash and bottom ash)

8.10.1 Even though a Memorandum of Understanding had been signed on 08 August 2017 with few entities by the Ceylon Electricity Board for the sale and promotion of products made by using fly ash and bottom ash and to give relevant technology required therefor to small and medium scale industrialists, it had not been satisfactorily implemented. (7.5.3)

8.10.2 Agreements relating to the proposals for the sale of this fly ash had not been executed even by 10 May 2018 (7.5.4)

8.10.3 It was observed that appropriate course of action should be taken to prevent, adding fly ash to the environment. (7.5.8)

8.11 Maintenance of Ambient air quality standards

8.11.1 In terms of regulations published by the North Western Environmental Authority, heavy metals including methane air and mercury discharged to the atmosphere by coal combustion had not been covered. It was observed that air emission standards with sources in order to maintain ambient atmospheric quality had not been published by a gazette notification. (Annexe - 46) (7.6.2)

8.11.2 In terms of continuous air emission observation data made available to audit relating to the lakvijaya power station, only the content of nitrogen oxide (NOX) and sulfur dioxide (SO₂) exhausted to the atmosphere in the process of electricity production had been tested but other creations had not been subject to continuous check. (7.6.3)

8.11.3 Data in respect of ambient atmospheric quality of the power station had not been analyzed by the Central Environmental Authority (7.6.4)

8.11.4 Even though the contract had been awarded to the Industrial Technology Institute for the testing of quality of combustion air exhausted through smoke pillars, sounds, vibration and the quality of water, action had not been taken to get the expected tests done by the Industrial Technology Institute even by 10 may 2018 by entering into a formal agreement (7.6.5)

8.12 Water supply to the water-cooling system of the power station and the process of discharging water to the sea after being refined

8.12.1 It was observed that quality of sea water is measured only at the unit 1 by using online monitoring sensors but the 2nd and the 3rd unit had not used those sensors (7.7.2)

8.12.2 Even though some portion of sea water used for the water-cooling system of the power station is used for all functions of the canteen after being refined, it was observed that a continuous quality check of the water was not carried out (7.7.2)

8.12.3 In the examination of data during the period from 2016 to 2018 observed that water discharged to the sea after being refined had not been subjected to continuous laboratory test in the years 2016 and 2017 and such tests had been carried out monthly since the year 2018. Furthermore, at the time of being physically observed at about 6.30 pm on 11 May 2018 at the discharging point where water was discharged to the sea after being refined, the value of temperature was 32 C° and it had been a tolerable limit (Annexe -47) (7.7.2)

Diagram No 14 – Discharge of water into the sea after being refined and the testing of the quality of that water



8.12.4 Even though the study on the quality of discharging water through water refinement systems such as the quality of water discharging through the water cooling system, industrial waste water refinement, sewerage water refinement, refinement of processing water accumulated via coal and ash yards had been awarded to the Industrial Technology Institute, it was observed that agreements had not been entered into even by 10 May 2018. (7.7.2)

8.13 Underground Water

8.13.1 Even though the Lakvijaya power station had requested the approval of the Water Resources Board in the following instances for the use of shallow wells, action had not been taken to grant approval therefor (7.8.1)

Table No 7 – Instances where lakvijaya power station had requested approval from the Water Resources Board for shallow wells

Date	Extent of lands	Capacity	No.of wells	Letter No	Approval of the Water Resources Board
07.09.2016	About 45 acres	About 6 meters in depth and water level stands at about 3 meters depth form the surface	67 shallow wells	LVPS/DGM/Civil/37-23	Not given
15.02.2017	About 100 acres	About 6 meters in depth and water level stands at about 3 meters depth form the surface	74 shallow wells	LVPS/DGM/Civil/37-55	Not given
05.12.2017	About 100 acres	About 6 meters in depth and water level stands at about 3 meters depth form the surface	74 shallow wells	LVPP/PPM/Gen/06-93	Not given

(Annexe – 48)

8.13.2 Even though a contract for a sum of Rs.3.95 million had been awarded to the Water Resources Board for continuous testing of the quality of underground water in the power station premises and surrounding environment, action had not been taken to commence testing even by 10 May 2018 having being entered into agreements.

8.14 Performance of the power station and temporary suspension of operations

8.14.1 In the examination of data from 2015 to 2017 an improvement of efficiency of the power station was observed but it represented only 65 per cent of the maximum ability of production capacity by the year 2017 (7.9.3)

8.14.2 As compared with the year 2016, temporary suspension of operations under various reasons as stated in paragraph 7.9.4 in the unit 2 and unit 3 had increased by 204 per cent and 280 per cent respectively in the year 2017. In addition, the electricity production had not been carried out for 352.44 days or 8,458 hours in all 3 units due to only internal causes during the period under consideration (7.9.4)

8.14.3 It was observed that planning maintenance functions in a manner that minimizing interruptions happen to the national electricity generation can minimize problems arise, thereof (7.9.5)

8.15 Weather data

It was observed that one weather data collection system had been inactivated during the period from October 2017 to 10 May 2018. It was further observed that the direction of wind and speed was not measured during 24 hours a day with more windy periods by the weather data system (7.10)

8.16 Progress of programs implemented for the prevention of environmental issues

8.16.1 The existing wind barrier does not fully cover the front side of the coal yard. Blowing direction and speed of the wind, since the beginning with monsoon wind is changed and as such it was observed that expansion of coal dust by the above wind barrier could not be completely prevented (7.11.1.1.1)

8.16.2 As the plan of the wind barrier proposed to be constructed had to be changed due to a 3rd party influence, construction works had not been started even by 10 May 2018. Accordingly, it was observed that the construction work, could not be completed within the expected timeframe and as such expected results could not be attained (7.11.1.1.2)

8.16.3 The water processing system had become inactive position by 10 May 2018 and it had been a repairable position (7.11.1.2.1)

8.16.4 Purchasing process of new lands for the broadening of buffer zone had not been completed even by 10 May 2018 (7.11.1.3.1)

8.16.5 Even though various trees had been planted around the power station premises, it was observed that the anticipated forest cover, enabling to retain dust particles had not been created even by 10 May 2018 (7.11.1.3.2)

8.16.6 Only the part of coal stock had been covered by using a chemical slurry by 10 May 2018 (7.11.4.1)

8.16.7 It was physically observed that machines and man power were used for the leveling of clustered ash in the yard and covering the surface of the ash yard using a slurry mixed up

with water and ash. Using these methods, an attempt had been made to maintain the expanding of ash by wind at a minimum level. It was further observed that action should be taken to maintain this process with a continuous supervision. (7.11.2.1.1.)

8.16.8 Construction of a wind barrier towards the west wind direction of the ash yard had not been done even by 10 May 2018. (7.11.2.2.1)

8.16.9 It was observed that a study report on sea water temperature, PH value, solute oxygen plankton and the behaviors of the sea lives had been presented in collaboration with the NARA only for the year 2017. (7.11.3.1)

8.16.10 Even though requests had been made to the University of Moratuwa to conduct a survey to identify the manner how coal had been deposited in the sea bed, such tests had not been initiated even by 10 May 2018. (7.11.3.2.1)

8.16.11 Even though discussions had been held for the prevention of coastal erosion with the Department of Coast Conservation, it had not been completed even by 10 May 2018 (7.11.4.1.1)

8.17 Comments of the 3rd Parties

It was observed that even though power stations are built, villagers do not get 24-hour electricity supply for their needs. (7.12.2)

8.18 Media Reports

A particular responsible officer of the power station had not been named in order to give correct information to media comments and as such various individuals provide various information to newspaper reporters. As a result, the correct information about the Power Station would not be disclosed by media. It was observed that a particular person responsible for this purpose could not be identified. (7.13)

9 Recommendations

- 9.1** Implementation of the North Western Province Environmental Consultation Committee (8.5.1)
- 9.2** Assignment of responsibilities to the officers of the North Western Province Environmental Authority to ensure the correctness of information presented by the Power Station in the process of renewal of Environment Protection Licences (8.6.6)
- 9.3** Recognition and inclusion of significant standards and criteria in respect of air emission exhausted in the coal combustion for the air emission regulations published by the Central Environment Authority at present. (8.7)
- 9.4** Instead of storing excessive stock of coal for the use of off season, conducting a feasibility study to find the possibility of transporting coal by alternative methods and to develop infrastructure facilities. (8.8.1, 8.8.2)
- 9.5** Action is taken to procure coal in compliance with the agreed specifications even though the imported coal is exterior to the expected specifications, instead of taking over that stock by price adjustments. (8.9.1, 8.9.2)
- 9.6** Action to be taken to indicate a member with an expertise knowledge in environmental issues to the Technical Evaluation Committee appointed for the purchase of coal. (8.9.4)
- 9.7** A suitable method should be initiated and implemented in a manner, minimizing the dropping of coal to the sea while coal is landed to the barges from vessels. (8.9.5)
- 9.8** Paying attention of the officers to expedite the Memorandum of Understanding entered into with the Sri Lanka National Engineering Research and Development Center for the disposal of ash deposited in the yard expeditiously and to expedite the methodology of disposal of ash, instead of depositing fly ash and bottom ash within the premises in which ash yard was located. (8.10.2) (8.10.3)
- 9.9** Make aware of investors who can make various products by using this ash deposited in the ash yard and ash generated from the Thermal Power Station, that this ash can be taken. (8.10.3)
- 9.10** Continuous monitoring of pollutant air of the Power Station and the introduction of an appropriate methodology to check heavy metals. (8.11.2)

- 9.11** Action should be taken to use the online monitoring sensors in the second and third units for testing seawater quality. (8.12.1)
- 9.12** Formulation of an appropriate methodology to test the quality of water used by the canteen located in the Power Station Premises. (8.12.2, 8.12.3)
- 9.13** Action should be taken to expedite continuous testing of underground water within the Power Station and surrounding area considered as a national importance and periodical reviewing by maintaining a data system thereon. (8.13.2)
- 9.14** Necessary action should be taken to use the present production capacity of the Power Station with a maximum efficiency. (8.14.1)
- 9.15** Planning maintenance work in a manner not to interrupt the national electricity system. (8.14.3)
- 9.16** Preparation of a methodology by using an online meteorological data system for the measurement of the direction and speed of the weather within the whole 24 hours during more windy seasons. (8.15)
- 9.17** Broadening the existing wind barrier to minimize the environmental damage caused by the coal yard. (8.16.1 , 8.16.2)
- 9.18** Make the water scattering system active position. (8.16.3)
- 9.19** Expedite the broadening of buffer zone. (8.16.4)
- 9.20** Cultivation of trees suitable for the area for the creation of forest cover. (8.16.5)
- 9.21** Putting up a wind barrier for the ash yard. (8.16.8)
- 9.22** Action should be taken to get the survey carried out by the University of Moratuwa to verify the manner how coal was deposited in the sea bed. (8.16.10)
- 9.23** Action should be taken to protect coastal line in collaboration with the Department of Coast Conservation to prevent beach erosion. (8.16.11)

- 9.24** Minimization of villagers protests made against the Power Station by providing continuous 24 hour electricity to villagers nearby. (8.17)
- 9.25** In order to prevent socializing false information, a representative nominated by the Power Station should be appointed to provide information to media and make the general public aware of the importance of the power station. (8.18)
- 9.26** In the accomplishment of targets contained in the Planning process prepared for the achievement of objectives anticipated from this power station, the expected environmental accountability had not been appropriately defined. As a result, it was observed that unexpected environmental issues were arisen. Hence, action to be taken to contribute highest benefits to the national economy and the society from the Power Station by minimizing economic, social and environmental cost incurred on environmental issues.

10 Conclusions

- 10.1** It is concluded that management of fly ash and bottom ash generated by operations of the Power Station, taking sufficient action for the control of dust available in the coal yard and occurred adverse environmental impact due to non-taking action periodically by the Ceylon Electricity Board.
- 10.2** It is concluded that even though agreements had been entered into with the parties by identifying the industries which would be commenced by using fly ash and bottom ash deposited in the Power Station now, they had not been successfully implemented and attention of the Ceylon Electricity Board thereon was insufficient.
- 10.3** It is concluded that the buffer zone created for the minimization of environmental detriment caused by ash expansion had not been successfully implemented.
- 10.4** It is concluded that the contribution made by the North Western Environmental Authority to review test reports requires for the minimization of adverse impact probable to be caused by the operations of the Power Station to the environment and taking action thereon when the Environmental Protection Licence is renewed is insufficient.
- 10.5** As coal with high quality had not been used, ash generated by coal combustion had increased and as such, it is concluded that environmental detriment had also increased thereby.
- 10.6** In taking necessary action to prevent adverse environmental impact of this project which provides a considerable contribution to the national economy, it is concluded that operation of this project is economically viable.

Sgd./ H.M. GAMINI WIJESINGHE
Auditor General

H.M. Gamini Wijesinghe
Auditor General
29 March 2019

CHAPTER 3

ELECTRICITY DEMAND: PAST AND THE FORECAST

3.1 Past Demand

Demand for electricity in the country during the last fifteen years has been growing at an average rate of about 6.0 % per annum while peak demand has been growing at a rate of 4.0 % per annum as shown in Table 3.1. However the peak demand has grown at a rate of 3.4% during the last 5 years and energy demand has been growing at a rate of 5.1% per annum. In 2016, the total electricity generated to meet the demand amounted to 14,250GWh, which had been only 9,814GWh ten years ago. The recorded maximum demand within the year 2016 was 2,453MW which was 2,283MW in year 2015 and 1,842MW ten years ago.

Table 3.1 - Electricity Demand in Sri Lanka, 2002– 2016

Year	Demand	Avg. Growth	Total energy Losses [†]	Generation	Avg. Growth	Load Factor	Peak	Avg. Growth
	(GWh)	(%)	(%)	(GWh)	(%)	(%)	(MW)	(%)
2002	5638*	5.6	19.2	6810	4.4	54.7	1422	-1.6
2003	6209	10.1	18.4	7612	11.8	57.3	1516	6.6
2004	6782*	9.2	17.1	8043	5.7	58.7	1563	3.1
2005	7255	7.0	17.3	8769	9.0	57.3	1748	11.8
2006	7832	8.0	16.6	9389	7.1	56.6	1893	8.3
2007	8276	5.7	15.7	9814	4.5	60.8	1842	-2.7
2008	8417	1.7	15.0	9901	0.9	58.6	1922	4.3
2009	8441	0.3	14.6	9882	-0.2	60.4	1868	-2.8
2010	9268	9.8	13.5	10714	8.4	62.6	1955	4.7
2011	10026*	8.2	13.1	11528	7.6	60.8	2163	10.6
2012	10475*	4.5	11.2	11801	2.4	62.8	2146	-0.8
2013	10624	1.4	11.2	11962	1.4	63.1	2164	0.8
2014	11063	4.1	10.9	12418	3.8	65.9	2152	-0.6
2015	11786	6.5	10.4	13154	5.9	65.8**	2283	6.1
2016	12785	8.5	10.3	14250	8.3	66.3**	2453	7.4
Last 5 year		5.1%			4.8%			3.4%
Last 10 year		5.0%			4.2%			3.2%
Last 15 year		6.0%			5.4%			4.0%

*Include Self-Generation

**Load Factor includes Other RE

[†]Includes generation auxiliary consumption

3.4 Base Demand Forecast 2018-2042

Base demand forecast for 2018-2042 was prepared as described in Section 3.3 for the planning horizon. In addition to that a number of demand forecast scenarios are prepared as described in section 3.6.

Table 3.3 shows the 'Base Load Forecast 2018-2042'.

Table 3.3 - Base Load Forecast 2018-2042

Year	Demand		Net Loss*	Net Generation		Peak Demand
	(GWh)	Growth Rate (%)		(GWh)	Growth Rate (%)	
2018	14588	6.8%	9.88	16188	6.8%	2738
2019	15583	6.8%	9.84	17285	6.8%	2903
2020	16646	6.8%	9.81	18456	6.8%	3077
2021	17478	5.0%	9.77	19370	5.0%	3208
2022	18353	5.0%	9.73	20331	5.0%	3346
2023	19273	5.0%	9.69	21342	5.0%	3491
2024	20242	5.0%	9.65	22404	5.0%	3643
2025	21260	5.0%	9.61	23522	5.0%	3804
2026	22332	5.0%	9.58	24697	5.0%	3972
2027	23459	5.0%	9.54	25933	5.0%	4149
2028	24639	5.0%	9.50	27225	5.0%	4335
2029	25867	5.0%	9.46	28570	4.9%	4527
2030**	27164	5.0%	9.42	29990	5.0%	4726
2031	28388	4.5%	9.38	31328	4.5%	4939
2032	29637	4.4%	9.35	32692	4.4%	5157
2033	30926	4.3%	9.31	34099	4.3%	5381
2034	32251	4.3%	9.27	35546	4.2%	5612
2035	33642	4.3%	9.23	37063	4.3%	5854
2036	35090	4.3%	9.19	38642	4.3%	6107
2037	36613	4.3%	9.15	40302	4.3%	6372
2038	38165	4.2%	9.12	41992	4.2%	6642
2039	39733	4.1%	9.08	43699	4.1%	6915
2040	41324	4.0%	9.04	45431	4.0%	7193
2041	42967	4.0%	9.02	47227	4.0%	7481
2042	44700	4.0%	9.00	49121	4.0%	7784
5 Year Average Growth	5.9%			5.9%		5.1%
10 Year Average Growth	5.4%			5.4%		4.7%
20 Year Average Growth	5.0%			4.9%		4.5%
25 Year Average Growth	4.8%			4.7%		4.4%

*Net losses include losses at the Transmission & Distribution levels and any non-technical losses. Generation (Including auxiliary consumption) losses are excluded. This forecast will vary depend on the hydro thermal generation mix of the future

**It is expected that day peak would surpass the night peak from this year onwards

GENERATION STATISTICS

Ownership & Type of Power Station	No. of Power Stations			Installed Capacity (MW)		
	2016	2017	% Change	2016	2017	% Change
CEB: Total	26	26	0.0%	2,891	2,898	0.3%
Hydro	17	17	0.0%	1,384	1,391	0.5%
Thermal (Oil)	7	7	0.0%	604	604	0.0%
Thermal (Coal)	1	1	0.0%	900	900	0.0%
ORE (Wind)	1	1	0.0%	3	3	0.0%
PPP: Total	206	221	7.3%	1,127	1,189	5.5%
ORE (Mini Hydro)	172	182	5.8%	342	354	3.4%
Thermal (Oil)	5	6	20.0%	611	629	2.9%
ORE (Wind)	15	15	0.0%	128	128	0.0%
ORE (Other)	14	18	28.6%	45	77	70.4%
Total	232	247	6.5%	4,018	4,087	1.7%

ORE - Other Renewable Energy (Mini Hydro, Solar, Dendro, Biomass, Wind)

PPP Total - 221
 Thermal - (6)
 other - 215

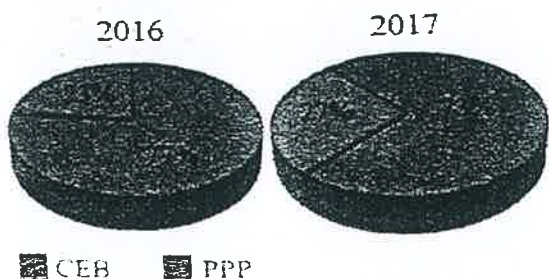
Ownership & Source	Generation (GWh)			Percentage of Total	
	2016	2017	% increase	2016	2017
CEB: Total	10,827	10,693	-1.2%	76.5%	72.9%
Hydro	3,481	3,059	-12.1%	24.6%	20.8%
Thermal (Oil)	2,297	2,529	10.1%	16.2%	17.2%
Thermal (Coal)	5,047	5,103	1.1%	35.7%	34.8%
ORE (Wind)	2.1	2.2	2.8%	0.0%	0.0%
PPP: Total	3,322	3,978	19.8%	23.5%	27.1%
ORE (Mini Hydro)	739	945	28.0%	5.2%	6.4%
Thermal (Oil)	2,164	2,516	16.3%	15.3%	17.1%
ORE (Wind)	343	365	6.4%	2.4%	2.5%
ORE (Other)	76	152	99.5%	0.5%	1.0%
Total Generation	14,148	14,671	3.7%	100.0%	100.0%
Av. Daily Generation - GWh/day	38.66	40.19	4.0%		

	Generation by Source (GWh)		
	2016	2017	% increase
Major Hydro	3,481	3,059	-12.1%
ORE (Mini Hydro)	739	945	28.0%
Total Hydro	4,220	4,004	-5.1%
Thermal (Oil)	4,461	5,045	13.1%
Thermal (Coal)	5,047	5,103	1.1%
ORE (Except Mini Hydro)	421	519	23.2%
Total Generation	14,148	14,671	3.7%
Day Maximum Demand (MW)	2,106.3	2,264.2	7.5%
Night Maximum Demand (MW)	2,452.9*	2,523.2**	7.4%
Hydro Reservoir Capacity (GWh)	1,259	1,258	

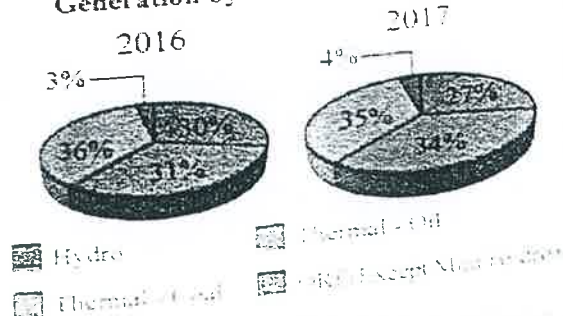
	Installed Capa. by Source (MW)		
	2016	2017	% increase
Major Hydro	1,384	1,391	0.5%
ORE (Mini Hydro)	342	354	3.4%
Total Hydro	1,726	1,745	1.1%
Thermal (Oil)	1,215	1,233	1.5%
Thermal (Coal)	900	900	0.0%
ORE (Except Mini Hydro)	177	209	18.1%
Total	4,018	4,087	1.7%

*On Monday, 25 April 2016
 **On Wednesday, 17 May 2017

Generation by Ownership - 2016 & 2017



Generation by Source - 2016 & 2017



2015

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GENERATION STATISTICS

Ownership & Source	No. of Power Stations			Installed Capacity in MW.		
	2013	2014	% Change	2013	2014	% Change
C.E.B. - Total	25	25	0.00%	2,228	2,824	26.75%
- Hydro	17	17	0.00%	1,361	1,377	1.18%
- Thermal - Oil	6	6	0.00%	564	544	-3.55%
- Thermal - Coal	1	1	0.00%	300	900	200.00%
- Wind	1	1	0.00%	3	3	0.00%
P.P.P. - Total	155	174	12.26%	1,127	1,108	-1.68%
- Hydro - Small	131	144	9.92%	264	288	9.14%
- Thermal	7	6	-14.29%	771	671	-12.97%
- NCRE - Wind	10	15	50.00%	78	128	63.73%
- NCRE - Other	7	9	28.57%	14	21	48.75%
Total	180	199	10.56%	3,355	3,932	17.20%

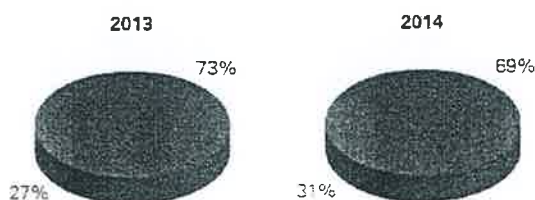
NCRE - Non Conventional Renewable Energy (Solar, Dendro, Biomass, Wind)

Ownership & Source	Generation in GWh *			Percentage of Total	
	2013	2014	% increase	2013	2014
C.E.B. - Total	8,744	8,532	-2.4%	73%	69%
- Hydro	5,990	3,632	-39.4%	50%	29%
- Thermal - Oil	1,283	1,696	32.2%	11%	14%
- Thermal - Coal	1,469	3,202	118.0%	12%	26%
- Wind	2.3	2.1	-8.4%	0%	0%
P.P.P. - Total	3,154	3,825	21.3%	27%	31%
- Hydro - Small	916	902	-1.5%	8%	7%
- Thermal	1,977	2,610	32.0%	17%	21%
- NCRE - Wind	232	270	16.4%	2%	2%
- NCRE - Other	28	43	52.7%	0%	0%
Total Generation *	11,898	12,357	3.9%	100%	100%
Av. Daily Generation - GWh/day	32.60	33.86	3.9%	* Refers Net Generation	

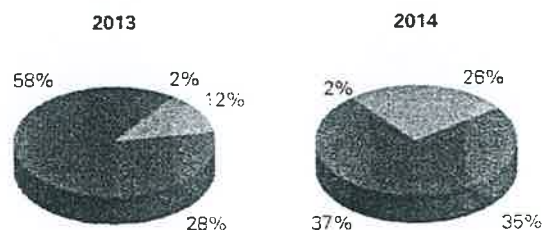
Source	Generation by Source in GWh.			Installed Capa. by Source in MW.		
	2013	2014	% Change	2013	2014	% Change
Hydro	6,906	4,534	-34.3%	1,625	1,665	2.47%
Thermal - Oil	3,260	4,305	32.1%	1,335	1,215	-8.99%
Thermal - Coal	1,469	3,202	118.0%	300	900	200.00%
NCRE	263	315	20.1%	96	153	59.49%
Total Generation	11,898	12,357	3.9%	3,355	3,932	17.20%

Day Maximum Demand in MW.	1,853.5	1,834.3	-1.04%	* - At Monday 8th April, 2013
Night Maximum Demand in MW.	2,164.2*	2,151.7**	-0.60%	** - At Monday 19th May, 2014
Hydro Reservoir Capacity in GWh	1,259	1,259		

Generation by Ownership - 2013 & 2014



Generation by Source - 2013 & 2014



■ CEB ■ PPP

■ Hydro ■ Thermal-Oil ■ Thermal-Coal ■ NCRE

GENERATION STATISTICS

Ownership & Source of Power Station	No. of Power Stations			Installed Capacity in MW.		
	2014	2015	% Change	2014	2015	% Change
C.E.B. - Total	25	26	4.00%	2,824	2,884	2.12%
- Hydro	17	17	0.00%	1,377	1,377	0.00%
- Thermal-Oil	6	7	16.67%	544	604	11.03%
- Thermal-Coal	1	1	0.00%	900	900	0.00%
- Wind (NCRE)	1	1	0.00%	3	3	0.00%
P.P.P. - Total	174	184	5.75%	1,108	963	-13.13%
- Thermal	6	4	-33.33%	671	511	-23.85%
- NCRE Mini Hydro	144	154	6.94%	288	307	6.60%
- NCRE - Wind	15	15	0.00%	128	124	-3.58%
- NCRE - Other	9	11	22.22%	21	21	0.47%
Total	199	210	5.53%	3,932	3,847	-2.17%

NCRE - Non Conventional Renewable Energy (Solar, Dendro, Biomass, Wind, Mini Hydro)

Ownership & Source	Generation - GWh			Percentage of Total	
	2014	2015	% increase	2014	2015
C.E.B. - Total	8,532	10,399	21.9%	69%	79%
- Hydro	3,632	4,904	35.0%	29%	37%
- Thermal-Oil	1,696	1,050	-38.0%	14%	8%
- Thermal-Coal	3,202	4,443	38.8%	26%	34%
- Wind (NCRE)	2.1	1.1	-50.2%	0%	0%
P.P.P. - Total	3,825	2,691	-29.6%	31%	21%
- Thermal	2,610	1,225	-53.1%	21%	9%
- NCRE Mini Hydro	902	1,065	18.0%	7%	8%
- NCRE - Wind	270	342	26.6%	2%	3%
- NCRE - Other	43	59	38.1%	0%	0%
Total Generation *	12,357	13,090	5.9%	100%	100%
Av. Daily Generation GWh/day	33.86	35.86	5.9%		

*Refers Net Generation

GENERATION STATISTICS

Ownership & Source of Power Station	No. of Power Stations			Installed Capacity (MW)		
	2015	2016	% Change	2015	2016	% Change
CEB : Total	26	26	0.0%	2,884	2,891	0.2%
Hydro	17	17	0.0%	1,377	1,384	0.5%
Thermal (Oil)	7	7	0.0%	604	604	0.0%
Thermal (Coal)	1	1	0.0%	900	900	0.0%
ORE (Wind)	1	1	0.0%	3	3	0.0%
PPP : Total	184	206	12.0%	963	1,127	17.0%
ORE (Mini Hydro)	154	172	11.7%	307	342	11.6%
Thermal	4	5	25.0%	511	611	19.6%
ORE (Wind)	15	15	0.0%	124	128	3.7%
ORE (Other)	11	14	27.3%	21	45	111.8%
Total	210	232	10.5%	3,847	4,018	4.4%

ORE - Other Renewable Energy (Mini Hydro, Solar, Dendro, Biomass, Wind)

Ownership & Source	Generation (GWh)			Percentage of Total	
	2015	2016	% increase	2015	2016
CEB : Total	10,399	10,827	4.1%	79%	76.5%
Hydro	4,904	3,481	-29.0%	37%	24.6%
Thermal (Oil)	1,050	2,297	118.7%	8%	16.2%
Thermal (Coal)	4,443	5,047	13.6%	34%	35.7%
ORE (Wind)	1.1	2.1	101.2%	0%	0.0%
PPP : Total	2,691	3,322	23.4%	21%	23.5%
ORE (Mini Hydro)	1,065	739	-30.6%	8%	5.2%
Thermal	1,225	2,164	76.6%	9%	15.3%
ORE (Wind)	342	343	0.2%	3%	2.4%
ORE (Other)	59	76	28.8%	0%	0.5%
Total Generation	13,090	14,148	8.1%	100%	100.0%

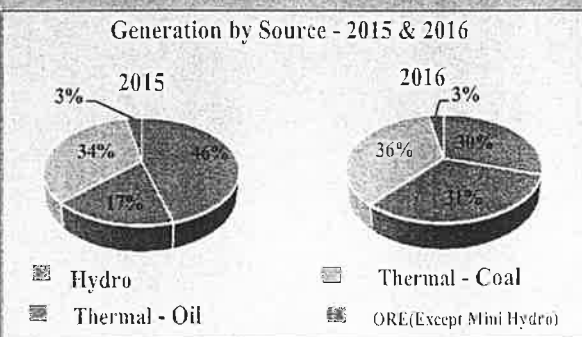
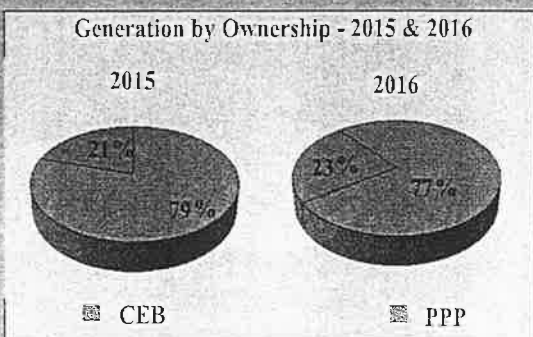
Av. Daily Generation - GWh/day 35.86 38.66 7.8%

Generation by Source (GWh)	2015	2016	% increase	Installed Capa. by Source (MW)		
Major Hydro	4,904	3,481	-29.0%	1,377	1,384	0.5%
ORE (Mini Hydro)	1,065	739	-30.6%	307	342	11.6%
Total Hydro	5,969	4,220	-29.3%	1,684	1,726	2.5%
Thermal (Oil)	2,275	4,461	96.0%	1,115	1,215	9.0%
Thermal (Coal)	4,443	5,047	13.6%	900	900	0.0%
ORE (Except Mini Hydro)	402	421	4.7%	148	177	19.3%
Total Generation	13,090	14,148	8.1%	3,847	4,018	4.4%

Day Maximum Demand (MW) 1,920.4 2,106.3 9.7% * On Tuesday, 22 September 2015

Night Maximum Demand (MW) 2283.4* 2452.9** 7.4% **On Monday, 25 April 2016

Hydro Reservoir Capacity (GWh) 1,259 1,259



Station	2016			2017		
	2016	2017	% Change	2016	2017	% Change
CEB : Total	26	26	0.0%	2,891	2,898	0.3%
Hydro	17	17	0.0%	1,384	1,391	0.5%
Thermal (Oil)	7	7	0.0%	604	604	0.0%
Thermal (Coal)	1	1	0.0%	900	900	0.0%
ORE (Wind)	1	1	0.0%	3	3	0.0%
PPP : Total	206	221	7.3%	1,127	1,189	5.5%
ORE (Mini Hydro)	172	182	5.8%	342	354	3.4%
Thermal (Oil)	5	6	20.0%	611	629	2.9%
ORE (Wind)	15	15	0.0%	128	128	0.0%
ORE (Other)	14	18	28.6%	45	77	70.4%
Total	232	247	6.5%	4,018	4,087	1.7%
ORE	- Other Renewable Energy (Mini Hydro, Solar, Dendro, Biomass, Wind)					

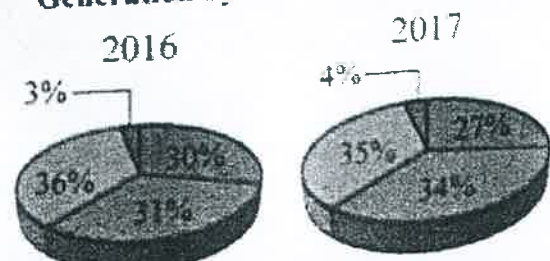
Ownership & Source	Generation (GWh)			Percentage of Total	
	2016	2017	% increase	2016	2017
CEB : Total	10,827	10,693	-1.2%	76.5%	72.9%
Hydro	3,481	3,059	-12.1%	24.6%	20.8%
Thermal (Oil)	2,297	2,529	10.1%	16.2%	17.2%
Thermal (Coal)	5,047	5,103	1.1%	35.7%	34.8%
ORE (Wind)	2.1	2.2	2.8%	0.0%	0.0%
PPP : Total	3,322	3,978	19.8%	23.5%	27.1%
ORE (Mini Hydro)	739	945	28.0%	5.2%	6.4%
Thermal (Oil)	2,164	2,516	16.3%	15.3%	17.1%
ORE (Wind)	343	365	6.4%	2.4%	2.5%
ORE (Other)	76	152	99.5%	0.5%	1.0%
Total Generation	14,148	14,671	3.7%	100.0%	100.0%
Av. Daily Generation - GWh/day	38.66	40.19	4.0%		

	Generation by Source (GWh)			Installed Capa. by Source (MW)		
	2016	2017	% increase	2016	2017	% increase
Major Hydro	3,481	3,059	-12.1%	1,384	1,391	0.5%
ORE (Mini Hydro)	739	945	28.0%	342	354	3.4%
Total Hydro	4,220	4,004	-5.1%	1,726	1,745	1.1%
Thermal (Oil)	4,461	5,045	13.1%	1,215	1,233	1.5%
Thermal (Coal)	5,047	5,103	1.1%	900	900	0.0%
ORE (Except Mini Hydro)	421	519	23.2%	177	209	18.1%
Total Generation	14,148	14,671	3.7%	4,018	4,087	1.7%
Day Maximum Demand (MW)	2,106.3	2,264.2	7.5%	*On Monday, 25 April 2016		
Night Maximum Demand (MW)	2,452.9*	2,523.2**	7.4%	**On Wednesday, 17 May 2017		
Hydro Reservoir Capacity (GWh)	1,259	1,258				

Generation by Ownership - 2016 & 2017



Generation by Source - 2016 & 2017



[GENERATION PERFORMANCE IN SRI LANKA 2016]

5. Plant Factor

The plant factor of a power plant is the ratio of the actual energy output of the power plant over a period of time to its potential output if it had operated at full nameplate capacity the entire time.

Plant Factors vary greatly depending on the type of power plants and it is calculated according to the following formula.

$$\text{Plant Factor} = \frac{\text{Actual Energy Production During the Nominal Period}}{\text{Potential Energy Production During the Period}}$$

Calculated plant factors for all grid connected power plants for the year 2016 are listed below.

Plant	Capacity (MW)	Annual Generation (GWh)	Plant Factor
CEB Hydro			
1 Wimalasurendra	50	84.74	19.3%
2 Old Laxapana	53.5	236.86	50.4%
3 Canyon	60	122.74	23.3%
4 New Laxapana	116	432.18 (4)	42.4%
5 Polpitiya	75	325.04 (5)	49.3%
6 Kotmale	201	279.64	15.8%
7 Victoria	210	588.93 (5)	31.9%
8 Randenigala	122	323.44 (5)	30.2%
9 Rantambe	49	142.50	33.1%
10 Dukuwela	40	158.02	45.0%
11 Bowatenna	40	42.29	12.0%
12 Upper Kotmale	150	235.52	17.9%
13 Samanalawewa	120	260.54 (6)	24.7%
14 Kukule	70	202.26	32.9%
15 Inginiyagala	11.25	41.73	42.2%
16 Udawalawe	6	15.53	29.5%
17 Nilambe	3.2	4.34	15.4%
CEB Thermal-Coal			
18 Puttalam Coal I	285	746.33	29.8%
19 Puttalam Coal II	285	2,161.09	86.3%
20 Puttalam Coal III	285	2,160.19	86.3%
CEB Thermal-Oil			
21 Uthura Janani	26.01	98.43	43.1%
22 Sapugaskanda B	69.6	474.70 (4)	77.6%
23 Sapugaskanda A	69.6	308.81	50.5%
24 Barge CEB	60	356.11 (5)	67.6%
25 KCCP	161	780.71 (5)	55.2%
26 RPS GT 7	113	263.44	26.5%
27 KPS Small GTs	65.2	44.83	7.8%
IPP			
28 Asia Power	50.8	126.90	28.4%
29 Northern Power	30	-	0.0%
30 Westcoast	270	893.04	37.7%
31 AES - Kelanitissa	163	795.27	55.5%
32 ACE Embilipitiya	100	387.19	60.4%

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239

6. Running Plant Factor

The running plant factor of a generation unit is the ratio of the actual energy output of a generation unit over a period of time to its potential output if it had operated at full nameplate capacity during the period in which it has been operated.

Running Plant Factor shows the extent to which the generation units have been operated when they are running out of their nominal capacities.

