

EXECUTIVE SUMMARY



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The final alignment was selected through meticulous planning. In the first stage broad alignment route were decided and thereafter, micro level examination of the selected alignment in first stage screening were carried out to finally decide the techno-economically best suited configuration of the system which can fulfil the targeted objectives of the project. In this process, the final alignments which were adopted for further survey, investigation, design and drawing in consultation with the department officials, were further analysed at this preliminary stage to make sure that there is minimal variation in the route even after detail survey and investigation. In view of these, the final selected alignments were analysed and preliminary design, drawing and estimates were made, the salient features of which are presented below:

Table-1:Salient Features		
S.No	Description	
1	Basin having surplus yield	Chambal River
2	Deficit Basin (where water is to be diverted)	Parbati
3	Water Availability From Own Catchment of Rajasthan (MCM)	
	90% Dependability	110.53
	75% Dependability	215.72
	50% Dependability	274.77
4	Benefitted Tehsils	5 nos. (Bari, Baseri, Sarmathura, Saipau, Dholpur)
5	Estimated Water Demand/Requirement (MCM)	
	Drinking Water Demand	1548 Mcft (43.83 MCM)
6	Length of the Conveyor System (Km)	
	a. Pumping Main	11
	b. Natural Stream	32.7
	Total	43.7
7	Land Acquisition	
	a) Private/Govt.Land (Ha)	30
	b) Forest Land (Ha)	20



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Table-1: Salient Features		
S.No	Description	
8	Maximum Discharge of feeder (Cumecs)	20
9	Power Requirement (MW)	55
10	Annual Energy Requirements (MU)	80.22
11	Annual Energy Cost (Rs.in Crores)	40.11
12	Cost of the Scheme (Rs.in Crores)	800.04
13	Cost Per MCM (Rs.in Crores)	8.12

ONLINE STORAGE CAPACITY OF THE ALIGNMENT

Since there is a temporal and spatial variation in the demand and supply of the water therefore, in order to be able to deliver required quantum of water at desired location and time, it is necessary to have suitably located online storage in the system. In the present case, the overall demand for the project is about 98.6/3482 MCM/Mcft and we need an overall storage in the system to bridge the gap between demand and supply. A deficit of about 102.2/3609.16 MCM/Mcft online storage in the system is present which could be used for its proper functioning. Accordingly, the existing storage sites having deficit to the tune of 102.2 MCM are proposed to be used. In the present case, therefore, 2 existing dams i.e. Ramsagar and Parbati are proposed as storage sites will have a total storage capacity of about 102.2 MCM. The details of the existing storage in deficit reservoirs are given hereunder through Table 2.

Table-2: Deficit Capacity of Existing Dams				
Sl. No.	Reservoirs	District	Tehsil	Deficit Capacity (MCM)
1	Ramsagar Dam	Dholpur	Bari	23.22
2	Parbati Dam	Dholpur	Baseri	78.98
TOTAL				102.20

WATER AVAILABILITY FOR THE SCHEME ALONG THE ALIGNMENT

With aim of harnessing surplus available water in Lower Chambal Basin, suitable sites for diversion structure as well as storage structures were identified and thereafter, availability



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of surplus flow both from catchment area within the boundary of Rajasthan were assessed. Based on the details of flow measured by CWC at their G&D Sites in the basin and the details of existing, ongoing and future planned projects, finally the net water availability at desired location of diversion were worked out for by considering the surplus flow generating from catchment area within Rajasthan Boundary only and are detailed below in Table 3. It can be seen in the referred table that nearly 110.53/3903 MCM/Mcft water is available at 90% dependability exclusively from Rajasthan Catchment. Accordingly, the overall planning of the scheme has been made for overall availability of 98.6/3482 MCM/Mcft.

Table-3: Water Availability – Rajasthan Catchment only							
Alignment	Component	Net Water Available (MCM)			Net Water Available (Mcft)		
		90	75	50	90	75	50
Alignment 2	Intake at Kaliteer, Baseri, Dholpur	110.53	215.72	274.77	3903	7618	9704

OVERALL DEMAND OF THE PROJECT

The prime objective of the proposed scheme is to meet the drinking water demand of 5 tehsils (namely Bari, Baseri, Sarmathura, Saipau, Dholpur) of Dholpur district along with the stabilization of existing command of both Parbati and Ramsagar Dams. Accordingly, the water supply demand assessment of 5 tehsils was assessed at 43.8 MCM and irrigation demand was to the tune of 54.8 MCM inclusive of evaporation. Accordingly, the overall demand for the project comes to be 98.6 MCM. Summarised details of drinking demand and Irrigation demand are given hereunder in table 4.

Table-4: Water Demand for the Scheme	
Description	Demand (MCM/Mcft)
Drinking Demand	43.83/1548
Irrigation Demand (inclusive of Evaporation)	54.77/1934

**PROJECT COST AND O&M COST**

The Preliminary Estimates of the project Cost based on the CWC Guidelines were worked out after carrying out preliminary design of the system and also thumb rule costing of the some of the component of the scheme such as electro mechanical works. The overall cost of the scheme is about Rs. 800.04 Crore with an annual power consumption cost of Rs. 40.11 Crore (considering Rs. 5/unit) respectively for alternative- 2. Since, this is mainly water supply scheme; at the present level of water tariff it is not possible to recover even O&M cost of the system. However, it should not be viewed purely on economic point of view because of social responsibility of government to provide safe drinking water to the people.

Table 5 Abstract of Cost		
Abstract of Cost (Alternate-2)		
S. No	Description	Amount (Rs. in Lacs)
	Part-A	
1)	Construction of Intake Well, Pump House including installation of pumping machinery and allied piping, instrumentation and electrical works	
1.1	Intake Well cum Pump House - Stage 1	5687.18
1.2	Pump House Civil Works - Stage 2	2783.92
2)	Electro-Mechanical Works for Intake well including pumps, motors, accessories, hoisting arrangement, Switchyard, Substation, 33 KV Transmission Line lattice tower, Panther Conductor single circuit, end equipments and take off etc.	29400.00
3)	Cost of Main Pipeline	33944.14
4)	Excavation of Canal	849.30
5)	Staff Quarters and Other Buildings	1964.40
6)	Land Aquisition, Crop Compensation etc.,	1248.26
7)	Provision for tools, plants and spares	100.00
8)	Provision for Alignment Survey, Road Communication, Miscellaneous item and Environment Ecology	
9.1	Preliminary Studies	200.00
9.2	Plantation	100.00
9.3	Road Communication	250.00



Table 5 Abstract of Cost		
Abstract of Cost (Alternate-2)		
S. No	Description	Amount (Rs. in Lacs)
9.4	Miscellaneous items	400.00
	Sub-Total of Capital Cost	76927.20
	Part-B	
1)	Cost of Operation and Maintenance Works @ 2%	1538.54
2)	SCADA @ 1%	769.27
3)	Audit and Accounts charges at 1% of I-works	769.27
	Grand Total (Rs. in Lakhs)	80004.28
	Grand Total (Rs. in Crores)	800.04
	*Note: Contingency Charges already included in the concerned estimate	
	Part-C	
	Annual Energy Expenditure (Rs. in Crores)	40.11


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