



## KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956)

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### ABSTRACT

Anakkayam Small Hydro Electric Project (7.5 MW) – Revised Administrative Sanction – accorded- Orders issued.

### CORPORATE OFFICE (SBU-G/C)

B.O (DB) No. 542 /2019(DGC/AEEV/ AKYM/2014) Thiruvananthapuram, dtd: 12.07.2019

- Read:
1. B.O.(FB) No.3281/2009 (GPCG/Anakkayam/2/2006) dated 29.12.2009.
  2. GO(Rt) No. 117/2014/PD dtd.03.05.2014.
  3. Note No. CECICC/4/Anakkayam HEP/2018-19 dated 11.09.2018,09.10.2018 and 30.10.2018 of the Chief Engineer (Civil I&CC).
  4. Note No. CECICC/4/Anakkayam HEP/2018-19/ dated 19.01.2019 and 22.04.2019 of the Chief Engineer (Civil I&CC).
  5. Note No.DGC /AEEVI/AKYM/2014 dtd.10.06.2019 of the Chairman & Managing Director
  6. Proceedings of the 47<sup>th</sup> meeting of the Board of Directors held on 29.06.2019 vide A.I.No.11-06/2019.

### ORDER

Anakkayam Small Hydro Electric Project is in Chalakudy basin in Thrissur District. It is purely a tailrace development of the Sholayar Hydro Electric Project without any additional storage/submergence. The power that can be generated from Anakkayam SHEP is assured and is having high value because the generation mainly occurs in the summer season due to assured release of 12.3 TMC of water at Kerala Sholayar reservoir as per PAP (Parambikkulam Aliyar Project) Agreement.

The Government of India & Government of Kerala had accorded sanction for the diversion of 8 ha of forest land for Anakkayam Hydro Electric Project during 1990. The conditions prior to the transfer of 8 ha of forestland were complied by KSE Board as early as in 1991. The Project was earlier allotted to M/S Ideal Projects as a generating company during 9/1992 and since no work was done by the developer, the allocation was cancelled during 9/1997.No activities related to the project including transfer of diverted forestland could be undertaken for a long time due to various litigations. Subsequently based on the orders of the Honourable Courts and directions of Govt. it was decided to implement the project by KSE Board.

KSEBL accorded revised Administrative Sanction for the implementation of Anakkayam SHEP as per B.O. read as 1<sup>st</sup> paper above for an amount of ₹ 91.66 crore at 2009 price level including IDC. The Government accorded sanction for the implementation of the project as per Government Order read as 2<sup>nd</sup> paper above. The tender for the execution of civil works was invited and the work was awarded to M/s. Valecha Engineering Limited on 17.01.2011. As there

was a delay in transfer of Forest land, Board accorded sanction to cancel the work order and the work order issued to the firm was cancelled on 30.10.2014.

As a period of more than 20 years had elapsed since the forest clearance had been granted, State Forest Department requested the Government of Kerala to obtain the concurrence of MoEF & CC for the transfer of 8 Ha. forest land required for the project. MoEF & CC had accorded In-Principle (Stage-1) clearance on 1st July 2013 subject to certain conditions. Accordingly, necessary undertakings were furnished towards the fulfilment of the conditions stipulated in the Stage-1 clearance and KSEBL has deposited ₹83.44 lakh towards Net Present Value, ₹60.07 lakh towards Compensatory Afforestation and ₹10 lakh towards caution Deposit. Subsequently Stage-2 (final) forest clearance was accorded on 17.03.2014. One of the conditions for the forest clearance stipulated by National Tiger Conservation Authority (NTCA) is "For open excavation works and drilling tunnel, explosives should not be used to avoid disturbance to the animals especially Elephants."

KSEBL and Government had approached MoEF & CC with a request to re-visit the condition regarding restriction in open blasting in light of huge financial commitment for compliance of the above condition. KSEBL also suggested methodology for drilling and blasting with the technical advice of National Institute of Rock Mechanics(M/s.NIRM). Due to the constant follow up action from KSEBL and Government the proposal was recommended by the Technical Committee of NTCA in its 18th Meeting held on 26.3.2018 at New Delhi subject to compliance/strict adherence to the conditions recommended by the Inspector General of Forests, National Tiger Conservation Authority, Regional Office, Southern Zone, MoE&F and NIRM for controlled and protective measures.

