

Detailed Project Report of Cauvery (Kattalai) - Vaigai - Gundar link project

CHECK LIST

I	GENERAL DATA		
1	Name of the project	Cauvery (Kattalai) - Vaigai - Gundar link project	
2	Location	Latitudes of 9° 12' N and 10° 58' N and longitudes of 78° 8' E and 79° 12' E	
a	State (s)	Tamil Nadu	
b	District (s)	Karur, Tiruchirappalli, Pudukkottai, Sivaganga, Ramanathapuram, Virudhunagar & Thoothukudi	
c	Taluk (s)	1. Karur (Krishnarayapuram, Kulithalai) 2. Tiruchirappalli (Srirangam) 3. Pudukkottai (Gandarvakottai, Kulathur, Pudukkottai, Karambakudi, Alangudi, Aranthangi, Thirumayam,) 4. Sivaganga (Tirupathur, Karaikkudi, Devakottai, Sivaganga, Ilayangudi, Manamadurai) 5. Ramanathapuram (Tiruvadanai, Paramakudi, Ramanathapuram, Mudukulathur, Kamuthi, Kadaladi) 6. Virudhunagar (Tiruchuli, Kariapatti, Aruppukottai) 7. Thoothukudi (Vilathikulam, Ettayapuram)	
d	Location of head works	Latitude (N)	Longitude (E)
	Kattalai barrage	10 ⁰ 57' 11"	78 ⁰ 13' 56"
e	Survey of India Topo-sheets 1:50,000 Scale	58J/1,5,9,10,12,13,14,15,16; 58K/2,3,4,5,6,7,8,9,10,11,12,13,14,15	

		58N/1,2,3,4&58O/1
f	Earthquake zone	The project lies in Seismic Zone II as per the zoning map of India (IS 1893 - 2002)
g	Complete address for correspondence along with pin code/e-mail	Superintending Engineer, National Water Development Agency, 1 st Floor, Mahatma Gandhi Markfed Bhavan, 5-2-68, Jambagh, Hyderabad. Telangana 500001. Ph: 040-24601209 Fax : 040-24601207 Email : sehyd-nwda@nic.in
3	Category of the project	
a	Irrigation or Multipurpose	Multipurpose
b	Storage or diversion	Diversion
II	PLANNING	
4	Has the Master plan for overall development of the river basin been prepared and stages of basin development discussed?	This is a proposed link under Peninsular rivers development component of National Perspective Plan for interlinking of rivers formulated by Govt. of India. This link is proposed in partial exchange of Mahanadi & Godavari surplus waters being brought into Cauvery at Grand Anicut.
5	Have the alternative proposals (including set of smaller developments vis-à-vis a single large development) been studied and their merits and demerits discussed?	Yes.

6	Does the scheme fit in the overall development of the river basin and its priority in the overall development of the basin discussed?	Yes. As indicated vide item 4 above.
7	Have the other Departments concerned with the development been informed?	Yes
8	Is the present scheme proposed to be executed in stages? If so, are its various stages of execution and development discussed in the report?	Yes
9	Are the effects of the scheme on the riparian rights & existing upstream and downstream projects, etc. discussed?	Yes. The requirement of water for all the existing, ongoing and future projects located in the up-stream catchment of Cauvery basin has been duly accounted for while arriving at the net inflow at Kattalai barrage. Further, to the extent of quantum of proposed diversion through the link project in partial exchange, the downstream committed requirement of Cauvery delta is being met from surplus Mahanadi & Godavari waters.
10	Has the provision for municipal and industrial water supply been made?	Yes.
III	INTERSTATE AND INTERNATIONAL ASPECTS	
11	Are there any International/Interstate issues involved? If so, have these issues been identified and present status of agreement or tribunal decision indicated specially in respect of this	Yes, discussed.

