

ANDHRA PRADESH LEGISLATIVE ASSEMBLY

SESSION-X

NOTE FOR SHORT DISCUSSION ON POLAVARAM IRRIGATION PROJECT

INTRODUCTION

- Polavaram Irrigation project is a multipurpose terminal reservoir project located 42 Km upstream of Sir Arthur Cotton Barrage at Dowlaiswaram on the River Godavari, near Ramayyapeta Village, Polavaram Mandal of West Godavari District.
- The project is strictly in accordance with the provision of Interstate agreement dated.02.04.1980 concluded among co-basin states and the GWDT Award 1980. All the requisite clearances have been obtained from various agencies of Government of India.

Sl no.	Clearance	Obtained on
1	Site Clearance from MoEF	September 2005
2	Environmental Clearance from MoEF	October 2005
3	Wild Life Clearance from National Board of Wildlife	July 2006
4	R&R Clearance from Ministry of Tribal Affairs	April 2007
5	Forest Clearance (Stage-I) from MoEF	December 2008
6	Forest Clearance (Stage-II) from MoEF	July 2010
7	TAC Clearance from Central Water Commission	January 2009
8	Investment Clearance from Planning Commission	February 2009
9	Revised TAC clearance for the updated cost	January 2011
10	Investment clearance from MOWR for revised estimates	May 2017
11	Revised TAC clearance for the price level 2017-18	February 2019

- The Government of India, recognizing the importance of the Polavaram Irrigation Project, declared Polavaram Project as a National Project (Section-90 (1) of AP Re-organization Act, 2014)
- The Ministry of Finance, Government of India vide their Office Memorandum dated.30.09.2016 communicated that, it will provide 100% funding of the remaining cost of the Irrigation component only of the project for the period starting from 01.04.2014.

- As per the recommendations of the Vice Chairman, NITI Ayog, that it will be appropriate for the State of Andhra Pradesh to execute this project (as it is an important project and the State Government is keen to complete it at the earliest), the Government of India has agreed to the State's request for the execution of the project by the State Government on behalf of the Government of India.
- The Government of India has constituted Polavaram Project Authority to monitor the progress of project works. The Polavaram Project Authority started functioning with effect from 9th January 2015.

PROJECT BENEFITS:

- Reservoir Gross Capacity 194.6 TMC & Utilization of water 322 TMC.
- Irrigation Potential: 7.2 Lakh Acres new ayacut and Stabilization of 23.5 Lakh Acres in Godavari and Krishna Delta Systems.
- Diversion of 80 TMC of Godavari water to Krishna River.
- Hydro Power of 960 MW (12 Nos X 80 MW)
- Domestic & Industrial Water Supply: 23.44 TMC of water to the habitations and industries in and around Vishakhapatnam City including Vizag steel plant.
- Drinking water facility to 540 villages enroute for a population of 28.5 Lakh.
- Utilization by other states: Odisha and Chhattisgarh can utilize 5 TMC and 1.5 TMC of water from backwaters of Polavaram.

PROJECT COST APPROVALS:

- TAC Cleared the project for Rs.10,151.04 Cr at 2005-06 Price level in its 95th meeting held on Dated.20.01.2009.
- TAC Clearance accorded for the Revised Cost Estimate (RCE) for Rs.16,010.45 Cr at 2010-11 Price level in its 108th meeting held on 04.01.2011.
- TAC Clearance accorded for the Revised Cost Estimate (RCE) - II for Rs.55,548.87 Cr at 2017-18 Price level in its 141st meeting held on 11.02.2019.
- Further, the Revised Cost Committee (RCC) has recommended the cost of the project for an amount of Rs.47,725.74 Cr. (including 108 Cr cost towards PPA) vide Report No. F.No. 22/JS&FAWR/2020 Dated.17.03.2020.
- The investment clearance of RCE II is awaited from GOI.