Calculated running plant factors for CEB owned generation units in year 2016 are listed below.

CEB Hydro

Plant	Unit	Running PF
Canyon	1	64%
	2	62%
Wimalasurendra	1	65%
	2	66%
New Laxapana	1	50%
	2	48%
Old Laxapana	1	54%
	2	61%
	3	57%
	4	54%
	5	54%
Polpitiya	1	54%
	2	62%
Ukuwela	1	98%
	2	96%
Bowatenna		39%
Victoria	1	64%
	2	64%

Plant	Unit	Running PF
	3	68%
	1	72%
Upper Kotmale	2	71%
	1	67%
Kotmale	2	64%
	3	64%
	1	85%
Randenigala	2	92%
	1	82%
Rantmbe	2	84%
	1	56%
Samanalawewa	2	59%
	1	86%
Kukule	2	86%
	1,2,3,4	18%
Inginiyagala	1,2,3	29%
Udawalawe	1,2	50%
Nilambe		

CEB Thermal

Plant	Unit	Running PF
Kalanithissa Gas Turbines	1	80%
	2	84%
	4	67%
	5	80%
	7	83%
Kalanithissa Combined Cycle	GT	89%
	ST	94%

Plant	Unit	Running PF
Sapugaskanda	1	73%
	2	69%
	3	67%
	4	79%
Sapugaskanda Extension	5	84%
	6	84%
	7	83%
	8	85%

[GENERATION PERFORMANCE IN SRI LANKA 2016]

Plant	Unit	Running PF
	9	86%
	10	83%
	11	86%
	12	84%
Lakvijaya	1	73%
	2	86%
	3	87%

Plant	Unit	Running PF
Uthuru Janani	1	99%
	2	98%
	3	98%
Barge		100%
		100%
		100%
		100%

IPP

Plant	Running PF
Asia Power	96%
AES Kalanithissa	92%
ACE Embilipitiya	92%

Note: Running Plant Factors for West Coast power plant and all SPPs were not calculated since the operation durations of those plants were not available.

7. Generation Cost

Power Station	Annual Generation (GWh)	Total Cost to CEB (Mn.LKR)	Average Unit Cost(Rs/kWh)
Asia Power	127	4,900	38.61
AES Kelanitissa	795	17,680	22.23
ACE Embilipitiya	387	8,480	21.90
Westcoast	893	29,591	33.14
Northern Power	-	725	
Sapugaskanda A	309	8,194	26.53
Sapugaskanda B	475	10,969 (8)	23.11
Kelanitissa Small GTs	45	2,984	66.56
Kelanitissa PS GT 7	263	10,198	38.71
Kelanitissa CCY	781	19,845 (7)	25.42
Puttalam Coal	5,068	50,187 (6)	9.90
Uthura Janani	98	3,219	32.71
Barge-CEB	356	7,783 (7)	21.86
Victoria	589	2,345 (8)	3.98
Ukuwela	158	697	4.41
Kotmale	280	2,129	7.61
Upper Kotmale	236	1,770	7.52
Randenigala/Rantambe	466	2,021 (4)	4.34
Bowatenna	42	534	12.63
Nilambe	4	136	31.46
Old Laxapana/New Laxapana	669	1,630 (2)	2.44
Polpitiya	432	2,201 (3)	5.09
Wimalasurendra	85	458	5.40
Canyon	123	720	5.86
Samanalawewa	261	1,868 (5)	7.17
Kukule	202	832	4.11
Inginiyagala	42	154	3.68
Udawalawe	16	632	40.69
Renewable	1,208	20,185	16.71
All Hydro	3,603	18,126	5.03
All CEB Thermal	7,395	113,379	15.33
ALL IPP Thermal	2,202	61,376	27.87
All Plants	14,408	213,066	14.79

Source: LISS Data

Note: Loan installment cost component is not included in the cost figure of Puttalam Coal plant

10. Availability Factor

The evaluation of availability of a power plant is one of the most important tasks at any power station. To analyze plant availability performance, generation unit outages should be scrutinized to identify the causes of unplanned or forced energy losses and to reduce the planned energy losses. Reducing outages increases the number of operating hours, therefore increases the plant availability factor.

Availability Factor of a generation plant can be calculated using the formula given below.

$$\text{Availability Factor} = \frac{\text{Duration in which the generation unit was available for operation}}{\text{Total length of the period}}$$

Total Availability Factor for all CEB generation units in 2016 = **86%**

Availability Factor for CEB hydro generation units in 2016 = **89%**

Availability Factor for CEB thermal generation units in 2016 = **84%**

Availability Factor for CEB wind generation units in 2016 = **64%**

Calculated availability factors for CEB owned generation plants in 2016 are listed below.

CEB Hydro

Plant	Unit	Availability factor (%)
Canyon	1	95%
	2	98%
Wimalasurendra	1	86%
	2	86%
New Laxapana (2)	1	87%
	2	91%
Old Laxapana	1	96%
	2	93%
	3	93%
	4	97%
	5	96%
Polpitiya (3)	1	85%
	2	89%
Ukuwela	1	85%
	2	72%
Bowatenna		96%
Victoria (1)	1	83%
	2	88%

Plant	Unit	Availability factor (%)
	3	96%
Upper Kotmale	1	89%
	2	94%
Kotmale	1	77%
	2	90%
	3	83%
Randenigala (4)	1	88%
	2	89%
Rantmbe	1	96%
	2	97%
Samanalawewa (5)	1	90%
	2	89%
Kukule	1	91%
	2	92%
Inginiyagala	1,2,3,4	91%
Udawalawe	1,2,3	42%
Nilambe	1,2	95%

[GENERATION PERFORMANCE IN SRI LANKA 2016]

CEB Thermal

Plant	Unit	Availability factor (%)	
Kalanithissa Gas Turbines	1	93%	
	2	70%	
	4	95%	
	5	85%	
	7	87%	
	Kalanithissa Combined Cycle	GT	70%
		ST	64%
Sapugaskanda	1	69%	
	2	81%	
	3	85%	
	4	69%	
Sapugaskanda Extension	5	85%	
	6	90%	
	7	81%	
	8	84%	

Plant	Unit	Availability factor (%)
	9	88%
	10	88%
	11	90%
	12	91%
Lakvijaya	1	40%
	2	96%
	3	94%
Uthuru Janani	1	79%
	2	79%
	3	84%
Barge	1	98%
	2	96%
	3	98%
	4	98%

Average
85%

CEB Wind Plant

Plant	Unit	Availability factor (%)
Wind	1,2,3,4,5	64%

IPP

Plant	Availability factor (%)
Asia Power	32%
AES Kalanithissa	94%
ACE Embilipitiya	58%

Note: Interruption data is available only for CEB owned power plants and some IPPs

වගු අංක - (I)

වර්ෂය	Gross generation(GWh)	Net generation(GWh)
2014	3,524.95	3,202.17
2015	4,920.30	4,457.28
2016	5,575.45	5,046.60
2017	5,638.61	5,103.26

වගු අංක - (II)

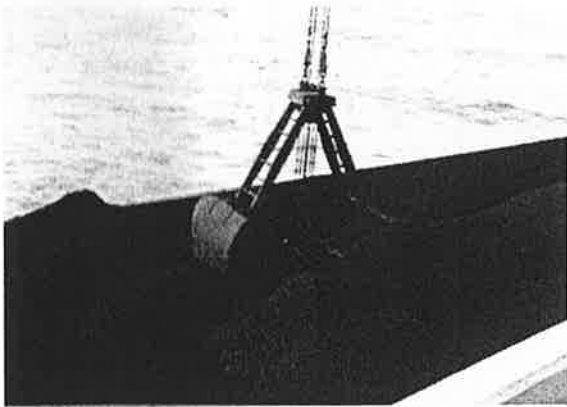
බලාගාර වර්ගය	වාර්ෂික උත්පාදනය (ශීත වේගවේග)	plant factor %	Running Plant Factor %	Energy Sales - බලාගාරයේ අලෙවි කළ මිල (රුපියල් මිලියන)	Average unit Cost - ජනන (රුපියල්/කිලෝවොට් පැය)	Availability Factor %
Lakvijaya - unit 1	Gross - 826.96 Net - 729.99	31.38	38.93		6.61	48.23
Lakvijaya - unit 2	Gross - 2383.01 Net - 2158.52	90.43	95.2	50,187	6.61	93.63
Lakvijaya - unit 3	Gross - 2365.48 Net - 2158.08	89.76	94.11		6.61	92.7

ජනන අංශය

වර්ෂය සඳහා ජනන දත්ත	
ජනනය කළ සම්පූර්ණ බිලියනකිහිපය (යුද්ධ)	ගිනාපොට් පැය 4,457
සම්පූර්ණ ගල් අඟුරු පරීක්ෂණය	පොත් මිලියන 1.88
සම්පූර්ණ ඩිග්ල් පරීක්ෂණය	ලීටර් මිලියන 3
ගල් අඟුරු මිල	කිලෝග්‍රෑම් එකක් රු. 11.11
* ඒකකයක් සඳහා පිරිවැය	නිලෝවොට් පැය එකකට රු. 4.78

* ගිනුම් විස්තර අනුමාන සාමාන්‍ය මිල

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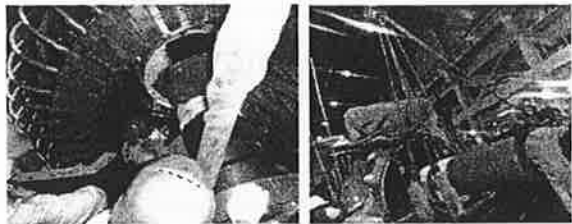


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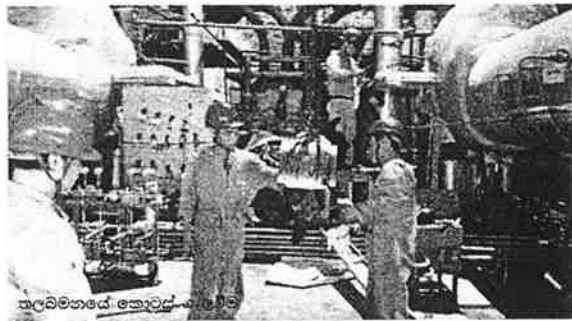
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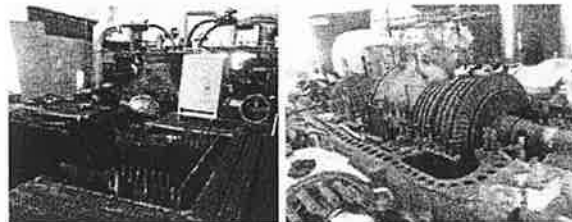
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ජනකයේ ප්‍රමාණ ගලවා ගැනීම



තලබමනගේ කොටස්-අංක 10



අඩු පීඩන තලබමනගේ පහළ කොටස

අධි පීඩන සහ මධ්‍යම පීඩන තලබමන

ජනන පිරිවැය - 2015						
තාක්ෂණය	ඉන්ධන පිරිවැය රු.මිලියන	අමතර කොටස් සහ වෙනත් නඩත්තු ද්‍රව්‍ය පිරිවැය රු. මිලියන	වෙනත් මෙහෙයුම් සහ නඩත්තු වියදම් රු. මිලියන	සම්පූර්ණ ජනන පිරිවැය රු. මිලියන	ඒකක ගි.වො. පැය	ඒකකයක් ජනනය සඳහා සාමාන්‍ය පිරිවැය රු./කි.වො. පැය
තාප - තෙල්	22,802	1,087	6,322	30,211	1,085	27.84
ජල විදුලි	-	532	7,608	8,140	4,925	1.65
තාප - ගල් අඟුරු	21,304	748	10,631	32,682	4,457	7.33
මුළු ගණන	44,106	2,367	24,561	71,033	10,467	6.79



Annual Report - CEB - 2016

Attention:
Mrs: Sangeethi.

Cost of Generation - 2016

Technology	Fuel Cost Rs. Million	Spares & Other Maintenance Material Cost Rs. Million	Other Operation & Maintenance Cost Rs. Million	Total Generation Cost Rs. Million	Units GWh	Average Cost of Generation Per Unit Rs/KWh
Thermal - Oil	49,516	1,677	6,412	57,605	2,362	24.38
Hydro	-	364	7,980	8,344	3,501	2.38
Thermal - Coal	20,762	762	11,978	33,502	5,066	6.61
Total	70,278	2,803	26,370	99,451	10,930	9.10

Annual Report - 2016

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[GENERATION PERFORMANCE IN SRI LANKA 2016]

7. Generation Cost

Power Station	Annual Generation (GWh)	Total Cost to CEB (Mn.LKR)	Average Unit Cost(Rs/kWh)
Asia Power	127	4,900	38.61
AES Kelaniyssa	795	17,680	22.23
ACE Embilipitiya	387	8,480	21.90
Westcoast	893	29,591	33.14
Northern Power	-	725	
Sapugaskanda A	309	8,194	26.53
Sapugaskanda B	475	10,969 (8)	23.11
Kelaniyssa Small GTs	45	2,984	66.56
Kelaniyssa PS GT7	263	10,198	38.71
Kelaniyssa CO	781	19,845 (7)	25.42
Puttalam Coal	5,068	50,187 (6)	9.90
Uthura Janani	98	3,219	32.71
Barge-CEB	356	7,783 (1)	21.86
Victoria	589	2,345 (1)	3.98
Ukuiwela	158	697	4.41
Kotmale	280	2,129	7.61
Upper Kotmale	236	1,770	7.52
Randenigala/Rantambe	466	2,021 (4)	4.34
Bowatenna	42	534	12.63
Nilambe	4	136	31.46
Old Laxapana/New Laxapana	669	1,630 (2)	2.44
Polottiya	432	2,201 (3)	5.09
Wimalasurendra	85	458	5.40
Canyon	123	720	5.86
Samaralawewa	261	1,868 (5)	7.17
Kukule	202	832	4.11
Inginiyagala	42	154	3.68
Udawalawe	16	632	40.69
Renewable	1,208	20,185	16.71
All Hydro	3,603	18,126	5.03
All CEB Thermal	7,395	113,379	15.33
ALL IPP Thermal	2,202	61,376	27.87
All Plants	14,408	213,066	14.79

Source: LISS Data

Note: Loan installment cost component is not included in the cost figure of Puttalam Coal plant

Clarifications

1.1 Annual Generation of LVPP for 2016

Year	Unit 01		Unit 02		Unit 03		Total for the Year	
	Gross Energy (GWh)	Net Energy Sent Out(GWh)	Gross Energy (GWh)	Net Energy Sent Out(GWh)	Gross Energy (GWh)	Net Energy Sent Out(GWh)	Gross Energy (GWh)	Net Energy Sent Out(GWh)
2016	826.96	729.99	2,383.01	2,158.52	2,365.48	2,158.08	5,575.45	5,046.60

1.2 Plant Factor

Plant factor for 2016 was calculated using the below formula.

Plant Factor = Gross Generation for the year / [Unit Capacity x Total hours for the year]

Ex: Plant Factor for Unit 01 = $[826.96 \times 10000] \times 100\% / [300 \times 366 \times 24] = 31.38\%$

1.3 Running Plant Factor

Running plant factor for 2016 was calculated using the below formula.

Running plant factor = Running hours for the year/ Total hours for the year

Ex: Plant Factor for Unit 01 = $3419.6 \times 100\% / [366 \times 24] = 38.93\%$

	Running (h)
Unit 01	3,419.60
Unit 02	8,362.17
Unit 03	8,267.02

1.4 Generation Cost & 1.5 Average Unit Cost

Please refer the table below

	2016
1 Personnel Expenses	1,197,623,850.19
2 Material Expenses	
Deisel	558,269,782.85
Coal	20,204,026,264.51
Demmurages	115,070,655.31
Others	646,958,757.39
Total Material	21,524,325,460.06
3 Accommodation Expenses	89,224,222.37
4 Transport & Communication Expenses	90,059,395.18
5 Depreciation	6,755,831,067.21
6 Other Expenses	
CMEC	3,563,583,689.00
Others	125,243,985.23
Total Other Expenses	3,688,827,674.23
7 Finance Cost	2,908,202.28
Grand Total (LKR)	33,348,799,871.52
Net Generation (GWh)	5,046.60
Unit Cost (LKR/kWh)	6.61

1.6 Availability Factor

Following equation was used to calculate the availability factors.

Availability factor = (Total Hours for the period x Total plant installed capacity – Σ Breakdown Outage Hours of individual units x installed individual unit capacities)/(Total Hours for the period x Total installed plant capacity)

As per LVPP data, breakdown outage hours of the units for 2016 are,

Unit 01 - 4547:45:52 (hh:mm:ss)

Unit 02 - 559:52:08 (hh:mm:ss)

Unit 03 - 641:01:42 (hh:mm:ss)

Note : This breakdown outage hours includes the forced outage ours of the plants and the loss of running hours due to plant deloadings resulted from faults of the plant.

Ex : Availability factor for unit 01 = $300 \times [8784 - 4547.76] \times 100 \% / [300 \times 8784] = 48.23 \%$

සාමාන්‍ය ඒකක පිරිවැය

ජල විදුලිය	
සමනල වැව	7.17
රන්දෙනිගල	4.34
පොල් පිටිය	5.09
ලක්ෂපාන නව	2.44
වික්වොරියා	3.98
සාමාන්‍ය ඒකක පිරිවැය	<u>4.60</u>

ගල් අඟුරු	
ලක්විජය තාප බලාගාරය	6.61
සාමාන්‍ය ඒකක පිරිවැය	<u>6.61</u>

ඉන්ධන	
යාත්‍රාවක නැංවූ බලාගාරය	21.86
සපුගස්කන්ද B	23.11
කැලණි තිස්ස විදුලි බලාගාරය	25.42
සාමාන්‍ය ඒකක පිරිවැය	<u>23.46</u>

GENERATION STATISTICS

Ownership & Source of Power Station	No. of Power Stations			Installed Capacity (MW)		
	2015	2016	% Change	2015	2016	% Change
CEB : Total	26	26	0.0%	2,884	2,891	0.2%
Hydro	17	17	0.0%	1,377	1,384	0.5%
Thermal (Oil)	7	7	0.0%	604	604	0.0%
Thermal (Coal)	1	1	0.0%	900	900	0.0%
ORE (Wind)	1	1	0.0%	3	3	0.0%
PPP : Total	184	206	12.0%	963	1,127	17.0%
ORE (Mini Hydro)	154	172	11.7%	307	342	11.6%
Thermal	4	5	25.0%	511	611	19.6%
ORE (Wind)	15	15	0.0%	124	128	3.7%
ORE (Other)	11	14	27.3%	21	45	111.6%
Total	210	232	10.5%	3,847	4,018	4.4%

ORE - Other Renewable Energy (Mini Hydro, Solar, Dendro, Biomass, Wind)

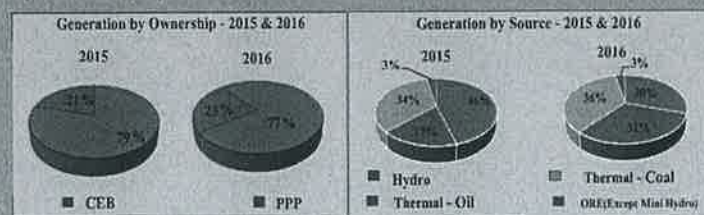
Ownership & Source	Generation (GWh)			Percentage of Total	
	2015	2016	% Increase	2015	2016
CEB : Total	10,399	10,827	4.1%	79%	76.5%
Hydro	4,904	3,481	-29.0%	37%	24.6%
Thermal (Oil)	1,050	2,297	118.7%	8%	16.2%
Thermal (Coal)	4,443	5,047	13.0%	34%	35.7%
ORE (Wind)	1.1	2.1	101.2%	0%	0.0%
PPP : Total	2,691	3,322	23.4%	21%	23.5%
ORE (Mini Hydro)	1,065	739	-30.6%	8%	5.2%
Thermal	1,225	2,164	76.6%	9%	15.3%
ORE (Wind)	342	343	0.2%	3%	2.4%
ORE (Other)	59	76	28.8%	0%	0.5%
Total Generation	13,090	14,148	8.1%	100%	100.0%

Av. Daily Generation - GWh/day 35.86 38.66 7.8%

Generation by Source (GWh)	2015	2016	% Increase	Installed Capa. by Source (MW)
Major Hydro	4,904	3,481	-29.0%	1,377 1,384 0.5%
ORE (Mini Hydro)	1,065	739	-30.6%	307 342 11.6%
Total Hydro	5,969	4,220	-29.3%	1,684 1,726 2.5%
Thermal (Oil)	2,275	4,461	96.0%	1,115 1,215 9.0%
Thermal (Coal)	4,443	5,047	13.6%	900 900 0.0%
ORE (Excepr Mini Hydro)	402	421	4.7%	148 177 19.3%
Total Generation	13,090	14,148	8.1%	3,847 4,018 4.4%

Day Maximum Demand (MW) 1,920.4 2,106.3 9.3% * On Tuesday, 22 September 2015
 Night Maximum Demand (MW) 2283.4* 2452.9** 7.4% **On Monday, 25 April 2016

Hydro Reservoir Capacity (GWh) 1,250 1,259



CEB Statistical Digest 2016

Comparison of LVPP Power Generation and a Combined Cycle PP Power Generation

Net Generation of LVPP Phase I since the beginning of the operation	= 8,787.87 GWh
Net Generation of LVPP Phase II since the beginning of the operation	= 13,681.28 GWh
O&M Cost per unit generation of LVPS	= 8.39 Rs/kWh
O&M Cost per unit generation of KC.Cy PP	= 24 Rs/kWh
Approximate Generation Cost of LVPP Phase I	= 73,730.25 Million Rs
Approximate Generation Cost if this 8787 GWh was generated by a Comb.Cy.PP	= 210,908.94 Million Rs
Approximate Generation Cost of LVPP Phase II	= 114,785.94 Million Rs
Approximate Generation Cost if this 13,681 GWh was generated by a Comb.Cy.PP	= 328,350.72 Million Rs
Therefore the saving achieved by operating LVPP Phase I	= 137,178.69 Million Rs
Therefore the saving achieved by operating LVPP Phase II	= 213,564.78 Million Rs
Phase I contract price	= 455 Million USD
Phase II contract price	= 70,525.00 Million Rs
Total contract price for phase I & phase II	= 126,945.00 Million Rs.
Saving from phase I & phase II	= 197,470.00 Million Rs
Net saving	= 350,743 Million
	= 153,273.47 Million Rs
	= 988.85 Million USD

1980 අංක 47 දරණ
ජාතික පාරිසරික පනත

(1988 අංක 56 දරණ ජාතික පාරිසරික
(සංශෝධන) පනත ඇතුළත්ව)

(පහසු පරිශීලනය සඳහා සකස් කරන ලදී.)

මධ්‍යම පරිසර අධිකාරිය
පරිසර අමාත්‍යාංශය

(මෙය ව්‍යවස්ථාපිත ප්‍රකාශනයක් ලෙස නොසලකන්න.)

(1980 අංක 47 දරණ ජාතික පාර්ලිමේන්තු පනත එහි 1983 අංක 56 දරණ සංශෝධන පනත ඇතුළත්ව)

සහතිකය සටහන් කළේ 1980 ඔක්තෝබර් මස 29 දින) එල්.ඩී.-ඩී.94/78

මධ්‍යම පාර්ලිමේන්තු අධිකාරියේ විධිවිධාන සඳහා ද එම අධිකාරියේ බලතල, ස්වභාවය සහ කාර්ය පිළිබඳ විධිවිධාන සැලැස්වීම සඳහා ද, පාර්ලිමේන්තු ආරක්ෂා කිරීම සහ කළමනාකරණය කිරීම සහ සම්බන්ධතා කිරීම සඳහා ද, පාර්ලිමේන්තු තත්ත්වය විධිමත් කිරීම, පවත්වා ගෙනයාම සහ එය පාලනය කිරීම සඳහාද, පාර්ලිමේන්තු සභාවේ වැළැක්වීම, භාරය කිරීම සහ පාලනය කිරීම සඳහා සහ ඒ සම්බන්ධ හෝ ඊට අනුබන්ධ කරනු ලබන සඳහා ද විධිවිධාන සැලැස්වීම පිණිස වූ පනතකි.

ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයේ පාර්ලිමේන්තුව විසින් මෙසේ පනවනු ලැබේ :-

මේ පනත 1980 අංක 47 දරණ ජාතික පාර්ලිමේන්තු පනත යනුවෙන් හඳුන්වනු ලබන අතර ගැසට් පත්‍රයේ පළ කරනු ලබන නිවේදනයක්, අමාත්‍යවරයා විසින් නියම කරනු ලබන දිනයක සිට, එය ක්‍රියාත්මක විය යුතු ය.

1 වන කොටස

මධ්‍යම පාර්ලිමේන්තු අධිකාරිය සහ පාර්ලිමේන්තු සභාවන් පිහිටුවීම

2. (1) මේ පනතේ කාර්ය සඳහා මධ්‍යම පාර්ලිමේන්තු අධිකාරිය යනුවෙන් හඳුන්වනු ලබන අධිකාරියක් පිහිටුවනු ලැබිය යුතුය. අධිකාරිය පිහිටුවීම
- (2) (1) වන උපවගන්තිය යටතේ පිහිටුවන ලද (මෙහි ඒකමතු "අධිකාරිය" යනුවෙන් සඳහන් කරනු ලබන) මධ්‍යම පාර්ලිමේන්තු අධිකාරිය, 3 වන වගන්තියේ (1) වන උපවගන්තිය යටතේ අධිකාරියේ කාර්යාලය සාමාජිකයන් වන සාමාජිකයන්ගෙන් සමන්විත විය යුතුය.
- (3) (1) වන උපවගන්තිය යටතේ අධිකාරියට පැවරුණු කාර්ය ඒ අධිකාරිය සංස්ථාපිත විය යුතුය. එයට අවිච්ඡින්න පැවැත්මක් හා පොදු මුද්‍රාවක් තිබිය යුතුය. සභාදේශීය අධිකාරිය විසින් හසු පවරනු ලැබීමට අධිකාරියට විරුද්ධව හසු පවරනු ලැබීම ද කළ හැකිය.
3. (1) අමාත්‍යවරයා විමසා ජනාධිපතිවරයා විසින් පත් කරනු ලබන සාමාජිකයන් නිලධාරීන්ගෙන් අධිකාරිය සමන්විත විය යුතු අතර අධිකාරියේ සාමාජිකයන්

IV අ කොටස

පාරිසරික ආරක්ෂාව

7. (මෙහි මින්මතු "අදාළ දිනය" යනුවෙන් සඳහන් කරනු ලබන) අමාත්‍යවරයා විසින් ගැසට් පත්‍රයේ ජල කරනු ලබන නියමයන් මගින් නියම කරනු ලැබිය හැකි යම් දිනයක සිට ක්‍රියාත්මක වන පරිදි, කවර හෝ තැනැත්තකු විසින්-

අ/ අධිකාරිය විසින් නිකුත් කරනු ලබන බලපත්‍රයක බලය යටතේ ; සහ

ආ/ මේ පනත යටතේ නියම කරනු ලැබිය හැකි වෙනත් යම් ප්‍රමිතීන්ට හා වෙනත් උපමානවලට

අනුකූලව හැර පරිසර දූෂණය සිදු වියහැකි අපද්‍රව්‍ය පරිසරය වෙත බැහැර කිරීම, පරිසරයෙහි හැත්පත් කිරීම හෝ පරිසරය වෙත පිට කිරීම නොකළ යුතුය.

8. (1) අධිකාරිය විසින්, නියම කරනු ලැබිය හැකි යම් ආකෘතියක ඒ සඳහා අධිකාරිය වෙත කරනු ලබන යම් ඉල්ලීමක් මත සහ නියමිත ගාස්තුව ගෙවීම මත මේ පනත යටතේ නියම කරනු ලැබිය හැකි යම් ප්‍රමිතීන්ට හා උපමානවලට අනුකූලව අපද්‍රව්‍ය පරිසරය වෙත බැහැර කිරීමට, පරිසරයෙහි හැත්පත් කිරීමට හෝ පරිසරය වෙත පිට කිරීමට යම් තැනැත්තකුට බලය පවරමින් ඒ තැනැත්තා වෙත බලපත්‍රයක් නිකුත් කරනු ලැබිය හැකිය.

(2) මේ කොටස යටතේ නිකුත් කරනු ලබන සෑම බලපත්‍රයක්ම-

අ/ නියම කරනු ලබන යම් ආකෘතියක විය යුතුය ;

ආ/ නියම කරනු ලබන යම් ආකාරයකට, කොන්දේසිවලට සහ යම් ප්‍රමිතීන්ට යටත් විය යුතුය.

ඇ/ බලපත්‍රයේ නියම කළයුතු යම් කාලයක් සඳහා වලංගු වියයුතු නමුත්, එය මාස දොළහක කාලයකට වැඩි නොවිය යුතුය.

ඈ/ අළුත් කළහැකි විය යුතුය.

9. (1) 23 ආ වගන්තිය යටතේ ඉල්ලීමක් ලැබුණු විට, එසේ කිරීම අවශ්‍ය යයි අධිකාරිය සලකන අවස්ථාවක අධිකාරිය විසින්, එම ඉල්ලීම පිළිබඳව වාර්තාවක් සපයන ලෙස ඉල්ලා සිටීමත්, එම ඉල්ලීම අදාළ ආණ්ඩුවේ දෙපාර්තමේන්තුවක් හෝ රාජ්‍ය සංස්ථාවක් හෝ වෙන යොමු කරනු ලැබිය හැකිය.

(2) ඉල්ලීමක්, (1) වන උපවගන්තිය යටතේ ආණ්ඩුවේ දෙපාර්තමේන්තුවක් හෝ රාජ්‍ය සංස්ථාවක් හෝ වෙන යොමු කරනු ලබන අවස්ථාවක, ඊට අදාළව එම දෙපාර්තමේන්තුවක් හෝ

අපද්‍රව්‍ය, පරිසරය වෙත බැහැර කිරීම, පිට කිරීම හෝ එහි හැත්පත් කිරීම තහනම් කිරීම.

බලපත්‍රයක් නිකුත් කිරීම

ඉල්ලීමක් අධිකාරිය විසින් ආණ්ඩුවේ දෙපාර්තමේන්තුවක් හෝ රාජ්‍ය සංස්ථාවක් හෝ වෙන යොමු කරනු ලැබිය හැකි බව.

Ministry of Mahaweli Development and Environment
Central Environmental Authority
Provincial Progress up to end of December 2017

Activity	Western Province			Southern Province			Central Province			Sabaragamuwa Province			Uva Province			North Central Province			Eastern Province			Northern Province					North western province		Grand Total										
	Colombo	Gampaha	Kaluthara	Total	Galle	Matara	Hambantota	Total	Kandy	Matale	Nuwara Eliya	Total	Kegalle	Rathnapura	Total	Badulla	Monaragala	Total	Ampara	Trinco	Batt	Total	Lanka	Kinnochchi	Vavunia	Mannar	Total	Kurunegala		Puttiam	Total								
																																142	186	129	457	95	55	69	219
1.1 Environmental Pollution Control Activities	67	149	77	293	76	25	31	132	56	39	13	108	40	110	150	45	35	80	60	16	76	38	9	51	98	24	68	69	39	16	216	161	49	210	1,363				
Issuing of Environmental recommendations for proposed industries	1	12	6	19	13	5	6	24	1	3	0	4	4	0	4	1	1	2	0	0	0	0	0	0	0	1	1	0	0	1	3	7	1	8	64				
Not recommended / Rejected*	26	27	18	71	18	60	19	97	24	84	0	108	52	0	52	29	63	92	0	0	0	10	6	82	98	26	525	97	28	41	717	0	0	0	1,235				
Being Processed																																							
2. Processing of EPL																																							
1.2 Procedure																																							
2.1 Issuance of New EPLs																																							
"A" Category Industries	192	134	98	424	24	27	32	83	63	74	46	183	24	16	40	16	29	45	82	8	90	2	6	9	17	19	6	4	9	2	40	93	25	118	1,040				
No. of fresh EPL applications received*	174	118	44	336	44	48	39	131	46	26	26	98	27	52	79	35	20	55	63	9	72	16	19	17	52	22	8	8	21	14	73	85	13	98	994				
EPL issued	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	13	0	0	13	1	0	1	0	0	2	0	0	0	0	17			
Being Processed	30	6	7	43	46	238	107	391	0	36	0	36	28	4	32	19	30	49	0	0	118	227	70	415	153	15	43	8	57	276	0	0	0	0	1,242				
No. of treatment plants established	20	0	1	21	0	0	0	0	2	7	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30			
"B" Category Industries	103	87	56	246	59	52	20	131	66	17	17	100	33	22	55	11	18	29	45	10	55	17	19	23	59	23	10	9	7	16	65	62	6	68	808				
No. of fresh EPL applications received*	86	90	30	206	78	36	30	144	49	18	10	77	50	58	108	16	16	32	21	7	28	39	23	22	84	15	4	7	9	22	57	51	11	62	798				
EPL issued	5	0	3	8	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	1	0	2	0	0	3	0	0	0	16				
Being Processed	10	9	14	33	160	152	149	461	36	12	11	59	34	3	37	12	18	30	0	0	63	49	46	158	200	12	27	7	209	455	0	0	0	1,233					
No. of treatment plants established	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	6			
"C" Category Industries by LoAs																																							
Application Received*	0	0	0	0	1	0	0	1	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	10	0	0	16	26	1	0	1	30				
EPL issued	0	88	0	88	145	23	0	168	216	0	0	216	0	1	1	0	0	0	0	0	0	6	0	6	0	6	18	0	2	15	35	0	0	0	514				
2.2 EPL (Renewals)																																							
"A" Category Industries	1475	410	493	2378	253	280	117	650	311	241	91	643	90	40	130	126	80	206	416	113	529	35	13	39	87	156	51	41	98	65	411	69	45	114	5,148				
No. of renewal applications received*	1356	599	341	2296	293	330	221	844	421	145	120	686	342	390	732	115	130	245	199	112	311	168	128	144	440	257	53	70	97	81	558	66	12	78	6,190				
EPL issued																																							

Ministry of Mahaweli Development and Environment
Central Environmental Authority
Provincial Progress up to end of December 2017

Activity	Western Province				Southern Province				Central Province			Sabaragamuwa Province			Uva Province		North Central Province		Eastern Province			Northern Province				North western Province		Grand Total									
	Colombo	Gampaha	Kaluthara	Total	Galle	Matara	Hambantota	Total	Kandy	Viatale	Nuwara Eliya	Total	Kegalle	Ratnapura	Total	Badulla	Monaragala	Total	Auradhapura	Polonnaruwa	Total	Ampara	Trinco	Batti	Total	Jaffna	Kilinochchi		Mulathiiv	Vavunia	Mannar	Total	Kurunegala	Puttalam	Total		
EPII rejected	43	10	32	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Being Processed	92	0	22	114	197	1184	1127	2508	108	384	72	564	142	6	148	131	89	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11th Category Industries																																					
No. of renewal EPII applications received ^a	345	116	132	593	129	81	16	226	62	5	23	96	83	20	103	37	14	51	86	18	134	14	12	87	113	12	47	20	11	37	127	7	2	9	1416		
EPII issued	309	232	82	623	143	115	52	310	91	65	19	175	132	131	263	33	50	83	40	58	98	89	43	106	238	81	37	38	12	35	203	3	0	2	1296		
EPII rejected	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Being Processed	37	0	22	59	111	527	385	1023	0	24	0	24	182	3	185	38	22	60	0	0	0	0	252	512	1480	407	481	161	6	49	1104	0	0	0	3035		
12th Category Industries by IAs																																					
Application Received ^a	0	6	0	6	0	1	0	1	11	0	0	11	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EPII issued	0	32	0	32	159	37	0	191	0	120	0	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12.3 Granting Concurrences to BOI Projects																																					
Concurrence given for NSR ^a	3	0	0	3	7	9	17	33	1	1	3	7	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Concurrence given for new EPII ^a	0	0	0	0	2	0	0	2	3	0	6	2	0	2	0	0	0	0	5	0	5	3	1	2	6	0	0	0	0	0	0	0	0	0	0	0	
Concurrence given for EPII ^a	0	0	0	0	17	7	7	31	29	17	2	48	12	1	13	3	2	5	7	0	7	7	11	3	21	0	1	1	3	6	0	0	0	0	0		
Compliance Monitoring ^a	0	0	0	0	0	0	1	1	4	0	4	14	0	14	0	4	4	4	0	5	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0		
-New	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-Renewals	0	0	0	0	0	0	0	0	4	0	4	13	0	13	0	4	4	4	0	5	5	0	0	0	0	0	2	0	0	0	2	0	0	0	0		
2.4 Handling of Public Complainers / EPC & NRM																																					
Total no of complainers received	445	373	240	1058	199	87	54	340	144	24	0	168	124	151	275	41	77	118	24	0	24	9	2	14	25	33	8	3	5	3	52	76	32	108	2,168		
EMC	415	330	176	921	119	64	33	216	108	12	0	120	71	57	128	20	39	59	24	0	24	9	2	12	23	33	7	2	3	2	47	67	23	90	1,628		
NRM	30	43	64	137	80	23	21	124	36	12	0	48	53	94	147	21	38	59	0	0	0	0	0	2	2	0	1	1	2	1	5	9	9	18	510		
Total no of complainers solved	4	36	41	81	139	10	28	177	60	0	0	60	70	50	120	11	22	33	0	0	0	1	0	10	11	12	5	2	1	2	22	25	5	30	534		

Ministry of Mahaweli Development and Environment
Central Environmental Authority
Provincial Progress up to end of December 2017