	project.	
a	Sharing of water	There is no such issue as sharing of water, benefits or cost.
b	Sharing of cost	
c	Sharing of benefits (irrigation, flood control, power etc.)	
d	Acceptance of the submergence by the upstream State(s)	Since the proposed diversion is from an existing barrage, no submergence issue is involved and as such, no acceptance from upstream States is required. The entire project area lies in Tamil Nadu State.
e	Acceptance by the upstream State(s) of compensation of land coming under submergence.	
f	Settlement of oustees	R&R package for PAFs likely to come under canal acquisition will be evolved keeping in view the provisions of Land Acquisition, Rehabilitation and Resettlement Act– 2013 after a CEIA study proposed to be taken up at pre-construction stage.
IV	SURVEYS	
12	Have the detailed topographical surveys been carried out for the following items and maps prepared as per prescribed scales?	The present DPR has been prepared based on the surveys & investigations carried out during 1998 to 2003 for feasibility report. No new surveys or investigations are planned to be carried out as part of the present DPR.
	(a) River surveys	Since, the proposed diversion is from an existing barrage only, no such surveys are required to be carried out.
	(b) Reservoir surveys	
	(c) Head-works surveys (dam, dykes, barrages, weirs, etc., and auxiliary components)	
	(d) Plant and Colonies sites	To be carried out at pre-construction stage.

	(e) Canals, branch canals and water distribution system	Surveys for main link canal were carried out at feasibility stage. Detailed surveys for canal, branch canals and water distribution system shall be carried out at pre - construction stage.
	(f) Major canal structures	Surveys for major canal structures were carried out at feasibility stage. Detailed surveys for the same shall be carried out at pre-construction stage.
	(g) Power house, switch-yard, surge shafts, tailrace	No power generation component is proposed. Hence, not required
	(h) Tunnel(s), adits, penstocks, etc.	Covered in the surveys for canal
	(i) Surveys (detailed and sample) of areas of the command for OFD and drainage works	Surveys for command area were carried out at feasibility stage. Detailed surveys for the same shall be carried out at pre-construction stage.
	(j) Soil surveys	Detailed soil surveys are to be carried out at pre-construction stage.
	(k) Surveys for soil conservation	
	(l) Any other surveys a) Archaeological,	To be carried out at pre-construction stage.
	b) Mineral survey	To be carried out at pre-construction stage.
	c) Right of way survey	Since no proposed reservoir is involved, the survey may not be required.
	d) Communication survey	To be carried out at pre-construction stage.
V	GEOLOGICAL INVESTIGATIONS	
13	Have the geological surveys for the following items been carried out and report on geology of the following appended?	
a	Region as whole	Yes, please refer para 4.3.3 of Chapter 4 of Volume I: Report.
b	Reservoir (Local Geology)	Since no reservoir is involved, not required to be carried out.
c	Head works and energy dissipation	Not required as it is only an existing

	area	barrage.
d	Power house and appurtenances	No power generation component is proposed. Hence, not required
e	Intakes and regulators	To be carried out at pre-construction stage
f	Major canal structures	
g	Tunnel(s), Penstock(s), hill(s), etc.	In respect of tunnels, to be carried out at pre-construction stage. Penstocks etc. are not involved.
h	Communication routes	To be carried out.
VI	SEISMIC INVESTIGATIONS	
14	Has the Seismicity of the region been studied and co-efficient of vertical/horizontal acceleration for the various structures discussed?	The link canal takes off from existing Kattalai barrage and terminates at Gundar river. No new dams/reservoirs are proposed for diversion of water through the link canal. Hence, no site-specific seismic studies are required to be conducted.
15	Has the approval of the National Committee for recommending design of seismic coefficients for River Valley Projects (NCSDP) been obtained?	
16	Is there a possibility of liquefaction of foundations? If so whether liquefaction studies been carried out?	
VII	FOUNDATION INVESTIGATIONS	
17	Have the detailed foundation investigations (including in-situ tests and laboratory tests) for the following structures been carried out and detailed report(s) appended?	
a	Earth and rock fill dam/barrage/weir.etc	No new dams/reservoirs are proposed for diversion of water through the link

b	Masonry/concrete dam/weir, etc.	canal. Hence, not required to be conducted.
c	Barrage(s)/Weir(s)/head regulator(s) etc	
d	Canal(s) & Canal Structures	Yes, please refer para 4.4.3 of Chapter 4 of Volume I: Report.
e	Power house(s), tunnel(s), transformer cavern(s), de-silting chamber(s), surge tank(s)/ shaft(s), intake(s) canal structures, etc.	No power generation component is proposed. Hence, not required. For the proposed tunnels in the link alignment, these will be conducted at pre-construction stage.
18	Are there any special features affecting the designs?	The foundation stratum for proposed tunnels portion is seen to vary from soil to hard rock. Therefore, appropriate structure i.e. tunnel or cut & cover section will be decided after detailed soil/rock investigations at pre-construction stage.
VIII	CONSTRUCTION MATERIAL SURVEY	
19	Have the surveys and laboratory tests for the following construction materials been carried out and report(s) appended?	
a	Soils for impervious, semi-pervious and pervious zones of earth and rock-fill dam(s)	Not required.
b	Sand	Construction material surveys were carried out at feasibility stage. Please refer para 4.5 of Chapter 4 of Volume I:- Report.
c	Rock and coarse aggregate	
d	Bricks and tiles	Available locally in the vicinity of the project area
e	Pozzolona	Not considered to be used in the

