

Central Electricity Authority



Guidelines for accord of concurrence to Hydro Electric Schemes submitted to the Authority under Section 8 of the Electricity Act, 2003

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Guidelines for accord of concurrence to Hydro Electric Schemes submitted to the Authority under Section 8 of the Electricity Act, 2003

1.0 General

1.1 These guidelines describe the procedure to be followed by Central Electricity Authority for accord of concurrence to Hydro Electric Schemes submitted to it under Section 8 of the Electricity Act, 2003.

1.2 In these guidelines, unless the context otherwise requires –

- (i) 'Act' means the Electricity Act, 2003.
- (ii) 'Authority' means the Central Electricity Authority constituted under sub-section (2) of Section 70 of the Act.
- (iii) 'Installed Capacity' means the summation of the Generating capacities (MW) of all the generating units to be installed in the Hydro Electric Generating Station.
- (iv) 'Hydro Electric Scheme' means a scheme aimed at setting up of a Hydro Electric Generating Station as defined under clause 2(30) of the Act.

1.3 Other words and expressions used and not defined in these guidelines but defined in the Electricity Act, 2003 shall have the meaning assigned to them in the said Act.

2.0 Applicability of the guidelines

These guidelines are applicable to any Generating Company intending to set up a Hydro Electric Generating Station estimated to involve a capital expenditure exceeding such sum as may be fixed by the Central Government from time to time, by Notification¹ under Section 8 (1) of the Act.

¹ Govt. of India Notification No. 550 (E) dated 18.04.2006.

3.0 Objectives and scope

- 3.1 Hydro Electric Schemes constitute an integral part of the overall development of the water resources of the river basins for multipurpose use and often are a part of a series of single or multipurpose schemes. In the overall river basin context, the impact of the operation of the upstream Hydro Electric Schemes, water availability undergoing changes over the life of the Hydro Electric Scheme on account of progressive development in the river basin, constraints imposed by the downstream Hydro Electric Schemes, requirements of drinking water, irrigation diversions, downstream releases, flood moderation, navigation and other related matters are to be considered.
- 3.2 Hydro Electric Scheme shall be designed for optimum benefits and shall not adversely affect the operation of the upstream and downstream Hydro Electric Schemes and shall take into consideration the impact of the future upstream and downstream developments in the river basin as identified by the concerned State and the Authority.
- 3.3 To meet the objectives at 3.1 and 3.2, it should be ensured that Hydro Electric Scheme:
- (i) meets the requirement of the best ultimate development of the river basin as provided in the National Electricity Policy and National Electricity Plan.
 - (ii) is consistent with water requirement for irrigation, navigation, flood control, drinking water or other public purposes.
 - (iii) takes into account the progressive development of consumptive use of water and new water resources development schemes in the river basin due to which the water availability may undergo change over the period,
 - (iv) meets the requirement of optimum location of dams and other river works.
 - (v) meets the norms regarding dam design and dam safety.
 - (vi) is either included in National Electricity Plan drawn by the Authority under Section 3(4) of the Act or results in generation of power at reasonable tariff.

4.0 Inputs and procedures for concurrence of hydro electric schemes

- 4.1 The generating company after completing essential site surveys and investigations shall prepare detailed project report (DPR) of the Hydro Electric Scheme consisting of relevant chapters in accordance with the latest edition of “*Guidelines for Formulation of Detailed Project Reports for Hydro Electric Schemes, their Acceptance and Examination for Concurrence*” published by the Authority and “*Guidelines for preparation of Detailed Project Report of Irrigation & Multipurpose Schemes*” published by the Central Water Commission and submit the same to the Authority.
- 4.2 The Authority shall consult the State Government or Central Government or such Government agencies as it may deem appropriate [as per Section 8(2) of the Act].
- 4.3 For accord of Concurrence, the appraising groups in CEA/ CWC/ GSI/ CSMRS/ MOWR would examine following aspects/ chapters:

Sl. No.	Chapters/Aspects	Appraising Groups / Directorate/Division		
		CWC	CEA	OTHERS
1	Hydrological	Hydrology	-	-
2	Geological	-	-	GSI
3	Foundation Engg. and Seismic	FE&SA	-	-
4	Power Potential	-	HPA	-
5	Project General Layout and Planning	HCD	HE&TD	-
6	Construction Material & Geotechnical	-	-	CSMRS
7	Inter- State	ISM	-	-
8	International	-	-	MOWR
9	ROR/Storage	-	STC/HP & I	-
10	Dam/Barrage Design	CMDD/BCD	-	-
11	Gates / HM Design	Gates Design	-	-
12	Instrumentation	Instrumentation	-	-
13	Hydel Civil Design	HCD	-	-
14	E&M Design		HE&TD	
15	Power Evacuation		SP&PA	
16	Cost of E&M and Misc Works		HPA	
17	Phasing of E&M and Misc. works		HPA	
18	Legal aspects		Legal	
19	Construction Power aspects		HPA	