Component	2010-11PL	2013-14PL	2017-18PL	
	As per TAC (Rs. In Cr)	As Per RCC (Rs. In Cr)	As per CWC (Rs. In Cr)	As Per RCC (Rs. In Cr)
Irrigation	9307.54	20398.61	51095.96	35950.16
Water Supply	2986.86	4068.43		7214.67
Power	3716.05	4560.91	4560.91	4560.91
Total	16010.45	29027.95	55656.87	47725.74

AWARD OF CONTRACT

- 24.02.2005: Spillway and ancillary works were awarded to M/s. Madhucon - Sino - Hydro (JV) for Rs.634 Crores. They have executed works worth of Rs.109.5 Crs.
- 11.08.2006: Earth cum Rock Fill Dam and ancillary works were awarded to M/s. Madhucon - Sino - Hydro (JV) for Rs.884 Crores. They have executed works worth of Rs.15 Crs.
- 28.08.2009: Meanwhile, CWC approved the designs and drawings. These designs are totally different from original DPR. Hence the above two agreements were pre-closed with mutual consent.
- 02.03.2013: All the main dam works were called in a single package tender and the works were awarded to M/s. Transtroy - JSC - EC - UES (JV) for Rs. 4053 Crores (-14.055%) with 2011-12 SOR rates under EPC contract system.
- 29.09.2016: The Govt has issued orders by enhancing the SOR rates from 2011-12 rates to 2015-16 rates. Agreement value of Rs. 4053 Crores was enhanced to Rs. 5386 Crores.
- M/s. Transtroy - JSC - EC - UES (JV) executed works worth of Rs.1664.38 Cr.
- Due to poor progress of works, the balance works of main dam package were withdrawn from M/s Transtroy - JSC - EC - UES (JV) in 3 phases and entrusted to M/s Navayuga Engineering Company Ltd., under LS contract system by nomination basis.

- 27.02.2018 – Rs. 1244.36 Cr
- 28.05.2018 – Rs 921.87 Cr
- 11.01.2019 – Rs.751.55 Cr
- Total – Rs. 2917.78 Cr**

- M/s Navayuga Engineering Company Ltd., executed works worth of Rs.1591.12 Crores.
- The works of Radial gates were entrusted to M/s Bekem Infra Pvt Ltd for Rs.387.56 Cr on nomination basis under LS contract system. They executed works worth of Rs. 141.14 Cr.
- In 2019, a comprehensive study was conducted with the Expert Committee and it was suggested that the work should be carried out through reverse tendering after recognizing that it is not the right method to hand over the work worth thousands of crores of rupees through nomination method
- 08.11.2019: Subsequently, M/s. Megha Engineering (MEIL) was entrusted the balance work for an amount of Rs.1548.13 Crore with (-) 12.60 % less through reverse tendering process under LS contract system.
- Further, by entrusting the works of Head works including connectivity works through reverse tendering process the government saved about Rs. 865 crores.

STATUS OF WORKS AS ON 28.02.2023:

Description	Completed
Head Works	77.39%
Right Main Canal	92.75%
Left Main Canal	72.48%
LA and R&R	22.16%
Overall Project	48.22%

Present Status of Polavaram Irrigation Project:

- The Polavaram Project works consists of Head Works (Main Dam and Connectivities), Left Main Canal, Right Main Canal and L.A. and R&R.

The component wise progress of Head works:

A.	Main Dam Package	Status
1	Spillway	: Completed.
2	Radial Gates Erection	: Gates erection is Completed.
3	Coffer Dams	: Both Upstream and Downstream coffer dams are completed.
4	Earth-cum-Rock Fill Dam (ECRF) (Gap-I)	: Diaphragm wall is completed. Scour treatment work is in progress.

5	Earth-cum-Rock Fill Dam (ECRF)(Gap-II)	: Scour treatment work is in progress. Diaphragm wall repair works are to be commenced.
6	Concrete Dam (Gap-III)	: Completed.
7	Spill Channel	: 88% work is completed.
8	Approach Channel	: 76% work is completed.
9	Pilot Channel	: 48% work is completed.
10	Power House foundation excavation	: Completed.
11	Connectivities	: 68% work is completed.

Component wise progress of Right Main Canal (RMC):

1	Earth work	: The total length of Right Main Canal is 178.812 Km and the Earth work excavation of RMC is completed
2	CC Lining	: 163.257 Km length of lining has been completed.
3	Structures	: Out of 255 Nos, 214 Nos are completed and 41 Nos. are in progress.

Component wise progress of Left Main Canal (LMC):

1	Earth work	: The total length of LMC is 212.32 Km and the canal excavation completed is 172.154 Kms.
2	CC Lining	: 131.981 Km length of lining has been completed.
3	Structures	: Out of 451 Nos, 172 Nos. are completed and 279 Nos. are in progress.

Land Acquisition and R&R:

1	LA	: Total extent of land required (works, land to land and R&R colonies) is 167765.13 Acs. Acquired is 113119.07 Acs.
2	R&R	: Out of 373 habitations, 38 habitations completed. Out of 20,946 Nos. of PDFs to be shifted upto +41.15m, 11,677 Nos. are shifted, 945 PDFs are ready to occupy, 3228 PDFs opted self construction/One time settlement and Govt. construction PDFs – pending are 5096 Nos. Balance 335 habitations are programmed to be rehabilitated in a phased manner, so that the entire R&R activities of the project to complete, well before the actual date of impounding of water in the reservoir.