Activity	Western Province			Southern Province			Central Province			Sabaragamuwa Province			Lya Province		North Central Province			Northern Province					North western Province		Grand Total							
	Colombo	Gampaha	Kaluthara	Total	Galle	Matarata	Hambantota	Total	Kandy	Matale	Nuwara Eliya	Total	Badulla	Monaragala	Total	Anuradhapura	Polinna	Ampara	Tinco	Batt	Total	Jaffna	Kilinochchi	Mulathiv		Vavunia	Manar	Total	Kurunegala	Puttalam	Total	
EPC	4	31	32	67	74	8	19	101	36	0	0	36	22	58	4	17	21	0	0	1	0	10	11	4	1	1	2	20	24	4	28	342
NRM	0	5	9	14	65	2	9	76	24	0	0	24	28	62	7	5	12	0	0	0	0	0	0	1	0	0	2	1	1	2	192	
Referred to other institution	0	25	26	51	38	15	1	54	24	0	0	24	3	19	22	0	0	2	0	0	0	0	5	0	0	0	5	0	0	0	158	
Legal enforcement for non-complying industries / Activities.																																
No. of Legal Notice	0	7	0	7	5	3	2	10	53	3	5	61	14	29	0	0	0	6	0	5	0	5	0	0	0	0	0	0	0	0	0	118
No. of Cases filed	0	1	0	1	5	1	9	27	7	6	2	15	13	23	0	0	2	1	3	0	0	0	0	15	0	0	9	24	0	0	93	
No. of Cases finalized	0	0	2	2	5	1	4	10	16	3	1	20	7	14	0	0	1	0	0	0	0	0	15	0	0	0	15	0	0	0	62	
No. of EPL Cancellation	0	1	0	1	28	7	2	37	44	7	5	56	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	
No. of Court Cases against the CEA	0	25	0	25	0	15	6	21	30	5	2	37	4	4	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	88	
No. of files to be initiated legal actions	0	72	0	72	51	123	133	307	166	39	40	245	36	30	66	0	0	12	0	5	0	5	1	0	0	0	1	0	0	0	708	
No. of cases filed related to NRM activities	0	2	0	2	0	0	0	0	5	2	1	8	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
Environmental Management and Assessment Activities																																
Issuance of environmental clearance for EEC projects																																
2.1 Number of applications received ¹	5	1	2	8	7	2	24	33	88	16	23	127	2	19	21	113	4	117	4	2	6	0	0	0	1	0	18	3	0	3	333	
No. of Meetings	0	0	0	0	5	0	5	10	84	0	0	84	25	2	27	2	4	5	2	7	0	1	0	0	1	0	1	0	0	0	129	
No. of Scoping	0	0	1	1	8	1	3	12	81	24	0	105	33	6	39	45	2	47	0	0	1	0	1	8	0	1	9	0	0	0	214	
No. of TEC	0	0	1	1	3	0	9	12	45	0	0	45	4	1	5	23	1	24	0	0	0	0	0	7	0	2	12	0	0	0	99	
Recommended (Specify)	1	0	0	1	10	1	0	11	38	42	15	95	0	5	5	124	2	126	1	1	2	0	0	7	0	1	9	2	2	4	253	
Not recommended (Specify)	0	0	0	0	0	0	0	0	33	0	0	33	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	35	
Being Processed ²	84	2	2	88	3	9	126	138	345	46	30	421	3	12	15	107	3	110	0	0	0	9	0	0	0	16	16	0	0	0	797	
Compliance Monitoring ³	0	0	0	0	2	4	4	10	9	7	1	17	3	0	3	43	3	46	0	0	0	18	5	23	22	0	0	1	23	0	0	122

Ministry of Mahaweli Development and Environment
 Central Environmental Authority
 Provincial Progress up to end of December 2017

Activity	Western Province			Southern Province			Central Province			Sabaragamuwa Province			Uva Province		North Central Province		Eastern Province					North Western Province		Grand Total													
	Colombo	Katubela	Total	Galle	Matara	Total	Nuwara Eliya	Matale	Total	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy	Kandy		Kandy	Kandy	Kandy	Kandy	Kandy								
Recycling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
Sts of day-to-day jobs	37	115	152	198	226	424	64	11	75	83	128	161	162	0	162	202	0	1	238	1	39	29	111	418	76	5	81	1,822									
Total	37	115	152	198	226	424	64	11	75	83	128	161	162	0	162	202	0	1	238	1	39	29	111	418	76	5	81	1,822									
Other activities	936	3980	4916	8124	6679	14803	170	14450	1252	1	0	1233	1280	5735	7035	5435	0	5435	7420	0	7420	0	20	3851	24	503	861	452	7691	2817	387	3204	54,612				
Day to Day Budgets	9928	3927	13855	16042	7900	23944	1106	17765	0	2088	0	2088	1509	1441	2950	1793	2463	4256	5446	0	5446	0	369	64	433	4376	839	1078	0	3785	10078	4810	103	4913	63,971		
4th Quarter	3819	3509	7328	12026	7021	19047	913	14127	0	1332	0	1332	1135	757	1892	1602	2101	3703	4623	0	4623	0	369	64	433	2063	632	1078	0	2317	6990	3635	103	3738	48,864		
5th Quarter	350	214	564	2809	1378	4187	172	2846	0	444	0	444	289	371	663	140	304	444	799	0	799	0	0	0	0	1019	171	0	0	1249	2439	917	0	917	11,361		
6th Quarter	350	204	554	1207	360	1567	21	792	0	312	0	312	85	310	395	51	58	109	24	0	24	0	0	0	0	394	36	0	0	219	649	258	0	258	3,746		
Teachers Training Programs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cost of vehicles through municipalities, considered	0	3	3	4	28	35	4	37	8	0	0	8	6	9	15	4	1	5	5	1	6	0	0	0	2	1	1	18	0	22	2	0	2	0	2	99	
National Day/ event celebrations	0	20	20	46	124	170	19	211	68	0	12	80	5	7	12	12	2	14	6	4	10	7	17	37	61	29	8	7	21	6	71	35	7	42	0	0	0
Workshop/ seminar/ day	2	10	12	24	11	35	41	0	0	0	0	0	0	1	1	0	0	0	1	3	5	7	6	24	37	26	0	0	5	5	36	30	5	35	182		
Health check up	0	0	0	2	0	2	6	8	0	0	0	0	4	0	4	5	2	7	1	0	1	0	0	0	0	1	1	0	0	1	2	0	0	0	0	0	24
Workshop	5	7	12	13	73	93	37	141	60	0	12	72	0	5	3	0	3	1	0	4	0	10	9	19	0	2	3	15	0	20	4	2	6	283			
Cost of conducting Awareness Programmes	158	18	176	197	387	584	62	649	72	81	81	240	53	14	67	6	0	6	3	2	5	163	90	113	366	189	23	21	16	0	278	81	2	83	1,676		
Cost of awareness programmes for school children/ for other programmes for other persons	130	14	144	174	241	415	61	476	48	84	81	216	51	12	63	5	0	5	2	3	4	163	89	111	363	183	19	19	37	0	258	67	1	68	1,526		
Cost of conducting awareness programmes	3	1	4	23	46	69	1	59	24	0	0	24	2	4	1	0	1	1	0	1	1	0	1	2	3	6	3	2	9	0	20	14	1	15	150		
Cost of conducting awareness programmes	11	0	11	41	31	72	11	82	14	1	0	15	0	6	6	0	0	0	0	0	0	0	0	11	14	0	0	1	0	1	2	0	0	0	0	129	
Cost of conducting awareness programmes	0	61	61	61	1	13	0	17	0	0	0	0	0	0	0	0	0	0	0	0	13	6	13	6	13	0	0	0	13	2	15	0	0	0	106		
Cost of conducting awareness programmes	0	70	70	57	51	108	3	88	20	110	130	81	79	163	143	0	143	35	45	41	124	36	7	12	8	13	76	114	0	114	1,021						
Processing	0	7	7	25	18	43	2	45	0	0	0	9	37	46	124	48	172	0	0	0	89	50	93	232	0	41	0	26	8	75	0	0	0	0	577		

*North Western Province Environmental
Statute No. 12 of 1990*

A STATUTE TO PROVIDE FOR THE ESTABLISHMENT OF THE NORTH WESTERN PROVINCE ENVIRONMENTAL AUTHORITY, TO MAKE PROVISION WITH RESPECT TO THE POWERS, FUNCTIONS AND DUTIES OF THAT AUTHORITY AND TO MAKE PROVISION FOR THE PROTECTION, MANAGEMENT AND ENHANCEMENT OF THE ENVIRONMENT AND FOR THE REGULATION MAINTENANCE AND CONTROL OF THE QUALITY OF THE ENVIRONMENT.

BE it passed by the Provincial Council of the North Western Province of the Democratic Socialist Republic of Sri Lanka as follows:

1. This statute may be cited as the North Western Province Environmental Statute No. 12 of 1990 and shall come into operation on such date as the Provincial Minister in charge of the subject of Local Government, hereinafter referred to as the Minister, may appoint by notification in the Gazette.

Short title and date of operation.

PART I

ESTABLISHMENT OF THE NORTH WESTERN PROVINCE ENVIRONMENTAL AUTHORITY AND AN ENVIRONMENTAL COUNCIL

2. (1) For the purposes of this Statute there shall be established an Authority called North Western Province Environmental Authority.

Establishment of the Authority .

(2) The Provincial Environmental Authority established under subsection (1) shall consist of the persons who are for the time being members of the Authority under subsection (1) of section 3.

(3) The Authority shall, be a body corporate and shall have perpetual succession and a common seal and may sue or be sued in such name.

3. (1) The Authority shall consist of three members appointed by the Chief Minister of the North Western Province in consultation with the Minister—

Members of the Authority and the Secretary.

- (a) one of whom shall have adequate expertise and qualifications in the subject of the environment ; and
- (b) one of whom shall have suitable administrative skill and experience in environmental management.
- (c) one of whom shall be the Chief Secretary of the North Western Provincial Council or the officer discharging the duties of that office.
- (d) The Chief Secretary of the North Western Provincial Council or the officer discharging the duties of that office shall be the Chairman of the Provincial Authority.
- (e) The Chairman of the Provincial Authority shall appoint the Commissioner of Local Government or the officer discharging the duties of that office as the Secretary of the Authority.

7. (1) There shall be established a Provincial Environmental Advisory Council (hereinafter referred to as "the Advisory Council") which shall consist of the following members appointed by the Minister or of such number of Members as may be appointed out of them.

Provincial
Environmental
Advisory Council.

- (a) Secretary to each Provincial Ministry of the Provincial Council of the North Western Province or a senior officer of each Provincial Ministry nominated by the Provincial Minister concerned.
- (b) Director of Health Services of the Provincial Council of the North Western Province or the officer discharging the functions of that office.
- (c) Director of Education of the Provincial Council of the North Western Province or the officer discharging the functions of that office.
- (d) Director of Agriculture of the Provincial Council of the North Western Province or the officer discharging the functions of that office.
- (e) Director of Agrarian Services of the Provincial Council of the North Western Province or the officer discharging the functions of that office.
- (f) Provincial Director of the Road Development Authority of the North Western Province or the officer discharging the functions of that office.
- (g) Chief Forest Officer of the Forest Department of the North Western Province or the officer discharging the functions of that office.
- (h) Director of Industries of the Provincial Council of the North Western Province or the officer discharging the functions of that office.
- (i) Director of Fisheries of the Provincial Council of the North Western Province or the officer discharging the functions of that office.
- (j) Provincial Manager of the North Western Province of the National Housing Development Authority appointed with the concurrence of the Government or the officer discharging the functions of that office.
- (k) Land Commissioner of the Provincial Council of the North Western Province or the Officer discharging the functions of that office.
- (l) Any other officers of the Provincial Council nominated by the Provincial Minister in charge of the subject of Environment.
- (m) The following officers, discharging functions in relations to the North Western Province, who will be nominated by the Minister in charge of the subject of environment in consultation with the government,

- Deputy Surveyor General
 - Regional Manager of the National Water Supply and Drainage Board.
 - Chief Executive, for the North Western Province, of the Water Resources Board.
 - Chief Executive, for the North Western Province, of the Wild Life Department.
 - Chief Executive, for the North Western Province, of the Ceylon Electricity Board.
 - An officer of the Department of Town and Country Planning.
 - A representative of the Central Environmental Authority.
- (n) Three members to represent voluntary agencies in the field of Environment.
- (o) Three Members with adequate expertise in the field of Environment.
- (p) The Secretary, for the time being, of the Provincial Authority.

(2) A Public officer, belonging to a Provincial Ministry should not be appointed under Sub - Section 1, as a member of the Advisory Board unless the Provincial Minister concerned concurs with such appointment.

(3) The Minister shall appoint one of the members appointed under Sub-Section (1) to be the Chairman of the Advisory Council.

(4) The Secretary to the Provincial Authority shall be the Secretary of the Advisory Council.

(5) The functions of the Advisory Council shall be generally to advise the Provincial Authority on matters pertaining to its responsibilities, powers and functions and to advise or investigate and report on or make recommendations in respect of any matter referred to the Advisory Council by the Provincial Authority.

Disqualification
of Members.

8. (1) A person shall be disqualified from being appointed or from continuing as a member of the Provincial Authority or Advisory Council.

- (a) if he is or becomes a member of Parliament, or the Provincial Council or a local authority; or
- (b) if he is not, or ceases to be a citizen of Sri Lanka ; or
- (c) if he is removed by the Minister or the Chief Minister as the case may be ; or
- (d) if he ceases, owing to transfer or such other reason, to hold the office by virtue of which he was appointed a member.

IN THE SUPREME COURT OF SRI LANKA
APPEALS

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23 MAR 2016
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SCFR 226/2006

Applicant of an application under
Article 126 read with Article 126 of the
Constitution

M. Sumanatilake,
and others
Petitioners

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1-

2. Hon. Maithripala Sirisena,
Minister of Agriculture, Irrigation and
Rural Development and Minister
of Environment, Ministry of
Environment, "Samathpaya",
52 Rajamalwate Road, Battaramulla.

and others.
Respondents



23 MAR 2016
gndc

SCFR 226/2006

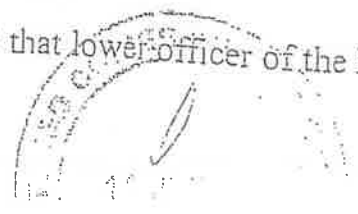
18.5.2009

BEFORE: S.N. SILVA, C.J
MS. TILAKAWARDANE, J.
SRIPAVAN, J.

COUNSEL: Ms. I.R. Rajapaksha, for the Petitioners.
Mrs. Barrie, SSC for the A.G.

Ms. Rajapaksha for the Petitioners submits

- (1) a copy of letter dated 21.3.2009 sent by M.A. Dias complaining of possible illegal storage of sand that has been mined. SSP, Chilaw and the Mining Engineer of Kurunegala are notified of this letter and agree that they would take steps to have the matter investigated.
- (2) a report of the work carried out by the Navoda Environmental Conservation Society to rehabilitate the banks of Deduruoya in the Pallama area. Copy of this is handed over to the SSP, Puttalam who would ensure that the Police Officers of the area are informed adequately of the work that has been done and their assistance sought to preserve the restoration work that has been carried out.
- (3) Ms. Rajapaksha submits that the environmental cells that have been functional are now not that active and that lower officer of the Police



SCFR 226/2006

have not been duly apprised of the action taken by this Court and the applicable law.

Mr. Senanayake submits that he would take steps since there have been changes in the Police Hierarchy for further information to be designated.

Mr. Senanayake, Director Provincial Environmental Authority, North Western Province submits representation dated 18.5.2009 which is filed of record. It is stated that the North Western Province Environmental Statute has been in operation from 10.01.1991. He produces a copy of the Statute. This Statute has been made by the Provincial Council since environment is a concurrent subject in terms of the 13th amendment to the Constitution. In terms of Article 154 G (5) (b) Provincial Council making a Statute in respect of the Statute in the concurrent list should do so after consultation with the Parliament. The report submitted by Mr. Senanayake indicates the process of consultation which has taken place the matter has been considered by the Parliament and the appropriate standing Committee, being standing Committee A and has expressed the opinion that the Statute be accepted subject to certain inconsistencies between the Constitution and the Statute. These inconsistencies have now been removed in the Statute that has now been published in the

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23 MAR 2015

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SCFR 226/2006

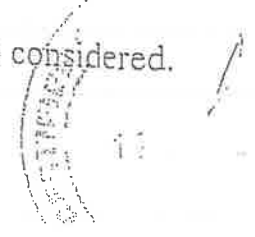
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gazette. Accordingly we ~~strictly~~ the North Western Province Environmental Statute No.12 of 1981 has been constitutionally enacted by the Provincial Council and the National Environmental Act No.47 of 1980 is suspended in the province ~~in terms of~~ Article 154 G (9). Mr. Senanayake further submits that it has been decided to construct a bund across the Deduruoya South of the Ridee Benda Ella. Permission of the Authority has been requested to excavate 40,000 cubic meters of sand for the construction of the bund by the Irrigation Department. Having considered the representation made by the Authority Court directs that permission be granted for the excavation of the said quantity of sand from the area that is to be inundated or from the accumulated sand bar to the southwards of the Ridee Benda Ella upon a suitable written request being made to the Authority and the Geological Survey and Mines Bureau by the Irrigation Department. When this permission is granted the relevant Police Stations are to be notified.

As regards the National Policy on Telecommunication Towers, D.S.G. submits that a meeting has been convened for 11.6.2009 on which day the matters specified by Mr. Senanayake would be considered.



DEMOCRATIC SOCIAL

23 MAR 2009

SCFR 226/2006

Detection of illegally mined sand on 1.5.2009, in the Pallama Police area. At the time of the detection three suspects were in the tractor. They are:

1. Wickramasinghe Arachchilage Premasiri
2. Warnakulasuriya Susil Jayalath
3. Dadayakkaralage Samantha Kithsiri

They have no permit for the transportation of the sand. Further investigation revealed that the sand has been excavated from a point about 50 meters from the Deduruoya bank. The three suspects are committed to remand custody till the next date. Accordingly Registrar is directed to issue committal orders in respect of the three persons. OIC, Pallama Police produces notes of investigation with regard to illegal transportation of sand in an lorry bearing No.41C 1549 at the time of the detection.

OIC, Bingiriya Police produces to Court notes of investigation with regard to detection made by Bingiriya Police on 7.5.2009. The suspect is Herath Mudiyanselage Dushantha Chandra Kumara Herath. He was

SCFR 226/2006

detected whilst excavating sand from the Deduruoya in preparation for transport by lorry bearing No. SS7. The person is committed to custody till the next date.

HQI, Chilaw produces notes of investigation with regard to a detention made on 1.4.2009 which two persons, Wamakulasuriya Jagath Nissanka of Isurugama, Dematapitiya, Bangadeniya and Hettiarachchige Chandrasena of Nelunkuliya, Kumarakattuwa have been detected whilst they were accumulated sand into bags from the river bank. They are committed to remand custody till the next date.

HQI, Kobeigane Police produces to Court notes of investigations with regard to the arrest of Hordnalpedidurayalage Ranjith Priyantha Dhamaratne alias Shantha whilst they were transporting sand in a tipper bearing No. NWLC 1708. The notes of investigation reveals that the person refused to obey the order of the Police, reversed the vehicle in which the illegally mined sand was being transported and the vehicle was driven into the premises where the sand was unloaded. The photographs supports that the fact that the sand had been unloaded shortly before the

SCFR 226/2006

photographs being taken. Mr. Samarasuriya for the accused suspect submits that there has been a case of fabrication and that the sand has been there for a period of three months. This position is totally unenable to prove the photographs that have been produced. After this photographs were shown to Mr. Samarasuriya submits that the suspect is now pleading guilty. He is remanded till the next date.

Mention on 7.7.2009.

CF/-

I do hereby certify that the foregoing is a true copy of the journal entry dated 18.5.2009 in Case No. SCFR 226/2006 filed of record in this Court.

Clerk/Supreme Court

Typed by:
Compared with:

CF (964194)

18/06/2009

Environmental
90

stant historic, cultural, or
development could result in
rich could result in damage

Provincial Council over the
management control is deemed

of new areas for the resettlement
and the methods for
the use of land in and around

CES

with the Advisory Council
policy on the management and
development in order to obtain the
sustainable for future generations
a policy may be carried out
therefore on the advice of the

RESOURCES

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Council of the Provincial Minister
and to the Minister a system
of aquatic resources within the
lake, or within its inland waters
on the advice of the Minister.

CES

ation with the Advisory
Council of the Provincial Minister
and to the Minister a system
of aquatic resources within the
lake, or within its inland waters
on the advice of the Minister.

with the Advisory Council
of the Minister in charge of the
management of a system of—

resources.

- (ii) conservation development and replanting of threatened species of flora, and restriction and prevention of their destruction and sale;
- (iii) promoting public participation in forest conservation and tree planting;
- (iv) land classification, management of forest expansion, plantation of industrial and fuel trees, parks and wild life management, forest research and study, minimization of damage consequent upon the development effort tree planting by the roadside and its regulation and setting up, development and conservation of parks, arbours and forest resorts.

SOIL CONSERVATION

19. The Provincial Authority in consultation with the Advisory Council shall, with the assistance of the Provincial Ministries of Irrigation, Agriculture, Plantation, Lands, Highways and Local Government, recommend to the Minister programmes for the identification and protection of critical watershed areas ; identification study and introduction of scientific farming techniques that prevent soil erosion; identification of areas subject to soil erosion; restriction, prohibition and imposition of conditions on such cultivations or other activities leading to soil erosion, encouragement of soil conservation, enlightenment on the consequences of soil erosion and regulation of drainage systems on highways and lands and shall formulate regulations therefore on the advice of the Minister.

Policy on soil
Conservation
Management.

PART V

ENVIRONMENTAL PROTECTION

20. With effect from such date as may appointed by the Minister by Order published in the Gazette, (hereinafter referred to the "relevant date"), no person shall discharge, deposit, or emit waste that is, garbage, animal or plant residue, sewage, industrial effluents or toxic chemicals, carbonic matter, air or smoke containing particles of waste or obnoxious odor, detrimental to environment and public health into the environment which will cause pollution except -

Prohibition of the
discharge,
emission or
deposit of waste
into the environ-
ment.

- (a) under the authority of a licence issued by the Provincial Authority; and
- (b) in accordance with such standards criteria, conditions or rules as may be prescribed under this Statute.

21. (1) The Provincial Authority may, on application being made therefore to the Authority in such form as may be prescribed, and on payment of the prescribed fee, issue a temporary or annual licence to any person or institution authorizing such person discharge, deposit or emit waste chemical into the environment referred to in Section 20 in accordance with such standards criteria conditions or rules as may be prescribed under this Statute.

Issue of licences.

(2) A licence should be valid for such period as shall be specified in the licence, provided, it shall not be for more than a period of twelve months; and

(3) When a licence is issued in terms of Section 1 for a purpose it can be continued beyond the period of validity of the licence only if a fresh licence is obtained or on renewal of the existing licence.

Authority may refer application to a Government department or public corporation.

22 (a) In issuing licences under Section 28, the Provincial Authority may where it considers necessary refer the application to an appropriate Provincial Ministry, Department, Institution or officer requesting that a report or recommendation be made on such application.

(b) Where an application is referred to a Provincial Ministry, Department, Institution or officer such Ministry, Department, Institution or officer shall report on it or make recommendation thereon without delay.

(c) The Provincial Authority shall not take a decision on such application until the report or recommendation is received.

Suspension or cancellation of licence.

23 (a) Where a licence has been issued to any person under Section 21 and such person acts in violation of any of the terms, standards and conditions of the licence or where since the issue of licence, the Provincial Authority considers the receiving environment no longer suitable for the continued discharge, deposit, or emission of waste or where it is not considered beneficial the Authority may suspend or cancel such licence.

(b) where a licence is suspended or cancelled, the activity concerned should cease forthwith.

Appeals against refusal of licence.

24 (1)(a) where the Provincial Authority refuses in terms of Section 21 to issue a licence the fact should be communicated to the parties concerned.

(b) Any person who is aggrieved by such communication, may, within five days of the date of communication, appeal to the Minister by registered letter.

(c) The Minister should give a decision on the appeal, on a recommendation made after an inquiry by a panel of two or more members of the Advisory Council.

(2) The decision of the Minister shall be final.

Ref No : PEA/PKT/EPL/CH/H/149/2015

Licence No: 3536/2015

Serial No : 1134



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PROVINCIAL ENVIRONMENTAL STATUTE, NO. 12 OF 1990
ENVIRONMENTAL PROTECTION LICENCE FOR EMISSION AND DISPOSAL OF WASTE ISSUED
UNDER SECTION 21 (1)

Ms. **Ceylon Electricity Board**
of **Narakkaliya, Norochchole**
Situating within the area of authority of the **Pradeshiya Sabha** of **Kalpitiya**
is/are hereby authorized to discharge/deposit waste and/or emit noise/vibrations/air emissions
which may arise as a result of the operation of the said industry/process, in accordance with the
standards and criteria prescribed by the Provincial (Environmental Protection and Quality)
Regulations No. 1 of 2010 and the Provincial Environmental (Noise control) Regulation No. 04
of the Provincial Environmental Statute No. 12 of 1990.

This licence shall be in force from **30/06/2015** to **29/06/2016** unless it is
earlier cancelled or suspended.

This licene is subject to the general terms and conditions stated overleaf and to the additional
terms and conditions stated below;

Special Terms and Conditions:

- 1.0 This Licence is valid only for the 900 MW Coal Fired Thermal Power Plant in Kalpitiya Peninsula; Norochchole - NWP.
- 2.0 The Ceylon Electricity Board (hereafter referred to as Project Proponent- PP) 900 MW Coal Fired Thermal Power Plant is bound to ensure that these terms and conditions are adhered to and have full control over a third party, that may be involved in implementation of the project . The PEA -NWP should have access to the contract document pertaining to Environmental aspects, entered into by the PP and any outside contractors.
- 3.0 Any project activity coming under the jurisdiction of the Coast Conservation Department (CCD) should be adhered to the terms and conditions specified by the CCD.
- 4.0 PP where necessary should obtain fresh approvals in respect of any alteration that are intended to be made to the initial project proposal submitted to PEA -NWP, as per the EIAR in 2011.
- 5.0 Costs to be incurred in giving effect to the implementation of the terms and conditions of this approval should be borne by the PP as project implementation costs.

30/06/2015
Date

.....
Director
Provincial Environmental Authority

Ref No: PEA/PKT/EPL/CH/H/149/2015

0701

Licence No: 3536/2016 RI



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PROVINCIAL ENVIRONMENTAL STATUTE, NO. 12 OF 1990
ENVIRONMENTAL PROTECTION LICENCE FOR EMISSION AND DISPOSAL OF WASTE ISSUED
UNDER SECTION 21 (1)

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of **Narakkalliya, Norochhole**
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- 5.0 Costs to be incurred in giving effect to the implementation of the terms and conditions of this approval should be borne by the PP as project implementation costs.

30/06/2016
Date

.....
Director
Provincial Environmental Authority

151

1990 අංක 12 දරණ පාරිසරික ප්‍රඥප්තිය
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ආණ්ඩුව

ඉල්ලුම්පත් අංකය: 24408

වර්ෂය:



27 JUN 2017

දිනය: 2017.06.14

1. සර්මාන්තයේ නම සහ ලිපිනය: මන්නිප්පේ විදුලිබලාගාර සමුදාය, මහා විදුලිබල මණ්ඩලය, කාර්මකල්ලිය, තොරතුරුලේ.
2. ඉල්ලුම්කරුගේ නම සහ ලිපිනය: සමානතා බනාරි, මහා විදුලිබල මණ්ඩලය, නැ.ලේ. 540, කේ. එන්. ඩබ්ලිව්. ආර්. ඩබ්ලිව්. A මානිනර් මාවත, කොළඹ 09.
3. සලකුණු බලපත්‍රයේ අංකය: 3536 / 2016
 - 3.1 නිකුත් කරන ලද දිනය: 30/06/2016
 - 3.2 අවලංගු වන දිනය: 29/06/2017
4. අන්තර්ගත බලපත්‍රය නිකුත් කිරීමෙන් පසුව, සර්මාන්තය විශාල කිරීම් / වෙනස් කිරීම් / ඕනෑම වෙනස් කිරීම් (විස්තර සඳහන් කරන්න): නැත.
5. නිවැරදි බලපත්‍රය / අලුළුවන පාවිච්චිය / නිම් නාණ්ඩ, ඕනෑම ක්‍රමයකින් වෙනස් කිරීම කලේ යන්න සඳහන් කරන්න. නැත.
6. වර්ෂය තුළ පළාත් පරිසර අධිකාරියට ඉදිරිපත් කරන ලද පාලන වාර්තා සම්බන්ධ විස්තර:
7. වෙනත් අමතර තොරතුරු:

සමස්ත ඉල්ලුම්පත්‍රයෙන් මා විසින් සපයන ලද තොරතුරු සත්‍ය හා නිවැරදි බවට මම සහතික කරමි. මෙහි සඳහන් වනාහි අතරතුරක් වනාන් හෝ අසත්‍ය බව සොයාගනු ලැබුවහොත් මගේ ඉල්ලුම්පත්‍රය ප්‍රතික්ෂේප කරන බවට, බලපත්‍රය නිකුත් කර ඇත්නම් එය අවලංගු කරන බවට, මම හොඳින් දන්නෙමි.

14/6/2017
දිනය


ඉල්ලුම්කරුගේ අත්සන


සාර්වජනික ප්‍රයෝජනය සඳහා පමණයි.

1. බලපත්‍රය අලුත් කරන්නේද - ඔව් / නැත:
2. අලුත් කරන්නේ නම්:
 - බලපත්‍රයේ අංකය:
 - බලපත්‍රයේ දිනය:
 - වලංගු කාලය:
 - අවලංගු වන දිනය:
 - අදාළ මොන්ටේසි අමුණා අත (අත්තමි)
3. බලපත්‍රය අලුත් කිරීම ප්‍රතික්ෂේප කලේ නම්, ප්‍රතික්ෂේප කිරීමට හේතු:

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.....
අවසර දෙන නිල
අත්සන සහ :



PROVINCIAL ENVIRONMENTAL STATUTE, NO. 12 OF 1990
ENVIRONMENTAL PROTECTION LICENCE FOR EMISSION AND DISPOSAL OF WASTE ISSUED
UNDER SECTION 21 (1)

Ms. **Ceylon Electricity Board**
of **Narakkaliya, Norochhole**
Situating within the area of authority of the **Pradeshiya Sabha** of **Kalpitiya**
is/are hereby authorized to discharge/deposit waste and/or emit noise/vibrations/air emissions
which may arise as a result of the operation of the said industry/process, in accordance with the
standards and criteria prescribed by the Provincial (Environmental Protection and Quality)
Regulations No. 1 of 2010 and the Provincial Environmental (Noise control) Regulation No. 04
of the Provincial Environmental Statute No. 12 of 1990.

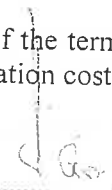
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- 3.0 Any project activity coming under the jurisdiction of the Coast Conservation Department (CCD) should be adhered to the terms and conditions specified by the CCD.
- 4.0 PP where necessary should obtain fresh approvals in respect of any alteration that are intended to be made to the initial project proposal submitted to PEA -NWP, as per the EIAR in 2011.
- 5.0 Costs to be incurred in giving effect to the implementation of the terms and conditions of this approval should be borne by the PP as project implementation costs.

30/06/2016
Date


.....
Director
Provincial Environmental Authority

General Terms and Conditions

1. The licence shall be valid for such period as may be specified in the license, provided it shall not be for more than a period of one year from the date of issue. An application for renewal of the license shall be made at least three months prior to the date of expiry of the license.
2. The holders of the Licence shall permit the Director or any other officer duly authorized in writing by him at any time to enter the premises in respect of which the Licence is issued to examine and inspect any equipment or industrial plant ; and
 - (a) to take samples of any pollutants that are emitted, discharged or deposited from or by such equipment or industrial plant ;
 - (b) to examine books, records or documents relating to the performance or use of such equipment or industrial plant or relating to the emission, discharge or deposition from such industrial plant ;
 - (c) to take photographs of such equipment or industrial plants as he considers necessary or make copies of any books, records or documents seen in the course of such examination; and
 - (d) to take samples of any fuel, substance or material used, in such trade, industry or process carried on in or on such premises.
3. The holder of the Licence shall comply with any requirement communicated from time to time by the Authority as regards :
 - (a) the use of any techniques or installations in the production/process, handling and storage of goods, material, fuel and waste products with a view to minimizing environmental pollution and hazards ; and
 - (b) any additional technical measures for preventing or mitigating environmental pollution and hazards.
4. The holder of the Licence shall ensure that monitoring of environmental pollution or other acts that the authority considers necessary to protect the environment, including the following are done:
 - (a) measurements, calculation, registration of samples to determine actual level of pollution and risk of exposure ;
 - (b) recording and sorting of data and reporting to the Authority ;
 - (c) issuing written instructions to persons employed with regard to handling of hazardous material and installations to protect the environment ;
 - (d) assigning duties and responsibilities to management and staff with regard to protection of the environment ; and
 - (e) ensuring that persons referred to in (c) above, and charged with duties and responsibilities referred to in
 - (d) above are properly qualified persons.
5. This Licence is valid only for the type and nature of the industry/process/operation as stated in the preliminary application and to the information submitted by the Licencee.
6. Any alteration or extension made to the industry, process or operation should be indicated forthwith to the Authority.

OPERATIONAL ACTIVITIES

6.0 No ground water shall be exploited for operational or any other activities without prior approval from the Water Resource Board.

7.0 AIR QUALITY

The ambient air quality levels specified by the Provincial Environmental Authority (PEA - NWP) under the extra ordinary gazette notification No. 1685/11 of 21.12.2010 shall strictly be adhered.

8.0 FUEL

8.1 Good quality, low ash coal with sulfur content of 1.0% or less by weight shall be used for the operation of the plant.

8.2 Moisture content and ash content of coal which will be used for the plant shall be in par with the table No. 4.4 of the EIAR prepared for this project.

9.0 STACK HEIGHT

It is recommended that the stack height shall be of 150 meters or above with an internal stack diameter of not more than 05 meters to ensure an exit velocity of flue gas about 20 m/s during operation.

10.0 EMISSION STANDARDS

10.1 Following interim stack emission levels are in place. However the condition No. 10.2 and 10.3 shall strictly be adhered by the PP

TYPE OF POLLUTION	EMISSION LIMIT mg/ Nm ³
SO _x	850 for maximum of 100 Kg SO ₂ /MW/Day subject to maximum 50 metric tons of SO ₂ /Day.
NO _x	650
PM	150
Opacity	15%

10.2 It should be noted that a properly designed continuous emission monitoring system (CEM) shall be installed for opacity, SO_x, NO_x and PM from the stack.

10.3 It is mandatory to manage "Flue Gas Desulpherizer" unit (FGD) with an efficiency of 99% to remove SO_x.

11.0 NOISE

11.1 The Noise level shall comply with standard given in the extra ordinary Gazette Notification No .1685/11 of 2010.12.21 published under the Provincial Environmental Statute (PES) No. 12 of 1990 of the North Western Province.

11.2 The workers shall be provided with quality earmuffs and the management shall ensure that the workers wear these while working within the plant.

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1. මේ නියෝග වල පළාත් පරිසර අධිකාරිය යන්නට 1990 අංක 12 දරන වයඹ පළාත් පාරිසරික ප්‍රඥප්තියේ ඊට දී ඇති අර්ථය ම ඇත්තේය.

උපලේඛනය

අපවිත්‍ර කාරක	සාමාන්‍යය සඳහා ගත් කාලය 8	ඉඩදිය හැකි උපරිම මට්ටම μgm^{-3}	උපරිම ppm	මිනුම් ක්‍රමය
1. අංශුමය ද්‍රව්‍ය (වායුගතික විශ්කම්භය මයික්‍රො මීටර් 10 ට අඩු (PM_{10}))	වාර්ෂික පැය 24	50	-	හයි-වොලියුම් සාම්ප්ලින් සහ ග්‍රැවිමේට්‍රික් හෝ බීටා ඇට්නුවේෂන්
2. අංශුමය ද්‍රව්‍ය (වායුගතික විශ්කම්භය මයික්‍රො මීටර් 2.5 ට අඩු ($\text{PM}_{2.5}$))	වාර්ෂික පැය 24	25	-	හයි-වොලියුම් සාම්ප්ලින් සහ ග්‍රැවිමේට්‍රික් හෝ බීටා ඇට්නුවේෂන්
3. නයිට්‍රජන් ඩයොක්සයිඩ් (NO_2)	පැය 24	100	0.05	සෝලට්ස්මන් ක්‍රමය හෝ ඊට සමාන
	පැය 8	150	0.08	ක්‍රමයක් භාජන කරමින් වර්ණමානය
	පැය 1	250	0.13	කිරීම් (ගැස්ලේස් කෙම්ලුමිනිසන්ස්)
4. සල්ෆර් ඩයොක්සයිඩ් (SO_2)	පැය 24	80	0.03	පාරාරෝසනිලින් ක්‍රමය ඊට සමාන
	පැය 8		120	0.05 ක්‍රමයක් (පල්ස්ල්ලෝරසන්ට් ක්‍රමය)
	පැය 1	200	0.08	
5. ඔසජන් (O_3)	පැය 1	200	0.10	කෙම්ලුමිනිසන්ස් ක්‍රමය හෝ ඊට සමාන ක්‍රමයක් (අධෝරක්ත දීප්ති මාපක ක්‍රමය)
6. කාබන් මොනොක්සයිඩ්	පැය 8	10000	9.0	විසරණ නොවන අධෝරක්ත
	පැය 1	30000	26.0	වර්ණාවලික්ෂය
	කවර වුවද වේලාවක්	58000	50.0	

හිමිත කාල පරිච්ඡේදය තුළ සාමාන්‍යය ලබා ගැනීම සඳහා අවශ්‍ය අවම නිරීක්ෂණ සංඛ්‍යාව.

- පැය 3 සාමාන්‍යය - අනුක්‍රමික පැයක් පාසා සාමාන්‍යයන් 3ක්.
- පැය 8 සාමාන්‍යය - පැයක් පාසා සාමාන්‍යයන් 8 ක්.
- පැය 24 සාමාන්‍යය - පැයක් පාසා සාමාන්‍යයන් 18ක්
- වාර්ෂික සාමාන්‍යය - එක් කාර්තුවකට යටත් පිරිසෙයින් මාස 2 ක සාමාන්‍යය බැගින්, මාසයක් පාසා සාමාන්‍යයන් 9 ක්

1. රසායන ද්‍රව්‍ය භාවිතයෙන් හෝ ස්වයංක්‍රීය විශ්ලේෂක මගින්.