20	Plant Planning	CMC		
21	Civil quantities		TCD	
22	Civil Cost	CA-HWF		
23	Phasing of Civil Works		TCD	
24	Financial & Commercial aspects		F&CA	

4.4 Accordingly, for the purpose of accord of Concurrence to the Scheme/ Detailed Project Report (DPR), the process of examination will involve the following steps:

4.4.1 The Project Proponent (PP) will first prepare/ finalize nine (9) aspects/ chapters of the DPR (Sl. No. 1 to 9) of para 4.3 above through consultation with concerned appraising groups of CEA, CWC, GSI, CSMRS and MOWR. Thus, prior to submission of DPR to CEA for its Concurrence/ Appraisal, the PP shall get these aspects/ chapters of the DPR examined and approved by the concerned appraising groups i.e. during pre-DPR stage.

CEA and concerned appraising groups shall review the pre-DPR activities with the PP quarterly for their timely completion. The review mechanism is at **Annexure**. PP shall approach CEA for holding the first consultation meeting with in a month of project allotment.

Pre-DPR activities include hydrological data collection, geological investigations, foundation engg. and seismicity, power potential studies, Project General Layout and Planning, Construction Material & Geotechnical aspects, Inter- State and International aspects and decision on ROR vs Storage by STC (if required) , preparation of chapters on these aspects, getting these chapters appraised from respective appraising groups and preparing final DPR along with other chapters as required before its submission to CEA. This process shall be completed indicatively in a period of 30 months from the date of allotment/ signing of MOU of the project, extendable by 6 months for reasons beyond the controls of PP.

For further delay on part of PP, State Government may make a provision for resorting to levy of a financial penalty against the PP and/ or cancellation of project allotment.

The Data collected by PP for preparation of DPR shall be property of concerned State Government and its copy shall be made available to CEA/ CWC.

4.4.2 The PP shall, thereafter, submit Complete DPR comprising of appraised aspects/ chapters as described above under para 4.4.1 and remaining aspects of para 4.3 to CEA for accord of concurrence u/s 8 of Electricity Act, 2003.

4.5 The various other aspects in the DPR will be examined by CEA and CWC as per timelines indicated below:

Sl. No.	Aspects	Organization/ Agency	No. of Days
1	Dam/ Barrage Design	CWC	90
2	Gates Design/ HM	CWC	
3	Instrumentation	CWC	
4	Hydel Civil Design	CWC	
5	E&M Design	CEA	
6	Power Evacuation	CEA	
7	Cost of E&M and Misc Works	CEA	
8	Phasing of E&M and Misc. works	CEA	
9	Legal aspects	CEA	
10	Construction Power	CEA	
11	Plant Planning	CWC	
12	Civil quantities	CEA	60
13	Civil Cost	CWC	
14	Phasing of Civil Works	CEA	
15	Financial & Commercial aspects	CEA	
16	Preparation of Note and Convening of Concurrence Meeting (PAC)	CEA	
Total Time Period (Post-DPR)			150

Appraisal of above aspects/ DPR by respective appraising groups including convening of Concurrence/ Appraisal meeting by Secretary, CEA shall be completed in a period of 150 working days (excluding time taken by PP for compliance of observations of CEA/ CWC/ GSI/ CSMRS etc.) from the date of acceptance of Complete DPR by CEA from PP.

4.6 The DPR shall include a checklist incorporating tie-up of essential inputs and statutory clearances, salient features of the Hydro Electric Scheme, executive summary, geological aspects, defence aspects, hydrology, justification for the best ultimate development of the river basin, power potential studies, optimization of location of dam and other civil works detailing various alternatives considered, studies for optimization of dam height, detailed design calculations for checking dam design & safety, civil design aspects, inter-state and international aspects, environmental & forest aspects, rehabilitation & resettlement aspects, cost estimates for civil works and electro-mechanical works and source of funding, fund

flow and tariff calculations as per the regulations of the appropriate Commission.

- 4.7 The electrical & mechanical cost estimates shall be based on the latest edition of "*Guidelines for Formulation of Detailed Project Reports for Hydro Electric Schemes, their Acceptance and Examination for Concurrence*" published by the Authority and as modified from time to time and civil cost estimates shall be based on the latest edition of "*Guidelines for preparation of Estimates for River Valley Schemes*" published by the Central Water Commission and as modified from time to time.
- 4.8 The DPR shall also include:
- (i) Authorization of the concerned State Government(s) for the development of the Hydro Electric Scheme.
 - (ii) Confirmation from State Government(s) in respect of water availability and land availability.
 - (iii) Information on environmental and forest aspects and status of clearance from the Ministry of Environment & Forest.
 - (iv) Information on tribal population affected and status of clearance from the Ministry of Social Justice and Empowerment/Tribal Affairs, if tribal population is affected.
 - (v) Clearance from the Ministry of Defence, if required.
- 4.9 Twenty five numbers of hard copies of the DPR along with six soft copies on compact disk shall be submitted to the Authority.
- 4.10 The generating company shall also submit the DPR to the appropriate Regulatory Commission and the appropriate Transmission Utility for information.
- 4.11 The Authority shall send a copy of DPR to the State Govt. seeking its views on development of the scheme. Also, the State Government representative shall be invited to participate in the meetings held for consultations and resolving various issues.
- 4.12 In case of DPR not being complete in all respects, the Authority shall return the same to the generating company within the time period stipulated in the "*Guidelines for Formulation of Detailed Project Reports for Hydro Electric Schemes, their Acceptance and Examination for Concurrence*" for its revision or modification and resubmission thereafter.

