

## Godavari (Inchampalli) – Cauvery (Grand Anicut) Link Project

### Salient Features

Sl. No.	Particulars			
<b>1</b>	<b>Name of the Project</b>	Godavari (Inchampalli) – Cauvery (Grand Anicut) Link Project		
<b>2</b>	<b>Type of Project</b>	Multipurpose		
<b>3</b>	<b>Location</b>	Telangana, Andhra Pradesh, Tamil Nadu		
<b>3.1</b>	<b>River Basin</b>			
a)	Name	Godavari, Krishna		
b)	Located in State	Telangana, Andhra Pradesh, Tamil Nadu		
<b>3.2</b>	<b>River / Tributary</b>	Godavari, Indravati, Krishna, Muneru, Palleru, Musi, Pennar, Gundlakamma, Palar, Ponnaiyar, Cauvery		
<b>3.3</b>	<b>State/District/Taluka in which the following are located</b>			
a)	<b>Reservoirs</b>	<b>State</b>	<b>District</b>	<b>Taluka</b>
	(i) Nagarjunasagar dam	Telangana / Andhra Pradesh	Nalgonda / Guntur	Tirumalagiri Sagar / Rentachintala
	(ii) Somasila Dam	Andhra Pradesh	Nellore	Chipurupalli
b)	<b>Head work</b>	<b>State</b>	<b>District</b>	<b>Taluka</b>
	(i) Inchampalli barrage	Telangana	Jayashankar Bhoopalapally (erstwhile Karimnagar)	Mahadevpur mandal
	(ii) Nagarjunasagar dam	Telangana / Andhra Pradesh	Nalgonda / Guntur	Tirumalagiri Sagar / Rentachintala
	(iii) Somasila Dam	Andhra Pradesh	Nellore	Atmakur
	(iv) Grand Anicut	Tamil Nadu	Thanjavur	Thiruvaiyuru
c)	<b>Command Area</b>	<b>State</b>	<b>District</b>	
1.	Enroute command area (New)	1) Telangana	Nalgonda	
		2) Andhra Pradesh	Prakasam	
			Nellore	
			Chittoor	
		3) Tamil Nadu	Tiruvallur	
			Vellore	

			Tiruvannamalai	
			Villupuram	
			Cuddalore	
			Kancheepuram	
2.	Stabilisation of existing projects			
		1) Telangana	Warangal Nalgonda Khammam	
		2) Andhra Pradesh	Guntur	
		3) Tamil Nadu	Thanjavur	
<b>d)</b>	<b>Power house</b>	<b>State</b>	<b>District</b>	<b>Taluka</b>
	(i) Nagarjunasagar dam	Andhra Pradesh	Guntur	Rentachintala
	(ii) Musi dam	Telangana	Nalgonda	Nakrekal
<b>3.4</b>	<b>Name of village near Head works</b>	<b>Name of the village</b>		
	(i) Inchampalli barrage	Muknur		
	(ii) Nagarjunasagar dam	Nandikonda		
	(iii) Somasila dam	Somasila		
	(iv) Grand Anicut	Thogur		
<b>3.5</b>	<b>Location of Head works</b>	<b>Latitude (N)</b>	<b>Longitude (E)</b>	
	(i) Inchampalli barrage	18° 37' N	80° 20' E	
	(ii) Nagarjunasagar dam	16°34'23" N	79°18'47" E	
	(iii) Somasila dam	14° 29' 15" N	79°18'25" E	
	(iv) Grand Anicut	10° 49' 50" N	70°57'32" E	
c)	Lies in Earthquake Zone No.	The project sites lie in seismic Zone-II & III as per the zoning map of India (IS: 1893-2002, Part-1).		
<b>3.6</b>	<b>Survey of India Toposheets 1:50000</b>	65B/2,3 & 6,56N/15 &16, 56O/4,8,11to15, 56P/1,2,5 to 8,11,12,15 & 16, 56L/9 & 13, 57M/5 to 11, 57N/ 5 to 8,11 & 12, 57O/9 to 12 &14, 57P/8,9,10,11, 58M/ 1 to 5, 7 & 8, 58J/13		
<b>3.7</b>	<b>Access to the project</b>	<b>Name</b>	<b>Distance from project site</b>	
a)	Airport	Hyderabad/	300 km / 330 km	

