

- 1. Case No. - 5194/2016 Shri M. G. Chobey, O/o Engineer-in-Chief, M. P. Water Resources Department, Jal Sansadhan Bhawan, Tulsi Nagar, Bhopal (M.P.)-462003 Prior Environment Clearance for KARAM Medium River Valley and Hydroelectric Project at Village-Dhar/Kothida, Tehsil-Dharampuri, Distt.-Dhar (M.P.) Live Capacity- 40.53 Mcm, Cultivable Command Area - 8746 ha., Catchment Area – 342.50 Sq km, Dam Lenth – 564 M, Spillway – 96 M, Maximum height of Dam – 52.10 M. FoR- ToR (River Valley Project)**

This is case of Medium River Valley and Hydroelectric Project. The application was forwarded by SEIAA to SEAC for appraisal. The proposed site is located Village-Dhar/Kothida, Tehsil-Dharampuri, Distt.-Dhar with Live Capacity- 40.53 Mcm, Cultivable Command Area - 8746 ha., Catchment Area – 342.50 Sq km, Dam Lenth – 564 M, Spillway –96 M, Maximum height of Dam–52.10 M. The project requires prior EC before commencement of any activity at site.

LOCATION DETAILS

<u>S.No</u>	<u>Details</u>	<u>KARAM PROJECT</u>
1	Latitude	22 ⁰ 22' 4.7"
2	Longitude	75 ⁰ 29' 3.5"
3	State	Madhya Pradesh
4	District	Dhar
5	Tehsil & Block	Dharmapuri
6.	River	Karam, a tributary of river Narmada
7.	Accessibility	At a distance of 50 km from Dhar.

BRIEF DESCRIPTION OF THE PROJECT

- Karam Irrigation Project is proposed on river Karam near Kothida village of tehsil Dharampuri, District Dhar located at Latitude 22^o22'4.7" and Longitude 75^o29'3.5".
- The Project is envisaged to have a live storage capacity of 40.53 MCM.
- 5.0 MCM has been reserved for drinking purpose for Dhar and Nalcha Block.
- Total CCA of the project is 8746 ha, benefitting 52 villages of Dhar District.
- Total cost of the project is Rs. 304.44 crores.

NECESSITY & PROJECT BENEFITS

- To provide irrigation facility in 8746 hectares of land.
- During summer season, the ground water table lowers down substantially and the region suffers from acute shortage of water.
- Creation of reservoir will result in recharge of ground water, improvement in the ecology and will have a great positive impact on the environment of the region.

SITE SELECTION CRITERIA FOR PROJECT AREA

<u>PARTICULARS</u>	<u>REMARKS</u>
Existing infrastructure	<ul style="list-style-type: none"> • Rail Connectivity – Indore (110km) • NH Accessibility – Near Gujri village on NH-3 (12 km), Dhar on NH-59 (50 km) • Airport facility – Indore (110km)

Resources Availability	<ul style="list-style-type: none"> • Water– From Karam river, a tributary of river Narmada • Cement / Steel – Dhar (50Km.) • Metal – Village Nalcha (22 Km.) • Sand - From Karam river (25 Km.) • Soil for Earthen Dam – From the Submergence area (2-5 Km) • Human Resource for Masonry Work – Locally Available
Environmental consideration (within 10 km radius from proposed project site)	<ul style="list-style-type: none"> • No National Park/Wild Life Sanctuary/Biosphere Reserve. • No Eco sensitive zone • No Critically/ severely polluted areas • No Interstate boundary

DETAILS OF SUBMERGENCE AREA

Forest Land affected	:	126.36 Ha
Private Land	:	62.41 Ha
Government Land	:	63.95 Ha
Total	:	252.72 Ha

HYDROLOGY (Approved by BODHI)

<u>S.No</u>	<u>Particulars</u>	<u>Value</u>
<u>1.</u>	<u>Total Catchment area (sq.km)</u>	<u>342.50</u>
	<u>Intercepted Catchment area (sq.km)</u>	<u>166.68</u>
	<u>Net Catchment area (sq.km)</u>	<u>175.82</u>
<u>2</u>	<u>Average Annual Rainfall (mm)</u>	<u>724.41</u>
<u>3</u>	<u>Designed flood (SPF) (Cumecs)</u>	<u>5234.82</u>

<u>4</u>	<u>Net 75% dependable yield available (MCM)</u>	<u>42.07</u>
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RESERVOIR