Progress of Polavaram Irrigation Project from 2005 to February 2023

Civil Works: Financial Progress

Sl. No	Item of Work	Amount in Crs	Progress During the Year							
			2005-14		2014-19		2019-23 (up to 2/2023)		Total	
1.	Head Works	7422.69	290.79	3.92 %	3612.81	48.67 %	1840.68	24.80 %	5744.28	77.39%
2	Right Main Canal	2053.65	1197.3	58.30 %	652	31.75 %	55.39	2.70 %	1904.69	92.75%
3	Left Main Canal	2317.90	904.83	39.04 %	655.52	28.28 %	119.78	5.17 %	1680.13	72.48%
	Total	11794.24	2392.92	20.29 %	4920.33	41.72 %	2015.84	17.09%	9329.09	79.10%

1. Land Acquisition

a) Physical:

Sl No	Component	Unit	Total Required	Land Acquired				Balance
				2005-14	2014-19	2019-23 (up to 2/2023)	Total	
1	Head works	Acre	144753.53	52376.52	33869.59	4030.09	90276.2	54477.3
2	PIPLMC	Acre	10609.5	10272.36	168.41	0	10440.8	168.73
3	PIPRMC	Acre	12402.1	10558.1	1844	0	12402.1	0
	Total		167765.13	73206.98	35882	4030.09	113119	54646.1

b) Financial:

Sl No	Component	Unit	Total Required	Land Acquired				Balance
				2005-14	2014-19	2019-23 (up to 2/2023)	Total	
1	LA - Head works, PIPLMC & PIPRMC	Crs	12,096.24	1142.38	3971.78	341.25	5455.41	6640.83

2. Rehabilitation & Resettlement

a) Physical:

SI No	Component	Unit	Total Required	Progress				Balance
				2005-14	2014-19	2019-23 (up to 2/2023)	Total	
1	Rehabilitation & Resettlement	No. of Houses	106006	714	3066	11507	15287	90719
		No. of PDFs Shifted	106006	714	2396	8567	11,677	94,329

b) Financial:

SI No	Component	Unit	Total Required	Progress				Balance
				2005-14	2014-19	2019-23 (up to 2/2023)	Total	
1	Rehabilitation & Resettlement	In Crs	23874.77	42.50	262.81	1657.41	1962.72	21,912.05

The following is the progress of work from **May, 2019 to February, 2023**

- Spillway is completed.
- Erection of all the 48 Gates has been completed
- Erection of 10 Nos of River Sluice gates has been completed.
- Approach Channel works -76% completed.
- Guide bund on Left flank of spillway upstream is completed
- Upstream Coffor Dam to a maximum level of +44.00M completed.
- Power House Excavation for foundations was completed.
- Downstream Coffor Dam to a Maximum level of +31.50 M completed.
- Gap-III Concrete Dam to a Maximum Level of +53 M completed.
- Godavari River flow diversion through approach channel, Spillway and through Spill channel completed to facilitate execution of ECRF Dam across the main river.

Reasons for delay in completion of Polavaram Irrigation Project.

As per the approved construction schedule, the Polavaram Irrigation Project is to be completed by April 2022, could not be completed the project by April 2022 due to the following reasons.

- Covid-19 Pandemic and imposition of nationwide Lock down resulting shortage of labour due to migration of camp labour to their native places. This has caused delay in execution of both project works as well as R&R works.
- Heavy floods during 2019 and 2020.
- Delay in finalization of layout of Approach Channel model studies at CWPRS, leading to delay in design analysis and approval from competent authorities.
- Due to partial construction of coffer dam, A deep scouring to a depth upto (-)12 M & (-) 22.50 M has occurred in river bed in the Gap-I, Gap-II reaches respectively of main earth cum rock fill dam (ECRF) and in the alignment of D/S coffer Dam and The Diaphragm wall was damaged in two reaches. The solution for the treatment of scour and damaged D wall are not finalized.
- The slow progress is due to component wise restriction of reimbursement, by Gol.
- Shifting of Pushkara pipe lines in left connectivity works: To safeguard the interests of Pushkara LIS ayacut farmers, the pipeline which is crossing the KL bund is not removed. The KL Bund work will be completed after the removal of the pipelines.
- Neither flying operations for aerial survey nor the field survey activities during the years 2020 and 2021 for the distributary system of PIPLMC and PIPRMC could be carried out, as planned, due to COVID-19 pandemic and lockdown.