		construction of the project
f	Cement and lime stone	Required cement for construction of the project is available in project area.
g	Steel	To be procured from the plants located within the project area.
h	Any other	-
20	Have the sources for each of the above material been identified and need etc. indicated?	Yes, Please refer para 4.5 of Chapter 4 of Volume I-: Report.
21	Have the proposals for procurement of scarce materials been indicated?	No scarce materials are anticipated to be used in the project which may cause hindrance to the progress of construction of the project.
IX	HYDROLOGICAL AND METEOROLOGICAL INVESTIGATIONS	
22	(a)Have the hydrological and meteorological investigations been carried out and status of following data discussed in report?	
i	Rainfall	In Cauvery (Kattalai) - Vaigai - Gundar link project, no dams/ storage reservoirs are contemplated and the existing Kattalai barrage across Cauvery river facilitates the off take of link canal. As such, hydrological and meteorological investigations are not required for this link project.
ii	Temperature	
iii	Sunshine	
iv	Gauge & Discharge	
v	Sediment	
vi	Water quality	
vii	Evaporation	
viii	Wind speed	
	(b) Has the above data been collected & appended?	Yes, collected& appended.
X	HYDROLOGY	
23	Is the hydrology dealt with in details in a separate volume? Have its brief details been included in this report?	No separate volume. Details are furnished in Chapter - 5 of Volume-I : Report
24	Have an index map and bar chart	Yes, please refer Chapter-5 of Volume-

	showing locations of various hydro-metric, climatic and rainfall stations existing/ongoing/planned water resources projects and the data availability at those stations been attached?	I : Report
25	Have required detail note about project specific hydro-meteorological data observatories been attached?	Yes, please refer Chapter-5 of Volume-I : Report
26	Have required detail in case of Himalayan rivers, if project being planned in upper reaches, the satellite imageries of project catchment especially one during snowmelt period (March-May) and one during monsoon (June-September) period been attached?	Not applicable since the project pertains to Peninsular region.
27	Are details notes about quality, consistency, processing and gap filling of the data included	Yes, please refer Chapter-5 of Volume-I : Report
28	Have hydrological studies been carried out for the following:	
a	To establish the availability of water for the benefits envisaged.	Yes, please refer Chapter-5 of Volume-I : Report
b	To determine design flood for the various structures (Spillway, weir, barrage, etc.)	Since no new structure is proposed, no such studies are required to be carried out.
c	Sediments storage	
d	Design flood for diversion during construction	
e	Tail water rating curve	Not applicable
f	Evaporation rates from	Since no new structure is proposed, no

	reservoirs/concerned area	such studies are required to be carried out.
g	Command area rainfall	Yes. Please refer Chapter-8 of Volume-I : Report
29	Has the Ground Water Potential (existing use and additional availability) been indicated?	Yes. Please refer Chapter-8 of Volume-I : Report
30	Have the studies regarding reservoir sedimentation been carried out and revised Elevation-Area Capacity curves been used in the simulation studies? (Working Table)?	Since only a barrage with negligible storage is involved, sedimentation studies are not carried out and no Elevation - Area Capacity curves are used in the simulation.
31	Have the ecological requirements of water such as low flow augmentation and water quality control etc. and water requirement for domestic, industrial use and power generation (thermal, hydel, nuclear) been considered and included in the Project Report and incorporated in the simulation studies?	Water are being proposed for diversion through the link project mainly during the monsoon period that too in partial exchange of the surplus water of Mahanadi & Godavari proposed to be received in Cauvery at Grand Anicut. Also, several streams are joining the Cauvery river d/s of Kattalai barrage, no adverse effect on account of link diversion is anticipated. As such, no ecological requirements are considered.
32	Have the details of the simulation studies (Working Table) and conclusions arrived from the various alternatives explaining the factors and assumptions been included and discussed?	Yes, Simulation studies are carried out. The inflows at Kattalai barrage have been verified for their adequacy to meet the designed requirement of Kattalai barrage and the proposed diversion through the link canal for a period of 42 years.
33	Have the number of failures for different aspects been indicated?	
34	Have the likely desirable and undesirable changes in the	No adverse effect on downstream hydrologic regime is anticipated.