S.No	Particulars	Value
1.	Top of Bund Level, (m)	R.L. 316.00
2.	Maximum Water Level , (m)	R.L. 313.20
3.	Full Reservoir Level, (m)	R.L. 312.00
4.	Crest Level (m)	R.L. 302.00
5.	Dead Storage Level, (m)	R.L. 284.00
6.	Deepest River Bed Level, (m)	R.L. 264.00
7.	Top Width of Dam (m)	6.00
8.	Height of Dam, (m)	52.00
9.	Gross storage (MCM)	43.98
10.	Live storage (MCM)	40.53
11.	Dead storage (MCM)	3.44
12.	Length of main Dam, (m)	564.00
13	Length of Spillway, (m)	96.00
14	No. of spillway gates, (m)	5 numbers radial gates of size 1 X15m
15	Length of main gravity pipe canal(km)	17.24 Km (pressure Irrigation)

WATER PLANNING

- The crop water requirement for approved cropping pattern (by state Agriculture department) is computed by Modified Penman Method.
- Based on the crop water requirement, demand table is prepared for 30 years which provides monthly crop water requirement for all crops sown in the command area.
- Reservoir operation tables for 30 years are prepared with 75 % success, hence no shortage of water for irrigation.

RESETTLEMENT AND REHABILITATION PLAN

- ❑ There are 4 villages of Tehsil Dharmapuri namely Utawali, Bhaisakho Khurd, Bhaisakho Kalan and Lalgargh are coming in full submergence and 04 number villages Kothida, Chowki (Tehsil Dharmapuri), Jamanda and Saray(Tehsil Dhar) are coming in partial submergence.
- ❑ Provision for B-Land Rs. 49.55 Cr taken in the project.
- ❑ Resettlement & Rehabilitation (R&R) is being prepared in accordance with the guidelines of the “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013”.

The case was presented by the PP for issuing of TOR to carryout EIA studies with site specific details. The committee after deliberations decided that following additional TORs along with standard TOR issued by the MoEF&CC:-

1. Details of area under submergence should be discussed in the EIA along with details of incremental benefits associated with this project.
2. PP should provide preliminary survey report as approx 50% of the area is forest land. Since project involves forest area, FC clearance has to be obtained. PP should indicate the status of FC clearance in EIA report.
3. If there is any mining activity in the area, same should be discussed in the EIA report.

4. As approximately 50% of the area under submergence in forest land, PP should provide proper justification for selection of site with details of alternative sites considered.
5. If the height of proposed dam is 50 meters, PP should explore the possibility of having mini hydel project.
6. Aerial distance of interstate boundary from the project duly verified by the competent authority site should be submitted.
7. Cost benefit analysis including environmental factors should be given in the EIA report.
8. Green belt plan and catchment area treatment plan be provided in the EIA report.
9. Inventory of existing trees and their management should be provided in the EIA report.

2. Case No. - 5200/2016 Executive Engineer, Office of Executive Engineer, Water Resources Department, Manawar Distt. – Dhar (M.P.) Prior Environment Clearance for Berkheda Medium Project" of Water Resources Department, Kukshi/Berkheda. Live capacity - 52.04 MCM, Cultivable Command Area - 9900 ha, Catchment Area - 382.9 sq., Dam Length - 889.15 M, Spillway - 147.00 M, Maximum height of Dam - 36.68 M Ha. FoR- ToR (River Valley Project)

This is case of Medium River Valley and Hydroelectric Project. The application was forwarded by SEIAA to SEAC for appraisal. The proposed site is located Village- _Kukshi/Berkheda Distt.-Dhar with Live capacity - 52.04 MCM, Cultivable Command Area - 9900 ha, Catchment Area - 382.9 sq., Dam Length - 889.15 M, Spillway - 147.00 M, Maximum height of Dam - 36.68 M ha. The project requires prior EC before commencement of any activity at site.

Location Details

S.No	Details	BERKHEDA PROJECT
1	Latitude	22 ⁰ 21' 8.7"

2	Longitude	74 ⁰ 54' 44.9"
3	State	Madhya Pradesh
4	District	Dhar
5	Tehsil & Block	Kukshi
6.	River	Uri ,a tributary of river Narmada
7.	Accessibility	At a distance of 80 Km from Dhar.

BRIEF DESCRIPTION OF THE PROJECT

- ✘ Berkheda Irrigation Project is proposed on River Uri near Tole/Berkheda village of Tehsil Kukshi, District Dhar located at Latitude 22⁰21'8.7" and Longitude 74⁰54'44.9".
- ✘ The Project is envisaged to have a live storage capacity of 52.40 MCM.
- ✘ 0.60 MCM has been reserved for drinking purpose for Kukshi Block.
- ✘ Total CCA of the Project is 9900 ha, benefitting 40 villages of Dhar District.
- ✘ Total cost of the project is Rs. 308.56 crores.