		Chennai	
b)	Rail head	Peddapalli / Tiruchurapalli	125 km /20 km
c)	Road head	Bhupalpally/ Tiruchurapalli	84 km / 20 km
d)	Seaport	Chennai	300 km
<b>4</b>	<b>Inter State aspects of the project</b>		
a)	Catchment area of the Godavari basin upto Inchampalli barrage	269000 km <sup>2</sup>	
<b>5</b>	<b>Estimated life of the projects (years)</b>	100 years	
<b>6</b>	<b>Irrigation (ha)</b>	The project will provide annual irrigation to 944572 hectare area	
		Command	CCA (ha)
		Area under Kakatiya stage II (SRSP)	178055
		New area under Gottimukkala feeder	80000
		Area under SLBC feeder	109250
		Part command under NSRBC	90000
		New area between Nagarjunasagar and Somasila	168017
		New area between Somasila and Cauvery	205000
		Cauvery delta	56700
		Total	887022
			944572
<b>7</b>	<b>Flood control</b>	No flood control envisaged	
<b>8</b>	<b>Navigation</b>	No navigation proposed	
<b>9</b>	<b>Water supply (Domestic and Industrial)</b>		
a)	Names of towns / villages/ Industries served	Local domestic and industrial demands considered in the vicinity of project area.	
b)	Size of population served	14058262	
c)	Quantum of water made available (Mm <sup>3</sup> )	1456 Mm <sup>3</sup> (512 Mm <sup>3</sup> for drinking + 944 Mm <sup>3</sup> for industrial)	
d)	Quantum of water per capita (litre)	70/135	
<b>10</b>	<b>Hydrology</b>		

<b>10.1</b>	<b>Annual yield calculated at the proposed Inchmpalli barrage site (Mm<sup>3</sup>)</b>				
a)	At 50% dependability	57208			
b)	At 75% dependability	71687			
<b>10.2</b>	<b>Climatic Data</b>				
		<b>Hanamkonda</b>		<b>Khammam</b>	
	Climatological Parameter	Max	Min	Max	Min
	Temperature (°C)	44.4	11.9	44.3	13.6
		I	II	I	II
	Relative Humidity (%)	72	61	73	52
	Cloud Cover (Oktas)	2.4	2.3	2.2	2.2
		<b>Gannavaram</b>		<b>Ongole</b>	
	Climatological Parameter	Max	Min	Max	Min
	Temperature (°C)	44.9	14.6	44.7	17.4
		I	II	I	II
	Relative Humidity (%)	78	59	75	60
	Cloud Cover (Oktas)	4.1	4.0	4.0	4.1
		<b>Cuddappah</b>		<b>Nellore</b>	
	Climatological Parameter	Max	Min	Max	Min
	Temperature (°C)	43.7	14.9	43.8	18.2
		I	II	I	II
	Relative Humidity (%)	67	49	76	62
	Cloud Cover (Oktas)	2.7	3.4	3.8	3.9
		<b>Vellore</b>		<b>Chennai</b>	
	Climatological Parameter	Max	Min	Max	Min
	Temperature (°C)	42.8	12.9	42.6	18.0
		I	II	I	II
	Relative Humidity (%)	78	55	74	65
	Cloud Cover (Oktas)	4.3	5	4.7	4.8
		<b>Cuddalore</b>		<b>Tirupati</b>	
	Climatological Parameter	Max	Min	Max	Min
	Temperature (°C)	40.9	17.3	36.9	12.5
		I	II	I	II
	Relative Humidity (%)	78	71	80	52
	Cloud Cover (Oktas)	4.4	4.4	4.8	5.1
		<b>Bengaluru</b>			
	Climatological Parameter	Max		Min	
	Temperature (°C)	43.6		14.7	
		I		II	
	Relative Humidity (%)	70		51	
	Cloud Cover (Oktas)	4.6		4.8	
<b>10.3</b>	<b>Flood</b>	No Flood storage is earmarked in the project			