Halon - 1211	CF ₂ BrCl	බ්‍රෝමෝක්ලෝරෝඩයිෆ්ලූරෝ මිනේන්
Halon - 1301	CF ₃ Br	බ්‍රෝමෝට්‍රයිෆ්ලූරෝ මිනේන්
Halon - 2402	C ₂ F ₄ Br ₂	ඩයිබ්‍රෝමෝටෙට්‍රෆ්ලූරෝ ඊතේන්
CFC - 13	CF ₃ Cl	ක්ලෝරෝට්‍රයිෆ්ලූරෝ මිනේන්
CFC - 111	C ₂ FCl ₃	පෙන්ටක්ලෝ රෝෆ්ලූරෝ ඊතේන්
CFC - 112	C ₂ F ₂ Cl ₄	ටෙට්‍රක්ලෝරෝඩයිෆ්ලූරෝ ඊතේන්
CFC - 211	C ₃ FCl ₇	හෙප්ටක්ලෝරෝෆ්ලූරෝ ප්‍රොපේන්
CFC - 212	C ₃ F ₂ Cl ₆	හෙක්සක්ලෝරෝඩයිෆ්ලූරෝ ප්‍රොපේන්
CFC - 213	C ₃ F ₃ Cl ₅	පෙන්ටක්ලෝරෝට්‍රයිෆ්ලූරෝ ප්‍රොපේන්
CFC - 214	C ₃ F ₄ Cl ₄	ටෙට්‍රක්ලෝරෝට්‍රයිෆ්ලූරෝ ප්‍රොපේන්
CFC - 215	C ₃ F ₅ Cl ₃	ට්‍රයික්ලෝරෝ පෙන්ටෆ්ලූරෝ ප්‍රොපේන්
CFC - 216	C ₃ F ₆ Cl ₂	ඩයික්ලෝරෝහෙක්සෆ්ලූරෝ ප්‍රොපේන්
CFC - 217	C ₃ F ₇ Cl	ක්ලෝරෝහෙප්ටෆ්ලූරෝ ප්‍රොපේන්

01 - 41/2

වයඹ පළාත් සභාව

1990 අංක 12 දරන වයඹ පළාත් පාරිසරික ප්‍රඥප්තිය

1990 අංක 12 දරන වයඹ පළාත් පාරිසරික ප්‍රඥප්තියේ 61 වන වගන්තිය යටතේ පාරිසරික කටයුතු පිළිබඳ පළාත් අමාත්‍ය විසින් සාදන ලද නියෝග

අතුල විජේසිංහ

වයඹ පළාත් ප්‍රධාන අමාත්‍ය සහ වයඹ පළාතේ මුදල් හා ක්‍රම සම්පාදන නීතිය හා සාමය, පළාත් පාලන හා පරිපාලන, මිනිස්බල, අධ්‍යාපන හා සංස්කෘතික කටයුතු, ඉඩම්, ප්‍රවාහන, පරිසර, සංචාරක, ආයෝජන සම්බන්ධීකරණ, සම්ප්‍රකාර සංවර්ධන සහ ආහාර සැපයුම් හා බෙදාහැරීමේ අමාත්‍ය

2010 දෙසැම්බර් මස 09 දින
කුරුණෑගල,
වයඹ පළාත් ප්‍රධාන අමාත්‍යාංශයේ දී ය.

නියෝග

1. මේ නියෝග "2010 අංක 03 දරන වයඹ පළාත් පාරිසරික (සංසරණ වායු තත්ත්වය) නියෝග" යනුවෙන් හඳුන්වනු ලැබේ.
2. අවසර දෙනු ලබන සංසරණ වායු තත්ත්ව පිළිබඳ ප්‍රමිති, මෙහි උපලේඛනයේ නිශ්චිත ව සඳහන් පරිදි වන්නේ ය.
3. නියමිත වායු තත්ත්ව ප්‍රමිති පවත්වාගෙන යනු ලැබේදැයි තීරණය කිරීම සඳහා පළාත් පරිසර අධිකාරිය විසින් අනුමත කළ උපකරණ භාවිතා කරමින් මෙහි උපලේඛනයේ නිශ්චිත ව සඳහන් ක්‍රම අනුගමනය කරමින් කරනු ලැබිය යුතුය.

BIDDING DOCUMENT FOR SUPPLY OF COAL

FOR



**LAKVIJAYA POWER PLANT
CEYLON ELECTRICITY BOARD**

FOR THE PERIOD OF September 2017 – April 2019

LANKA COAL
COMPANY(PVT)LTD

LANKA COAL COMPANY (PRIVATE) LIMITED

51/3, SURANIMALA PLACE, OFF-DUTUGEMUNU STREET, DEHIWALA, SRI LANKA.

Tel: +94-11-2824681 / +94-11-2824682

Fax: +94-11-2824689

Term Tender (TT) No: LCC/16/T/1

If the results of such testing report the presence of such organic contaminants, the cost of testing shall be for the Seller's account and Buyer reserves all remedies available under law including, but limited to, Termination of the Agreement.

If the results of such testing are negative with regard to the presence of organic contaminants, the cost of testing shall be for the Buyer's account.

1.5 DETERMINATION OF QUALITY OF COAL DELIVERED

1.5.1 AT PORTS

Each shipment of Coal will be sampled at the Port of Loading and at the Anchorage point / at the Jetty of the Plant in accordance with the ASTM standards (Approved Measurement Standards).

1.5.2 DETERMINATION OF QUALITY

- (a) The analysis of samples will be carried out by the Independent Surveyors acceptable to buyer and seller in accordance with the Approved Measurement Standards as specified in Schedule 1 Part C. One (1) representative sample of Coal shall be taken by the Seller at the Port of Loading and one (1) representative sample of Coal shall be taken by the Buyer at the Jetty of the Plant, in each case in accordance with the Approved Measurement Standards and under the supervision of Independent Surveyors. Each sample shall be divided into two (2) parts, with one (1) such part to be used for the analysis of the sample by the Independent Surveyor. The remaining part shall be available as a reference sample and shall be retained by the party taking such sample in a suitable airtight container, properly labelled and sealed, for not less than ninety (90) days. In the event of the Buyer unable to take samples as specified in this as specified above, the analysis of the sample taken at the Port of Loading be deemed conclusive.

However, the Buyer may appoint another Independent Surveyor, acceptable to the Seller, who shall be permitted to supervise the sampling at the Port of Loading. In such event, the reference sample taken at the Port of Loading shall be sealed, by the Independent Surveyor responsible for analysis of the sample and the Independent Surveyor appointed by the Buyer, in a suitable air tight container and retained by the Independent Surveyor appointed by the Buyer for period not less than ninety (90) days.

Similarly the Seller may appoint another Independent Surveyor, acceptable to the Buyer, who shall be permitted to supervise the sampling at the Port of Jetty of the Plant. In such event, the reference sample taken at the Jetty of the Plant shall be sealed, by the Independent Surveyor responsible for analysis of the sample and the Independent Surveyor appointed by the Seller, in a suitable air tight container and retained by the Independent Surveyor appointed by the Seller for period not less than ninety (90) days.

- (b) The Seller shall provide via electronic transmission to the Buyer certificates of analysis, from the Independent Surveyor, within three (03) working days after completion of the relevant Coal being loaded at the Port of Loading. The certificates of analysis taken at the Port of Loading shall be binding on both parties other than in the case of demonstrable error or fraud, and except as provided in Clause 3.5.3
- (c) Two (2) authorized representatives of the buyer shall be permitted to supervise the sampling & analysis process at the Port of Loading in random timing approximately 1 visit in every 5 shipments basis and the seller shall facilitate to the above process.

SCHEDULE 1 - PART A

: LCC STANDARD VALUES FOR COAL

TENDER No.

: LCC/16/T/1

The Lakvijaya Power Plant will be operated as a base load unit, fuelled by low sulphur coal having standard properties (the LCC Standard Values) given below.

LCC STANDARD VALUES FOR COAL

PROXIMATE (%)	UNIT	As Received BASIS
GCV (kcal/kg)	kcal/kg	6,150
Total Moisture	% wt	12.0
Volatile Matter	% wt	31.0
Fixed Carbon	% wt	49.5
Sulphur	% wt	0.5
Ash	% wt	11.0
HGI	° H	50
ULTIMATE (%)		As Received
Moisture	% wt	12.0
Carbon	% wt	65.0
Hydrogen	% wt	3.8
Nitrogen	% wt	1.5
Oxygen	% wt	6.2
Sulphur	% wt	0.5
Ash	% wt	11.0
ASH (%)		Dry Basis
SiO ₂	% wt	61.0
Al ₂ O ₃	% wt	25.0
Fe ₂ O ₃	% wt	4.0
CaO	% wt	3.5
MgO	% wt	0.7
Na ₂ O	% wt	0.3
K ₂ O	% wt	0.6
TiO ₂	% wt	1.3
P ₂ O ₅	% wt	0.9
SO ₃	% wt	2.7
ASH FUSION (° C)		Reducing
IDT	° C	1,250
Fluid		1,325
GRAIN SIZE (mm)		50 Maximum
		2 Minimum

SCHEDULE 1 - PART B : LCC REJECT VALUES FOR COAL

(as received basis)

(Proximate analysis - as received basis)

Parameter	LCC REJECT VALUES
Gross Calorific Value	Less than 5,900 kcal / kg
Total Moisture	More than 16 % by weight
Ash Content	More than 16 % by weight
Volatile Matter	Less than 22 %, More than 39.9 % by weight
Sulphur Content	More than 1.0 % by weight
HGI	Less than 40, More than 59
Size Consist : a) Above 50 mm b) Below 2 mm	More than 5 % by weight More than 30 % by weight
Ash Fusion Temperature R	
IDT (Deformation)	Less than 1,150°C, More than 1300 °C
F.T (Fluid)	Less than 1,250°C, More than 1500 °C

Note: R equals Reducing Atmosphere

HGI - Hardgrove grindability index

වගු අංක - (V)

පරාමිතිය	ඒකකය	ප්‍රතික්ෂේප කරනු ලබන සීමාවන්				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
දහනය මගින් ලැබෙන තාප ශක්තිය(GCV Value)	Kcal/Kg	5,800 අඩු	5,900 අඩු	5,900 අඩු	5,900 අඩු	5,900 අඩු
තෙතමනය (Total Moisture)	% wt	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි
(Ash Content)	% wt	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි
(Volatile matter)	% wt	22% අඩු	22% අඩු, 39.9% වැඩි	22% අඩු, 39.9% වැඩි	22% අඩු, 39.9% වැඩි	22% අඩු, 39.9% වැඩි
(Sulper Content)	% wt	1.2% වැඩි	1% වැඩි	1% වැඩි	1% වැඩි	1% වැඩි
(Size Consist)	%	5% වැඩි	5% වැඩි	5% වැඩි	5% වැඩි	5% වැඩි
Above 50mm	%	30% වැඩි	30% වැඩි	30% වැඩි	30% වැඩි	30% වැඩි
Less than 2mm	%	40 අඩු	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි
(Hard Grove Grindability med)	⁰ H	40 අඩු	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි
Reducing						
(Ash fusion tempest) - IDT	⁰ C	1250 අඩු	1,150 අඩු, 1,300 වැඩි	1,150 අඩු, 1,300 වැඩි	1,150 අඩු, 1,300 වැඩි	1,150 අඩු, 1,300 වැඩි
(Ash fusion tempest) - Fluid			1,250 අඩු, 1,500 වැඩි	1,250 අඩු, 1,500 වැඩි	1,250 අඩු, 1,500 වැඩි	1,250 අඩු, 1,500 වැඩි

වගු අංක - (VI)

පරාමිතිය	ගුණාත්මක අවශ්‍යතාවලින් බැහැර වූ / ප්‍රතික්ෂේපිත ගල් අඟුරු ප්‍රමාණය (මෙට්‍රික් ටොන්)				
	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
දහනය මගින් ලැබෙන තාප ශක්තිය(GCV Value)	0	460,900	0	0	0
තෙතමනය (Total Moisture)	0	55,270	0	0	0
(Volatile matter)	0	57,530	0	0	0
(Sulper Content)	0	114,269	0	0	0
ප්‍රතික්ෂේපිත මට්ටමේ පැවති මුළු ප්‍රමාණය	0	575,169	0	0	0
මුළු ගල් අඟුරු මිලදී ගැනීම	1,003,545	1,849,726	2,191,529	2,209,983	2,117,165
ප්‍රතික්ෂේපිත මට්ටමේ පැවති ප්‍රමාණය, මුළු ගල් අඟුරු මිලදී ගැනීමේ ප්‍රතිශතයක් ලෙස	0.00	31.09	0.00	0.00	0.00

සටහන: ගල් අඟුරු ගොඩබැරීමේ (Unloading port) තොටුපල දක්න වලට අනුව

BIDDING DOCUMENT FOR SUPPLY OF COAL

FOR



**LAKVIJAYA POWER PLANT
CEYLON ELECTRICITY BOARD**

FOR THE PERIOD OF September 2017 – April 2019

LANKACOAL
COMPANY(PVT)LTD

LANKA COAL COMPANY (PRIVATE) LIMITED

51/3, SURANIMALA PLACE, OFF-DUTUGEMUNU STREET, DEHIWALA, SRI LANKA.

Tel: +94-11-2824681 / +94-11-2824682

Fax: +94-11-2824689

Term Tender (TT) No: LCC/16/T/1

SCHEDULE 1 PART B shall be accepted by the Buyer at an adjusted Price in accordance with Part B of SCHEDULE 2.

3.4.1 UNIFORM QUALITY; NO FOREIGN MATTER

The Seller shall ensure that the Coal is within LCC Standard value stipulated in SCHEDULE 1 PART B throughout each shipment delivered to Jetty coal stockpiles and is free from foreign matter which might damage or interfere to a material extent with the operation of Vessels or the Plant's (Ceylon Electricity Board) Coal Unloading and Handling Facilities.

3.4.2 HANDLING CHARACTERISTICS

The Seller shall ensure that all Coal has handling characteristics, which enable reasonable discharge and transport to coal yard of the plant. Analysis

3.4.3 FAILURE TO MEET SPECIFICATION

If GCV, Total Moisture, Ash Content, Volatile matter and Grain Size of coal delivered falls within the LCC reject values stated in SCHEDULE 1 PART B, the Buyer may, within 72 hours after receiving the binding certificate of analysis of load port provided pursuant to Clause 3.5.2, LCC reserve the right to either:

- (a) reject such coal, in which case the Seller shall promptly at the Buyer's request remove such coal at the Seller's cost if practicable and to the extent that such coal is rejected, the Seller shall be obliged to offer Substitute Coal which no parameters which have Reject Values stipulated in the SCHEDULE 1 PART B is within the specified Reject Values; or.
- (b) In the event, the Buyer does not reject such Coal as per Clause 3.4.3(a) above, it is be deemed to have accepted such coal (which acceptance shall be without prejudice to the Buyer's right to reject future deliveries of coal which is of similar quality to that Delivered) subject to double the quality price adjustment (2 times of the applicable quality price adjustments as mentioned in SCHEDULE 2: PART B QUALITY PRICE ADJUSTMENT)
- (c) In the event of the coal is rejected and the Seller provides substitute coal, the Seller is not exempted from paying any Liquidated Damages on account of any delays and the provisions of Clause 3.8.1 shall be applicable, considering the delay till such substitute Coal is loaded and trimmed on board the nominated carrying vessel at the Port of Loading.
- (d) In the event the Sulphur content of coal delivered falls within the LCC reject values stated in SCHEDULE 1 PART B, the Buyer may, within 72 hours after receiving the binding certificate of analysis of load port provided pursuant to Clause 3.5.2, LCC shall reject such Coal subject to clause 3.4.3(a).

3.4.4 ORGANIC CONTAMINANTS

The Buyer reserves the right to randomly request that shipments be analysed by the Independent Surveyor to determine with presence of organic contaminants including but not limited to petroleum coke, pitch, pitch coke, tar sludge or other petroleum by-product-related solids. Seller's approval to have shipments undergo such testing shall not be unreasonably withheld. Testing shall be performed in accordance with the relevant ASTM standard and results of such testing shall be final, conclusive and binding on the Parties.

ගෙවූ දකුණු ජාතික වර්තමාන වාර්තා කෙරෙහි කිරීමේ ප්‍රකාශයන්

Shipment	Season	Vessel	B/L Date	SGS Report Date (Loading Port)
154	2016/2017	Lanka Jaya	01-04-2017	4/7/2017
155	2016/2017	MV Ceylon Princess	05.10.2017	10/11/2017
156	2016/2017	MV Ikan Pulas	14.10.2017	10/18/2017
157	2016/2017	MV TR Princess	17.10.2017	10/25/2017
158	2016/2017	MV Great Comfort	21.10.2017	10/26/2017
159	2016/2017	MV Ceylon Breeze	22.10.2017	10/30/2017
160	2016/2017	MV African Cheetah	09.11.2017	11/15/2017
161	2016/2017	MV Maina	13.11.2017	11/20/2017
162	2016/2017	MV Ceylon Princess	25.11.2017	12/4/2017
163	2016/2017	MV Ikan Pulas	30.11.2017	12/6/2017
164	2016/2017	MV Asia Ruby IV	05.12.2017	12/13/2017
165	2016/2017	MV Ceylon Breeze	11.12.2017	12/18/2017
166	2016/2017	MV Great Comfort	05.12.2017	12/11/2017
167	2016/2017	MV Toxotis	15.12.2017	12/21/2017
168	2016/2017	MV Melody Fair	17.12.2017	12/27/2017

Board

source From - Electricity Audit
Branch.

Attn: Mis. Sangerath;

LCC/16/T/6

24/11/2016

Chairman,
Special Standing Cabinet Appointed Procurement Committee
Ministry of Power and Energy.

Procurement of Coal for Lakvijaya Power Plant (900MW) – Puttalam
Invitation of Bids from the Registered Coal Suppliers:
2016 – 2017 Season (Spot No 04) Quantity-300,000 MT ± 10% Bituminous Coal
TEC Report on Bid Evaluation – Bid Opening: 24/11/2016 at 10.00am
Tender No: LCC/16/T/6

The undersigned were appointed to the Standing Technical Evaluation Committee (STEC), to assist the Special Standing Cabinet Appointed Procurement Committee (SSCAPC) for the procurement of Coal for Lakvijaya Power Plant, under spot tenders. Members of the STEC were informed by the letter, no. PE/TEN/SSCAPC/SS/2015/35 dated 23/07/2015, no. PE/TEN/SSCAPC/SS/2015/34 dated 24/07/2015 and no. PE/TEN/SSCAPC/SS/2015/43 dated 05/08/2016.

At the meeting held on 31/10/2016, SSCAPC approved the bidding document and decided the time schedule for the balance procurement work. Bids have been invited on 31st October 2016 by emails and fax from the following registered coal suppliers to supply 300,000 MT ± 10% of bituminous coal and same time advertisement was published in LCC website.

- 1 Swiss Singapore Overseas Enterprises Pte. Ltd
- 2 Glencore International AG
- 3 Vitol Asia Pte Ltd
- 4 Adani Global Pte Ltd
- 5 Traffigura Pte Ltd
- 6 Frost International Ltd
- 7 M C S Holdings Pte Ltd
- 8 Noble Resources International Pte Ltd.
- 9 Suck AG
- 10 Avani Resources Pte Ltd
- 11 Avra Commodities Pte Ltd
- 12 P T Commodities & Energy Resources
- 13 VISA Resources Pte Ltd
- 14 HIMS Bergbau AG
- 15 SIMEC Group Ltd
- 16 Crown Resources

The following suppliers have acknowledged the receipt of bid invitation email.

- 1 Glencore International AG
- 2 Vitol Asia Pte Ltd
- 3 Adani Global Pte Ltd
- 4 Traffigura Pte Ltd
- 5 Frost International Ltd

- 6 SUEK AG
- 7 Avra Commodities Pte Ltd
- 8 P T Commodities & Energy Resources
- 9 VISA Resources Pte Ltd
- 10 HMS Bergbau AG
- 11 SIMEC Group Ltd
- 12 Swiss Singapore Overseas Enterprises Pvt. Ltd.
- 13 Crown Resources

Bids were closed at 10:00 a.m. on 24.11.2016 and opened immediately thereafter. Three (03) bids were received from the following bidders.

1. SIMEC Group Ltd.
2. Adani Global Pte. Ltd
3. Traffigura Pte. Ltd.

Bid opening schedule is attached marked as *Annexure 1*.

Examination of Bids

All three bids are complied with the following requirements mentioned in the bidding document.

- Letter of Bid
- Validity of Bid
- Validity of Bid Security and Amount
- Power of Attorney
- Public Contract Act Registration (PCA 3)
- Price Proposal
- Acceptance of the Agreement

Therefore TEC considered that those bids are substantially responsive.

Details of the bid evaluation is attached marked as *Annexure 2*

Evaluation of Bids

No.	BIDDER	BID PRICE OF COAL USD/MT	Total for 300,000 MT of Coal in USD	Rank
1	SIMEC Group Ltd.	91.30	27,390,000.00	2
2	Adani Global Pte. Ltd.	87.90	26,370,000.00	1
3	Traffigura Pte. Ltd.	98.75	29,625,000.00	3

The lowest FOBT rate of US\$ 87.90 (USD Eighty Seven and Cents Ninety only) per MT at the load port of Richard Bay Coal Terminal (RBCT) has been offered by ADANI GLOBAL PTE LTD, 80, Raffles Place #33-20 UOB Plaza II, Level 33, Singapore 048624

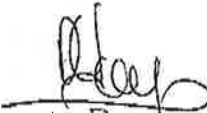
The NEWC index as at 23rd November 2016 per MT rate is USD 103.02 on FOB basis as published by *Global Coal Market Report*. (Annexure 3)


Recommendation

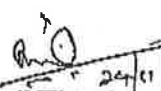
STEC recommends to award the bid to M/s: Adani Global Pte. Ltd. 80, Raffles Place #33-20 UOB Plaza II, Level 33, Singapore 048624, who has submitted the lowest evaluated and substantially responsive bid to supply 300,000 MT +/-10% Bituminous Coal at the rate of US\$ 87.90 FOBT (USD Eighty Seven and cents Ninety only) per MT at the load port of Richard Bay Coal Terminal (RBCT).


- (The maximum total sum of the quantity of 300,000 MT + 10% Bituminous Coal shall be USD. 29,007,000.00 (Twenty Nine Million and seven Thousand only)).

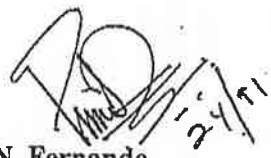
Terms and conditions applicable for the bid will be as per the bidding document.


A. K. Samarasinghe
AGM (DDI) / CEB
Chairman / TEC

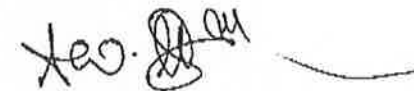

N. B. M. P. Jecwasiri
Dep. Manager (Op.) / CPC
Member / TEC


Sunil Wanniarachch
DGM (Recoveries)
People's Bank
Member / TEC


C. J. K. Perera
Addl. Director General
Dept. of Treasury Operations
Member / TEC


S.N. Fernando
AFM (Projects) / CEB
Member / TEC


Chandana Wijayasinghe
Director (P & E) / M of P & RE
Member / TEC


L.D.A.W. Namal Hewage
Manager (Oper.) / LCC
Member / TEC

Evaluation Sheet LCC/T/16/6 -Spot-8

Offer No.	STATEMENT OF BIDDER	LETTER OF BID	BID SECURITY	POWER OF ATTORNEY	TECHNICAL SPECS	Bidders Confirmation on AGREEMENT	PRICE- BITUMINOUS COAL -USD/MT	Total USD for 300,000 MT BITUMINOUS COAL	P/CA-3 Registration form	Rank by Price
1	SIMEC Group Ltd	OK	OK	OK	OK	OK	27,390,000.00	91.30	OK	2
2	Adant Global Pte Ltd	OK	OK	OK	OK	OK	26,370,000.00	87.90	OK	1
3	Traffigura Pte. Ltd.	OK	OK	OK	OK	OK	29,625,000.00	98.75	OK	3

P


Fly ash Selling and Dumping detail

Month	Fly ash Sold /(MTon)	Dispose fly ash/ (MTon)
2015/Jan	11,779.91	
2015/Feb	9,096.04	
2015/Mar	13,978.69	
2015/Apr	12,277.98	
2015/May	13,627.23	
2015/June	7,219.80	
2015/July	10,590.96	
2015/Aug	10,149.24	
2015/Sep	8,498.48	
2015/Oct	6,796.55	
2015/Nov	7,774.05	
2015/Dec	9,191.77	
Total Amount for 2015	120,980.70	102,740.67
2016/Jan	8,716.77	
2016/Feb	8,604.80	
2016/Mar	9,500.40	
2016/Apr	8,953.70	
2016/May	11,861.64	
2016/June	12,569.17	
2016/July	10,057.58	
2016/Aug	9,625.04	
2016/Sep	10,891.92	
2016/Oct	12,161.91	
2016/Nov	10,137.06	
2016/Dec	10,470.26	
Total Amount 2016	123,550.25	105,745.56
2017/Jan	11,928.34	
2017/Feb	11,117.74	
2017/Mar	10,009.42	
2017/Apr	8,850.36	
2017/May	9,528.48	
2017/June	12,047.62	
2017/July	10,576.16	
2017/Aug	10,452.96	
2017/Sep	8,824.34	
2017/Oct	9,498.28	
2017/Nov	7,216.62	
2017/Dec	9,973.60	
Total Amount 2017	120,023.92	165,472.36
2018/Jan	9,501.48	12,220.60
2018/Feb	8,602.36	19,139.40
2018/Mar	14,089.26	13,260.00
2018/Apr	13,696.94	12,600.00
2018/May mid	14,562.62	12,730.20
Total Amount 2018	60,452.66	69,950.20

Grave Total 418,113.37
425,007.53

438,288.59
443,908.79

This Memorandum of Understanding is made and entered into at **COLOMBO** on the **08th DAY** of **AUGUST** in the Year 2017

BY AND BETWEEN

The National Engineering Research and Development Centre and its successors acting for and having its Registered Office at Industrial Estate, Ekala, Ja-Ela (hereinafter called and referred to as "NERDC" which term or expression as herein used shall where the context so requires or admits means and include the said National Engineering Research and Development Centre (Sri Lanka) its heirs, executors and administrators as first party.

CEYLON ELECTRICITY BOARD, a body corporate established under Ceylon Electricity Board Act No. 17 of 1969 as amended and having its Head Office at No: 50, Sir Chittampalam A. Gardiner Mawatha, Colombo 2. in the Democratic Socialist Republic of Sri Lanka (hereinafter called and referred to as "CEB" which term or expression as herein used shall where the context so requires or admits means and include the said CEYLON ELECTRICITY BOARD its heirs, executors and the administrators as second party.

1. The Intent of this Memorandum of Understanding

The Intent of this MOU is to formalize:

1. To conduct research on application of fly ash & bottom ash in construction industry.
2. Commercializing / popularizing and transferring the technologies of application of fly ash & bottom ash in construction industry among Small and Medium Enterprises.

2. Background and Rationale

CEB is operating 3x300 MW coal fired power plant at Lakvijaya power station in Puttalam. It generates approximately 750 tons per day of fly ash as a by product. Around 45% of fly ash is purchased by the cement industries in Sri Lanka.

The NERDC being a premier Engineering Research and Development Organization in Sri Lanka, which has comprehensive resource base in all aspects of Engineering such as Civil, Electrical, Mechanical, Mechatronics, etc. has intended to initiate a new research project namely "application of fly ash & bottom ash in construction Industry". The NERDC is in position to develop technologies and CEB has sufficient capabilities to commercialize and popularize the technologies developed among the contractors and manufactures. The proposed joint programme expects the following benefits.

- (1). To use the fly ash & bottom ash effectively and find out a solution to the environmental issues in open dumping.
- (2). To introduce cost effective technologies to construction industry.
- (3). To create employment opportunities.

3. Responsibilities of the NERDC

- a. To carryout research on "Application of fly ash & bottom ash in construction industry" ** with the prior approval of CEB
- b. To carry out field testing from the products/ technologies developed.
- c. To prepare a technology transfer package including demonstrations and training programmes.
- d. Monitoring of production/ construction processes by the entrepreneurs for a specific period of time, until the technology is matured at commercialization.
- e. The NERDC will bear the initial cost of research.

4. Responsibilities of CEB

- f. To provide the reports on chemical analysis of fly ash & bottom ash and meet the cost of such tests.
- g. Keep the NERDC inform regarding the changes if any in fly ash & bottom ash properties.
- h. Providing assistance for the field testing, and reporting feedback information.
- i. Providing assistance for monitoring the quality of products manufactured by the entrepreneurs.
- j. The cost with regard to the demonstrations, popularization, training programme, monitoring and supervision of production should be borne by CEB for the research conducted with the prior approval of CEB.

***construction industry refers here includes-Paving blocks, Cement: sand blocks, Cement: soil blocks, Slip form walls, Precast/ Prestressed Concrete, Plastering and Cement Rendering.*

5. Intellectual Property Rights

Any Intellectual Property (IP) Rights will belong to the NERDC, in so far as it arises as a direct result of research and development by NERDC.

6. Rewards

Both parties agree to share any rewards whenever the innovation is honored by an external party.

7. Income Generation

CEB is free to generate income through any intervention except through IP rights referred above in clause 5.

8. Confidential Information

Both parties agree that any information received from the other party to be treated as classified information and held in confidence without divulging to any other third party.

9. Dispute and Settlement

The parties agree to resolve and settle any disputes or disagreement, which may arise in connection with this Memorandum of Understanding through open discussion with due recognizance to the national significance of the project.

10. The Tenure

It is mutually agreed that the tenure of this Memorandum of Understanding is 03 years from the date of signing. It is further agreed that the tenure could be extended based on the agreement of such period and the applicable terms and conditions.

11. Termination

It is further agreed that this Memorandum of Understanding could be terminated during its tenancy by one party giving ninety (90) days written notice of such intent to the other party with reasons for termination.

12. Modifications or Changes to the Memorandum of Understanding

No addition, modifications or changes to this Memorandum of Understanding shall be valid unless such addition, deletion, modifications or change is mutually agreed by the parties, documented and signed by the authorized signatories.

13. Applicable Law

Regardless of the place of MOU, the place of performance, or otherwise, this MOU, and all amendments, modifications, alterations, or supplements hereto, shall be construed under, governed by, and the legal relations between the Parties hereto determined in accordance with the laws of Sri Lanka.

14. Amendments

This MOU may be amended or modified only by an instrument in writing of equal formality, signed by the duly authorized representatives of the respective Parties hereto.

15. Entire MOU

The terms and conditions of this MOU constitute the entire MOU and understanding of the Parties, supersede all previous communications, whether oral or written, between the Parties, including any previous agreement of understanding varying or extending the same, and there are no further or other agreements or understandings, written or oral, in effect between the Parties, with respect to the subject matter hereof.

16. Notices

Any notice or request with reference to this MOU shall be by registered post and shall be directed by one Party to the other at its respective following address or at such other address as either of the Parties may notify to the other in writing.

Party 1: Ceylon Electricity Board

**Address: No: 50,
Sir Chittampalam A. Gardiner Mw,
Colombo 2.**

**Party 2: National Engineering Research
and Development Centre of Sri Lanka**

**Address: Industrial Estate,
Ekala, Ja-Ela**

[Handwritten signature]

For and on behalf of the
Ceylon Electricity Board

Designation:

Name: Eng. A. K. Samarasinghe
General Manager, CEB

Date : 03/08/2017

[Handwritten signature]

For and on behalf of the
National Engineering Research
& Development Centre of Sri Lanka
Designation:

Name:

Date:

03/08/2017

Execution

IN WITNESS WHEREOF the Parties hereto have caused this MOU to be duly executed in duplication or their behalf by their duly authorized officers and representatives on the day and year given (above) (below) in a manner legally binding upon them.

Witness:

Party 1

Signature : *[Signature]*
Eng. D. Tilakasena
ACM(Generation)

Name : D. Tilakasena

Title :

Date : 03/08/2017

Witness:

Party 2

Signature : *[Signature]*

Name : J. A. C. Christou

Title : Director / Technol

Date : 03/08/2017

2017 11:03 FAX 011 2445286

AGM GENERATION (CEB)

0001

ELUPS

FAX NO. : 0322268966

07 Apr. 2017 13:44 P 1

3

Fax
Received on
07-04-2017
at 13:44 p.m.
Date & Time

urgent

Office of Lakvijaya Power Station,
Norochochola

Date: 07th April 2017

Additional General Manager,
(Generation)

Publication of an Individual Advertisement in Web and Papers

Tender Name : Disposal of Fly Ash Produced as a Byproduct of Combustion of Coal of Unit 1, 2 & 3 of Lakvijaya Power Station, Norochochola.

Publishing Date : 11th April 2017

Closing Date : 07th June 2017

Please grant approval to publish the attached individual advertisement on 11th April 2017 "Daily News" paper.

(*Pls published on 20th April 2017*)

M. W. Wickoon
 P.W.M.N.A.B. Wickoon
 Deputy Plant Manager (M & C)
 (Lakvijaya Power Station)

P.P.M.
 Approved.
W. S. Jayasinghe
 18/4/2017

Note
 Published date 20th April 2017



Mullaitivu
IS
2018



Ministry of Health Services (Mullaitivu)

Qty	Bid Security
02	
01	
01	
11	10,000.00
14	
03	
01	
05	
13	
05	
07	13,000.00
04	
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01	10,000.00
05	
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01	
02	
02	
02	12,000.00
01	
02	
02	
01	11,000.00
05	
03	
01	
01	10,000.00
05	
02	
02	

payment
all be rejected
on 12.30 hrs. and 13.30 hrs.
id on submission of the bid
of the Regional Director

Generating and Railway Division

2018-2019
NARAKULLIYA, NOROCHCHOLA
011 226 8975
011 226 8975

NOTICE INVITING TENDERS

CEYLON ELECTRICITY BOARD

Bid No. EV/SHED/Inv/Asst/02



Chairman, Standing Cabinet appointed Procurement Committee (SCAPC) on behalf of the Ceylon Electricity Board, invites sealed bids for the sale of 11 Ash Produced from Unit 01, 02 & 03 of Lakvaya Power Station, Norochchola up to 10.00 hrs. on 07th June 2017. Bids should be submitted only on documents purchased from the CEB.

Bidders who are interested can inspect the tender documents at the office of DSGM (Asset Management - Thermal/Mechanical) at the address indicated below prior to submitting bids.

The bidding document may be purchased by the bidders for this contract on submission of a written application to the Deputy General Manager (Asset Management - Thermal/Mechanical), Generation Head Office, Ceylon Electricity Board, New Kelani Bridge Road, Welimulla, Walumbura, Colombo 10. Refundable fee of LKR 60,000/- per set in cash or bank draft drawn in favor of the General Manager, CEB, between 0900 hrs and 15.00 hrs. on any working day till 06th June 2017.

Bids may be delivered through registered post or by hand to the office provided for this purpose at the office of the Deputy General Manager (Corporate Affairs - Generation Division), 2nd Floor, Generation Headquarters, Ceylon Electricity Board, New Kelani Bridge Road, Kelaniya 10600, on or before 1000 hrs. on 07th June 2017. Late bids shall be rejected.

Bids will be opened at the office of Deputy General Manager (Corporate Affairs - Generation Division), 2nd Floor, Generation Headquarters, Ceylon Electricity Board, New Kelani Bridge Road, Kelaniya, immediately after the closing time of the Bid in the presence of Bidders or their authorized representatives.

Value of the Bid Security should not be less than 1% of the bid value. It should be purchased during the one day period before the bid. Bid Security shall be valid for One Hundred and Fifty (150) days from the date of closing of the bids.

Bid shall be valid up to Hundred and Twenty (120) days from the bid closing date.

All clarifications shall be sought before the date of the closing of bidding from Deputy General Manager, Lakvaya Power Station, Ceylon Electricity Board, Narakulliya, Norochchola. Tel: 011 226 8975/011 226 8975.

General Manager
Ceylon Electricity Board

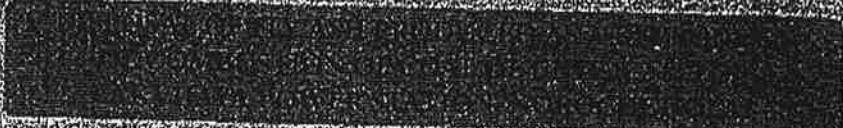
Attn: Ms. Sangeetha

10,000.00
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100,000.00

INVITATION FOR BIDS

CEYLON ELECTRICITY BOARD

Bid No. EV/CEPD/Ely-Asb/02



Chairman, Standing Cabinet Appointed Procurement Committee (SCAPC) on behalf of the Ceylon Electricity Board invites sealed bids for the sale of Fly Ash Produced from Unit 01, 02 & 03 of Lakvijaya Power Station, Norochcholai up to 10:00 hrs. on 07th June 2017. Bids should be submitted only on documents purchased from the CEB.

Bidders who are interested can inspect the tender documents at the office of DGM (Asset Management - Thermal Mechanical) at the address indicated below prior to submitting bids.

The bidding document may be purchased by the Bidders for this contract on submission of a written application to the Deputy General Manager (Asset Management - Thermal Mechanical) Generation Head, Quarter, Ceylon Electricity Board, New Kelani Bridge Road, Wellampitiya upon payment of non-refundable fee of LKR 60,000/- per set in cash or bank draft drawn in favour of the General Manager, CEB between 09:00 hrs and 15:00 hrs on any working day till 06th June 2017.