Necessity & Project Benefits

- ✘ **To provide irrigation facility in 9900 hectares of land.**
- ✘ **During summer season, the ground water table lowers down substantially and the region suffers from acute shortage of water.**
- ✘ **Creation of reservoir will result in recharging of ground water, improvement in the ecology and will have a great positive impact on the environment of the region.**

SITE SELECTION CRITERIA FOR PROJECT AREA

<u>PARTICULARS</u>	<u>REMARKS</u>
<u>Existing infrastructure</u>	<ul style="list-style-type: none"> • <u>Rail Connectivity – Indore (110 Km.)</u> • <u>NH Accessibility – Near Mangod NH59(65km) , khalgh NH3 (68km)</u> • <u>Airport facility – Indore (110 Km.)</u>
<u>Resources Availability</u>	<ul style="list-style-type: none"> • <u>Water– From Uri River , tributary of river narmada</u> • <u>Cement / Steel – Dhar (80Km.)</u> • <u>Metal – Baugh , Blackof Dhar (10 Km.)</u> • <u>Sand - Hathini River 80 Km. from dam site</u> • <u>Soil for Earthen Dam – From the Submergence area (2-5 Km)</u> • <u>Human Resource for Masonry Work – Locally Available</u>
<u>Environmental consideration (within 10 km radius from proposed project site)</u>	<ul style="list-style-type: none"> • <u>No National Park/Wild Life Sanctuary/Biosphere Reserve.</u> • <u>No Eco sensitive zone</u> • <u>No Critically/ severely polluted areas</u> • <u>No Interstate boundary</u>

DETAILS OF SUBMERGENCE AREA

Forest Land	:	32.49Ha
Private Land	:	261.52 Ha
Government Land	:	195.80 Ha
Total	:	489.81 Ha

Hydrology (Approved by BODHI)

S.No	Particulars	Value
1.	Total Catchment area (sq.km)	382.90
	Intercepted Catchment area (sq.km)	184.41
	NetCatchment area (sq.km)	198.49

2	Average Annual Rainfall (mm)	751.22
3	Designed flood (SPF) (Cumecs)	4985.38
4	Net 75% dependable yield available (MCM)	52.40

- Total catchment area of the river at dam site is 382.90 sq km. Intercepted catchment area is 184.41 sq km. This water is utilized in existing 17 nos. of minor tanks. Net catchment area for Berkheda medium irrigation project is 198.49 sq km.
- 75% dependable yield is worked out as 52.40 MCM .
- Standard probable flood (SPF) has been worked out by Synthetic Unit Hydrograph approach (CWC, Sub zone, 3c) as 4985.38 cumecs.
- Dhar district is in Earthquake zone-III

VILLAGES UNDER SUBMERGENCE

- ❖ No Village is coming under full submergence.
- ❖ Partially Submerged Villages : 07 No., Tehsil Kukshi and Gandwani
- ✘ Total effected Population of villages : 684Nos (ST 684, SC 0)
- ✘ Total effected No. of Families in villages : 168Nos (ST 168, SC 0)
- ✘ Number of Houses : 65 No.

RESETTLEMENT AND REHABILITATION PLAN

- ❑ There are 07 number villages coming in partially submargance namely Tole, Bandhaniya, Pipari in tehsil Kukshi and Reharda, Kojakuwa, Kadwal, Mujalda in tehsil Gandhwani.
- ❑ Provision for B-Land Rs. 57.67 Cr. taken in the project.
- ❑ Resettlement & Rehabilitation (R&R) is being prepared in accordance with the guidelines of the “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013”.

The case was presented by the PP for issuing of TOR to carryout EIA studies with site specific details. The committee after deliberations decided that following additional TORs along with standard TOR issued by the MoEF&CC:-

1. Details of area under submergence should be discussed in the EIA along with details of incremental benefits associated with this project.
2. If there is any mining activity in the area, same should be discussed in the EIA report.
3. As area under submergence includes forest land, PP should obtain forest clearance and provide status in the EIA report.
4. Aerial distance of interstate boundary from the project duly verified by the competent authority site should be submitted.
5. Cost benefit analysis including environmental factors should be given in the EIA report.
6. Green belt plan and catchment area treatment plan be provided in the EIA report.
7. Inventory of existing trees and their management should be provided in the EIA report.
8. It was also suggested by the committee that PP should explore the possibility of reducing the submergence of forest area.