	hydrologic regime due to the project been brought out in the report?	
35	Is the criteria adopted for selection of the construction diversion flood discussed?	Not applicable. Kattalai barrage is an existing structure.
36	Has the basis for determining the storage capacity been discussed?	
37	Have integrated working tables (for more than one reservoir in the system) been prepared?	No reservoir is involved.
38	Has carry over storage been prepared? If so, whether studies for most economic carry over storage been done?	
39	Have the flood routing studies been carried out?	
40	Have the back-water studies been carried out?	No reservoir is involved.
XI	LAND ACQUISITION AND RESETTLEMENT OF OUSTEES	
41	Have the type and quantum of land proposed to be acquired in the submerged area, project area, area coming under canal and distribution system, area required for rehabilitation of the oustees been detailed?	Yes, please refer Chapter- 11 of Volume-I : Report. This will be firmed up during the CEIA study of the link project.
42	Is the basis for provision for land compensation indicated?	Yes, please refer Chapter-13 of Volume-I : Report
43	Have the rehabilitation measures, amenities and facilities to be provided to the Project Affected Persons been discussed and whether their provisions included	Yes, rehabilitation measures, amenities and facilities to be provided to the Project Affected Persons have been discussed and LS provisions in anticipation of CEIA study are made.

	in the report? Are these in accordance State's policy/project specific policy/draft national policy for rehabilitation and resettlement?	Please refer Chapters-11&13 of Volume-I : Report
44	Are the basis of land acquisition of the submerged area upto FRL/MWL etc. discussed?	No reservoir is involved. Only land acquisition for canal is required.
XII	DESIGNS	
45	Does the State have established a Central Design Organisation and State level multidisciplinary Advisory Committee and whether its composition has been indicated in the report	Designs are carried out by NWDA. Not applicable.
46	Has the selection of final location of the head works and appurtenances, in preference to the other sites investigated, been discussed?	Not applicable. The head work is an existing barrage.
47	Have the layout of the project viz., location of head works, workshop sheds, offices, colonies, etc. been finalized and discussed?	Yes. Location of Head work has been discussed.
48	Has the layout of the various major components of the head works been discussed in the light of site feature, geology, and foundation characteristics, etc.	The head work is an existing barrage.
49	Have the detailed designs been prepared for the following components and got vetted by CDO?	Designs of various components of the project have been carried out by NWDA.
a	Earth or rock fill dam, masonry or concrete dam, spillway, barrage,	No new dam/reservoir is involved.

	weir, etc. and appurtenances.	
b	Energy dissipation arrangements, training wells, etc.	
c	Openings through dam-galleries, head regulators, penstocks, other outlets, sluices, etc.	
d	Regulators	Yes, please refer Chapter-6 of Volume-I : Report
e	Canal and water conductor system	
f	Canal structures	
g	Pump house , intake structures	No lifting of water is involved.
h	Power house, tunnels, surge shaft	No power generation component is involved. Four tunnels in the link alignment are proposed. Refer Chapter-6 ‘Designs’ of Volume-I : Report
i	Instrumentation	Not required
j	Power evacuation arrangement	
k	Design of Hydro Mechanical equipments	
50	Have the salient features of the above components and the assumptions made in the design of above components of the project been indicated and basis of assumption discussed?	Yes. Please refer Chapter-6 of Volume-I : Report
51	Have any model studies been carried out for location of the dam, spillway and other appurtenances checking the design profile of the spillway, energy dissipation arrangements, location of outlets/regulators, etc?	No new dam/reservoir is involved.
52	Has the final alignment of canal(s) and branch canal(s) been discussed in the light of various alignments	Yes, discussed for main canal.