Bids may be delivered through registered post or could be deposited in the mailbox provided for this purpose at the office of the Deputy General Manager (Corporate Affairs - Generation Division) 2nd Floor, Generation Headquarter, Ceylon Electricity Board, New Kelani Bridge Road, Kolonnawa 10600 on or before 10:00 hrs. on 07th June 2017. Late Bids shall be rejected.

Bids will be opened at the office of Deputy General Manager (Corporate Affairs - Generation Division) 2nd Floor, Generation Headquarter, Ceylon Electricity Board, New Kelani Bridge Road, Kolonnawa immediately after the closing time of the Bid in the presence of Bidders or their authorized representatives.

Value of the Bid Security should be equal to the value of 1% of Fly Ash expected to be purchased during the one year period. Bid Security shall be valid for One Hundred and Fifty (150) days commencing from the closing of the Bids.

Bid shall be valid up to Hundred and Fifty (150) days from the bid closing date.

All clarifications shall be sought two weeks prior to the date of the closing of bidding from Deputy General Manager (Lakvijaya Power Station), Ceylon Electricity Board, Narakkaliba, Norochcholai Tel: 0322268969/03226896.

General Manager
Ceylon Electricity Board



and 13:00 hrs.
non-ordinary duty
Final Director of
Bidding



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

TOKYO EASTERN CEMENT COMPANY LIMITED

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this 14th day of February 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner Mw., Colombo 02, Sri Lanka (hereinafter called "the Seller") of the ONE PART and **Tokyo Eastern Cement Company Limited** (hereinafter called "the Buyer") of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 200.00 (LKR Two Hundred Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. Buyer is eligible to procure maximum 312.5MT per day fly ash, from the total of daily production (Quality No. 02).

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 02 Fly Ash

- a) Loss of Ignition (LOI) >5%
- b) Fineness : Sieve Residue, 45 μ m > 30%

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in Annexure A. Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based of that LOI result.

If buyer still not satisfied with the LOI results, the reference sample will be tested again in an independent laboratory with presence of both parties. And such payment for the testing need to bone by the buyer. If third party laboratory LOI result more than 5 % then Independent laboratory payment will be reimbursed to the buyer by seller. The Independent laboratory will be selected by the conference of both parties.

4. Term of the agreement

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls Five (5) years after the date of the Agreement.

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**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

TOKYO CEMENT COMPANY (LANKA) PLC

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this^{14th}..... day ofFebruary..... 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner Mw., Colombo 02, Sri Lanka (hereinafter called "the Seller") of the ONE PART and **Tokyo Cement Company (Lanka) PLC** (hereinafter called "the Buyer") of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 3,500.00 (LKR Three Thousand Five Hundred Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. Buyer is eligible to procure maximum 360MT per day, fly ash from the total of daily production (Quality No. 01).

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 01 Fly Ash

- a) Loss of Ignition (LOI) $\leq 5\%$
- b) Fineness : Sieve Residue, $45 \mu\text{m} \leq 30\%$

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in **Annexure A**. Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based on that LOI result.

If buyer still not satisfied with the LOI results, the reference sample will be tested again in an independent laboratory with presence of both parties. And such payment for the testing need to be done by the buyer. If third party laboratory LOI result more than 5% then Independent laboratory payment will be reimbursed to the buyer by seller. The Independent laboratory will be selected by the conference of both parties.

4. Term of the agreement

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls Five (5) years after the date of the Agreement.



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

HI-TECH CEMENT LANKA (PVT) LTD

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this 14th day of February 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner Mw., Colombo 02, Sri Lanka (hereinafter called “the Seller”) of the ONE PART and **Hi-Tech Cement Lanka (Pvt.) Ltd** (hereinafter called “the Buyer”) of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 1,200.00 (LKR One Thousand Two Hundred Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. **Buyer is eligible to procure maximum 900MT per day, fly ash from the total of daily production (Quality No. 01).**

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 01 Fly Ash

- a) Loss of Ignition (LOI) $\leq 5\%$
- b) Fineness : Sieve Residue, $45 \mu\text{m} \leq 30\%$

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in **Annexure A**. Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based on that LOI result.

If buyer still not satisfied with the LOI results, the reference sample will be tested again in an independent laboratory with presence of both parties. And such payment for the testing need to be borne by the buyer. If third party laboratory LOI result more than 5% then Independent laboratory payment will be reimbursed to the buyer by seller. The Independent laboratory will be selected by the conference of both parties.

4. Term of the agreement

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls Five (5) years after the date of the Agreement.

5. Logistic plan

5.1. Monthly Forecast Schedule



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

SIGIRI DISTRIBUTORS

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this 14th day of February 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner Mw., Colombo 02, Sri Lanka (hereinafter called "the Seller") of the ONE PART and **Sigiri Distributors** (hereinafter called "the Buyer") of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 1,500.00 (LKR One Thousand Five Hundred Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. **Buyer is eligible to procure maximum 900MT per month, fly ash from the total of daily production (Quality No. 01).**

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 01 Fly Ash

- a) Loss of Ignition (LOI) $\leq 5\%$
- b) Fineness : Sieve Residue, $45 \mu\text{m} \leq 30\%$

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in **Annexure A.** Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based of that LOI result.

If buyer still not satisfied with the LOI results, the reference sample will be tested again in an independent laboratory with presence of both parties. And such payment for the testing need to bone by the buyer. If third party laboratory LOI result more than 5 % then Independent laboratory payment will be reimbursed to the buyer by seller. The Independent laboratory will be selected by the conference of both parties.

4. Term of the agreement

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls Five (5) years after the date of the Agreement.

5. Logistic plan

5.1. Monthly Forecast Schedule



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

TOKYO SUPER CEMENT CO. LANKA (PVT) LTD

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this 14th day of February 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner M.w., Colombo 02, Sri Lanka (hereinafter called "the Seller") of the ONE PART and **Tokyo Super Cement Co. Lanka (Pvt.) Ltd** (hereinafter called "the Buyer") of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 3,000.00 (LKR Three Thousand Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. Buyer is eligible to procure maximum **27.5MT per day, fly ash from the total of daily production (Quality No. 01).**

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 01 Fly Ash

- a) Loss of Ignition (LOI) $\leq 5\%$
- b) Fineness : Sieve Residue, $45 \mu\text{m} \leq 30\%$

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in Annexure A. Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based of that LOI result.

4. Term of the agreement:

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls Five (5) years after the date of the Agreement.

5. Logistic plan

- 5.1. Monthly Forecast Schedule

Seller must submit a Monthly Forecast Schedule along with the invoice for fly ash according to the monthly energy forecast of all three units.



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

SIAM CITY CEMENT (LANKA) LIMITED

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this^{14th}..... day of~~February~~..... 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner Mw., Colombo 02, Sri Lanka (hereinafter called "the Seller") of the ONE PART and **SIAM City Cement (Lanka) Limited** (hereinafter called "the Buyer") of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 3,750.00 (LKR Three Thousand Seven Hundred Fifty Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. **Buyer is eligible to procure maximum 246.6MT per day, fly ash from the total of daily production (Quality No. 01).**

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 01 Fly Ash

- a) Loss of Ignition (LOI) $\leq 5\%$
- b) Fineness : Sieve Residue, $45 \mu\text{m} \leq 30\%$

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in **Annexure A**. Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based of that LOI result.

If buyer still not satisfied with the LOI results, the reference sample will be tested again in an independent laboratory with presence of both parties. And such payment for the testing need to bone by the buyer. If third party laboratory LOI result more than 5 % then Independent laboratory payment will be reimbursed to the buyer by seller. The Independent laboratory will be selected by the conference of both parties.

4. Term of the agreement

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls Five (5) years after the date of the Agreement.

5. Logistic plan

5.1. Monthly Forecast Schedule

7



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

SRI RAMCO ROOFINGS LANKA (PVT) LTD.

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this 14th day of February 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner Mw., Colombo 02, Sri Lanka (hereinafter called "the Seller") of the ONE PART and **Sri RamcoRoofings Lanka (Pvt) Ltd** (hereinafter called "the Buyer") of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 700.00 (LKR Seven Hundred Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. **Buyer is eligible to procure maximum 25MT per month, fly ash from the total of daily production (Quality No. 01).**

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 01 Fly Ash

- a) Loss of Ignition (LOI) $\leq 5\%$
- b) Fineness : Sieve Residue, $45 \mu\text{m} \leq 30\%$

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in Annexure A. Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based of that LOI result.

If buyer still not satisfied with the LOI results, the reference sample will be tested again in an independent laboratory with presence of both parties. And such payment for the testing need to bone by the buyer. If third party laboratory LOI result more than 5 % then Independent laboratory payment will be reimbursed to the buyer by seller. The Independent laboratory will be selected by the conference of both parties.

4. Term of the agreement

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls Five (5) years after the date of the Agreement.

5. Logistic plan

5.1. Monthly Forecast Schedule

Ceylon Electricity Board: Bid LV/CEPD/Fly Ash/02



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT**

2018-2022

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

CEYLON & FOREIGN TRADERS PLC

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

FORM OF CONTRACT AGREEMENT

Contract No: LV/CEPD/Fly Ash/02

THIS AGREEMENT made and entered into at Norochcholai on this 14th day of February 2018 the Ceylon Electricity Board, a corporate body established under the Act No. 17 of 1969 having its head office at No. 50, Sir Chittampalam A. Gardiner Mw., Colombo 02, Sri Lanka (hereinafter called "the Seller") of the ONE PART and **Ceylon & Foreign Traders PLC** (hereinafter called "the Buyer") of the OTHER PART.

WHEREAS the Seller invited bids for Selling of Fly Ash from Three Units of Lakvijaya Power Station and has accepted a Bid by the Buyer for the purchase of those goods in the sum of **LKR 2,552.00 (LKR Two Thousand Five Hundred Fifty Two Only) per Metric Ton (MT) Excluding VAT and NBT.**

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General and Special Conditions of Contract referred to.

2. Quantity of Fly Ash

Quantity of Fly Ash defined according to the plant operation. **Buyer is eligible to procure maximum 300MT per month fly ash, from the total of daily production (Quality No. 01).**

3. Selection of Ash Quality

Both Coarse and Fine Fly Ash will be stored in the same silo and will not be stored separately.

Quality No. 01 Fly Ash

- a) Loss of Ignition (LOI) $\leq 5\%$
- b) Fineness : Sieve Residue, $45 \mu\text{m} \leq 30\%$

Ash quality is classified according to the LOI value. If LOI is below 5%, it is categorized as Quality No. 01 Ash and if LOI is above 5% it is categorized as Quality No. 02 Ash. Loss of Ignition values will solely be tested by a third party contractor and verified by CEB. The final LOI value will be declared by CEB. Test will be conducted by every 3 hours and the verified value will be taken as the final value for all financial invoices. Third party contractor must check the LOI and fineness according to ASTM standards mentioned in Annexure A. Buyer should be able to observe the quality checking process as and when required by the buyer.

If it is observed that LOI is higher than 5% by the buyer, the buyer can immediately stop accepting fly ash and should go for testing of reference sample must be done again in a third party laboratory with presence of buyer's and seller's representatives. That result will be taken as the final LOI result and can continue accepting or rejecting based of that LOI result.

If buyer still not satisfied with the LOI results, the reference sample will be tested again in an independent laboratory with presence of both parties. And such payment for the testing need to bone by the buyer. If third party laboratory LOI result more than 5 % then Independent laboratory payment will be reimbursed to the buyer by seller. The Independent laboratory will be selected by the conference of both parties.

4. Term of the agreement

The term of the Agreement shall be for a period commencing on the date of the Agreement and ending, unless terminated earlier in accordance with the provisions of the Agreement, on the date which falls **Five (5) years** after the date of the Agreement.

5. Logistic plan

5.1. Monthly Forecast Schedule



**CEYLON ELECTRICITY
BOARD
DISPOSAL OF FLY ASH AGREEMENT
2018-2022**

For

**Disposal of the fly ash, Produced as a byproduct of combustion of
coal of unit 1, 2 & 3 of Lakvijaya Power Station, Norochcholai**

Between

**CEYLON ELECTRICITY BOARD
(LAKVIJAYA POWER PLANT)**

And

TOKYO SUPER CEMENT CO. LANKA (PVT) LTD

**Contract No: LV/CEPD/Fly Ash/02
February 2018**

Measuring Standards and Sampling Method

01. Samples shall be taken from six ash silos for sampling (3×1kg of representative sample) in every 3 hour duration by the third party testing laboratory. One portion of the sample shall be given to the purchaser and reference sample put in a airtight container, sealed and signed by representatives of CEB, Third party Laboratory and the purchaser shall be kept for a Period of one month. If sample change from quality 01 to quality 02 in the test results between the third party test results as declared by the CEB and the test carried out by the purchaser then the reference sample shall be tested in an independent laboratory acceptable to both parties.
02. Electronic version of test report shall be forwarded by the authorized person of the CEB in every 3 hours after sampling.
03. All test and sampling shall be carried out by a third party contractor according to the ASTM standards. Reference Test Methods are as follows,
For fineness - ASTM-D 5158 (Standard test method for determination of particle size of powdered activated carbon by air jet sieving)
For LOI - ASTM-C 311-05
04. The third party testing body is an accredited testing laboratory (For ISO 17025) and they have been performing material testing (Water, food, soil, etc.) in Sri Lanka.

රහස්‍යයි



අමාත්‍ය මණ්ඩල කාර්යාලය
அமைச்சரவை அலுவலகம்
OFFICE OF THE CABINET OF MINISTERS



CABINET DECISION

අමාත්‍ය මණ්ඩල තීරණය அமைச்சரவைத் தீர்மானம்

පිටපත් : ජනාධිපති ලේකම්.
අග්‍රාමාත්‍ය ලේකම්.
මහවැලි සං.හා පරිසර ලේකම්.
ජාතික ප්‍රතිපත්ති හා ආර්.ක. ලේකම්.
මුදල් හා ජනමාධ්‍ය ලේකම්.
සෞඛ්‍ය, පෝෂණ හා දේශීය වෛ.ලේකම්.
සභාපති, ප්‍රසම්පාදන අභියාචන මණ්ඩලය.
විගණකාධිපති.
මගේ අංකය: අමප/17/2495/727/055/විබීආ/2017 නොවැම්බර් මස 22 දින.

ක්‍රියා කළ යුතු : විදුලිබල හා පුනර්ජනනීය බලශක්ති අමාත්‍යාංශයේ ලේකම්.
අතුරු නිෂ්පාදනයක් ලෙස පුත්තලම මෙහෙවොට් 900 බලාගාරයේ නිපදවෙන අළු බැහැර ලීම් සඳහා ටෙන්ඩර් ප්‍රදානය කිරීම - Bid No. LV/CEPD/Fly Ash/02
(විදුලිබල හා පුනර්ජනනීය බලශක්ති ගරු ඇමතිතුමා ඉදිරිපත් කළ 2017-10-27 දිනැති සංදේශය)

2017 නොවැම්බර් මස 14 දින පැවැත්වුණු අමාත්‍ය මණ්ඩල රැස්වීමේදී එළඹී තීරණයක් අවශ්‍ය කටයුතු සඳහා මේ සමඟ එවා ඇත.

ඩබ්ලිව.එම්.ඒ.පී.ප්‍රනාන්දු
අතිරේක ලේකම්.

අ.කමල්/එස්.අබේසිංහ
අමාත්‍ය මණ්ඩලයේ ලේකම්.

(අ) න්‍යාය පත්‍රයේ විෂයයන්:

(II) අමාත්‍ය මණ්ඩල පත්‍රිකා - ප්‍රසම්පාදනයට අදාළ කරුණු :

39. අමාත්‍ය මණ්ඩල පත්‍රිකා අංක 17/2495/727/055/විබීආර් වූ, “අතුරු නිෂ්පාදනයක් ලෙස පුත්තලම මෙහෙවොට් 900 බලාගාරයේ නිපදවෙන අළු බැහැර ලීම් සඳහා ටෙන්ඩර් ප්‍රදානය කිරීම - Bid No. LV/CEPD/Fly Ash/02” යන මාගෙන් විදුලිබල හා පුනර්ජනනීය බලශක්ති ඇමතිතුමා ඉදිරිපත් කළ 2017-10-27 දිනැති සංදේශය - ඉහත සඳහන් සංදේශය මුදල් හා ජනමාධ්‍ය ඇමතිතුමාගේ නිරීක්ෂණ සමඟ සලකා බලන ලදී. මේ පිළිබඳව සාකච්ඡා කිරීමෙන් අනතුරුව, මුදල් හා ජනමාධ්‍ය ඇමතිතුමාගේ නිරීක්ෂණවල නියම කර දක්වා ඇති කොන්දේසියට යටත්ව, සංදේශයේ 7 ඡේදයෙහි සඳහන් (7.1) සිට (7.9) දක්වා වන යෝජනා සඳහා අනුමැතිය ලබා දීමට තීරණය කරන ලදී.

CONFIDENTIAL

6

අමාත්‍ය මණ්ඩල කාර්යාලය

සංවර්ධන අංශය ..61/2017/PE.....

නොපු අංශය ..PE/TEN/SCAPC/SG/2016/66.....

පුත්තලම මෙහා වොට් 900 බලාගාරයේ අතුරුඵලයන් ලෙස නිපදවෙන අළු බැහැරලීම සඳහා වෙන්වී ප්‍රදානය කිරීම.

Bid No. LV/CEPD/Fly Ash/02

1. පසුබිම

පුත්තලම පිහිටි ගල් අගුරු බලාගාරය මෙහා වොට් 300 ඒකක 03කින් යුක්ත වේ. මෙම ඒකක 03හි විදුලි ජනනය සඳහා වසරකට ගල් අගුරු වොට් මිලියන 2.4ක් අවශ්‍යවන අතර එම ගල් අගුරු දහනයෙන් එක් ඒකකයකින් අළු මෙට්‍රික් වොට් 85000 බැගින් ඒකක 03න් අළු මෙට්‍රික් වොට් 255000 නිපදවේ. මෙම අළු බලාගාරයෙන් බැහැර කිරීම අත්‍යවශ්‍ය වේ. මෙම අළු බලාගාර භූමිය තුළ එකතු වීම විශාල පරිසර ගැටලුවක් වන අතර මෙම අළු සිමෙන්ති නිපදවීම සහ වහල සෙවිලි කරනු ලබන තහවුරු නිෂ්පාදනයට භාවිත කරනු ලබන බැවින් යම් මිලකට අලෙවි කිරීමට හැකියාව ඇති බැවින් එම අළු බැහැරලීම සඳහා ආයතන තෝරා ගැනීමට වෙන්වී කැඳවීමට තීරණය කරන ලදී.

2. විස්තරය

ඉහත සඳහන් පරිදි ප්‍රසම්පාදනය ආරම්භ කිරීම සඳහා රාජ්‍ය මුදල් දෙපාර්තමේන්තුව මගින් තාක්ෂණික ඇගයුම් කමිටුවක් හා අමාත්‍ය මණ්ඩලය පත් කළ ප්‍රසම්පාදන කමිටුව පත් කරන ලදී.

2.1 අමාත්‍ය මණ්ඩලය පත් කළ ප්‍රසම්පාදන කමිටුව අනුමත කළ ලංසු ලේඛන භාවිත කරමින් ලංසු කැඳවන ලදී. ලංසු කැඳවීමේ දී අළුවල ප්‍රමිතිය අනුව හා මිලට ගැනීමට අපේක්ෂිත ප්‍රමාණ අනුව පහත දැක්වෙන නිර්ණායක 03 යටතේ ලංසුකරුවන් තෝරාගැනීමට ලංසු ලේඛනය සකස් කරන ලදී.

- i. Quality No. 01 Fly Ash :- Over 1000MT
- ii. Quality No. 01 Fly Ash :- 250MT-1000MT
- iii. Quality No. 02 Fly Ash :- Above 250MT

3. ලංසු ඇගයීම

3.1. 2017 ජූනි 07 දින ලංසු වසන අවස්ථාව වනවිට පහත ලංසු 12 ලැබී තිබිණි.

Bidder No.	Bidder
1-A	SIAM City Cement Lanka Limited
1-B	SIAM City Cement Lanka Limited
1-C	SIAM City Cement Lanka Limited
2	Ceylon & Foreign Traders PLC
3	Century Zone (Pvt) Ltd
4	Sigiri Distributors
5	Hi Tech Cement Lanka (Pvt) Ltd
6	Fine Ash (Pvt) Ltd
7	Lanka AAC (Pvt) Ltd
8	SMS Engineering (Pvt) Ltd
9-A	Sri Ramco Roofing Lanka (Pvt) Ltd
9-B	Sri Ramco Lanka (Pvt) Ltd
10	Tokyo Super Cement Co. Lanka (Pvt) Ltd
11	Tokyo Eastern Cement Company Limited
12	Tokyo Coment Company Lanka PLC

Handwritten note: ලැබුණු ලංසු 12 කින් 11 ක් පමණක් ලැබුණි.

(3) (7)

3.2. කාක්ෂණික ඇගයුම් කමිටුව විසින් ලංසුකරුවන් ඉදිරිපත් කළ මිල ගණන් පහත පරිදි දක්වා ඇත.

Bid No.	Total Bid Price (Read Out) Price Schedule A (Above 1000MT per month)		Total Bid Price (Read Out) Price Schedule B (250MT - 1000MT per month)		Total Bid Price (Read Out) Price Schedule C (Above 250MT per month)	
	Requested Quantity per Annam (Tones)	Amount (LKR)	Requested Quantity per Annam (Tones)	Amount (LKR)	Requested Quantity per Annam (Tones)	Amount (LKR)
1-A	30,000.00	600,000,000.00				
1-B	90,000.00	1,687,500,000.00				
1-C	30,000.00	637,500,000.00				
2			3,600.00	45,936,000.00		
3	18,000.00	67,500,000.00				
4			10,800.00	81,000,000.00		
5			10,800.00	64,800,000.00		
6	36,000.00	630,000,000.00				
7						
8					15,000.00	1,200,000.00
9-A			3,120.00	10,920,000.00	3,000.00	300,000.00
9-B			3,120.00	9,360,000.00		
10	86,400.00	1,296,000,000.00				
11	86,400.00	1,080,000,000.00			129,600.00	129,600,000.00
12	129,600.00	2,268,000,000.00			129,600.00	129,600,000.00
					129,600.00	97,200,000.00

4. කාක්ෂණික ඇගයීම් කමිටුවේ හා අමාත්‍ය මණ්ඩලය පත් කළ ස්ථාවර ප්‍රසම්පාදන කමිටුවේ නිර්දේශ.

උපරිම මිල ලබා දුන් ලංසුකරුවන්ට ප්‍රමුඛතාවය ලබා දී පහත ආකාරයට ලංසු ප්‍රදානය කිරීමට කාක්ෂණික ඇගයුම් කමිටුව නිර්දේශ කොට ඇත. අමාත්‍ය මණ්ඩලය පත් කළ ප්‍රසම්පාදන කමිටුව කාක්ෂණික ඇගයුම් කමිටුවේ පහත පරිදි අවන්ඛරය ප්‍රදානය කිරීමට නිර්දේශ ලබා දී ඇත.

Bid No.	Bidder	Requested quantity for Annam (MT)	Approved Quantity for Annam (MT)	Unit Price (LKR/MT)	Total Price for Five Years without VAT and NBT in LKR	Quantity Percentage (%)
Awarding - Quality No. 01- Over 1000MT : 90% of Fly Ash Production						
12	Tokyo Cement Company (Lanka) PLC	129,600.00	129,600.00	3,500.00	2,268,000,000.00	50.82
1-B	SIAM City Cement (Lanka) Limited	90,000.00	90,000.00	3,750.00	1,687,500,000.00	35.29
10	Tokyo Super Cement Co. Lanka (Pvt) Ltd	86,400.00	9,900.00	3,000.00	148,500,000.00	3.88
Awarding - Quality No. 01- (250 to 1000MT) : 10% of Fly Ash Production						
4	Sigiri Distributors	10,800.00	10,800.00	1,500.00	81,000,000.00	4.24
5	Hi - Tech Cement Lanka (Pvt) Ltd	10,800.00	10,800.00	1,200.00	64,800,000.00	4.24
2	Coylon & foreign Traders PLC	3,600.00	3,600.00	2,552.00	45,936,000.00	1.41
9-A	Sri Ramco Roofing Lanka (Pvt) Ltd	3,120.00	300.00	700.00	1,050,000.00	0.11
Awarding - Quality No. 02 : Above 250MT						
10	Tokyo Super Cement Co. Lanka (Pvt) Ltd	129,600.00	112,500.00	200.00	112,500,000.00	50
11	Tokyo Eastern Cement Company Limited	129,600.00	112,500.00	200.00	112,500,000.00	50

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(2017. 07. 26 දිනැති කාන්තරයක ඇගයුම් කමිටු වාර්තාව හා 2017. 08. 03 දිනැති අමාත්‍ය මණ්ඩලය පත්කළ ස්ථාවර ප්‍රසම්පාදන කමිටු වාර්තාව පිළිවෙලින් ඇමුණුම 1 හා 2 වශයෙන් අමුණා ඇත.)

- 5. අභියාචනා මණ්ඩලය වෙත අසාර්ථක ලංසුකරුවන්ගේ නියෝජනයන් ඉදිරිපත් කිරීම.
 ප්‍රසම්පාදන මාර්ගෝපදේශ සංග්‍රහය අංක 2006 (භාණ්ඩ හා සේවා) හි ඡේද අංක 8.3 ට අනුව අමාත්‍ය මණ්ඩල ස්ථාවර ප්‍රසම්පාදන කමිටුවේ නිර්දේශ, අසාර්ථක ලංසුකරුවන් වෙත තම නියෝජනයන් අභියාචනා මණ්ඩලය වෙත සනිටුසාදනු ලබන තුළ ඉදිරිපත් කරන ලෙස 2017. 08. 18 වන දින දන්වා ඇත. ඒ අනුව පහත ලංසුකරුවන් අභියාචනා ඉදිරිපත් කොට ඇත.
 - i. M/s Sri Ramco Lanka (Pvt) Ltd
 - ii. M/s Century Zone (Pvt) I,td
 - iii. M/s Fine Ash (Pvt) Ltd

ඉහත අභියාචනා තුන සලකා බැලූ ප්‍රසම්පාදන අභියාචනා කමිටුව අභියාචනා තුන ම ප්‍රතික්ෂේප කොට ඇත. (ප්‍රසම්පාදන අභියාචනා මණ්ඩල වාර්තාව ඇමුණුම 03 වශයෙන් අමුණා ඇත.)

- 6. අභියාචනා මණ්ඩලයේ නිර්දේශ සම්බන්ධයෙන් අමාත්‍යාංශ ලේකම්ගේ නිර්දේශ අභියාචනා මණ්ඩලයේ නිර්දේශ, අමාත්‍ය මණ්ඩලය පත් කළ ප්‍රසම්පාදන කමිටු නිර්දේශ සමඟ එකඟ වන බැව් අවධානයට ලක් කොට අභියාචනා මණ්ඩලයේ නිර්දේශ සමඟ අමාත්‍යාංශ ලේකම් එකඟ වෙයි.

7. යෝජනාව

මා ඉහත සඳහන් අමාත්‍ය මණ්ඩලය පත් කළ ප්‍රසම්පාදන කමිටු නිර්දේශ හා ප්‍රසම්පාදන අභියාචනා මණ්ඩල නිර්දේශය හා අමාත්‍යාංශ ලේකම්ගේ නිර්දේශ සමඟ එකඟ වෙමින් පහත යෝජනා අමාත්‍ය මණ්ඩල අනුමැතියට ඉදිරිපත් කරමි.

නොරොච්චෝලේ ගල් අඟුරු බලාගාරයේ නිපදවෙන අළු ඉදිරි වසර 5 තුළ, පහත 7.1 සිට 7.9 දක්වා සඳහන් පරිදි විකිණීමට ලංකා විදුලිබල මණ්ඩලයට බලය ලබාදීමට යෝජනා කරමි.

- 7.1. ප්‍රමිති අංක 1 හි අළු දිනකට මෙට්‍රික් ටොන් 360 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 129,600ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.3500ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 469 1/1, ශාලු පාර, කොළඹ 03 හි පිහිටි සීමාසහිත ටෝකියෝ සිමෙන්ති ලංකා සමාගමට විකිණීමට.
- 7.2. ප්‍රමිති අංක 1 හි අළු දිනකට මෙට්‍රික් ටොන් 246.6 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 90,000ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.3750ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 413, ආර්. ඒ. ද. මෙල් මාවත, කොළඹ 03 හි පිහිටි සියාම් සිටි සිමෙන්ති ලංකා සමාගමට විකිණීමට.
- 7.3. ප්‍රමිති අංක 1 හි අළු දිනකට මෙට්‍රික් ටොන් 27.5 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 9,900ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.3000ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 469 1/1, ශාලු පාර, කොළඹ 03 හි පිහිටි සීමාසහිත ටෝකියෝ සුපර් සිමෙන්ති ලංකා සමාගමට විකිණීමට.
- 7.4. ප්‍රමිති අංක 1 හි අළු මාසිකව මෙට්‍රික් ටොන් 900 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 10800ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.1500ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 51/1, මීගමුව පාර, බලියමුල්ල, වත්තල හි පිහිටි සිග්ට් ඩිස්ට්‍රිබියුටර්ස් වෙත විකිණීමට.
- 7.5. ප්‍රමිති අංක 1 හි අළු මාසිකව මෙට්‍රික් ටොන් 900 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 10800ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.1200ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 51/1, මීගමුව පාර, වත්තල හි පිහිටි හයි වෙස් සිමෙන්ති ලංකා සමාගම වෙත විකිණීමට.

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- 7.6. ප්‍රමිති අංක 1හි අළු මාසිකව මෙට්‍රික් ටොන් 300 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 3600ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.2552ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 414/18, ගස්. සිරිල් සී. පෙරේරා මාවත, කොළඹ 13 හි පිහිටි සිලෝන් ඇන්ඩ් ලොරින් ට්‍රේඩර්ස් වෙත විකිණීමට.
- 7.7. ප්‍රමිති අංක 1හි අළු මාසිකව මෙට්‍රික් ටොන් 25 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 300ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.700ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, මතුගම කර්මාන්තපුරය, මහල, බර්ගානගරයෙහි පිහිටි ශ්‍රී රාමනෝ රුහින් ලංකා ප්‍රයිවෙට් ලිමිටඩ් වෙත විකිණීමට.
- 7.8. ප්‍රමිති අංක 2හි අළු මාසිකව මෙට්‍රික් ටොන් 9375 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 112500ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.200ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 469 1/1, භාලු පාර, කොළඹ 03හි පිහිටි සීමාසහිත ටෝකියෝ සුපර් සිමෙන්ති ලංකා සමාගමට වෙත විකිණීමට.
- 7.9. ප්‍රමිති අංක 2හි අළු මාසිකව මෙට්‍රික් ටොන් 9375 බැගින් වසරක් තුළ මෙට්‍රික් ටොන් 112500ක්, එක් මෙට්‍රික් ටොන් 1ක් රු.200ක් බැගින් (VAT හා NBT රහිතව) වසර 5ක් දක්වා, අංක 469 1/1, භාලු පාර, කොළඹ 03හි පිහිටි සීමාසහිත ටෝකියෝ ඊස්ටර්න් සිමෙන්ති ලංකා සමාගමට වෙත විකිණීමට.

8. අනුමැතිය

ඉහත 7.1 - 7.9හි සඳහන් යෝජනාවන් සඳහා අමාත්‍ය මණ්ඩල අනුමැතිය අපේක්ෂා කරමි.

රංජිත් සියඹලාපිටිය (පා.ම.)
විදුලිබල හා පුනර්ජනනීය බලශක්ති අමාත්‍ය

විදුලිබල හා පුනර්ජනනීය බලශක්ති අමාත්‍යාංශය
නො. 72, ආනන්ද කුමාරස්වාමි මාවත,
කොළඹ 07.

2017 ඔක්තෝබර් 27 දින

900
දුගල 1080 x 365 =

ප්‍රමිත අංක 01

ගැනුම්කරුගේ නම	වසරකට විකිණීමට අපේක්ෂිත මෙට්‍රික් ටොන් ප්‍රමාණය	මෙට්‍රික් ටොන් ඒකක මිල (බදු රහිත) <i>රු.</i>	අපේක්ෂිත මුළු මුදල <i>රු.</i>
සීමා සහිත ටෝකියෝ සිමෙන්ති ලංකා සමාගම	129,600	3,500	453,600,000
සියැම් සිටි සිමෙන්ති ලංකා සමාගම	90,000	3,750	337,500,000
ටෝකියෝ සුපර් සිමෙන්ති ලංකා සමාගම	9,900	3,000	297,000
සිගිරි ඩිස්ට්‍රිබියුටර්ස්	10,800	1,500	16,200,000
හයිඩෙක් සිමෙන්ති ලංකා	10,800	1,250	12,960,000
සැලෝන් ඇන්ඩ් ෆෝරින් ට්‍රේඩර්ස්	3,600	2,552	9,187,200
ශ්‍රී රැමකෝ රුගින් ලංකා (පෞ:) සමාගම	300	700	210,000
	<u>255,000</u>		<u>829,954,200</u>

ප්‍රමිත අංක - 02

සීමා සහිත ටෝකියෝ සුපර් සිමෙන්ති	112,500	200	22,500,000
සීමා සහිත ටෝකියෝ ඊස්ටන් සිමෙන්ති ලංකා	112,500	200	22,500,000
	<u>225,000</u>		<u>45,000,000</u>

යටි අළු අලෙවි කිරීමේ ආදායම

	මිලදී ගත් ආයතනයේ නම	ඉන්වොයිස් අංකය/දිනය	ප්‍රමාණය	වටිනාකම (බදු හැර)
1	International construction consortium (PVTO Ltd	LPS- S- 0001/2015.11.09	30 Cubes	5,000.00
2	International construction consortium (PVTO Ltd	LPS- S- 0002/2016.02.15	40 Loads	20,000.00
3	International construction consortium (PVTO Ltd	LPS- S- 0003/ 2016.02.24	40 Loads	20,000.00
4	International construction consortium (PVTO Ltd	LPS- S- 0004/2016.09.20	40 Loads	20,000.00
5	Precision Engineering Service PVT Ltd	LPS- S- 0005/2016.10.03	100 Loads	50,000.00
6	International construction consortium (PVTO Ltd	LPS- S- 0006/2016.11.23	80 Loads	40,000.00
7	International construction consortium (PVTO Ltd	LPS- S- 0007/2017.01.21	120 Loads	60,000.00
8	International construction consortium (PVTO Ltd	LPS- S- 0008/B/2017.03.14	120 Loads	60,000.00
9	Siam City Ciment (Lanka) PVT Ltd	LPS- S- 0009/B/2017.05.05	18 Loads	9,000.00
10	International construction consortium (PVTO Ltd	LPS- S- 0010/B/2017.05.30	120 Loads	60,000.00
11	Fine Ash (PVT) Ltd	LPS- S- 0011/B/2017.06.09	10 Loads	5,000.00
12	D.M. Concrete Works	LPS- S- 14/B/2017.10.24	20 Loads	11,734.00
13	Sawindra Sadisha	LPS- S- 0015/B/2017.10.24	10 Loads	5,867.00
14	S.W.A.Manoj	LPS- S- 0022/B/2017.12.31	10 Loads	5,867.00
15	International construction consortium (PVTO Ltd	LPS- S- 0021/B/2017.12.15	120 Loads	60,000.00
16	N.Selwaraja	LPS- S- 0023/B/2018.01.31	10 Loads	5,867.00
	මුළු එකතුව		30 Cubes & 858	438,335.00

Coal and air pollution

The smoke from coal power plants is exceedingly dangerous to human health.

When coal burns, the chemical bonds holding its carbon atoms in place are broken, releasing energy. However, other chemical reactions *also* occur, many of which carry toxic airborne pollutants and heavy metals into the environment.

This air pollution includes:

Mercury: Coal plants are responsible for 42 percent of US mercury emissions, a toxic heavy metal that can damage the nervous, digestive, and immune systems, and is a serious threat to the child development. Just 1/70th of a teaspoon of mercury deposited on a 25-acre lake can make the fish unsafe to eat. According to the Environmental Protection Agency's (EPA) National Emissions Inventory, US coal power plants emitted 45,676 pounds of mercury in 2014 (the latest year data is available).

Sulfur dioxide (SO₂): Produced when the sulfur in coal reacts with oxygen, SO₂ combines with other molecules in the atmosphere to form small, acidic particulates that can penetrate human lungs. It's linked with asthma, bronchitis, smog, and acid rain, which damages crops and other ecosystems, and acidifies lakes and streams. US coal power plants emitted more than 3.1 million tons of SO₂ in 2014.

Nitrogen oxides (NO_x): Nitrous oxides are visible as smog and irritate lung tissue, exacerbate asthma, and make people more susceptible to chronic respiratory diseases like pneumonia and influenza. In 2014, US coal power plants emitted more than 1.5 million tons.

Particulate matter: Better known as "soot," this is the ashy grey substance in coal smoke, and is linked with chronic bronchitis, aggravated asthma, cardiovascular effects like heart attacks, and premature death. US coal power plants emitted 197,286 tons of small airborne particles (measured as 10 micrometers or less in diameter) in 2014..

Other harmful pollutants emitted in 2014 by the US coal power fleet include:

- 41.2 tons of **lead**, 9,332 pounds of **cadmium**, and other **toxic heavy metals**.
- 576,185 tons of **carbon monoxide**, which causes headaches and places additional stress on people with heart disease.
- 22,124 tons of **volatile organic compounds (VOC)**, which form ozone.
- 77,108 pounds of **arsenic**. For scale, arsenic causes cancer in one out of 100 people who drink water containing 50 parts per *billion*.

Most of these emissions can be reduced through pollution controls—sometimes by a significant amount—though many plants don't have adequate controls installed.

Under the Clean Air Act, the Clean Water Act and other environmental laws, the US Environmental Protection Agency (EPA) has the responsibility and authority to set and enforce emissions limits for pollutants deemed harmful to human health and the environment.

However, the head of the EPA under President Trump—Scott Pruitt—built his career suing the EPA to withdraw pollution protections. Actions he has taken since his tenure began, including regulatory rollbacks and delays, and cuts to the EPA's staffing and budget, put many protective standards in jeopardy.