Schedule Recommended by the 5 member Committee

- PPA constituted a committee comprising of senior officers of CWC, CSMRS, WAPCOS, PPA and WRD in October 2022 to examine proposed action plan for the working season 2022-23.
- The committee visited dam site during 2nd to 4th of November, 2022 and held discussions with WRD officials and executing agencies. The committee identified all the activities to be carried out during working season of 2022 - 2023 and finalized relevant timelines for various activities vide PPA F.No.4/2/1/2020/PPA/3589-3599, Dated.15.11.2022.
- The same issue has also been discussed in the 15th PPA Meeting held on 10.12.2022 and suggestions were made for implementation of all the activities to be carried out during working season of 2022-2023.

Trial tests in Scour area and NHPC tests on D Wall

- The CWC, New Delhi suggested to conduct the certain investigations in the Scour reaches of ECRF dam area, accordingly the investigations in trail areas of ECRF dam area were completed and the reports were submitted to CWC for finalization of scour treatment.
- The National Hydro power corporation (NHPC) has conducted the health assessment tests on the damaged Diaphragm wall in ECRF Dam Gap II and submitted the report.
- Both the trail tests report and NHPC report are examined during 21st DDRP meeting held on 04th & 05th March 2023.

Decisions taken during 21st DDRP meeting

- During 21st DDRP meeting held on 4th& 5th March, 2023 the Chief Engineer, CWC opined that since the methodology of dozing the sand in the trail areas yielded the required results, the same can be adopted in scour portions of ECRF dam also. Further, the Panel decided that WRD may proceed with the work of sand filling in scour reaches with the same methodology adopted in trial areas and suggested WRD to complete the work scour filling before ensuing monsoon duly conducting required field tests maintaining strict quality control.
- The health assessment of D-Wall - The DDRP Panel decided as follows:
 - i. A parallel diaphragm wall may be constructed in the scour reaches from formed level upto a depth of 2.0m into the fresh rock.
 - ii. A parallel diaphragm wall may be constructed in the non-scour reaches from formed level upto a depth of 2.0 m into the fresh rock in the reaches identified by NHPC.
 - iii. A detailed methodology on the construction procedure and the connection details of old and new diaphragm walls shall be submitted to CWC.

Statement Showing the Expenditure incurred on Polavaram Irrigation Project and fund released to State Government

Sl. No.	Government	Period	Total Expenditure incurred on PIP (In crores)	Amount reimbursed to the GoAP by PPA (In crores)
1	Before National Project	Inception to 31-03-2014	4730.71	0
2	After National Project	01-04-2014 to 31-05-2019	11059.25	6727.26
3		01-06-2019 to 28-02-2023	5004.75	6735.95
		Total	20,794.66	13,463.21

REIMBURSEMENT OF EXPENDITURE:

- Total expenditure incurred on Polavaram Project : **Rs. 20,794.66 Cr.**
upto 28th February, 2023.
- Expenditure incurred on the Project before National : Rs. 4,730.71 Cr.
project.
- Expenditure incurred on Polavaram Project after: Rs. 16,063.95 Cr.
declaration as National Project, 28th February, 2023.
- Total Funds released to the State Government : Rs. 13,463.21 Cr.
through Polavaram Project Authority.
- Balance Reimbursement to be made by Gol for the
expenditure already made on the Project by the: **Rs. 2,600.74 Cr.**
State of AP after declaring as National Project.

ADHOC GRANT

- Govt. of India is reimbursing the expenditure incurred by GoAP on the basis of 2013-14 PL in which Rs. 20398.61 Cr is allocated under irrigation component. GoAP already made an expenditure of Rs. 20,794.66 Cr. As such there is no possibility for further reimbursement. This hampers the progress of the project.
- Also the approval of investment clearance for RCE II proposal will take considerable time, Hon'ble Chief Minister met the Hon'ble Prime minister of India and requested to release and adhoc grant of Rs.10000 Cr to speed up the execution of Polavaram Irrigation project. Hon'ble Prime minister responded favorably. Hon'ble Chief Minister instructed higher officials to pursue with Govt. of India officials. The Higher officials of Govt of AP are coordinating with officials of Govt of India for early release of Adhoc grant.

AMBATI RAMBABU
MINISTER FOR WATER RESOURCES DEPARTMENT