	studied?	
a.	Does the canal design provide for meeting requirements of rush irrigation?	Yes. The canal is designed for 110% of the peak discharge to take care of rush irrigation.
b.	Have any intermediate storages and tail tanks been considered to reduce the canal capacities?	No.
53	Are the canals and distribution system being lined and if so what is the minimum capacity of the channel proposed to be lined?	Main and branch canals are proposed to be lined. The minimum capacity of main link canal at tail end is 17cumec.
54	Is the location of canal structures on main and branch canals fixed after detailed surveys of the final alignments?	Yes. Fixed after detailed surveys at feasibility stage for main canal. For branch canals, locations of canal structures to be fixed at pre-construction stage.
55	Are the regulation arrangements of the off-taking channel both near and away from the cross regulators discussed?	Yes
56	Are sufficient escapes including terminal escapes provided on the main/branch canal distributaries/minors?	Yes. provided for main canal.
57	Have the basis for adopting water way for the cross-drainage works been discussed?	Yes
58	Have the proposals for rating the canal section by providing standing wave flumes, rating of the falls, broad crested weirs. V-notches etc. been discussed for the canal and distribution system?	No
59	Have any model studies for major	No

	canal structure(s) been carried out and if so, are the results discussed and incorporated in the design?	
XIII	IRRIGATION AND COMMAND AREA DEVELOPMENT	
60	Have the conveyance and field irrigation efficiencies for paddy and upland crops during kharif, rabi, etc. been indicated, discussed and justified?	Yes. Refer Chapter-8 of Volume-I : Report
61	Have the 10-daily/monthly Crop water requirements at the canal head been worked out?	Yes, Monthly crop water requirements are worked out.
62	Are there any proposals for introducing Warabandi and if so have these proposals been discussed in the report and sample calculations for a typical distributary /minor/ sub-minor furnished?	Not proposed in the present DPR. These shall be finalised at a later stage.
63	Has the present position of irrigation in the command through existing canals, tanks, lift schemes, wells, etc. been brought out in the report?	Yes
64	Are the particulars of all irrigation projects (including minor schemes) existing/proposed in the command been indicated?	Yes
65	Are there potential areas, where ground water is available? If so, has the quantity & quality of the ground water been indicated?	Yes, please refer Chapter-11 of Volume-I : Report
66	Has the quantum of available ground water been assessed and plan for its conjunctive use with surface water been prepared and incorporated in the	Yes, Ground water potential is given in Chapter-11 of Volume-I : Report. Conjunctive use is not incorporated in the DPR, but its

	report?	scope is discussed.
67	Have the semi-detailed soil surveys been carried out for the entire command? If not the extent of area surveyed may be indicated.	No. Soil surveys shall be carried out at pre-construction stage.
68	Have soil and land irrigability classifications brought out in the report?	Yes. Please refer Chapter-8 of Volume-I : Report
69	Is the method used for determining the crop water requirements discussed?	Yes. Please refer Chapter-8 of Volume-I : Report.
70	Has the pre-project cropping pattern and the proposed cropping pattern along with justification been furnished?	Yes
71	Has the proposed cropping pattern been certified by Centre/State Agricultural Authorities giving the Statement of having considered the soil characteristics and land irrigability characteristics of the command area in deciding the percentage of the command area falling under respective crops as suggested in DPR?	The proposed cropping pattern is devised duly taking into consideration the soil and land irrigability characteristics of the command area. This will be got certified from State Agricultural Department of Tamil Nadu.
72	Whether drinking water needs of the population projected for the 25-30 years after construction of the project on enroute and that in the command of the project considered?	Yes. Drinking water needs of the population projected to 2050 AD in the command area are duly considered.
73	Whether the proposed G.W utilisation is certified by CGWB and a statement furnished	No G.W. utilisation is planned in the proposal.
74	Are the areas and percentages of the CCA that will be irrigated during kharif, rabi, two seasonal, summer and perennial been indicated?	Yes

75	Is justification furnished for irrigating perennials and summer crops from the reservoir?	Perennial crops and summer crops are not proposed.
76	Have the monthly reservoir operation studies been carried out at least for 20 years and summary on annual basis attached?	No reservoir is involved.
77	Have the number of blocks selected for detailed surveys for On Farm Development (OFD) works including drainage and total area covered by such blocks been indicated?	No. Proposed to be carried out at pre-construction stage.
78	Have the existing locations of the Trial cum Demonstration Farm, input centres(seeds, fertilizer and insecticides) in the command been indicated and proposal to strengthen the same discussed?	Yes
79	Have the arrangements for financing the OFD works and proposals if any, for strengthening the same been discussed?	No
80	Have the agencies responsible for execution of the OFD works been identified and simultaneous planning of execution of OFD works along with engineering works discussed?	No. Will be identified at pre-construction stage.
81	Has the year-wise phasing of irrigation development as a result of the project been discussed?	Yes
82	Is the existing communication system telephone, wireless, and roads within command area sufficient to meet the requirement after full development of	Yes, Suitable provisions have been kept in the estimate for coping with the future development.