Coal and global warming

Climate change could cause irrevocable harm.

Of coal's many environmental impacts, none are as harmful, long term, and irreversible as global warming. Global warming is driven by emissions of heat-trapping gases, primarily from human activities, that rise into the atmosphere and act like a blanket, warming the earth's surface.

Consequences include rising temperatures and accelerating sea level rise as well as growing risks of drought, heat waves, heavy rainfall intensified storms, and species loss. Left unchecked climate change could lead to profound human and ecological disruption.

Carbon dioxide (CO₂) emissions from combusting fossil fuels are the main driver of global warming. CO₂ is also the main byproduct of coal combustion: nearly 4 grams of CO₂ are produced for every gram of carbon burnt (depending on its type, coal can contain as much as 60 to 80 percent carbon).

Methane (CH₄) often occurs in the same areas that coal is formed, and is released during mining activities. Methane is 34 times stronger than carbon dioxide at trapping heat over a 100-year period and 86 times stronger over 20 years; roughly 10 percent of all US methane emissions come from coal mining.

Carbon capture and storage technologies (or CCS) are emerging technologies that could allow coal plants to capture some of the CO₂ they would otherwise release; the CO₂ could then be transported and stored in a geological repository without harming the earth's climate. A few projects worldwide are currently operating, but the technology remains expensive, especially compared with cleaner forms of generation, and it is still unproven at the scale needed to materially contribute to addressing climate change. The deployment of CCS would also not reduce other harmful pollutants produced across the fuel cycle of coal.

To date the federal government has invested on the order of \$5 billion dollars in CCS research, including \$4.8 billion under the Obama administration and millions of dollars during the Bush administration.

Emissions from burning coal

Several principal emissions result from coal combustion:

- **Sulfur dioxide (SO₂)**, which contributes to acid rain and respiratory illnesses
- **Nitrogen oxides (NO_x)**, which contribute to smog and respiratory illnesses
- **Particulates**, which contribute to smog, haze, and respiratory illnesses and lung disease
- **Carbon dioxide (CO₂)**, which is the primary greenhouse gas produced from the burning of fossil fuels (coal, oil, and natural gas)
- **Mercury and other heavy metals**, which have been linked to both neurological and developmental damage in humans and other animals
- **Fly ash and bottom ash**, which are residues created when coal is burned at power plants

In the past, fly ash was released into the air through the smokestack, but laws now require that most emissions of fly ash be captured by pollution control devices. In the United States, fly ash and bottom ash are generally stored near power plants or placed in landfills. Pollution leaching from ash storage and landfills into groundwater and the rupture of several large impoundments of ash are environmental concerns.

Reducing the environmental effects of coal use

The Clean Air Act and The Clean Water Act require industries to reduce pollutants released into the air and water.

The coal industry has found several ways to reduce sulfur and other impurities from coal. The industry has also found more effective ways of cleaning coal after it is mined, and coal consumers have shifted toward greater use of low sulfur coal.

Power plants use flue gas desulfurization equipment, also known as *scrubbers*, to clean sulfur from the smoke before it leaves their smokestacks. In addition, the coal industry and the U.S. government have cooperated to develop technologies that can remove impurities from coal or that can make coal more energy efficient, which reduces the amount of coal that is burned per unit of useful energy produced.

Equipment intended mainly to reduce SO₂, NO_x, and particulate matter can also be used to reduce mercury emissions from some types of coal. Scientists are also working on new ways to reduce mercury emissions from coal-burning power plants.

Research is underway to address emissions of carbon dioxide from coal combustion. One method is *carbon capture*, which separates CO₂ from emissions sources and recovers it in a concentrated stream. The CO₂ can then be injected underground for permanent storage, or *sequestration*.

Reuse and recycling can also reduce the environmental effects of coal production and use. Land that was previously used for coal mining can be reclaimed and used for airports, landfills, and golf courses. Waste products captured by scrubbers can be used to produce products such as cement and synthetic gypsum for wallboard.

Date	5/21/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
Time																							
1:00 AM																							
9:00 AM																							
5:00 PM																							
Max Value																							
Time																							
So2/Day (kg)																							

Unit shut down

Date	5/21/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
Time																							
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9:00 AM																							
5:00 PM																							
Max Value																							
Time																							
So2/Day (kg)																							

Date	5/21/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load
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1:00 AM																							
9:00 AM																							
5:00 PM																							
Max Value																							
Time																							
So2/Day (kg)																							

Note : Temperature IN/OUT and Pressure IN recorded at DCS

mail by Mr: chinthake
2018/6/5

Date		5/22/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1:00 AM																									
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5:00 PM																									
Max Value																									
Time																									
So2/Day (kg)																									

Unit shut down

Date		5/22/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1:00 AM																									
9:00 AM																									
5:00 PM																									
Max Value																									
Time																									
So2/Day (kg)																									

Date		5/22/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1:00 AM																									
9:00 AM																									
5:00 PM																									
Max Value																									
Time																									
So2/Day (kg)																									

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date	5/23/2018		NOX(mg/m3)		CO (mg/m3)		So2(mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load	
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		OUT
1:00 AM																								
9:00 AM																								
5:00 PM																								
Max Value																								
Time																								
So2/Day (kg)																								

0.813

unit sync at 17:55

Date	5/23/2018		NOX(mg/m3)		CO (mg/m3)		So2(mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load	
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		OUT
1:00 AM																								
9:00 AM																								
5:00 PM																								
Max Value																								
Time																								
So2/Day (kg)																								

292.8

Date	5/23/2018		NOX(mg/m3)		CO (mg/m3)		So2(mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load	
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		OUT
1:00 AM																								
9:00 AM																								
5:00 PM																								
Max Value																								
Time																								
So2/Day (kg)																								

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date		5/24/2018		NOX(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load		
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM																										
9:00 AM		6		5		17		0.6		0.5		0.5														
5:00 PM		90		172		3		1.0		1.3		1.3														
Max Value		54		84		3		0.9		4.7		4.3														
Time		107		190		21		1.1		4.8		4.8														
So ₂ /Day (Kg)		13:31		11:17		0:08		6:22		17:11		19:11														
Date		5/24/2018		NOX(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load		
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM																										
9:00 AM		423		72		15		3.3		5.3		5.3														
5:00 PM		456		63		29		3.3		3.6		3.6														
Max Value		417		56		8		2.6		3.6		3.6														
Time		534		74		131		3.6		5.9		5.9														
So ₂ /Day (Kg)		10:30		1:10		9:30		9:50		10:00		10:00														
Date		5/24/2018		NOX(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load		
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM																										
9:00 AM		334		7		6		2.8		3.9		3.9														
5:00 PM		378		4		4		3.0		4.3		4.3														
Max Value		325		10		8		3.0		3.3		3.3														
Time		431		29		46		3.3		4:40		5														
So ₂ /Day (Kg)		6:30		23:50		21:32		4:40		5:50		5:50														
Date		5/24/2018		NOX(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load		
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM																										
9:00 AM		334		7		6		2.8		3.9		3.9														
5:00 PM		378		4		4		3.0		4.3		4.3														
Max Value		325		10		8		3.0		3.3		3.3														
Time		431		29		46		3.3		4:40		5														
So ₂ /Day (Kg)		6:30		23:50		21:32		4:40		5:50		5:50														

Date		5/24/2018		NOX(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load	
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM																									
9:00 AM		423		72		15		3.3		5.3		5.3													
5:00 PM		456		63		29		3.3		3.6		3.6													
Max Value		417		56		8		2.6		3.6		3.6													
Time		534		74		131		3.6		5.9		5.9													
So ₂ /Day (Kg)		10:30		1:10		9:30		9:50		10:00		10:00													
Date		5/24/2018		NOX(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load	
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM																									
9:00 AM		334		7		6		2.8		3.9		3.9													
5:00 PM		378		4		4		3.0		4.3		4.3													
Max Value		325		10		8		3.0		3.3		3.3													
Time		431		29		46		3.3		4:40		5													
So ₂ /Day (Kg)		6:30		23:50		21:32		4:40		5:50		5:50													

Date		5/24/2018		NOX(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load	
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM																									
9:00 AM		334		7		6		2.8		3.9		3.9													
5:00 PM		378		4		4		3.0		4.3		4.3													
Max Value		325		10		8		3.0		3.3		3.3													
Time		431		29		46		3.3		4:40		5													
So ₂ /Day (Kg)		6:30		23:50		21:32		4:40		5:50		5:50													

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date	5/25/2018		NOx(mg/m ³)		SO ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		CO ₂ (%)		Oxygen (%)		Temperature @		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /s)		Unit Load
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	
1:00 AM	33	39	110	10	0	0.7	1.5	12.5	79	45	0.065	99											200
9:00 AM	100	86	79	11.5	1	2:25	4:01	36.355															218
5:00 PM	161	151	4:43																				208
Max Value																							
So ₂ /Day (kg)																							

Date	5/25/2018		NOx(mg/m ³)		SO ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		CO ₂ (%)		Oxygen (%)		Temperature @		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /s)		Unit Load
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	
1:00 AM	404	63	156	26	3	2.6	1.6	13.5	74	103	-0.079	99											112
9:00 AM	334	280	152	15	2.1	3.3	5.2	13.5	68	119	-0.062	99											300
5:00 PM	671	180	11:20					19:50															200
Max Value																							20:50
So ₂ /Day (kg)																							

Date	5/25/2018		NOx(mg/m ³)		SO ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		CO ₂ (%)		Oxygen (%)		Temperature @		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /s)		Unit Load
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	
1:00 AM	261	64	39	9	6	3.4	1.4	11.0	98	101	-0.014	99											121
9:00 AM	176	39	68	4	3.5	3.8	2.9	10.8	56	86	0.077	99											115
5:00 PM	212	76	270	10	4:10	1:50	0:00	1:00	11	108	0.193	100											236
Max Value																							
So ₂ /Day (kg)																							

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date		5/26/2018																				
Time	NOx(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM			40		36		6		0.6		2.9		12.3		78		48		0.148			
9:00 AM			72		101		13		1.0		8.1		11.7		82		49		0.182			
5:00 PM			39		57		8		0.8		3.7		11.5		94		53		0.093			
Max Value			130		148		15		1.1		11.5		12.3									206
Time			2:37		3:06		11:46		2:57		2:53											220
So ₂ /Day (Kg)																						223
34.763																						

Date		5/26/2018																				
Time	NOx(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM			342		46		16		2.9		4.6		13.5		133		59		-0.082			
9:00 AM																						
5:00 PM																						
Max Value			416		114		40		4.8		4.6		13.5									95
Time			0:00		4:20		0:20		9:20		0:30		0:00									179
So ₂ /Day (Kg)																						114
74.954																						

Date		5/26/2018																				
Time	NOx(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /S)		Unit Load	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM			262		41		9		3.3		1.2		13		59		97		-0.052			
9:00 AM																						
5:00 PM																						
Max Value			285		57		11		3.4		1.5		14.4		67		102		0.051			76
Time			0:40		0:00		1:50		0:00		0:00		1:50		12:02		12:02		12:29			114
So ₂ /Day (Kg)																						0:30
44																						

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date	5/27/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	
1:00 AM		33		29		7		0.7		2.8		11.6		95		44		0.106		99			220
9:00 AM		46		68		7		0.7		3.8		14.3		91		42		0.013		100			125
5:00 PM		28		46		2		1.0		4.3		10.8		68		36		-0.029		99			130
Max Value		126		114		11		1		13.2		15.3								104			
So2/Day (kg)		2:31		2:50		2:33		2:22		2:55		8:47								1:02			
																							18.446

Date	5/27/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	
1:00 AM																							
9:00 AM																							
5:00 PM																							
Max Value																							
So2/Day (kg)																							

Date	5/27/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load
	Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	
1:00 AM																							
9:00 AM																							
5:00 PM																							
Max Value																							
So2/Day (kg)																							

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date		5/28/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature @		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM			8		36		5		0.6		2.1		10.0		37		0.046		100						220
9:00 AM			58		92		8		0.8		8.6		10.2		36		0.046		100						220
5:00 PM			79		51		0		0.8		7.1		10.2		58		0.314		99						220
Max Value			121		172		13		1		14.6		10		59		0.363								220
Time			12:40		2:39		2:53		2:23		11:44		10:51		14:17		22:06								
So2/Day (kg)							2:53		2:23		11:44		10:51		14:17		22:06								
													30.86												

Date		5/28/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature @		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM																									
9:00 AM																									
5:00 PM																									
Max Value																									
Time																									
So2/Day (kg)																									

Date		5/28/2018		NOX(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature @		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM																									
9:00 AM																									
5:00 PM																									
Max Value																									
Time																									
So2/Day (kg)																									

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date		5/31/2018		NOX(mg/m3)		SO2(mg/m3)		CO (mg/m3)		Water vapour (%)		CO2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load		
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1:00 AM	45		0	5	0.6		4.5	10.3	57	0.325	100															220
9:00 AM	128		26	11	1.0		14.5	10.5	58	0.328	100															220
5:00 PM	111		42	10	0.8		8.9	10.5	59	0.354	99															220
Max Value	170		72	15	1.1		19.2	10.8	60	0.411	121															
Time																										
So2/Day (Kg)	11.983																									

Date		5/31/2018		NOX(mg/m3)		SO2(mg/m3)		CO (mg/m3)		Water vapour (%)		CO2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load			
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM																											
9:00 AM																											
5:00 PM																											
Max Value																											
Time																											
So2/Day (Kg)	Unit shut down																										

Date		5/31/2018		NOX(mg/m3)		SO2(mg/m3)		CO (mg/m3)		Water vapour (%)		CO2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/S)		Unit Load			
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM																											
9:00 AM																											
5:00 PM																											
Max Value																											
Time																											
So2/Day (Kg)																											

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date: 6/1/2018																						
Time	NOx(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /s)		Unit Load	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1:00 AM	99	11	7	0.8	7.2	10.6	60	0.356	100													
9:00 AM	113	15	12	1.0	12.6	10.6	60	0.358	100												215	
5:00 PM	100	38	7	0.8	8.0	10.5	58	0.345	99												215	
Max Value	184	66	14	1.1	17.9	10.5	60	0.409	121												215	
Time	3:08	2:20	2:34	2:50	2:58	7:685	13:14	10:50	13:47	1:02												
So ₂ /Day (Kg)																						

Date: 6/1/2018																					
Time	NOx(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /s)		Unit Load
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM	0*	0*	0*	0.1*	0.0*	13.5*	102*	76													
9:00 AM	0*	0*	0*	0.1*	0.0*	13.5*	102*	82													
5:00 PM	0	74	75	4.7	0.7	13.5	99	4237													
Max Value	151	128	84	5.2	1.3	13.5	102	15104													
Time	23:59	23:54	14:30	14:43	22:42	13:34	22:59	15104													
So ₂ /Day (Kg)																					

Date: 6/1/2018																					
Time	NOx(mg/m ³)		So ₂ (mg/m ³)		CO (mg/m ³)		Water vapour (%)		Co ₂ (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m ³)		Flow (m ³ /s)		Unit Load
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM																					
9:00 AM																					
5:00 PM																					
Max Value																					
Time																					
So ₂ /Day (Kg)																					

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date		6/2/2018		NOx(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load			
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM		75		11		5		0.8		6.8		10.3		58		0.312		100									220
9:00 AM		132		11		15		1.0		14.2		10.4		58		0.319		100									220
5:00 PM		88		0		10		0.8		9.3		10.3		56		0.328		99									220
Max Value		184		74		15		1.1		19.9		10.7		59		0.383		123									
Time		2:33		1:48		2:59		2:36		2:56		10:54		19:30		1:00		1:02									
So2/Day (kg)																											

7.238

Date		6/2/2018		NOx(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load			
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM		211		146		29		3.4		1.7		13.5		86		-0.121		99									100
9:00 AM		304		172		78		1.9		0.9		13.5		133		-0.095		100									300
5:00 PM		162		143		10		1.7		1.0		13.5		99		-0.08		99									154
Max Value		374		234		84		3.4		2		13.5		105				105									176
Time		11:02		9:53		8:59		0:00		1:43		0:00						13:01									22:45
So2/Day (kg)																											

955.93

Date		6/2/2018		NOx(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature °C		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load			
Time	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
1:00 AM																											
9:00 AM																											
5:00 PM																											
Max Value																											
Time																											
So2/Day (kg)																											

Unit shut down

Note : Temperature IN/OUT and Pressure IN recorded at DCS

Date		6/3/2018		NOx(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1:00 AM		81		7	10	0.8		7.7		10.1		59		143		0.33		101							220
9:00 AM		129		4	13	1.0		12.5		10.6		59		146		0.326		100							220
5:00 PM		81		26	10	0.8		7.4		10.4		60		147		0.353		100							220
Max Value		170		64	16	1.1		20.5		10.7		147		147		0.404		121							
Time		3:12		14:40	3:07	2:38		3:18		8:48		18:15		23:59		5:54		1:01							
So2/Day (Kg)																									

Date		6/3/2018		NOx(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1:00 AM		176		114	8	1.7		1.0		13.5		119		100		-0.088		99							200
9:00 AM		185		156	10	1.9		1.2		13.5		93		121		-0.1		204							260
5:00 PM		187		133	5	1.9		1.0		13.5		94		122		0.004		98							240
Max Value		454		186	202	2.6		3.4		13.5		131		121				105							169
Time		21:19		4:05	22:18	23:37		23:45		0:00								13:01							0:00
So2/Day (Kg)																									

Date		6/3/2018		NOx(mg/m3)		So2(mg/m3)		CO (mg/m3)		Water vapour (%)		Co2 (%)		Oxygen (%)		Temperature (°C)		Pressure (kpa)		Dust (mg/m3)		Flow (m3/s)		Unit Load	
Time		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1:00 AM																									
9:00 AM																									
5:00 PM																									
Max Value																									
Time																									
So2/Day (Kg)																									

Note : Temperature IN/OUT and Pressure IN recorded at DCS



ශ්‍රී ලංකා (http://www.ceal.gov.lk/srilanka/how_1)
 සාදාහ (http://www.ceal.gov.lk/web/en/air-quality)

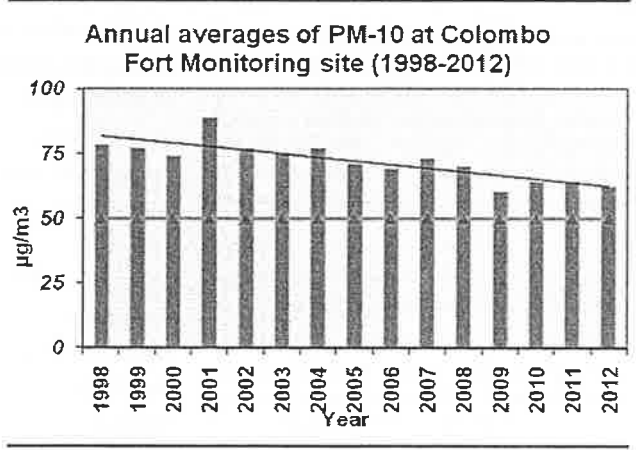
මුළු පිටුව (/web/si) අප ගැන (/web/si/about-us) අපගේ සේවාවන් (/web/si/services) අංශ මාධ්‍ය අවකාශය ප්‍රකාශන (/web/si/publication)
 පනත් සහ රෙගුලාසි (/web/si/acts-regulations) නිතර අසන පැන (/web/si/2013-05-07-07-53-03) ලෝරමය (/web/si?Itemid=265) අප අමතන්න
 පිටු පෙළගැස්ම (/web/si/site-map)

රජායතනාගාර සේවා ඒකකය

මධ්‍යම පරිසර අධිකාරිය සතුව ජලයේ තත්ත්වය, වාතයේ තත්ත්වය, ශබ්දය සහ කම්පන පිළිබඳ සම්පූර්ණ පරීක්ෂාවන් සිදු කළ හැකි සියළු පහසුකම් සපිරි රජායතනාගාරයක් ඇත. අවශ්‍ය අවදානම් සඳහා ජලය, වාතය, ශබ්දය, පස සහ ඝන අපද්‍රව්‍ය පිළිබඳ විශ්ලේෂණ පරීක්ෂාවන් වාණිජ වශයෙන් ද එයින් සපයනු ලැබේ.

ශ්‍රී ලංකාවේ වාතයේ තත්ත්වය පවත්වා ගැනීම

1998 සිට 2011 දක්වා සුළු පසුබෑමක් සහිතව කොළඹ නගරාශ්‍රිත වාර්ෂික සාමාන්‍ය සංසරණ වායුගෝලීය PM10 අගය ඝන මීටරයට මයික්‍රො ග්‍රෑම් 60-82න් අතර මට්ටමෙහි පවති, ඉහළම අගය වාර්තා වී ඇත්තේ 2001 වර්ෂයේ දී ය. (රූපය 1) 2009 වර්ෂය දක්වා වන දළ පසුබෑම අගයෙහි නැවත ඉහළ යෑමක් නිරීක්ෂණය කළ හැකි යි, කෙසේ වෙතත් මෙම අගයයන් ලෝක සෞඛ්‍ය සංවිධානය මගින් PM10 සඳහා අනුමත යැයි දක්වා ඇති ඝන මීටරයට මයික්‍රො ග්‍රෑම් 50 සීමාව ඉක්මවා යයි. ඒ අනුව කොළඹ නගරය, එහි ජන ගණන්වලට අදාලව සෞඛ්‍යයට ඉතා අහිතකර නගරයක් බව දැක්වේ. කෙසේ වෙතත් 1998 සිට 2012 දක්වා කාල පරාසය තුළ වාතයේ සංසරණ වායුගෝලීය PM10 අගයෙහි ක්‍රමික පසුබෑමක් දැකිය හැකි වේ. (රූපය 1)



මූලාශ්‍ර: මධ්‍යම පරිසර අධිකාරිය (වර්ෂ 2012)

රූපය 1 - සංසරණ වායුගෝලීය වාතයේ තත්ත්ව පරීක්ෂණ මධ්‍යස්ථානය වෙතින් ලබා ගත් කොළඹ කොටුවේ වාර්ෂික සාමාන්‍ය PM10 අගයයන් (1998 - 2012)

1998 - 2008 දක්වා කොළඹ කොටුව ප්‍රදේශයේ සංසරණ වායුගෝලීය වාතයේ ස්ඵර්ෂ වියොක්සයිඩ්, කාබන් මොනොක්සයිඩ්, ඕසෝන් සහ PM10 අගයයන් විමසුමට ලක් කරනු ලැබිණි. කෙසේ වෙතත් 2008 සිට අනෙකුත් පරාමිතියන් පරීක්ෂා කිරීමට අවශ්‍ය උපකරණ සකුය තත්ත්වයේ නොමැති බැවින් කොළඹ නගරයේ වාතයේ තත්ත්වය පරීක්ෂා කිරීම සඳහා PM10 පරාමිතිය පමණක් දැනට භාවිතා කරනු ලැබේ.

ශ්‍රී ලංකාවේ සංසරණ වායුගෝලීය වාතයේ තත්ත්වය පවත්වා ගැනීම සඳහා මූලාශ්‍ර සහිත වායු විමෝචනයන් මෙන්ම මූලාශ්‍ර රහිත විමෝචනයන් ද පාලය කිරීම අත්‍යවශ්‍ය වේ. මූලාශ්‍ර සහිත වායු විමෝචනයන් පාලනය කිරීමේ ක්‍රමෝපායයක් වශයෙන් මධ්‍යම පරිසර අධිකාරිය විසින් ශ්‍රී ලංකාවේ මූලාශ්‍ර සහිත වායු විමෝචන ප්‍රමිතීන් හඳුන්වා දී තිබේ. මෙම ප්‍රමිතීන් ජාතික පරිසර පනත යටතේ ගැසට් නිවේදනයක් මගින් ප්‍රකාශයට පත් කරන තෙක් අතුරු පාලන ක්‍රමයක් ලෙස භාවිතා කිරීමට මධ්‍යම පරිසර අධිකාරියේ කළමනාකරණ මණ්ඩලය අනුමැතිය ලබා දී තිබේ. පවතින සීමිත සම්පත් ආධාරයෙන් 2012 වර්ෂය තුළ ස්කන්ධ විමෝචන මිනුම් 5ක් සිදු කර තිබේ.

දිවයින පුරා රථවාහන සංසරණ වායුගෝලීය වාතයේ තත්ත්වය පාලනය කිරීමේ ව්‍යාපෘතිය, මධ්‍යම පරිසර අධිකාරියේ වායු-ශබ්ද-කම්පන පාලන/උපදේශන ඒකකය මගින් ආරම්භ කර තිබේ. ඒ සඳහා රථවාහන විමෝචන පරීක්ෂා භාර අරමුදල මගින් සපයා ඇති ස්වයංක්‍රීය සංසරණ වායුගෝලීය වාතයේ තත්ත්ව පරීක්ෂණ මධ්‍යස්ථානය භාවිතයට ගැනේ.

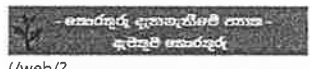
රථවාහන විමෝචන පරීක්ෂා ව්‍යාපෘතිය

රථවාහන මගින් සිදු කෙරෙන වායු දූෂණය පාලනය කිරීම සඳහා රථවාහන විමෝචන පරීක්ෂා ව්‍යාපෘතිය පිහිටුවා ඇත. මෙම ඒකකයේ නිලධාරීන් වරින් වර මාර්ගාසන්න පරීක්ෂණ කටයුතු වල නිරත වෙති. මීට අමතරව රථවාහන විමෝචන පරීක්ෂා ව්‍යාපෘතිය සහ රථවාහන විමෝචන පරීක්ෂා මධ්‍යස්ථාන නිරන්තර පරීක්ෂාවන්ට ලක් කෙරේ. එහි ප්‍රධාන අරමුණ නම් රථවාහන මගින් සිදු වන වායු දූෂණය පාලනය කිරීම මගින් රථවාහන විමෝචන පරීක්ෂා ව්‍යාපෘතිය මහජන සුබසාධන ව්‍යාපෘතියක් බවට පත් කිරීමයි.

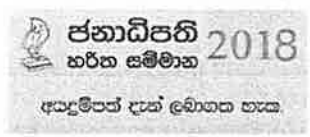
කර්මාන්ත මූලාශ්‍ර මගින් සිදු කෙරෙන විමෝචනයන් පාලනය කිරීම

මේ වන විට මූලාශ්‍ර විමෝචන ප්‍රමිතීන් සම්පාදනය කෙරී ඇති අතර තුදුරු අනාගතයේ දී රෙගුලාසි ලෙස ප්‍රකාශ කෙරෙනු ඇත. කෙසේ වෙතත් වර්තමානයේ දී මූලාශ්‍ර විමෝචනයන් පාලනය කෙරෙනුයේ මධ්‍යම පරිසර අධිකාරිය මගින් ස්ථාපනය ලද අතුරු විමෝචන ප්‍රමිතීන් මගිනි.

අන්තර් දේශ සීමා වායු දූෂණ පාලනය



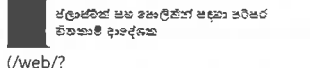
(/web/?option=com_content&view=article&layout=edit&id=100)



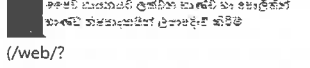
(/web/?option=com_content&view=article&layout=edit&id=121)



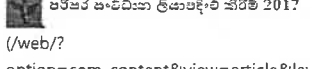
(/web/?option=com_content&view=article&layout=edit&id=108)



(/web/?option=com_content&view=article&layout=edit&id=109)



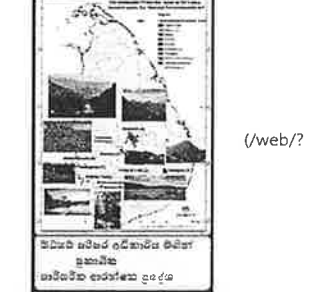
(/web/?option=com_content&view=article&layout=edit&id=111)



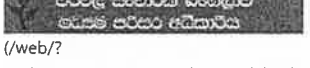
(/web/?option=com_content&view=article&layout=edit&id=111)



(/web/?option=com_content&view=article&layout=edit&id=108)



(/web/?option=com_content&view=article&layout=edit&id=118)



(/web/?option=com_content&view=article&layout=edit&id=778)

තනිතම පුවත් සහ තොරතුරු

Investigation the metal quarries and soil burrow pits which supply metal and soil for Southern Expressway development (/web/si/news-and-events/1194-investigation-the-metal-quarries-and-soil-burrow-pits-which-supply-metal-and-soil-for-southern-expressway-development)

(/web/si/news-and-events/1194-investigation-the-metal-quarries-and-soil-burrow-pits-which-supply-metal-and-soil-for-

වායු දූෂණය පාලනය කිරීම හා වැළැක්වීම සහ වායු දූෂණයෙන් දකුණු ආසියානු පදිංචි සීමා අතර ඇති විය හැකි බලපෑම් සඳහා වන මාලේ සම්මුතියෙහි ශ්‍රී ලංකා නියෝජිතයන්ගේ වන්නේ මධ්‍යම පරිසර ඇඟවීමක් වායු-ශබ්ද-කම්පන පාලන ඒකකය විසින් අනෙකුත් දකුණු ආසියානු රටවලට සමගාමීව මාලේ සම්මුතිය යටතේ වන අන්තර් දේශ සීමා වායු දූෂණ පාලන වැඩපිළිවෙළ ක්‍රියාවට නංවනු ලැබේ. ඉහතින් දක්වන ලද මධ්‍යස්ථානයේ දී සංසරණ වායුගෝලීය වාතයේ තත්ත්වය අක්‍රීය සාම්පල භාවිතයෙන් පරීක්ෂා කෙරෙන අතර, නයිට්‍රජන් ඩයොක්සයිඩ්, සල්ෆර් ඩයොක්සයිඩ් සහ ඕසෝන් සඳහා දුටුවැව ප්‍රදේශයේ දී ද පරීක්ෂණ පවැත්වේ. එසේම දොරමඩලාට පරීක්ෂා වැඩ බිමෙහි දී සනීපනා සංසරණ වායුගෝලීය වාතයේ සංයුතිය සම්බන්ධ පරීක්ෂණ ද සිදු කෙරේ.

අමිල වැසි පාලනය

මාලේ සම්මුතිය යටතේ අන්තර් දේශ සීමා වායු දූෂණය හේතුවෙන් අමිල වැසි ඇති වීමේ හැකියාව හඳුනා ගැනීම සඳහා වායු-ශබ්ද-කම්පන පාලන ඒකකය විසින් අමිල වැසි පාලන ව්‍යාපෘතිය ක්‍රියාත්මක කරනු ලැබේ. මෙම ව්‍යාපෘතිය සඳහා දොරමඩලාවේ පිහිටි මාලේ ව්‍යාපෘති උපදේශක කමිටුව විසින් ලබා දෙන නිර්දේශ මත ආදර්ශ වැඩ බිම් තෝරා ගනු ලැබේ. ඒ අනුව දොරමඩලාව සහ මිහින්තලේ ආශ්‍රිත වැසි පලය තෙත් එකතු සහ සමුභ එකතු වශයෙන් එකතු කර ආම්ලිකතාව (Ph අගය), පෘෂ්ඨය වාලන ස්වභාවය සහ වර්ෂාපතනය සඳහා පරීක්ෂණ පවත්වනු ලැබේ.

විමෝචන සංඛ්‍යා ලේඛන සකස් කිරීම

මධ්‍යම පරිසර අධිකාරියේ වායු-ශබ්ද-කම්පන පාලන ඒකකය දකුණු ආසියානු කලාපයේ විමෝචන සංඛ්‍යා ලේඛන සකස් කිරීම සඳහා වන මධ්‍යස්ථානය ලෙස තෝරාගනු ලැබ ඇත. වායු දූෂණය පාලනය කිරීම හා වැළැක්වීම සහ වායු දූෂණයෙන් දකුණු ආසියානු දේශ සීමා අතර ඇති විය හැකි බලපෑම් සඳහා වන මාලේ සම්මුතිය යටතේ ජාතික සහ අන්තර්ජාතික වැඩිමුළු 2012 මැයි මාසයේ දී පවත්වන ලදී. ජාතික වැඩිමුළුවෙහි ප්‍රධාන අරමුණ වූයේ විමෝචන සංඛ්‍යා ලේඛන සකස් කිරීම සම්බන්ධයෙන් පුහුණුවක් ලබා දීම මගින් පාර්ශ්වකරුවන්ගේ සංවිධාන සහ ආයතන සමග ඒකාබද්ධව දත්ත එක් රැස් කිරීමේ ජාලයක් ස්ථාපනය කිරීමයි. අන්තර්ජාතික වැඩිමුළුවෙහි ප්‍රධාන අරමුණ වූයේ වායු තත්ත්ව කළමනාකරණයෙහි මූලික අවශ්‍යතාවයක් වන විමෝචන සංඛ්‍යා ලේඛන රචනා කිරීම සහ ඒකාබද්ධ තක්සේරුකරණ ආකෘතියක් සංවර්ධනය කිරීම සඳහා පුහුණුවක් ලබා දීමයි. 2012 වර්ෂය අවසානයේ දී සියළුම සහභාගීත්ව රටවල් විසින් පවතින දත්ත ආශ්‍රයෙන් වර්ෂ 2005 සඳහා විමෝචන සංඛ්‍යා ලේඛන වාර්තා සකස් කර ඉදිරිපත් කර තිබුණි.

ශබ්ද සහ කම්පන මිනුම්/ කර්මාන්ත ශබ්ද විමෝචන මිනුම්

ශ්‍රී ලංකා සමාජයේ මහජනයා පීඩාවට පත් කරන නවීන් ප්‍රධාන පරිසර ගැටළුවක් නම් ශබ්ද දූෂණයයි. මධ්‍යම පරිසර අධිකාරියේ රසායනාගාරය වෙත කර්මාන්ත ක්‍රියාකාරකම් මගින් ඇති කෙරෙන ශබ්ද දූෂණයන් මෙන්ම ප්‍රජා ක්‍රියාකාරකම් මගින් ඇති කෙරෙන ශබ්ද දූෂණයන් පිළිබඳව ද බොහෝ චෝදනා සහ පැමිණිලි ලැබේ. ජාතික ශබ්ද පාලන රෙගුලාසි සංශෝධනය කිරීම සඳහා ශබ්ද පිළිබඳ තාක්ෂණික විශේෂඥයින්ගෙන් සමන්විත තාක්ෂණික කමිටුවක් පත් කර ඇත. සම්පාදනය කර ඇති නව රෙගුලාසි, ප්‍රායෝගික ක්‍රියා ව්‍යවස්ථාව සම්පාදනය කිරීමෙන් පසුව ගැසට් පත්‍රයෙහි මුද්‍රණය කර පල කිරීමට නියමිතයි. ශබ්දය ආශ්‍රිත මිනුම් අනුමත සීමා යටතේ පාලනය කරනු ලැබේ. මීට අමතරව පාරිභෝගිකයින් විසින් කරන ලද ඉල්ලීම් අනුව රසායනාගාරය විසින් වාණිජමය වශයෙන් ද ශබ්ද සීමා මිනුම් ලබා ගැනීම සඳහා දායකත්වය ලබා දෙනු ලැබේ.

රටවාහන මගින් සිදු කෙරෙන ශබ්ද දූෂණය පාලනය කිරීම සඳහා රටවාහන නලා හැඩවීම පාලනය කිරීමේ රෙගුලාසි ගැසට් ක්වේතයේ පල කර ඇති අතර රටවාහන නලා හැඩ පරීක්ෂා ව්‍යාපෘතිය ස්ථාපනය කර ඇත.

මෙයට සමගාමීව, මෙම ඒකකයේ මිළඟ සැලසුම වන්නේ ෆොසිල ඉන්ධන තත්ත්ව පරීක්ෂා කටයුතු සිදු කිරීම ඇරඹීමටයි. ප්‍රවාහනය, බල ශක්ති නිෂ්පාදනය සහ කර්මාන්ත ක්‍රියාකාරකම් ආදියේ දී භාවිතා කෙරෙන තත්ත්වයෙන් බාල ඉන්ධන දහනය වායු දූෂණයේ ප්‍රධාන සාධකය වීම මෙයට හේතුව යි. ජාතික පරිසර පනත යටතේ දක්වා ඇති ලමිතින්ට අදාලව ඉන්ධන තත්ත්වය පවතින්නේ දැ යි පරීක්ෂාකිරීමට පරීක්ෂණ තත්ත්ව පහසුකම් වැඩි වර්ධනය කිරීම මගින් ඉඩ සැලසෙනු ඇත.

Tuesday, 12 November 2013 09:55 අවසන් වරට යාවත්කාල කළ දිනය

southern-expressway-development)
There is a massive requirement of soli and metals for...

අලුත් තොරතුරු

රාජ්‍ය නොවන ප්‍රජා පාරිසරික සංවිධාන ලියපදිංචි කිරීම (/web/?option=com_content&view=article&layout=edit&id=885)

ප්‍රසම්පාදන දැන්වීම් (/web/?option=com_content&view=article&layout=edit&id=888)

රැකියා අවස්ථා (/web/?option=com_content&view=article&layout=edit&id=852)

මහජන අදහස් දැක්වීම සඳහා විවෘතව ඇති පාරිසරික ගැටළු තක්සේරුකරණ වාර්තා (/web/?option=com_content&view=article&layout=edit&id=862)

මහජනතාවට ඇරුණු - පාරිසරික ආරක්ෂණ ප්‍රදේශ (/web/images/pdf/whats/Paper_add_Sinhala.pdf)

ක්ෂණික සබැඳි

පැමිණිලි ඉදිරිපත් කිරීම (/web/si/make-complaint)

වායුගෝලීය තත්ත්වය (/web/si/air-quality)

ජල තත්වය (/web/si/water)

බාගත කිරීම් (/web/si/downloads)

නවතම ව්‍යාපෘති (/web/si/latest-projects)

ජාතික තෙත් බිම් නාමාවලිය (http://203.115.26.10/wetland)

ජලාස්චික්/ පොලිතීන්/අපද්‍රව්‍ය එක්රැස් කරන්නෝ සහ පිළිසරුකරුවෝ (/web/?option=com_content&view=article&layout=edit&id=කාලගුණය

(http://www.meteo.gov.lk/)

ස්ථානීය වාර්තා (http://www.dmc.gov.lk/situation%20report.htm)

ශ්‍රී ලංකාවේ නර්ජිත වන සතුන් සහ තුරු ලතා ඇතුළත් රතු දත්ත ලේඛනය

(/web/images/pdf/redlist2012.pdf)

අනුබද්ධිත ආයතන (/web/si/environment-related-agencies)

Licensed Collectors of Electronic Waste Management in Sri Lanka

(/web/si/index.php?option=com-content-view-article-layout-edit-id-983)

CEA e-Repository (/web/si/cea-e-repository)

(https://www.youtube.com/channel/UCAJe39mk...)