The Chief Engineer (Civil I&CC) as per note as 3<sup>rd</sup> paper above requested revised Administrative Sanction for the implementation of Anakkayam SHEP for an amount of ₹162.02 Crore excluding IDC at CPWD DSR 2016 with cost index 2017 for Thrissur District for civil works. (Civil-₹102.8 crore, Electro mechanical & Transmission-₹37.03 crore with applicable GST).

The matter of according revised Administrative Sanction for the implementation of Anakkayam SHEP for an amount of ₹162.02 Crore including GST was placed before the Board of Directors in the meeting held on 30.11.2018 (Agenda Item No.12-11/2018) and the proposal was deferred.

The Chief Engineer (Civil I&CC)/ Deputy Chief Engineer (Civil Designs&Consultancy) was asked to explore the possibility of reducing the project cost further by optimising the design or by adopting cost effective methods. Accordingly, the Chief Engineer (Civil I&CC) vide note read as 4<sup>th</sup> paper above, forwarded a proposal for revised administrative sanction for the implementation of Anakkayam SHEP. The major change involved in arriving at the revised cost is that the 3.5m finished dia (D-shape) tunnel section with a provision for 200mm thick concrete lining is replaced with a hydraulically equivalent section having 4m finished dia (D shape) with provision for shotcrete lining at sides and crown & 100mm concrete lining at base.

As per the revised proposal, the total cost of the project is estimated as ₹139.62 crore including GST (₹ 96.17 crore for civil works and ₹32.45 crore for E & M works & ₹ 11 crore for power evacuation). The financial parameters IRR & NPV are worked out for the project cost of ₹139.62 crore based on the KSERC notification dated 05.10.2018.

The Chief Engineer (Civil I&CC) as per note dtd.22.04.2019 has also suggested to adopt a turnkey approach for the implementation of Anakkayam SHEP.

The matter was discussed in detail as per the note dtd.22.04.2019 in the meeting of the Full Time Directors held on 25.04.2019 and the Full Time Directors resolved that KSEBL has to float a Request For Proposal ( RFP) for execution of the project with all our requirements in terms of technical specification, guarantee etc on turnkey basis. It was also resolved to place the proposal with recommendation before the Board of Directors for Administrative Sanction.

Accordingly, matter was placed before the Board of Directors vide note read as 5<sup>th</sup> paper above. The Board of Directors in its 47<sup>th</sup> meeting held on 29.06.2019 (Agenda No.11-06/2019) discussed the matter in detail. It was informed to the Board about the advantages for recommending Anakkayam SHEP as it is capable of generation during summer months and the internal generation within Kerala is very limited as against the demand of power. So even if the cost is slightly more, the implementation of the project is to be considered after attempting to get financial support from Government of India & Government of Kerala. After discussion, the Board

RESOLVED to accord Revised Administrative Sanction for the implementation of Anakkayam SHEP for an amount of ₹139.62Crore (One Hundred and Thirty-Nine Crore Sixty-Two Lakh Only) including GST and the modification suggested by the Chief Engineer (Civil I&CC) in the tunnel size viz.3.5m dia D-shape tunnel section with a provision for 200mm thick concrete lining as per the DPR be replaced with a hydraulically equivalent section having 4m finished dia D shaped tunnel with shotcrete lining at sides and crown & 100mm concrete lining at base.

RESOLVED FURTHER to direct the Chief Engineer (Civil I&CC) to float a Request For Proposal for the execution of the project with all the requirements in terms of technical specification, guarantee etc on turnkey basis.

Orders are issued accordingly. The Chief Engineer (Civil I&CC) shall take further necessary action in this regard.

By Order of the Director Board

Sd/-

**LEKHA.G**

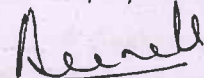
**COMPANY SECRETARY IN CHARGE**

To: The Chief Engineer (Civil I&CC).

Copy to:

1. The Financial Adviser/ The Chief Internal Auditor
2. The RCAO/RAO
3. The Deputy Chief Engineer (IT)
4. TA to CMD/ TA to Dir (GC & HRM)/ Dir(D&IT)/ Dir(T&SO)/Dir (CP, GE, SCM, &S)
5. PA to Dir (F)/ Company Secretary)
6. FC Supt/ Librarian/Stock file / File

Forwarded / By Order



Assistant Executive Engineer