	irrigation? If not, have the new proposals been planned and discussed?	
83	Is the adequacy of the marketing centres in the Command Area and new proposals to meet the requirements after full development of irrigation been discussed?	Yes
84	Is there any stabilization of existing irrigation proposed?	No. Only new command area is proposed.
XIV	FLOOD CONTROL AND DRAINAGE	
85	Have the various flood control components of the multipurpose project been indicated?	Not applicable. The head work is an existing structure
86	Have the damage areas in pre-project & post project situations been identified and flood intensities worked out at each of the damage centre(s) which gets affected?	Not applicable
87	Have the following flood aspects been discussed?	The head work is an existing barrage. No reservoir is involved.
a	Flood cushion in the reservoir	Not applicable
b	Maximum moderated flood out flows over the spillway etc. and its frequency	Not applicable
c	Existing and proposed safe carrying capacities of the channel below the dam after construction of flood embankment, channel improvement, river diversion, etc.	Not applicable
d	Synchronized moderated peak floods due to release(s) from the dam upstream and unintercepted catchment upto the damage centers	Not applicable
e	Average annual expenditure incurred on flood relief works	Not applicable

f	Area and population affected/likely to be affected before/after the project	Not applicable
g	Estimated saving in annual loss of life, property, cattle, crops, etc. (evaluated in terms of money) due to flood control.	Not applicable
88	Have the following drainage aspects of command area been discussed?	
a	Existing Surface and sub-surface drainage network and problems of the drainage congestion, water logging, alkalinity/salinity, if any.	Yes
b	Studies on sub soil water table (pre-monsoon, post-monsoon etc.)	Yes. As per CGWB documents
c	Maximum intensity of 1,2 & 3 day rainfall	No
d	Deficiencies in farm drains	No
e	Deficiencies in existing natural drains	No
f	Proposal for improvement of drainage / water logging/alkalinity/salinity of the area along with justification thereof.	Yes, suitable provision has been made in the cost estimate.
g	Identification of the area in Command which will get benefited due to execution of drainage network and benefits thereof in terms of relief from crop damage, increased yields, etc.	No
XV	NAVIGATION	
89	Is the present scheme for remodeling of the existing facilities and /or extension of the navigable reach or establishing new navigable reach?	Navigation aspect is not planned in the project proposal.
90	Is the existing inland transport system being fully utilized? If not, have the bottlenecks in its full utilization been	Not applicable

	identified and discussed?	
91	Have the surveys for goods and passenger traffic been carried out and discussed?	
92	Is the extent of modification required in the existing system discussed and justified?	
93	Do design for the canal sections and structures take into account the navigation requirements?	
94	Have the proposals to develop the new scheme and phases of development in the different reaches been discussed?	
95	If the area is being served by inland water transport, have the following been discussed:	The project area is not being served by inland water transport
a	The existing toll rates and registration fees, for the crafts(size wise)	Not applicable
b	Proposals for revision of tollage rates and fees, if any	
c	Concurrence of the competent authorities for revision of rates and fees.	
d	Proposal to subsidize the tariff, tollage, craft registration fee, passenger fare, etc. to attract traffic.	
96	Has the State Inland Water Authority been consulted while finalizing the scheme and its view point discussed?	Not applicable
97	Has economic justification and viability of the navigation component of the multipurpose project been discussed?	Not applicable
XVI	POWER	

98	Have the following points been discussed?	
a	Availability of the power generating capacity in the State as well as in the region from different sources	Yes, Refer Chapter-9 of Volume-I : Report.
b	Total energy available and peaking capacity of the system in the State as well as in the region from different sources.	
c	Integrated operation of the system and present status of utilisation in the State as well as in the region.	
d	Surpluses and shortfalls in the system in the State as well as in the region.	
e	Future plans of power development from different sources in the State/region.	
f	Fitment of the scheme in planning of power development of the State/region	
g	Energy generated from the project, firm power; seasonal power and total power	
h	Proposal for transmission lines connecting to the existing system/grid	Not applicable
i	Project cost per kwh installed and per kwh generated at bus bar as compared to the different hydro-electric, thermal generation and gas projects and different sources in the State as well as in the region to justify the power component of the project.	
j	Whether the proposed addition to the transmission system has been shown on a geographical map. Whether options considered for the proposed addition	