අප අමතන්න

මධ්‍යම පරිසර අධිකාරිය



ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයේ ගැසට් පත්‍රය

අති විශේෂ

අංක 2010/23 - 2017 මාර්තු මස 16 වැනි බ්‍රහස්පතින්දා - 2017.03.16

(රජයේ බලයපිට ප්‍රසිද්ධ කරන ලදී)

I වැනි කොටස: (I) වැනි ඡේදය - සාමාන්‍ය රජයේ නිවේදන

1964 අංක 29 ජල සම්පත් මණ්ඩල පනත
16 වගන්තිය

වාරිමාර්ග හා ජල සම්පත් කළමනාකරණ අමාත්‍යාංශයේ ගාම්භී විජේ විජයමුණි සොයිසා වන මා හට 1964 අංක 29 දරන ජල සම්පත් මණ්ඩල පනතෙහි (සංශෝධිත 1999 අංක 42 දරන පනත) 16 වගන්තිය ප්‍රකාරව හිමිව තිබෙන්නාවූ බලතල අනුව ජල සම්පත් මණ්ඩල නියෝග මින් ප්‍රකාශයට පත් කරමි.

ගාම්භී විජේ විජයමුණි සොයිසා,
වාරිමාර්ග හා ජල සම්පත් කළමනාකරණ අමාත්‍ය.

2017 මාර්තු මස 15 වැනි දින,
කොළඹ,
වාරිමාර්ග හා ජල සම්පත් කළමනාකරණ අමාත්‍යාංශයේ දී ය.

1964 අංක 29 දරන ජල සම්පත් මණ්ඩල පනතේ 12(1) වගන්තියේ සඳහන්
කාරණා සම්බන්ධයෙන් එකී පනතේ 16(1) හා 16(2) වගන්තිය යටතේ ක්‍රියාත්මක නියෝග

(1) මොනසම් රාජ්‍ය හෝ පළාත් පාලන ආයතනයක්, රාජ්‍ය නොවන සංවිධානයක් හෝ ආයතනයක් හෝ පුද්ගලයකු මින් ඉදිරියට පහත සඳහන් කාර්යයන් හෝ ව්‍යාපෘතීන් සඳහා, ස්වභාවික ජල උල්පතක් හෝ ගැඹුරු හෝ නොගැඹුරු භූගත ජලය භාවිතා කරනු ලබන්නේ නම්,

එම කාර්යයේ හෝ ව්‍යාපෘතියේ සම්පූර්ණ තොරතුරු ඇතුළත් කළ ව්‍යාපෘති යෝජනාව, ජල සම්පත් මණ්ඩලයේ අධීක්ෂණය සඳහා ඉදිරිපත් කළ යුතු අතර ජල සම්පත් මණ්ඩලය විසින් දෙනු ලබන නියමයන්ට අනුකූලව එම ව්‍යාපෘති ක්‍රියාත්මක කළ යුතු ය.

එකී කාර්යය හෝ ව්‍යාපෘතිය ක්‍රියාත්මක කිරීමට ප්‍රථම ජල සම්පත් මණ්ඩලයේ නිසි ලිඛිත අනුමැතිය ලබාගත යුතු ය.

එනම්,

(අ) කෘෂිකාර්මික කටයුතු සඳහා ඉදි කරනු ලබන විෂ්කම්භය මීටර් 4ක් හෝ ඊට වැඩි වශා ලීං ;

(ආ) වාණිජමය කෘෂිකාර්මික කටයුතු හා කර්මාන්ත අවශ්‍යතා සඳහා ඉදිකරනු ලබන නිෂ්පාදන නල ලීං හා වල ලීං හෝ ස්වභාවික ජල උල්පත්, නිෂ්පාදන නල ලීං, වල ලීං, යොදාගනිමින් කරනු ලබන වාණිජමය, කෘෂිකාර්මික කටයුත්තක් ව්‍යාපාරයක් හෝ වෙනත් ඕනෑම කර්මාන්තයක් (ඇමුණුම 01).

(2) නල ලීං ඉදිකිරීමේ නියැලෙන සියලු ආයතන ජල සම්පත් මණ්ඩලයේ ලියාපදිංචි විය යුතු ය.



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මෙම අති විශේෂ ගැසට් පත්‍රය www.documents.gov.lk වෙබ් අඩවියෙන් බාගත කළ හැක.

නල ළිං ඉදිකිරීම ජල සම්පත් මණ්ඩලය විසින් ලබා දෙනු ලබන උපදෙස් අනුව සිදු කළ යුතු අතර පරිසරයට හානි නොවන පරිදි එයින් ලබා ගත හැකි ජල ප්‍රමාණයන් නිවැරදි ලෙස තක්සේරු කිරීම ජල සම්පත් මණ්ඩලයේ අධීක්ෂණය යටතේ සිදුකර ඊට අදාළ අනුමැතිය ලබා ගත යුතු ය. ඒ අනුව දිනකදී ලබාගන්නා ජල ප්‍රමාණය මැනීම සඳහා අදාළ ආයතනය විසින්ම ජල මනු (flow meter) සවිකිරීම සිදු කළ යුතු අතර දෛනිකව ලබා ගන්නා ජල ප්‍රමාණයන් පිළිබඳ දත්තයන් නඩත්තු කිරීම කළ යුතු ය. අවශ්‍ය අවස්ථාවන්හිදී පරීක්ෂා කිරීම සඳහා මෙය ඉදිරිපත් කිරීමට අදාළ ආයතනය බැඳී සිටී.

ඉහත ලියාපදිංචි ආයතන විසින් නව ඉදිකිරීම් සිදු කරනු ලබන්නේ නම් එසේ ඉදිකරනු ලබන සියලු ගැඹුරු හෝ නොගැඹුරු නල ළිං පිළිබඳ පහත දැක්වෙන දත්තයන් සෑම මාස 03 කට වරක් ජල සම්පත් මණ්ඩලය වෙත ලබාදිය යුතු ය. (ඇමුණුම 02, ඇමුණුම 03)

ජල සම්පත් මණ්ඩලය විසින් මෙම දත්තයන් මණ්ඩලයේ දත්ත පද්ධතියට ඇතුළත් කරනු ලබන අතර ඒවා භූගත ජල සම්පත් කළමනාකරණය සඳහා ද ඉදිරි ව්‍යාපෘති සැලසුම්කරණය සඳහා ද භාවිතා කෙරේ.

(3) ජලය බෝතල කිරීමේ කාර්මාන්තයෙහි, බීම නිෂ්පාදනයෙහි නියැලෙන මොනසම් රාජ්‍ය හෝ පළාත් පාලන ආයතනයක් හෝ රාජ්‍ය නොවන සංවිධානයක් හෝ ආයතනයක් හෝ පුද්ගලයකු ස්වභාවික ජල උල්පතක් හෝ භූගත ජලය සිය නිෂ්පාදන කටයුතු සඳහා උපයෝගී කරගනු ලබන්නේ නම් එකී ජල මූලාශ්‍රයේ ජල නියැදියක් සෑම මාස 06 කට වරක් රජයේ පිළිගත් රසායනාගාරයකින් (ඇමුණුම 04) මගින් සිදුකර අදාළ විශ්ලේෂණ වාර්තාව අනුමැතිය සඳහා ජල සම්පත් මණ්ඩලය වෙත යොමු කළ යුතු ය.

(4) වාණිජමය කෘෂිකර්මාන්තය සඳහා හෝ කර්මාන්ත සඳහා (ඇමුණුම 05) මසකට ලීටර් 30000 ක භූගත ජලය ලබාගන්නා වූ ව්‍යාපෘති සඳහා අදාළ ජල ප්‍රභවය සම්බන්ධව තත්ත්ව වාර්තාවක් (Perimeter Protection Report) ජල සම්පත් මණ්ඩලයෙන් ලබාගත යුතු වේ.

(5) ස්වභාවික ජල උල්පතක් හෝ භූගත ජලය උපයෝගී කර ගනිමින් නිෂ්පාදන හෝ සේවා කටයුතු සිදුකරනු ලබන ආයතන හෝ ස්ථාන පූර්ව දැනුම් දීමක් සහිතව හෝ රහිතව දවසේ කුමන හෝ සාධාරණ කාලයන්හි දී එකී නිෂ්පාදන හෝ සේවා ස්ථානවලට ඇතුළු වී පරීක්ෂා කිරීමේ අයිතිය ජල සම්පත් මණ්ඩලය සතු ය.

(6) ඉහත ඡේදයන්හි විස්තර කර ඇති පරිදි කටයුතු නොකරන රාජ්‍ය හෝ පළාත් පාලන ආයතනයක් හෝ රාජ්‍ය නොවන සංවිධානයක් හෝ පුද්ගලයෙකුට එරෙහිව 1964 අංක 29 දරන හා සංශෝධිත 1999 අංක 42 දරන ජල සම්පත් මණ්ඩල පනතේ 20 වන වගන්තිය අනුව නීත්‍යානුකූලව කටයුතු කිරීමට ජල සම්පත් මණ්ඩලය විසින් ක්‍රියා කරනු ඇත.

ඇමුණුම 01

ස්වභාවික ජල උල්පතක් හෝ භූගත ජලය උපයෝගී කරගනිමින් කරනු ලබන කර්මාන්ත වන්නේ

- 01. පානීය ජල බෝතල් කර්මාන්තය
- 02. වෙනත් බීම නිෂ්පාදන කර්මාන්ත
- 03. රෙදි සෝදන ස්ථාන
- 04. වාහන සේවා ස්ථාන
- 05. හෝටල් කර්මාන්තය
- 06. පැල තවාන්
- 07. කෘෂිකාර්මික ගොවිපළ
- 08. සත්ව පාලන ගොවිපළ
- 09. පෞද්ගලික මට්ටමින් ජලය විකුණනු ලබන ස්ථාන
- 10. කොහු සහ රබර් ආශ්‍රිත කර්මාන්තශාලා
- 11. අයිස් කර්මාන්ත ශාලා
- 12. ජල සම්පත් මණ්ඩලය විසින් තීරණය කරනු ලබන වෙනත් කර්මාන්ත

ඇමුණුම 02

ගැඹුරු හා නොගැඹුරු නළු ළිංවලට අදාළ දත්තයන් වනුයේ

01. ළිඳ පිහිටි ස්ථානය : GPS ඛණ්ඩාංක
02. භූ භෞතික විද්‍යාත්මක දත්ත
03. ළිඳේ විෂ්කම්භය
04. ළිඳේ ගැඹුර
05. ළිඳේ පස් හා පාෂාණ සම්බන්ධ ලොග් වාර්තා
06. ළිඳේ විදුම් වාර්තාව
07. ළිඳේ ජල මට්ටම
08. ළිඳේ පොම්ප පරීක්ෂණ වාර්තාව
09. ළිං ජලයේ ගුණාත්මකතාව සම්බන්ධ වාර්තා (භෞතික, රසායනික, බැක්ටීරියා, ක්ෂුද්‍ර ජීවී සහ බැර ලෝහ පරීක්ෂාවන් ඇතුළත්ව)
10. ළිඳේ පාෂාණවල පිහිටි කුස්තුරවලට අදාළ විස්තර

ඇමුණුම 03

කෘෂි වගා ළිංවලට අදාළ දත්තයන් වනුයේ

01. ළිඳ පිහිටි ස්ථානය
02. භූ භෞතික විද්‍යාත්මක දත්ත
03. ළිඳේ විෂ්කම්භය
04. ළිඳේ ගැඹුර
05. තද පාෂාණය දක්වා භාරා ඇත්ද යන බව
06. ළිඳේ ජල මට්ටම
07. ළිඳේ පොම්ප පරීක්ෂණ වාර්තාව
08. ළිං ජලයේ ගුණාත්මකතාව සම්බන්ධ වාර්තා

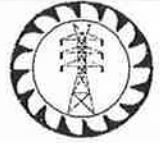
ඇමුණුම 04

රජයේ පිළිගත් රසායනාගාර

01. කාර්මික තාක්ෂණික ආයතනය
02. ජල සම්පත් මණ්ඩලය
03. ජල සම්පාදන හා ජලාපවාහන මණ්ඩලය
04. ශ්‍රී ලංකා ප්‍රමිති කාර්යාංශය
05. භූ විද්‍යා හා පතල් කාර්යාංශය
06. ජාතික ගොඩනැගිලි පර්යේෂණ ආයතනය

ඇමුණුම 05

ඇමුණුම 01 න් දක්වා ඇති සියලුම කර්මාන්ත අයත් වේ.



Your ref:

My ref: LV/T/2018/0126

Date: 2018-04-23

Registered Post

Deputy General Manager (Operations)
Water Resources Board,
2A, Hector Kobbekaduwa Mawatha,
Colombo 07.

Dear Sir,

Letter of Award

**Ground Water Monitoring of Surrounding Area as a requirement of Environment
Concern in Lakvijaya Power Plant**

Tender No: LV/T/2018/126

This refers to your revised cost estimate dated 22nd March, 2018, submitted to the Power Plant Manager, Lakvijaya Power Plant, Ceylon Electricity Board, on subjected matter. I am pleased to inform you that the proposals and the cost estimate for water quality monitoring program has been accepted by CEB for the above tender. Accordingly you are hereby awarded to provide the service in accordance with your proposal, and as per the gazette 1685/11 dated 21st December 2010. This award is subjected to the conditions stipulated in the above tender.

The report of the study shall include the suggestions for further monitoring of critical points as per the weather pattern of the area throughout the year. All the raw data and tabulated data as per the said gazette, has to be submitted as soft copies as well as certified hard copies.

Total cost for the water quality monitoring program (Phase I and Phase II) is Sri Lankan Rupees Three Million Nine Hundred Fifty Two Thousand Two Hundred Fifty Two and Cents point One (3,952,252.01 LKR) only. (Including NBT 2.041% and VAT 15%)

An advance payment of Rs. 2,000,000.00 will be made before commencing the study and balance after submission of the final report.

You are kindly requested to sign and return a copy of this letter to accept the award within 7 (seven) days from the date of this letter of award.

Thanking you,

Yours faithfully,

CEYLON ELECTRICITY BOARD,

Eng. A.B.M.T. Abeykoon
Chief Engineer (Commercial)

Chief Engineer (Commercial)
Lakvijaya Power Plant
Ceylon Electricity Board
Norochcholai.

Sgd/- Eng. P.G.P. Indrasiri
Power Plant Manager
(Lakvijaya Power Plant)

OFFICE OF THE POWER PLANT MANAGER – LAKVIJAYA POWER PLANT

Cc : General Manager (CEB) - f.i.pl.
: Addl. General Manager (Generation) - f.i. pl.
: Chief Internal Auditor - f.i. pl.
: Civil Eng.(Env.)/CE(C&EM) - pl. follow.
: Accountant (Payments)LVPP - f.i. pl.

To: Power Plant Manager – LVPP

I/We confirm acceptance of the award and shall abide by the terms and conditions of the award.

.....
Signature & frank of the Bidder

-/is

(Date: 12/12/2011)
12/12/2011

LVPS Outages Summary - Unit wise

Year	Unit 1		Unit 2		Unit 3	
	Outage Duration		Outage Duration		Outage Duration	
	Hours	Days	Hours	Days	Hours	Days
2016 (Jan - Dec)	4706:04:00	796.09	421:50:00	17.58	516:59:00	21.54
2017 (Jan- Dec)	1004:18:00	41.85	1556:23:00	64.85	1968:11:00	82.62
2018 (Jan - Apr)	312:27:00	13.02	290:25:00	12.10	-	-
Total	6022:49:00	250.95	2268:38:00	94.53	2485:10:00	103.55

LVPS Outages Summary According to the Reason for Shutdown

Unit & Year	Commissioning		Internal Fault		External Fault		Maintenance		SCC Request		
	Hours	Days	Hours	Days	Hours	Days	Hours	Days	Hours	Days	
Unit 1	2016	232:18:00	9.68	3622:49:00	150.95	29.38	705:12:00	-	145:45:00	6.07	
	2017	-	-	1004:18:00	41.85	-	-	-	-	-	
	2018	-	-	-	-	-	-	312:27:00	13.02	-	
Unit 2	2016	-	-	135:08:00	5.63	286:42:00	11.95	-	-	-	
	2017	-	-	1551:06:00	64.63	5:17:00	0.22	-	-	-	
	2018	-	-	290:25:00	12.10	-	-	-	-	-	
Unit 3	2016	-	-	147:23:00	6.14	369:36:00	15.40	-	-	-	
	2017	-	-	1707:27:00	71.14	-	-	260:44:00	10.86	-	
	2018	-	-	-	-	-	-	-	-	-	
Total		232:18:00	9.68	8458:36:00	352.44	56.95	1366:47:00	573:11:00	23.88	145:45:00	6.07

OVERHAUL PLAN OF LAKVIJAYA POWER STATION

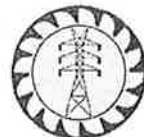
Unit	Year 2018	Year 2019	Year 2020	Year 2021
U#1	C (April)	B (May/June)	C (April)	A (April/May/June)
U#2	B (June/July)	A (Sep/Oct/Nov)	C (Oct)	B (Oct/Nov)
U#3	B (Oct/Nov)	A (Nov/Dec/Jan)	C (Nov)	C (Nov/Dec)

Level "A" – 100 days

Level "B" - 45 days

Level "C" - 25 Days(depends on)

ලංකා විදුලිබල මණ්ඩලය
இலங்கை மின்சார சபை
CEYLON ELECTRICITY BOARD



මිබේ අංකය: මගේ අංකය:එල්වීපී/පීපීඑම්/පොදු/6- 149

දිනය: 2018 ජූනි මස 05 වැනිදා

නියෝජ්‍ය විගණකාධිපති,
රජයේ විගණන අංශය,
PER (පරිසර),6 වන මහල,
නො.07, එන්.එම්.පෙරේරා මාවත,
කොටා ටෙරසය, කොළඹ 08.

මහත්මයාණෙනි,

විගණන කටයුතු සඳහා වායු විමෝචන පරීක්ෂණ සම්බන්ධ තොරතුරු ලබා දීම, ලක්විජය බලාගාරය

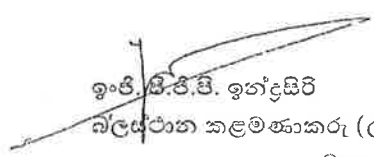
උක්ත කරුණට අදාළව ඔබ විසින් යොමු කර ඇති අංක PER/B/2018/වි.තොරතුරු/10 හා 2018 මැයි 18 දිනැති ලිපිය හා සම්බන්ධයෙනි.

ඉහත ලිපියෙන් විමසා ඇති වායු විමෝචන පරීක්ෂණ පිළිබඳ තොරතුරු පහතින් දක්වා ඇත.

1. සෑම ඒකකයක් (Unit 1, Unit 2, Unit 3) සඳහාම විමිනිය හරහා විමෝචනය වන දුමේ අන්තර්ගතයන් හා ප්‍රමාණයන් පිළිබඳ පරීක්ෂණ සිදුකරනු ලබයි.
2. සෑම දිනකම විමෝචන පරීක්ෂණය සිදුකරනු ලබයි. කිසියම් දෝෂයක් හටගත්විට එය අළුත්වැඩියා කරමින් මෙම ඒකක තුනෙහිම පරීක්ෂණ කටයුතු සිදුකරනු ලැබේ. (සෑම ඒකකයකම පසුගිය මස වායු විමෝචන පරීක්ෂණ වාර්තා මේ සමඟ අමුණා ඇත - ඇමුණුම 01).
3. ඒකක තුනෙහිම FGD (Flue Gas Desulphurization) යන්ත්‍ර ක්‍රියාත්මක වේ. අළුත්වැඩියාව සඳහා විදේශයකට යවා ඇත්තේ FGD යන්ත්‍රයට දහන වායුව ඇතුළුවීමට පළමුව සහ ESP (Electro Static Precipitator) යන්ත්‍රයට පසුව සවිකර ඇති දුම පරීක්ෂණ උපකරණ වන අතර එහි ප්‍රගතිය පහතින් දැක්වේ.
 - a. ඒකක තුනෙහිම ESP යන්ත්‍ර යෙන් පසු විමෝචනය වන වායුවේ ගුණාත්මකභාවය මනින උපකරණ තඩත්තුව සඳහා යවා ඇත.
 - b. 2017 සැප්තැම්බර් මාසයේ යවා ඇති මෙම උපකරණයේ අළුත්වැඩියාව 2018 ජූලි මාසයේ නිමවේයැයි දන්වා ඇත.
 - c. 2018 අගෝස්තු මාසයේ සිට එය යථාතත්වයට පත්කිරීමට බලාපොරොත්තු වේ.
4. කාලගුණික දත්ත රැස්කිරීමේ ඒකකවලින් එක් ඒකකයක් අළුත්වැඩියාවෙන් පසු නැවත ක්‍රියාත්මක වේ. අනෙක් ඒකකය තඩත්තූ කටයුත්තක පවතී. දත්ත ගබඩාවන උපකරණයේ ඇතිවූ දෝෂයක් අක්‍රියවීමට හේතුවිය. ජැටිය ආසන්නයේ ඇති කාලගුණික දත්ත රැස්කිරීමේ ඒකකයේ දත්ත ලබාගැනීමේ හැකියාව අළුත්වැඩියාවෙන් පසු ලැබී ඇත. අනෙක් උපකරණයේ දත්ත 2017 ඔක්තෝබර් මාසය තෙක් ලබාගෙන ඇත (කාලගුණික දත්ත - ඇමුණුම 02).

ඉහත සඳහන් වායු විමෝචන පරීක්ෂණ පිළිබඳ තොරතුරු ඔබගේ කාරුණික දැනගැනීම සහ අවශ්‍ය කටයුතු සඳහා ඉදිරිපත් කරමි.

ස්තූතියි,
මෙයට විශ්වාසී,
ලංකා විදුලි බල මණ්ඩලය.


ඉංජි. පී. ජී. පී. ඉන්ද්‍රසිරි
බල ස්ථාන කළමනාකරු (ලක්විජය බලාගාරය)

ඉංජි. පී. ජී. පී. ඉන්ද්‍රසිරි
බල ස්ථාන කළමනාකරු
ලක්විජය බලාගාරය
ලංකා විදුලිබල මණ්ඩලය.

බල ස්ථාන කළමනාකරු කාර්යාලය - ලක්විජය බල ස්ථානය



ඔබේ අංකය: මගේ අංකය:එල්ටීසීපී/පීපීඑම්/පොදු/6-148

දිනය: 2018 ජූනි මස 05 වැනිදා

නියෝජ්‍ය විගණකාධිපති,
රජයේ විගණන දංගය,
ලංකා විදුලිබල මණ්ඩලය,
කොළඹ 02.

මහත්මයාණෙනි,

ලක්විජය බලාගාරය නිසා ඇතිවී ඇති පාරිසරික ගැටළු නිරාකරණය පිළිබඳ රැගෙන ඇති ක්‍රියාමාර්ග වල දළ කාල රාමුව

උක්ත කරුණට අදාළව ඔබ විසින් යොමු කර ඇති අංක POE/C/CEB/2018/18 හා 2018 මැයි 08 දිනැති ලිපිය හා සම්බන්ධයෙනි.

එම ලිපිය මගින් ඉල්ලා ඇති ලක්විජය බලාගාරය නිසා ඇති වී ඇති පාරිසරික ගැටළු නිරාකරණය කිරීම සඳහා ගෙන ඇති ක්‍රියාමාර්ගවල වර්තමාන ප්‍රගතිය සඳහන් වාර්තාව මේ සමඟ ඉදිරිපත් කරමි.

ස්තූතියි,
මෙයට විශ්වාසී,
ලංකා විදුලි බල මණ්ඩලය.

ඉංජි. පී.ජී.පී. ඉන්ද්‍රසිරි
බලාපොරොත්තු කළමනාකරු
ලක්විජය බලාගාරය

ඉංජි. පී.ජී.පී. ඉන්ද්‍රසිරි
බලාපොරොත්තු කළමනාකරු
ලක්විජය බලාගාරය
ලංකා විදුලිබල මණ්ඩලය.

බලාපොරොත්තු කළමනාකරු කාර්යාලය - ලක්විජය බලාපොරොත්තු

පාරිසරික ගැටළු වලක්වා ගැනීමේ අරමුණින් ක්‍රියාත්මක වන වැඩ සටහන් දළ කාලරාමුව

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
1.	ගැටළුව : ගල් අඟුරු කුඩු (දුච්චි) අසල ගම්මානය වෙත සුළං මගින් ව්‍යාප්ත වීම.				
1.1	ගල් අඟුරු වටා මගින් ව්‍යාප්ත වීම ඉදිකිරීමට අංගනය වැලැක්වීම සඳහා අංගනයේ ඉතිරි වූ ප්‍රදේශය වටා සුළං බාධකය ඉදිකිරීම.	2018 පෙබරවාරි 05 වන දින වෙන්වරය පිරිනැමීම සිදුකර ඇත. වීම ඉදිකිරීමට නියමිත සුළං බාධකයේ සැලසුම පිළිබඳව තවදුරටත් අධ්‍යයනයක් සිදුකිරීම සඳහා යෝජනා ඉදිරිපත් වී ඇති බැවින් එම අධ්‍යයනයේ ප්‍රතිඵල ලැබීමෙන් අනතුරුව සුළං බාධකයේ ඉදිකිරීම් කටයුතු සිදුකරනු ඇත.	මොරටුව විශ්වවිද්‍යාලය මගින් සිදුකරන මෙම අධ්‍යයනයේ වාර්තාව කඩිනමින් ලබාදීමට අවශ්‍ය කටයුතු එම අධ්‍යයන කාර්ය මණ්ඩලය විසින් සිදුකරමින් පවතී.	2018 ජූලි	2019 ජූනි
			එම අධ්‍යයනයේ ප්‍රතිඵල මත දැනට සැලසුම් කර ඇති පරිදි සුළං බාධකය ඉදිකිරීම හෝ සැලසුම වෙනස්කර ඉදිරිපත්වන නව සැලසුමට අනුව ඉදිකිරීම සඳහා අවශ්‍ය වෙන්වර පවිසාටිය ක්‍රියාත්මක කිරීමට නියමිතය.		

අංකය	විස්තරය	විස්තරය	විස්තරය	අරමුභක දිනය	නිමවන දිනය
1.	ගැටළුව : ගල් අඟුරු කුඩු (දුට්ටි) අසල ගම්මානය වෙත පුළුං මහින් ව්‍යාප්ත වීම.				
1.2	ගල් අඟුරු අංගනය වෙත ජංගම ජල ඉසින යන්ත්‍ර යෙදවීම.	බෝසර්, ලෝඩර් සහ ට්‍රැක් වැනි යන්ත්‍ර ක්‍රියාකාරීත්වය මඟින් ගල් අඟුරු ගොඩ ගැසීමේ සහ ඉවත්කිරීම් වලදී ඇති වන දුට්ටිල මැඩ පැවැත්වීම.	පළවෙලින් මීටර් 60 ක් සහ මීටර් 80 ක් දුරට ජලය විසිරීමේ හැකියාව ඇති ජල විදින යන්ත්‍ර 2ක් මේ වන විට බලාගාරය සතුටු පවතී. නිරිතදිග මෝසම් සමය සඳහා මෙම යන්ත්‍ර භාවිතා කිරීම මේ වනවිටත් අරඹා ඇත. ගල් අඟුරු ගොඩ ගැසීමේ සහ නැවත ගැනීමේ කාර්යය සිදුකරනු ලබන Stacker Reclaimer යන්ත්‍ර 2 සඳහාද ජල විසිරුම් යන්ත්‍ර 2ක් මේ වන විටත් සවිකර ඇත. එමඟින් Stacker Reclaimer යන්ත්‍රය මගින් ගල් අඟුරු ගැනීමේදී හා පැටවීමේදී ඇතිවන දුට්ටිල සාලනය කිරීම සිදුකරයි.	2018 මැයි	අඛණ්ඩව ක්‍රියාත්මක වේ
1.3	ගල් අඟුරු අංගනයේ ජල විසිරුම් පද්ධතිය නැවත ක්‍රියාත්මක කරවීම.		ගල් අඟුරු අංගනයේ පිහිටුවා ඇති ජල විසිරුම් පද්ධතිය අත්වැසියා කර නැවත ක්‍රියාත්මක කිරීමට අවශ්‍ය කටයුතු සිදුකරමින් පවතී. එම අළුත්වැසියාවන් පූනි මස මැද භාගයේදී අවසන් කිරීමට නියමිතය. එමඟින් ගල් අඟුරු ගැනීමේදී හා පැටවීමේදී ඇතිවන දුට්ටිල සාලනය කිරීම සිදුකරයි.	2018 ජූනි	අඛණ්ඩව ක්‍රියාත්මක වේ.

අංකය	විලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
1.	ගැටළුව : ගල් අඟුරු කුඩු (දුච්චි) අසල ගම්මානය වෙත සුළං මහින් ව්‍යාප්ත වීම.				
1.4	ගල් අඟුරු අංගනයේ භාවිතයට නොගන්නා ගල් අඟුරු කොටසක් රසායනික ද්‍රාවණයක් යොදා ආවරණය කිරීම.	මෙම රසායනික ද්‍රාවණය 2018 අප්‍රේල් අග භාගය වන විට භාවිතයට නොගන්නා ගල් අඟුරු කොටසකට යොදා ගෙන සංවර්ධන කටයුතු වලදී ද භාවිතා කරන පරිසර හිතකාමී රසායනික ද්‍රව්‍යකි.	2018 අප්‍රේල් අග භාගය වන විට භාවිතයට නොගන්නා ගල් අඟුරු කොටසකට යොදා ගෙන සංවර්ධන කටයුතු වලදී ද භාවිතා කරන පරිසර හිතකාමී රසායනික ද්‍රව්‍යකි. ඇතිවීම වැලැක්වීම.	2018 අප්‍රේල්	අවශ්‍ය අවස්ථාවන්හිදී යෙදීම සිදුවේ.

අංකය	විලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
1.	ගැටළුව : ගල් අඟුරු කුඩු (දුර්ලි) අපල ගම්මානය වෙත සුළං මහින් ව්‍යාප්ත වීම.				
1.5	ගල් අඟුරු අංගනය සහ ගම අතර ගස්වලින් ස්වාරක්ෂක කලාපයක් ඇති කිරීම.	මෙම ක්‍රියාවලියේ අරමුණ ස්වාරක්ෂක කලාපයේ අඟුරු අංගනයේ ඇති උස ගස්වලින් දුර්ලි අංශු අපල පිහිටි ගම වෙත යාම අවම කිරීමයි.	<p>අලුතට බලාගාරය සහ ගම අතර පවතින ස්වාරක්ෂක කලාපය තුළ මුද්‍රිල්ල (<i>Barringtonia asiatica</i>) ශාක 90 ක් පමණ අළුතින් සිටුවා ඇත.</p> <p>ඉදිරියේදී වෙරළ තීරය සහ බලාගාරය අතර කලාපය සඳහා කස (<i>Casuarina equisetifolia</i>) ශාක 240 ක් පමණ සිටුවීමට නියමිතය.</p> <p>වෙරළ තීරය ආශ්‍රිතව වැටකෙයියා (<i>Pandanus tectorius</i>) පැල සිටුවීමේ වැඩසටහනක්ද පසුගියදා බලාගාර පරිශ්‍රයේදී ආරම්භ කරන ලදී. එයටමත් වැටකෙයියා පැල 150 ක් පමණ සිටුවීමට නියමිතය.</p> <p>වන සංරක්ෂණ දෙපාර්තමේන්තුව හරහා ස්වාරක්ෂක කලාපය නිර්මාණය කිරීමට සහ පවත්වාගෙන යාමට අවශ්‍ය උපදේශණය හා මගපෙන්වීම ලබාගැනීම සඳහා අවශ්‍ය කටයුතු සිදුකරමින් පවතී.</p>	2015 මැද භාගයේ සිට	අඛණ්ඩව ක්‍රියාත්මක වේ. 2015.06.07 2015.06.07 2015.06.07

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
2.	ගැටළුව : අළු අසල පිහිටි ගම වෙත ගමන් කිරීම.				
2.1	ගැටළුව : අළු අසල පිහිටි ගම වෙත ගමන් කිරීම - කෙටිකාලීන විසඳුම.				
2.1.1	අළු අංගනයේ කොටසක් අළු දියරමය මිශ්‍රණයක් මගින් වසා දැමීම.	කැවී ඇති අළු අංගනය මතට කොන්ක්‍රීට් මිශ්‍රණ යන්ත්‍ර උපයෝගී කර ගෙන අළු සහ ජලය මිශ්‍රකර සාදන ලද උතු ද්‍රාවණයක් මගින් අළු අංගනයේ කොටසක් වසා දැමීම.	මෙම ක්‍රියාවලිය දැනටමත් සිදුකර අවසන්ය. අළු අංගනය වටා පිහිටි ආනත මුහුණත මේ වන විට අළු දියකර සාදාගනු ලබන උතු ද්‍රාවණයකින් ආවරණය කර ඇත. මෙම ආවරණය හේතුවෙන් අළු සුළඟින් ව්‍යාප්තවීම වලකී. වාරකන් සමයේදී අළු බැහැරකිරීම සඳහා සීමිත හුම් ප්‍රමාණයක් ඉතිරි කරමින් අක්කර 7 ක පමණ හුම් ප්‍රමාණයක් හොඳින් සම්පීඩනය කිරීමෙන් අනතුරුව මෙම ද්‍රාවණය යොදා ආවරණය කර ඇත.	2018 මාර්තු	අවශ්‍ය අවස්ථාවන්හිදී යෙදීම සිදුවේ.
2.1.2	අළු අංගනය වැලී යොදා ආවරණය කිරීම.	ව්‍යාපෘතිය සඳහා කැනීම් කටයුතු සිදු කර ලබාගත් වැලී සංවිනය යොදා ගනිමින් අළු අංගනයෙහි කොටසක් ආවරණය කර ඇත.	මෙම ක්‍රියාවලිය දැනටමත් සිදුකර අවසන්ය. අළු අංගනයේ දැනට අළු බැහැර කිරීම සඳහා භාවිතා නොකරන ප්‍රදේශ වැලී යොදා ආවරණය කිරීම මගින් අළු සුළඟින් ව්‍යාප්ත වීම වලකා නු ලබයි. එම වැලී ආවරණය මත තාණ විශේෂ වර්ධනයද සිදුවන බැවින් අමතර ආවරණයක් සැලසීමද සිදුවේ.	2016 මුල් භාගයේදී	අවශ්‍ය අවස්ථාවන්හිදී යෙදීම සිදුවේ.