- 4.13 Completeness of DPR shall be assessed after the presentation made by the generating company in DPR acceptance meeting held in CEA within five weeks of DPR submission. DPR complete in all respects will be taken up for detailed examination by the Authority. The queries raised by the Authority/ any appraising group or agency, if any, shall be promptly replied by the generating company within the stipulated time schedule as prescribed by the Authority failing which the DPR shall stand returned to the generating company.
- 4.14 In case the Hydro Electric Scheme is found technically and economically viable with necessary inputs and clearances having been tied-up as stipulated in the *“Guidelines for Formulation of Detailed Project Reports for Hydro Electric Schemes, their Acceptance and Examination for Concurrence”*, the Authority may accord concurrence for its implementation, as far as practicable, within a period of 60 (sixty) working days from the receipt of approval of relevant chapters of DPR (as per para 4.3 above) complete in all respects.
- 4.15 For Hydro Electric Scheme selected through tariff based competitive bidding, the Authority shall examine the technical viability consistent with the provisions of the Act.
- 4.16 On tying up of all essential inputs and statutory clearances, the PP shall update the DPR incorporating all the modifications as agreed during the deliberations and in accordance with the conditions of concurrence and submit the same on compact disk in the software format prescribed by the Authority along with 7 (seven) nos. of hard copies for record of the Authority/ CWC.
- 4.17 The PP shall submit the updated DPR to the concerned State Government under intimation to the Authority.

5.0 Availability of the guidelines

“Guidelines for Formulation of Detailed Project Reports for Hydro Electric Schemes, their Acceptance and Examination for Concurrence” are available on the Authority’s web site (www.cea.nic.in).

6.0 Validity of concurrence

In case the time gap between the concurrence to the scheme by the Authority and the actual start of the work of the project by the generating company is three years or more, a fresh Concurrence of CEA shall be obtained by the generating company before the start of actual work. Revalidation of Concurrence can also be considered, in case the reasons for not starting of works are beyond the control of generating company. However, proposal for revalidation shall be submitted three months before the expiry of validity of Concurrence which is three years from the date of issue of Concurrence letter. The generating company may apply for revalidation of the concurrence giving justification after getting due authorization of the appropriate Government. The Authority will consider the request for extension of the validity based on the merits.

7.0 Transfer of concurrence

Concurrence to the Hydro Electric Scheme given by the Authority in the name of a generating company can be transferred to another generating company in accordance with the procedure laid down by the Authority. The new generating company shall submit the request for transfer of concurrence for consideration of the Authority.

8.0 Subsequent changes in the project parameters

In case, there are major changes in the parameters of the project viz. type of development (storage/ ROR), type & height of dam, live storage, design head, installed capacity, number of units, type of turbine, type of power house, transmission voltage etc, from those concurred by the Authority necessitated on account of site conditions, such major changes need to be brought to the notice of the Authority for its approval with appropriate justification prior to implementation of such changes in the project.

Review Mechanism for pre-DPR activities by CEA and concerned appraising groups with the Project Proponent

The review/consultation mechanism shall be as under:-

- After signing MOA with State Govt., the developer shall carry out topographical survey & geological surface mapping of the project and submit the proposed layout of the project and detailed investigation plans to HP&I Division, CEA along with CWC, GSI and CSMRS for appraisal and finalization.
- CEA along with other agencies shall hold meeting with developer to finalize different alternatives of the project layout for which investigations are to be carried out by the developer along with detailed investigation plan to be carried out in first phase. This meeting would be followed up with subsequent quarterly meetings till first phase investigations are completed.
- After completion of the first phase investigations, the developer shall submit the results to HP&I Division, CEA along with CWC, GSI and CSMRS. CEA along with other agencies shall hold a meeting with the developer for finalization of project layout and final phase-II investigations to be carried out by the developer. This meeting would be followed up with subsequent quarterly meetings till the full DPR is actually submitted to CEA for concurrence by the developer.

Miscellaneous:-

- For holding the consultation meeting(s)/ taking clearance on a particular aspect, the developer shall submit its request along with concerned report(s) to the concerned Directorates/Divisions/Organizations under intimation to HP&I Division of CEA.
- All efforts will be made by the developer to complete the investigations and studies as suggested by the concerned agencies like CEA, CWC, GSI, or CSMRS, in time.
- The developer may approach CEA and other agencies in case of any difficulty in finalization of any study or report.
- Developer shall submit hydrological studies after collection of hydrological data at site for at least two years.