	have been discussed with statement of justification for the selected option after carrying out supporting studies covering load flow studies, short-circuit studies (three phase and single phase) and stability studies	
XVII	CONSTRUCTION PROGRAMME AND PLANT AND MANPOWER PLANNING	
99	Are the major components of work proposed to be done departmentally or through contractor?	Through contractor
100	Have the various alternative construction programme been studied and proper justification furnished for the final programme adopted?	Yes
101	Has the proposed construction programme been prepared and synchronized for timely completion of each of the major component of work including Command Area Development?	Yes
102	Have the year wise quantities of the following materials of construction been worked out for various components of the project?	
a	Excavation separately in – soft and hard strata	Total quantities of the required materials have been worked out. Please refer Chapter-12 of Volume-I : Report
b	Earthwork in filling-impervious, semi-pervious and pervious	
c	Rockfill- for dam, toe, riprap, etc.	
d	Stone for masonry	
e	Coarse aggregate for concrete	
f	Sand – for filter, masonry/ concrete	

g	Gravel – for filter	
h	Steel of various sizes and type	
i	Cement- normal, quick/slow setting with or without pozzolana, special types	
j	Lime - surkhi-pozzolana	
k	Scarce material - special steel	
l	Other material - fuel, electricity, explosive, etc.	
103	Have the year wise quantities to be executed by machine/ labour for each of the major component been worked out for each of the above material	Yes
104	Have the labour intensive items of the various major components of the project been identified and the quantities of such items worked out?	No
105	Have PERT chart or CPM diagrams for construction programme of various components been made and included in report? Has organization set up and frequency for project monitoring been indicated in the Report.	Yes. Bar Chart is prepared for construction programme.
XVIII	FOREIGN EXCHANGE	
106	Have the details of the plant and machinery, spares, instruments and scarce materials to be imported worked out?	Not visualized as of now. Most of the requirements of plants and machinery, spares, equipments / instruments, etc would be procured indigenously.
107	Has the phasing of imports and source(s) of imports been discussed item wise?	No
108	Are the imports to be affected under foreign grants/credits or internal	Not applicable

	resources of the country?	
109	Is the scheme covered under State sector or Central sector	Central sector
XIX	FINANCIAL RESOURCES	
110	Has the concurrence of the State Finance Department been obtained?	Based on the DPR, WRD, Government of Tamil Nadu shall obtain the concurrence of the State Finance Department, if required.
111	Is the scheme included in the Five year/Annual plan? If not, what is the present position regarding its inclusion in the plan?	Not included. DPR is prepared.
112	Whether the scheme has already been started? If so, is the present stage of construction indicated?	Yet to be started
113	Have the year wise requirement of funds been indicated?	Yes, Please refer Chapter-12 of Volume-I : Report
114	Is the scheme covered or proposed to be covered under any foreign assistance/aid agreement?	No
XX	ESTIMATE	
115	Is the separate volume of estimate attached as appendix?	No. Included as part of Volume-II Annexures & Volume-III Appendices.
116	Is the year to which the rates adopted in the estimate relate to indicated?	Yes, please refer Chapter-13 of Volume-I : Report
117	Have the analysis of rates for various major items of work for the major components of the project been furnished and with basis of analysis described?	Yes, please refer Chapter-13 of Volume-I : Report
118	Are the provisions for the following items made on the basis of sample survey and sub-estimates:	Provision is made on the basis of prevailing rates.

a	Distributaries, minor and sub-minors	
b	Water courses	
c	Drainage	
d	CAD works	
XXI	REVENUES	
119	Are the basis for the following sources of revenues furnished?	
a	Betterment levy and proposal for its recovery	Not applicable
b	Irrigation cess	Yes. Please refer Chapter-13 of Volume-I : Report.
c	Flood protection cess	Not applicable
d	Cropwise water rates	Yes. Please refer Chapter-13 of Volume-I : Report.
e	Sale of water for village/city/industrial/power /water supply	Yes. Please refer Chapter-13 of Volume-I : Report.
120	Have these rates been compared with the existing rates at the other projects in the State region?	No comparison is done.
121	In case the rates are being enhanced, has the concurrence of the concerned department(s) been obtained?	As per the prevailing norms of Central Govt.
122	Have the organizational set up for the collection of revenue been indicated?	No, existing set up Govt. of Tamil Nadu shall take care of it
XXII	B-C RATIO	
123	Are the allocated costs for the following components of the multipurpose project worked out and basis therein furnished?	Unit/Head wise cost is assessed. Use wise cost apportionment is not done.
	(a) Irrigation	No