අංකය	විස්තරය	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
2.	ගැටළුව : අළු අසල පිහිටි ගම වෙත ගමන් කිරීම.				
2.1	ගැටළුව : අළු අසල පිහිටි ගම වෙත ගමන් කිරීම - කෙටිකාලීන විසඳුම.				
2.1.3	ප්‍රවාහනය සහ අළු අසල ගොඩබැඳීමේදී අළු කැන්වයෙන් තබා ගැනීම, අළු අභ්‍යවශ්‍ය වේ. මෙය අංගනය තෙත්ව මිනිසුන් සහ යන්ත්‍ර යොදා තබා ගැනීම, සිදු කරන ක්‍රියාවලියකි. මේ මට්ටම කිරීම සඳහා කුලී පදනම මත ට්‍රැක්, වතුර බඩුසර, ඩෝසර් සහ රෝලර් ගැනීම අවශ්‍ය වේ.	මෙම අළු, අළු අංගනයේ දැනටමත් වාහන කුලී පදනම මත ලබාගෙන අඛණ්ඩව වැඩෙහි යොදවා ඇත.	2017 මැයි		අඛණ්ඩව ක්‍රියාත්මක වේ.
2.2	ගැටළුව : අළු අසල පිහිටි ගම වෙත ගමන් කිරීම - දීර්ඝ කාලීන විසඳුම.				
2.2.1	ඒලයි ඇෂ් බැහැර කිරීම.	ඒලයි ඇෂ් සීමෙන්ති කාර්මාන්තය, කාර්මාන්තය, සෙවිලි තහඩු කාර්මාන්තය ආදී කාර්යන් සඳහා මේ වන විටත් 50% පමණ අළු රැගෙන යාම සිදුවේ. එම වෙන්වීරය නැවත කැඳවා ඒ සඳහා ලංසු තබන්නන් 15 ක් පමණක් ඒලයි ඇෂ් මිලදී ගැනීම සඳහා ලංසු ඉදිරිපත් කර ඇත. එහි අන්තර්ගත කොන්දේසියක් වනුයේ මෙය සිට	අංක 17/2495/727055/TBR දරන කැබිනට් පත්‍රිකාව මගින් ලැබී ඇති අනුමැතියට අනුව පහත සඳහන් ඒලයි ඇෂ් ගැනුම්කරුවන් 2018 මාර්තු මස සිට අළු රැගෙන යාම සිදුවේ. LOI අගය 5% ට අඩු ඒලයි ඇෂ් සඳහා • Tokyo Super Cement Co. Lanka (Pvt) Ltd. - 27.5 MT/day - මාර්තු මස සිට • Tokyo Cement Company (Lanka) - 360 MT/day - අප්‍රේල් මස නැවත කැඳවා ඒ සඳහා ලංසු තබන්නන් 15 ක් පමණක් ඒලයි ඇෂ් මිලදී ගැනීම සඳහා ලංසු ඉදිරිපත් කර ඇත. එහි අන්තර්ගත කොන්දේසියක් වනුයේ මෙය සිට	2018 මාර්තු	අඛණ්ඩව ක්‍රියාත්මක වේ. (වසර 5ක් යන තුරු)

- අදාළ ලංසු කරුව හිවිසුමේ සඳහන් අළු ප්‍රමාණය මිලදී මස සිට
- Ceylon and Foreign Traders P.L.C - 300 MT/month - මාර්තු
- ගැනීමට නොහැකි වුවහොත්
- Sri Ramco Roofing Lanka (Pvt) Limited - 25 MT/month - මාර්තු මස සිට
- එම අළු ප්‍රමාණය හා
- Sigiri Distributors - 900 MT/month - මාර්තු මස සිට
- හැසිරවීමට අදාළ හා මිනු
- ඉදිරිපත් කර ඇති අගය
- LOI අගය 5% ට වැඩි වැඩි අළු සඳහා
- ලංචිම වෙත ගෙවිය යුතුය
- Tokyo Super Cement Co. Lanka (Pvt) Ltd - 9375 MT/month
- යන්නයි. මේ හේතුවෙන් අළු
- මාර්තු මස සිට
- දැගෙන යා හැකි අය
- Eastern Cement Company Limited - 9375 MT/month -
- පමණක් ලංසු තබනු ලැබේ.
- මාර්තු මස සිට

විකුණන ලද විකුණන ලද ලද මාසයට

අංකය	මාසය	විකුණන ලද අළු ප්‍රමාණය (මෙට්‍රික් ටොන්)	අළු අංගනයට බැහැර කරන ලද අළු ප්‍රමාණය (මෙට්‍රික් ටොන්)	විකුණන ලද අළු ප්‍රමාණය (මෙට්‍රික් ටොන්)	අළු අංගනයට බැහැර කරන ලද අළු ප්‍රමාණය (මෙට්‍රික් ටොන්)
1	ජනවාරි	9501.48	12220.60	43.74	56.26
2	පෙබරවාරි	8602.36	19139.40	31.01	68.99
3	මාර්තු	14089.26	13260.00	51.52	48.48
4	අප්‍රේල්	13696.94	12600.00	52.09	47.91
5	මැයි	14562.62	12730.20	53.36	46.64

2.2.2	අළු අංගනයේ බටහිර දිසාවේ සුළං බාධකය ඉදිකිරීම.	ආදායම	2019 ජූනි
ආදායම		ආදායම	2018 ජූනි

අංකය	වලකවා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	විකල්ප ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
2.	ගැටළුව : අළු අසල පිහිටි ගම වෙත ගමන් කිරීම.				
2.2	ගැටළුව : අළු අසල පිහිටි ගම වෙත ගමන් කිරීම.				
2.2.3	අළු ඉදිකිරීමේ ක්ෂේත්‍රය සඳහා යොදා ගැනීමට නැමැත්තන් ඇති පාර්ශව වෙනත් යෝජනා කැඳවීම.	<p>අලු අළු ගිවිසුම් කාර්මාන්තය, කාර්මාන්තය, සෙවිලි කඩුළු කාර්මාන්තය ආදී කාර්යයන් සඳහා ඉතා ප්‍රයෝජනවත් අමුද්‍රව්‍යයකි.</p> <p>දිනකට අළු මෙට්‍රික් ටොන් 650 ක් පමණ භාවිතා කරනු ලබන AAC 2018 ගඩොල් කාර්මාන්ත ශාලාවක් මදුරන්කුලිය ප්‍රදේශයේ ඉදිකරමින් පවතී.</p>	<p>2018 අගෝස්තු</p> <p>අඛණ්ඩව ක්‍රියාත්මක වේ. (පවතින අළු කොහ අවසන්වන තුරු)</p>		

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
3.	ගැටළුව: බලාගාරයේ සිසිලන පද්ධතිය මගින් මුද්‍රා හරින ජලය නිසා කල්පිවිය ප්‍රදේශයේ ඩවර කටයුතු සඳහා වන බලපෑම.			2017 ජනවාරි	2017 දෙසැම්බර්
3.1	තාරා (NARA) ආයතනය මගින් පර්යේෂණ කටයුතු සිදු කරමින් පවතී.	තාරා (NARA) ආයතනය මගින් සිසිලන පද්ධතියේ ජලය මුද්‍රාට මුදා හැරීම නිසා සිදුවන බලපෑම පිළිබඳ පර්යේෂණ පවත්වමින් සිටියි. මෙහිදී සාගර ජලයේ උෂ්ණත්වය, පී.එච් අගය, ද්‍රාව්‍ය ඔක්සිජන්, ජල ජලවාංග හා අනෙකුත් ජීවීන්ගේ හැසිරීම යන අංශ ආවරණය වන පරිදි පර්යේෂණ සිදු කරනු ලබයි.	2017 දෙසැම්බර් මාසයේ සිට 2017 දෙසැම්බර් මාසය දක්වා අධ්‍යයන කටයුතු සිදුකර වාර්තාවක් ඉදිරිපත් කරන ලදී. තාරා ආයතනය මගින් එම පර්යේෂණය ඉදිරි වසර කිහිපයක් සඳහාද සිදුකිරීමට නියමිතය. එමඟින් වඩාත් නිවැරදි තොරතුරු ලබාගැනීමේ ඉඩකඩ වීවරවනු ඇත. මේ වන විට අපගේ ඉල්ලීම පරිදි තාරා ආයතනය සිය ව්‍යාපෘති යෝජනාව බලාගාරය වෙත ලබාදී ඇත.	2018 අගෝස්තු	2019 ජූලි

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
4.	ගැටළුව: ඉලක්කඩය වෙරළ තීරය බාදනය වීම.				
4.1	නිශ්චිත පරතරයක් සහිතව දිය කඩන ඉදි කිරීම.	දිය කඩන ඉදි කල විට වෙරළ බාදනය වැලකෙන අතර දියකඩන අතර වැලි තැම්පක් වීම නිසා ඩිවර යාත්‍රා නැංගුරම් ලැම සඳහා ඉඩ කඩ නිර්මාණය වීම සිදුවේ.	<p>2017 ඔක්තෝබර් 13 වන දින ෧.වී.ම. හා වෙරළ සංරක්ෂණ දෙපාර්තමේන්තුව අතර සාකච්ඡාවක් පවත්වන ලදී. එහි ප්‍රතිඵලයක් ලෙස මේ වන විටත් අදාළ ඉදිකිරීම් කටයුතු සිදුකිරීම අරඹා ඇත.</p> <p>මීටර් 180 ක පරතරයක් සහිතව සහ මීටර් 35 ක දිගින් යුතු දිය කඩන රක් මූලික අදියර යටතේ ඉලක්කඩය වෙරළ තීරය ආශ්‍රිතව ඉදිකිරීම සිදුකරනු ලබයි.</p> <p>ටොන් 2.5 ක පමණ බරින් යුතු කළු ගල් වලින් පිටත ආවරණය සහිතව මෙම ඉදිකිරීම් කටයුතු සිදුකරනු ලබන අතර එමගින් දිගුකල් පැවැත්ම තහවුරුවේ.</p> <p>එය වෙරළ සංරක්ෂණ දෙපාර්තමේන්තුවේ අනුග්‍රහය යටතේ සිදුකරයි.</p>	2018 අප්‍රේල්	2018 ඔක්තෝබර්

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	විකල්ප ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
5.	ගැටළුව: වායුගෝලයේ ගුණාත්මකතාවය පිළිබඳ පසුබිහසුම.	2018 වසරේ කාර්තු 4 නියෝජනය වන පරිදි මෙම අධ්‍යයනය සිදුකරනු ලබයි.	<p>ඒ අනුව 2018 ජනවාරි මස 19 දින සිට පෙබරවාරි මස 04 දින දක්වා ඊසාන දිග මෝසම් සුළං කාල සීමාවට අදාළව වායුගෝලීය තත්ව පරීක්ෂාව III ආයතනය මගින් සිදුකරන ලදී.</p> <p>දෙවන කාර්තුව සඳහා 2018 මාර්තු මස 26 දින සිට 2018 අප්‍රේල් මස 08 දින දක්වා පළමු අන්තර් මෝසම් කාලසීමාවට අදාළව වායුගෝලීය තත්ව පරීක්ෂාව III ආයතනය මගින් සිදුකරන ලදී. මෙම කාර්තු දෙක සඳහා අදාළ වන පර්යේෂණ වාර්තා බලාගාරය වෙත ලැබී ඇත.</p> <p>එහිදී තෝරාගත් GPS කණ්ඩාංක සහිතව ස්ථාන 10 ක වායුගෝලීය තත්ව පරීක්ෂාව සිදුකරන ලදී. ඉතිරි කාර්තු දෙක සඳහා 2018 ජූනි සහ ඔක්තෝම්බර් මාස වලදී පරීක්ෂණ කටයුතු සිදුකිරීමට නියමිතය.</p>	2018 ජනවාරි	2018 දෙසැම්බර්

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
6.	ගැටළුව: දහන වායුවේ ගුණාත්මකතාවය හා දහන වායු පිරිපහදු යන්ත්‍රවල කාර්යක්ෂමතාවය මැනීම, පල පිරිපහදු පද්ධතීන් හරහා බැහැරවන පලයේ ගුණාත්මකතාවය, ශබ්දය සහ කම්පන පිළිබඳ අධ්‍යයනය කිරීම.				
6.1	දහන වායුවේ ගුණාත්මකතාව හා දහන වායු පිරිපහදු යන්ත්‍රවල කාර්යක්ෂමතාවය මැනීම.				
6.1.1	කාර්මික තාක්ෂණ ආයතනය (Industrial Technology Institute) මගින් පර්යේෂණ කටයුතු මෙහෙයවනු ලබයි.	දුමි කුලුණු හරහා බැහැරවන දහන වායුන්ගේ ගුණාත්මකතාවය අධ්‍යයනය කිරීම, දහන වායුවේ අන්තර්ගත සියුම් අංශු ඉවත්කරනු ලබන ස්තීරික විද්‍යුත් අවක්ෂේපකයේ සහ සල්ෆර් හරහා පද්ධතියේ කාර්යක්ෂමතාවය මැනීම යන කටයුතු මේ යටතේ සිදුකරනු ලබයි.	මෙම පර්යේෂණ කටයුතු සිදුකිරීමට අදාළ වෙන්වරය මේ වන විට ITI ආයතනය වෙත පිරිනැමා ඇති අතර එම අධ්‍යයන කටයුතු 2018 ජූනි මස ඇරඹීමට සැලසුම් කර තිබේ.	2018 ජූනි	2019 මැයි

අංකය	විස්තරය	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
6.	<p>ගැටළුව: දහන වායුවේ ගුණාත්මකතාවය හා දහන වායු පිරිසහය යන්ත්‍රවල කාර්යක්ෂමතාවය මැනීම, ජල පිරිසහය පද්ධතීන් හරහා බැහැරවන ජලයේ ගුණාත්මකතාවය, ශබ්දය සහ කම්පන පිළිබඳ අධ්‍යයනය කිරීම.</p>				
6.2	<p>ජල පිරිසහය පද්ධතීන් හරහා බැහැරවන ජලයේ ගුණාත්මකතාවය මැනීම</p>				
6.2.1	<p>කාර්මික තාක්ෂණ ආයතනය (Industrial Technology Institute - ITI) මගින් පර්යේෂණ කටයුතු මෙහෙයවනු ලබයි.</p>	<p>සිසිලන පද්ධතිය හරහා බැහැරවන ජලයේ ගුණාත්මකතාවය සහ කාර්මික අප ජල පිරිසහය, මල අපවහන ජල පිරිසහය, ගල් අඟුරු සහ අළු අංගනය හරහා එක් රැස්වන ජලය පිරියම් කිරීමේ පිරිසහය සහ ජල පිරිසහය පද්ධතීන් හරහා බැහැරවන ජලයේ ගුණාත්මකතාවය පිළිබඳ අධ්‍යයනය සිදුකරයි.</p>	<p>මෙම පර්යේෂණ කටයුතු සිදුකිරීමට අදාළ වෙන්වරය මේ වන විට ITI ආයතනය වෙත පිරිනමා ඇති අතර එම අධ්‍යයන කටයුතු 2018 ජූනි මස ඇරඹීමට සැලසුම් කර තිබේ.</p>	2018 ජූනි	2019 මැයි

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
6.		ගැටළුව: දහන වායුවේ ගුණාත්මකතාවය හා දහන වායු පිරිසහය යන්ත්‍රවල කාර්යක්ෂමතාවය මැනීම, ජල පිරිසහය පද්ධතීන් හරහා බැහැරවන ජලයේ ගුණාත්මකතාවය, ශබ්දය සහ කම්පන පිළිබඳ අධ්‍යයනය කිරීම.			
6.3		ශබ්දය සහ කම්පන පිළිබඳ අධ්‍යයනය කිරීම.			
6.3.1	කාර්මික තාක්ෂණ ආයතනය (Industrial Technology Institute - ITI) මගින් පර්යේෂණ කටයුතු මෙහෙයවනු ලබයි.	බලාගාරය ක්‍රියාත්මක කළේ පවතින අවස්ථාවන්හිදී බලාගාර සීමාව වෙත බලපානු ලබන ශබ්දය මැනීම, අවට නිවාස වෙත පැතිරෙන කම්පනය මැනීම, බලාගාර ප්‍රවේශ මාර්ගය දෙපස පිහිටි නිවාස සඳහා බර වාහන ගමනාගමනයේදී ඇතිවන කම්පනය යන ශබ්ද හා කම්පන මිනුම් කිරීම සහ එම මිනුම් අගයන් පාරිසරික නීති රෙගුලාසි මගින් දක්වා ඇති සීමාවන් තුළ පවතීද යන්න පිළිබඳව මෙම අධ්‍යයනයේදී පරීක්ෂා කිරීමට නියමිතය.	මෙම පර්යේෂණ කටයුතු සිදුකිරීමට අදාළ වෙන්වරය මේ වන විට ITI ආයතනය වෙත පිරිනමා ඇති අතර එම අධ්‍යයන කටයුතු 2018 ජූනි මස ඇරඹීමට සැලසුම් කර තිබේ.	2018 ජූනි	2019 මැයි

අංකය	වලක්වා ගැනීමේ ක්‍රියාකාරකම්	විස්තරය	වත්මන් ප්‍රගතිය	ආරම්භක දිනය	නිමවන දිනය
7.	ගැටළුව: බලාගාරය හේතුවෙන් ප්‍රදේශයේ භූගත ජලයේ ගුණාත්මක තාවය සඳහා යම් බලපෑමක් සිදුව ඇත්දැයි පරීක්ෂා කිරීම.		වත්මන් ප්‍රගතිය	2018 ජූනි	2019 මැයි
7.1	ජල පම්පත් මණ්ඩලය විසින් පරීක්ෂණ කටයුතු සිදුකිරීමට නියමිතය.		<p>බලාගාරය තුළ පිහිටි උදාහරණ අලංකාරණය සඳහා අවශ්‍ය ජලය උබාගන්නා නල ළිං ආශ්‍රිතව සහ බලාගාරයෙන් පිටත ගම් ප්‍රදේශය තුළ පිහිටි නල ළිං ආශ්‍රිතව මෙම අධ්‍යයනය සිදුකිරීමට නියමිතය.</p> <p>මෙහිදී භූ ගත ජලයේ ගුණාත්මක තාවය පිළිබඳව වසරේ කාර්තු 4 නියෝජනය වන පරිදි ජල සම්පත් මණ්ඩලය මගින් විධිමත් පර්යේෂණයක් සිදුකරනු ලබයි.</p> <p>මේ වනවිට ජල සම්පත් මණ්ඩලය වෙත එම පර්යේෂණ කටයුතු සිදුකිරීමට අදාළ ටෙන්ඩරය පිරිණමා ඇත.</p> <p>මෙම පරීක්ෂණ කටයුතු 2018 ජූනි මස ආරම්භයේ සිට සිදුකිරීමට නියමිතය.</p>		



subhashini kodippili <subhashinikodippili@gmail.com>

Length of the existing wind barrier

3 messages

Thusith Maduranga <thusithrtm@gmail.com>
To: subhashini kodippili <subhashinikodippili@gmail.com>

Fri, May 25, 2018 at 9:56 PM

Length of the existing wind barrier = 460 m

subhashini kodippili <subhashinikodippili@gmail.com>
To: Thusith Maduranga <thusithrtm@gmail.com>

Sat, May 26, 2018 at 8:42 AM

Noted.Thank you.

[Quoted text hidden]

subhashini kodippili <subhashinikodippili@gmail.com>
To: roshini_27@live.com

Mon, May 28, 2018 at 12:46 PM

[Quoted text hidden]



subhashini kodippili <subhashinikodippili@gmail.com>

Requested details from Lakvijaya Power Plant

3 messages

Thusith Maduranga <thusithrtm@gmail.com>
To: subhashinikodippili@gmail.com

Fri, May 25, 2018 at 7:55 PM

Length of proposed wind barrier=1183.5 mApplication for renewing EPL
Payment receipt for application

Virus-free. www.avast.com

2 attachments**Doc201805251927300001.pdf**
513K**Doc201805251929100001.pdf**
97K**subhashini kodippili** <subhashinikodippili@gmail.com>
To: Thusith Maduranga <thusithrtm@gmail.com>

Fri, May 25, 2018 at 8:39 PM

Received, thank you.
[Quoted text hidden]**subhashini kodippili** <subhashinikodippili@gmail.com>
To: roshini_27@live.com

Mon, May 28, 2018 at 12:43 PM

[Quoted text hidden]

ලංකා විදුලිබල මණ්ඩලය
இலங்கை மின்சார சபை
CEYLON ELECTRICITY BOARD



Your No:

My No: LV/CEPD/CU/02

Date: 2018-02-05

REGISTERED POST

Joint Venture - Laugfs Engineering (Pvt) Ltd.,
and Shanken Construction (Pvt) Ltd.,
Laugfs Engineering (Pvt) Ltd.,
No: 101, Maya Avenue,
Colombo 06.

Attention: Mr. Charana de Silva, CEO

Dear Sirs

LETTER OF ACCEPTANCE

Construction of Wind Barriers around Coal Yard and Ash Yard at Lakvijaya Power Plant
Tender No: LV/CEPD/CU/02

This is to notify you that your bid dated 01st November, 2017, for "Construction of Wind Barriers around Coal Yard and Ash Yard at Lakvijaya Power Plant Norochcholai (Bid No. LV/CEPD/CU/02)" for the Contract price of Sri Lankan Rupees Four Hundred Eighty Three Million Seven Hundred Ninety Four Thousand Five Hundred Sixty Four (483,794,564.00 LKR) (excluding Taxes) and USD 1,485,068.86, on measure and pay basis as corrected in accordance with Instruction to Bidders is hereby accepted. Applicable VAT, NBT and Custom Duties will be paid by CEB.

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract document.

The start date shall be 30 days from the issue of the Letter of Acceptance.

Two Performance Securities, one in local currency and the other one in USD shall be submitted on or before 14 days from the letter of acceptance. The amounts are LKR 48,379,456.40, and USD 148,506.86.

Thanking you,

Yours faithfully,

CEYLON ELECTRICITY BOARD,

Eng. E.M.N.A.B. Wijekoon
Deputy Plant Manager (C & M)

Eng. E.M.N.A.B. Wijekoon
DPM (Moni & Com), LVPS

Sgd/- Eng. P.G.P. Indrasiri
Power Plant Manager
(Lakvijaya Power Plant)

OFFICE OF THE POWER PLANT MANAGER - LAKVIJAYA POWER PLANT

Ceylon Electricity Board, Narakkalliya, Norochcholai 61342, Sri Lanka.
Tel: +94 33 3268964, 2268977 / Fax: +94 32 2268966 | e-mail: ppmlvpp@ceb.lk | www.ceb.lk

Cc: Chairman, SCAPC

: Auditor General

: Commissioner General of Inland Revenue

: Dept. of the Registration of Companies

: General Manager (CEB)

: Addl. General Manager (Generation)

: Chief Internal Auditor

: DPM (HM & AS)

: Civil Engineer /DPM(P&D)

: Accountant (Payment)LVPP

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To: Power Plant Manager - LVC

I/We confirm acceptance of the award and shall abide by the terms and conditions of the award.



Signature & frank of the Bidder

09.08.2017

The General Manager,
Ceylon Electricity Board,
Sir Chiththampalam A Gardiner Mawatha,
P.O. Box 540,
Colombo 02.

**RENEWAL OF THE ENVIRONMENTAL PROTECTION LICENCE (EPL) ISSUED
TO COAL FIRED THERMAL POWER PLANT AT NOROCHCHOLE.**

This refers to the site inspection and the discussion held at the project site of the coal fired thermal power plant on 07.07.2017.

As agreed upon by you at the aforesaid discussion you are hereby informed to submit the following documents/reports and details to take further action with regard to the renewal of the EPL.

1. Ambient air quality test reports of the power plant premises.
2. Stack emission test reports.
3. Analysis reports on quality of the coal use as raw material and related documents.
4. Reports and documents to prove the ash content of the coal.
5. Reports on solid waste disposal methodology adapted in the power plant.
6. Data on environmental aspects on plant operation as per the format given by this Authority.

In addition to above requirements I hereby inform you to take necessary actions to fulfill the taken decision (taken decision has mentioned below) at the meeting held on 04.08.2016 at Colombo with the Chairman of CEB, GM CEB, The DGM power plant all other relevant officers of CEB.

1. Handover the air quality equipment fitted in the vehicle to PEA-NWP to working with consultation with CEB.

2. Appoint a committee to prepare a comprehensive report on dust emission, warm water emission, SO₂ emission from the power plant .
3. Carry out dispersion simulation model for 03 stacks of the power plant .
4. Carry out a TCLP test for bottom ash.



S.K.Lenaduwa,
Act. Director,
Provincial Environmental Authority (NWP),
Dambulla Road,
Kurunegala

ලදා: ලෙස;

1990 අංක 12 දරණ පලාත් පරිසර ප්‍රඥප්තියට අනුකූලව වයඹ පළාත් පරිසර අධිකාරිය විසින් බලාගාරය වෙත ඉදිරිපත් කරන ලද ප්‍රශ්නාවලිය අනුව ලබා දුන් පිළිතුරු පහත දක්වා ඇත.

මේ අනුව වයඹ පළාත් පරිසර අධිකාරිය විසින් යොමුකර ඇති ප්‍රශ්නාවලියට ලබා දී ඇති පිළිතුරු පරීක්ෂාවේදී දිනකට ජනිත වන පියාසර අළු ප්‍රමාණයේ ක්‍රමික වර්ධනයක් වී ඇති අතර එම අළු ඉවත් කිරීමේ ක්‍රමවේදය සාර්ථකව ක්‍රියාත්මක වන්නේද යන්න පසු විපරම් කර නොතිබුණු බව නිරීක්ෂණය විය. පරිසර ආරක්ෂණ බලපත්‍රය අළුත් කිරීමට පෙර බලාගාරයේ මෙහෙයුම් කටයුතු මගින් පරිසරයට මුදා හරිනු ලබන දූෂණ කාරකයන් පාලනය සඳහා අධිකාරිය විසින් පරීක්ෂාවන් සිදුකෙරේද යන්න පරිසර අධිකාරිය විසින් තහවුරු කරගෙන නොතිබුණු බව නිරීක්ෂණය විය.

ප්‍රශ්නාවලිය යොමුකල දිනය	ගැටළුව	පිළිතුර	ප්‍රශ්නාවලිය යොමුකල දිනය	නව ප්‍රශ්නාවලි අංකයට යොමුව	පිළිතුර	ප්‍රශ්නාවලිය යොමුකල දිනය	නව ප්‍රශ්නාවලි අංකයට යොමුව	පිළිතුර
11/23/2009	17 මෙහෙයුම් ක්‍රියාවලියේ අතුරුදාම	පියාසර අළු	5/26/2011	2.2	පිළිතුර පෙර පරිදීම වේ.	11/13/2013	18	නැත
	20 ජල මූලාශ්‍රය 1. පොදු සැපයුම 2. භූගත ජලය 3. මතුපිට ජලය	පිරිපහදු කල මුහුදු ජලය ලවණකරනය කර ජල අවශ්‍යතා සඳහා භාවිතා කෙරේ.		3	පිළිතුර පෙර පරිදීම වේ.		22	මුහුදු ජලය නිර්ලවණය කිරීම
	23 ජලය බැහැර කිරීම	සිසිල්කරණ පද්ධතිය හරහා බැහැර කෙරේ.		3.4	ආවරණය කරන ලද Drain එකක් හරහා		24	වාතනය, අතංචනය හා මිදීම, වැලි පෙරණය, සනීකාරණය
	24 බැහැර කිරීමට අපේක්ෂිත අනෙක් විෂේෂිත Toxics Substances	පිළිතුරු ලබා දී නැත.		3.6				
	25 අප ජලය පිරිපහදු කරන ආකාරය	පිළිතුරු ලබා දී නැත.		3.7	Aerobic Oxidation, Separation and Filtration			

ප්‍රශ්නාවලිය යොමුකල දිනය	ගැටළු අංකයට යොමුව	ගැටළුව	පිළිතුර	ප්‍රශ්නාවලිය යොමුකල දිනය	තව ප්‍රශ්නාවලි අංකයට යොමුව	පිළිතුර	ප්‍රශ්නාවලිය යොමුකල දිනය	තව ප්‍රශ්නාවලි අංකයට යොමුව	පිළිතුර
11/23/2009	26	අප ජලය පිරිපහදු කිරීමට පෙර හා පසු ඒවායේ ගුණාත්මකභාවය පරීක්ෂාව සඳහා අනුගමනය කරනු ලබන ක්‍රමවේදය	රසායනාගාර තාක්ෂණවේදීන් විසින් පොත්වල සටහන් කිරීම මඟින් සිදු කරයි.	5/26/2011	3.8	Process has been decided to measure	11/13/2013		
	28	සන අපද්‍රව්‍ය වල වර්ගය හා ස්වභාවය	1. පියාසර අළු 2. යටි අළු		4.1	පිළිතුර පෙර පරිදීම වේ.			
	29	සන අපද්‍රව්‍ය වල ප්‍රමාණය Kg/ දිනකට	1. පියාසර අළු - 15.36 T/hr 2' යටි අළු - 2.73 T/hr		4.2	පියාසර අළු - 221.8 T/hr		27	බර අළු - දිනකට වෙන් 130 සැහැල්ලු අළු - දිනකට වෙන් 737.28
	30	සන අපද්‍රව්‍ය බැහැර කිරීමේ ක්‍රමවේදය	1. පියාසර අළු - සිමෙන්ති නිෂ්පාදනය සඳහා 2. යටි අළු - අංගනයේ තැන්පත් කෙරේ.		4.3	පිළිතුර පෙර පරිදීම වේ.		28	සැහැල්ලු අළු - සිමෙන්ති නිෂ්පාදන ආයතන මගින් රැගෙන යනු ලබයි බර අළු - අවුරුදු 30 ගබඩා කර තබයි.
	32	වියහැකි දූෂා කාරක	1. නයිට්‍රජන් ඔක්සයිඩ් 260 mg 2. සල්ෆර් ඩයොක්සයිඩ් 56 mg 3. දුච්චි කාරක 15 mg		5.1	පිළිතුර පෙර පරිදීම වේ.		32	පිළිතුර පෙර පරිදීම වේ.

ඒකකය	ප්‍රතික්ෂේප කරනු ලබන සීමාවන්				
	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
දහනය මගින් ලැබෙන තාප ශක්තිය(GCV Value)	5,800 අඩු	5,900 අඩු	5,900 අඩු	5,900 අඩු	5,900 අඩු
තෙතමනය (Total Moisture)	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි
Ash Content	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි	16% වැඩි
(Volatile matter)	22% අඩු	22% අඩු, 39.9% වැඩි	22% අඩු, 39.9% වැඩි	22% අඩු, 39.9% වැඩි	22% අඩු, 39.9% වැඩි
(Sulper Content)	1.2% වැඩි	1% වැඩි	1% වැඩි	1% වැඩි	1% වැඩි
(Size Consist)	5% වැඩි	5% වැඩි	5% වැඩි	5% වැඩි	5% වැඩි
Above-50mm	30% වැඩි	30% වැඩි	30% වැඩි	30% වැඩි	30% වැඩි
Less than 2mm	40 අඩු	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි	40 අඩු, 59 වැඩි
(Hard Grove Grindability med)					
Reducing					
(Ash fusion tempest) - IDT	1250 අඩු	1,150 අඩු, 1,300 වැඩි	1,150 අඩු, 1,300 වැඩි	1,150 අඩු, 1,300 වැඩි	1,150 අඩු, 1,300 වැඩි
(Ash fusion tempest) - Fluid		1,250 අඩු, 1,500 වැඩි	1,250 අඩු, 1,500 වැඩි	1,250 අඩු, 1,500 වැඩි	1,250 අඩු, 1,500 වැඩි

විග්‍රහ අංක - (VI)

පරාමිතිය	මුණාත්මක අවශ්‍යතාවලින් බැහැර වූ / ප්‍රතික්ෂේපිත ගල් අහුරු ප්‍රමාණය (මෙට්‍රික් ටොන්)		
	2013-2014	2014-2015	2015-2016
දහනය මගින් ලැබෙන තාප ශක්තිය(GCV Value)	0	460,900	0
තෙතමනය (Total Moisture)	0	55,270	0
(Volatile matter)	0	57,530	0
(Sulper Content)	0	114,269	0
ප්‍රතික්ෂේපිත මට්ටමේ පැවති මුළු ප්‍රමාණය	0	575,169	0
මුළු ගල් අහුරු මිලදී ගැනීම	1,003,545	1,849,726	2,209,983
ප්‍රතික්ෂේපිත මට්ටමේ පැවති ප්‍රමාණය, මුළු ගල් අහුරු මිලදී ගැනීමේ ප්‍රතිශතයක් ලෙස	0.00	31.09	0.00
			0.00

සටහන: ගල් අහුරු හොඩබැමේ (Unloading port) නොවූවල දක්න වලට අනුව

Interim Source Emission Regulations Central Environment Authority

Schedule II
Part I (Cont.)

Fuel	Rated Output Capacity (C)	Type of Pollutant	Emission Limit	
Biomass	C < 0.5 MW	Particulate Matter (PM), Nitrogen Oxides (NO _x)	Shall be controlled by stack height as defined in Regulation II	
		Smoke	25% Opacity	
	0.5 < C <= 3 MW	Nitrogen Oxides (NO _x)	500mg/Nm ³	
		Particulate Matter (PM)	250mg/Nm ³	
		Smoke	25% Opacity	
	C >= 3 MW	Nitrogen Oxides (NO _x)	450mg/Nm ³	
		Particulate Matter (PM)	200mg/Nm ³	
		Smoke	20% Opacity	
	Coal	C <= 50 MW	Sulfur Dioxide (SO ₂)	1600mg/Nm ³
Nitrogen Oxides (NO _x)			750mg/Nm ³	
Particulate Matter (PM)			200mg/Nm ³	
Smoke			20% Opacity	
C > 50 MW		Sulfur Dioxide (SO ₂)	1. 850mg/Nm ³ for new power plants with maximum 50kg SO ₂ per day per MW subject to maximum 30 metric tons of SO ₂ /day for first 500MW plus 25kg SO ₂ per day per MW for each additional MW. 2. Shall be controlled by fuel quality for existing power plants.	
		Nitrogen Oxides (NO _x)	650mg/Nm ³	
		Particulate Matter (PM)	150mg/Nm ³	
		Smoke	15% Opacity	
		C <= 50 MW	Sulfur Dioxide (SO ₂)	75mg/Nm ³
			Nitrogen Oxides (NO _x)	350mg/Nm ³ for steam turbine 250mg/Nm ³ for gas turbine/combine cycle 400mg/Nm ³ for internal combustion engines
Natural Gas	C <= 50 MW	Particulate Matter (PM)	100mg/Nm ³	
		Sulfur Dioxide (SO ₂)	75mg/Nm ³	
		Nitrogen Oxides (NO _x)	300mg/Nm ³ for steam turbine 200mg/Nm ³ for gas turbine/combine cycle 350mg/Nm ³ for internal combustion engines	
	C >= 50 MW	Particulate Matter (PM)	75mg/Nm ³	

Watter discharge testing		පිරිපහදු ජලය මුහුදට මුදාහැරීමේ රසායනාගාර වාර්තා
Unit 1	Unit 2	Unit 3
2016/03/01-3-7	2016/03/1-3-7	-
2016/8/18	2016/08/18	2016/08/16
2016/07/17	2016/09/17	2016/09/17
2016/10/14	-	-
2017/02/26	2017/02/26	2017/02/26
2017/03/31	2017/03/31	2017/03/31
2017/04/13	-	-
2017/07/05	2017/07/05	2017/07/05
2017/09/27	2017/09/27	2017/09/27
2017/10/24	2017/10/24	2017/10/24
2018/02/27	2018/02/27	2018/02/27
2018/03/28	2018/03/28	2018/03/28
2018/04/28	2018/04/28	2018/04/28

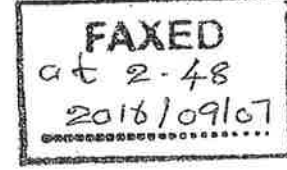


Your ref:

My ref: LVPS/DGM/Civil/37-23

Date: September 07, 2016

Manager (Ground Water),
Ground Water Section,
National Water Supply and Drainage Board,
Chilaw Road, Wariyapola.



Dear Sir,

Request to get the approval of ground water exploited for landscaping work and ground water quality test, Lakvijaya Power Station, Norochcholai

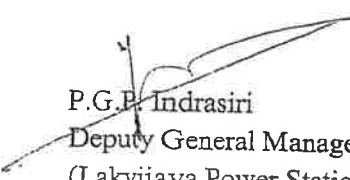
Lakvijaya Power Station is required to use ground water for landscaping work only for nearly 45acre. 67Nos shallow wells are exist and which are 6m deep and water levels at 3m level from the ground. The locations are noted in attached drawing.

Please make necessary arrangements to grant approval for the use of ground water for gardening and water quality test covering the all the landscaped area.

Please send your quotation with the proposal to proceed the work. Your earlier response is highly appreciated.

Yours Faithfully,

CEYLON ELECTRICITY BOARD


P.G.P. Indrasiri
Deputy General Manager
(Lakvijaya Power Station)

Eng. P.G.P. INDRASIRI
Deputy General Manager
Lakvijaya Power Station

OFFICE OF THE DEPUTY GENERAL MANAGER – LAKVIJAYA POWER STATION

Ceylon Electricity Board, Narakkaliya, Norochcholai 61342, Sri Lanka.
Tel: +94 32 2268964, 2268977 / Fax: +94 32 2268966 | e-mail: dgmlvps@ceb.lk | www.ceb.lk

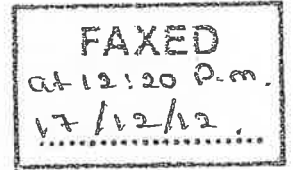


Your ref:

My ref: LVPP/PPM/Gen/06-93

Date : December 5, 2017

General Manager,
Water Resources Board,
Po Box 34,
2A
Hector Kobbekaduwa Mawatha,
Colombo 07



Dear Sir,

Ground Water Quality Monitoring Programme

Lakvijaya Power Plant is required to use ground water for landscaping work only for nearly 100 acers. 74 Nos. shallow wells are exist and which are 6m deep, and water levels at 3m level from the ground. Request has been made on 15/02/2017 from Provincial Manager (North Western Province) to get the approval for ground water exploitation for the landscaping work and ground water quality test. But still work is not done.

According to the Environmental Impact Assessment Report (EIAR) of the Lakvijaya Power Plant, monitoring programme should be carried out for any possible deterioration of the quality of the ground water. Monitoring should be included,

- I. Quarterly monitoring of electrical conductivity.
- II. Performance of the following analysis in ground water samples taken from each observation well annually.

Electrical conductivity, TDS, Hardness, Temperature, PH, O₂, BOD₅, COD, NO₃, Ca, Mg, Na, K, CO₃, Cl, SO₄ as well as heavy metals such as Fe, Mn, Zn, Ti, Al, As, Hg, Pb, Cr, Cd

Please be kind enough to send your quotation for testing with the proposal to proceed the work Including approval to exploit the ground water for landscaping work.

Thank you,

Yours Faithfully,
CEYLON ELECTRICITY BOARD

Eng. P.G.P. Indrasiri
Power Plant Manager
Lakvijaya Power Plant

OFFICE OF THE POWER PLANT MANAGER – LAKVIJAYA POWER PLANT

FAXED
at 1.50 PM
17/02/16

ලංකා විදුලිබල මණ්ඩලය
இலங்கை மின்சார சபை
CEYLON ELECTRICITY BOARD



Your ref:

My ref: LVPS/DGM/Civil/37-55

Date: February 15, 2017

Provincial Manager (North Western Province),
Water Resources Board,
Puttalam.

Dear Sir,

Request to get the approval of ground water exploited for landscaping work and ground water quality test, Lakvijaya Power Station, Norochcholai

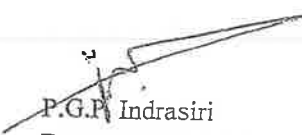
Lakvijaya Power Station is required to use ground water for landscaping work only for nearly 100acre. 74Nos shallow wells are exist and which are 6m deep and water levels at 3m level from the ground. The locations are noted in attached drawing with coordinate.

Please make necessary arrangements to grant approval for the use of ground water for gardening and water quality test covering the all the landscaped area.

Please send your quotation with the proposal to proceed the work. Your earlier response is highly appreciated.

Thank you,
Yours Faithfully,

CEYLON ELECTRICITY BOARD


P.G.P. Indrasiri
Deputy General Manager
(Lakvijaya Power Station)

Eng. P.G.P. INDRASIRI
Deputy General Manager
Lakvijaya Power Station
Ceylon Electricity Board

OFFICE OF THE DEPUTY GENERAL MANAGER – LAKVIJAYA POWER STATION

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