	(b) Power	Not applicable
	(c) Flood Control	Not applicable
	(d) Navigation	Not applicable
	(e) Domestic water supply	No
	(f) Industrial water supply	No
124	Have the various departments of the State/Centre agreed to the sharing of the above allocated cost?	The stage has not arisen as of now.
125	Have the crop wise benefits been worked out for irrigated and un irrigated crops being grown before project in consultation with the agriculture department and Statement furnished?	Yes; Please refer Chapter-13 of Volume-I : Report.
126	Have the crop wise benefits been worked out for proposed cropping pattern after the introduction of irrigation in consultation with the agriculture department and Statement furnished?	Yes; Please refer Chapter-13 of Volume-I : Report.
127	Is the B.C. ratio of Irrigation Projects acceptable or otherwise justified?	Yes
128	Is the B.C. ratio for Flood Control Projects acceptable or otherwise justified?	Not applicable
129	Is the B.C. ratio for power component of the project acceptable or otherwise justified?	Not applicable
130	Have the financial and economic return Statements been furnished keeping in view the phasing of development?	Yes
131	Are the benefits other than those considered in the B.C. ratio and financial return Statement been	Yes. Only indirect benefits which can't be quantified have been mentioned.

	identified?	
132	Is the benefit from Gallper land, if proposed, based on lease rates admissible and Statement from concerned Central /State authorities furnished?	Not applicable
133	Are the benefits from fisheries, horticulture, if proposed, based on lease rates admissible and Statement from concerned Central/State authorities furnished?	Yes. Fisheries development in the existing tanks in the command area which are proposed to be fed from the link canal is considered. Please refer Chapter-13 of Volume-I : Report.
XXIII	ECOLOGICAL ASPECTS	
134	(a) Is the area likely to have any of the following environmental and ecological problems due to the altered surface water pattern? If yes whether preventive measures have been discussed?	
i	Excessive sedimentation of the reservoir and the upper reaches of the river and its tributaries tailing into reservoir	No reservoir is proposed
ii	Water logging, salinity/alkalinity	Not likely
iii	Quality of surface and ground water	Not likely
iv	Groundwater recharge	No. In fact, on introduction of irrigation in the command area, groundwater table will improve in the adjoining areas along the link canal.
v	Health hazard-water borne diseases, industrial pollution, etc.	Not likely
vi	Submergence of important minerals	Not likely

	deposits	
vii	Submergence of monuments/archeological sites	Not likely
viii	Fish culture and aquatic life	No.
ix	Plant life (flora)	No
x	Wild Life	No
xi	Migratory birds	Not likely.
xii	National Park and sanctuaries	No
xiii	Seismicity due to filling of reservoir	No reservoir is involved.
xiv	Likely change in the regime of the river	Not likely
xv	Any other	No
	(b) Have the environmental and forest clearance from MoE&F been obtained? If not what is status thereof?	Yet to approach MoEF & CC.
XXIV	COLONIES AND BUILDINGS	
135	Has the planning of the colony/building been done keeping in view the ultimate use for optimum utilization of the investment?	Yes
136	Has an estimate of the extent of higher cost involved been made and details discussed?	No
137	Are the permanent buildings being constructed required for maintenance of the project only?	Yes. Provision is made as per the guidelines for preparation of DPR of irrigation & multipurpose projects-2010
138	Can the buildings other than required for maintenance of the project being constructed be put to some other use after the completion of the project by the department or any other agencies?	Yes. Can be used by Govt. departments or other project authorities
139	Have the interested agencies been consulted in planning of the buildings to suit their requirements later on?	No. will be taken up at pre-construction stage.

140	Have the proposals for disposal of temporary buildings been discussed?	Yes
XXV	PUBLIC PARTICIPATION AND COOPERATION	
141	Are the possibilities of these been discussed in:	
	(a) Planning	Yes
	(b) Construction	Yes
	(c) Improved agricultural practices	Yes
142	Have public debates about utility of projects been held and the response thereof outlined in the Report?	Not yet. During the CEIA, public hearings will be conducted
XXVI	SOIL CONSERVATION	
143	Is the need for soil conservation measures in the catchment of the project discussed?	No; will be taken up during the CEIA studies of the link project.