	<b>absorption capacity (Mm<sup>3</sup>)</b>			
<b>10.4</b>	<b>Submergence</b>	9306 ha (Inchampalli barrage) confined to the river portion.		
	<b>Number of families affected</b>	9 villages along the link alignment will be affected. Population of 21575 in 5474 households will be affected.		
<b>10.5</b>	<b>Barrage</b>			
(i)	Design Flood Discharge (cumec)	71030		
(ii)	Total Waterway (m)	688.5		
(iii)	Top level of pier/abut (m)	100.7		
(iv)	Crest Level (m)	76		
(v)	Pond Level (m)	87		
(vi)	HFL	98		
(vii)	Width of Pier (m)	2.5		
(viii)	Clear Width of each span (m)	15		
<b>11</b>	<b>Conveyance System</b>			
<b>11.1</b>	<b>Main Canal</b>			
<b>11.2</b>	Purpose of canal (Irrigation/Power/Navigation/Divers ion/ Water Supply/ Multipurpose)	Irrigation		
<b>11.3</b>	Type			
	i) Flow /Lift	Flow / Lift		
	ii) Lined / Un lined	Lined		
	iii) Type of lining	C.C lining		
<b>11.4</b>	Main canal data	<b>Inchamapalli-Nagarjunasagar</b>	<b>Nagarjunasagar -Somasila</b>	<b>Somasila – Grand Anicut</b>
(i)	Length (km) (Total length 1210.841 km)	299.256	393.020	518.565
(ii)	FSL at Head/Tail (m)	106/180.254	151.66/100.77	97.3/61.433
(iii)	Maximum discharging capacity at head/tail (cumec)	1090/1041	488/498	601.18/ 350.76
(iv)	Full supply Depth	6.75	7	6

	at head (m)			
(v)	Bed width at head (m)	109.6	21.3	73
(vi)	Side slope at head (H:V)	1.5:1	1.5:1	1.5:1
(vii)	Bed Slope(range)	1:20000	1:2200- 1:20000	1:20000
(viii)	Total number of canal structures on main canal	237	262	489
(ix)	Total assumed losses across the structures (m)	21.98	50.89	35.26
(x)	Culturable Command Area (En-route) (ha)	367305	258017	261700
<b>11.5</b>	<b>Efficiencies (%)</b>			
	(i) Conveyance	75		75
	(ii)Field application	65		65
<b>11.6</b>	<b>Tunnel</b>			
<b>12</b>	<b>Cost of project (lakh) Unit-wise</b>			
	Unit – I: Head Works			392052
	Unit – II: Conveyance system			6989726
	Unit – III: Hydropower			91621
	Unit – IV: Lifting Arrangements			1105926
	Unit – V: Onfarm Development			16911
	<b>Total cost of the project</b>			<b>8596236</b>
<b>13</b>	<b>Benefits / Revenue</b>			
a)	Irrigation			641493
b)	M&I			606440
c)	Power			14640
d)	Irrigation cess			14169
e)	Pisciculture			53385
f)	Animal husbandry			10637

g)	Plantations	18425
	<b>Total Benefits</b>	<b>1359189</b>
14	<b>Annual Cost</b>	
	Interest at 10%	859624
	Annual O&M command	15523
	Depreciation at 1%.	85793
	Maintenance of headworks at 1% of cost	3921
	Depreciation of pumping system at 8.33% of pumping system	55066
	Charges of power	76900
	<b>Total Annual cost</b>	<b>1096827</b>
<b>15</b>	<b>Benefit Cost (BC) Ratio and IRR</b>	
a)	BC Ratio	<b>1.24</b>
b)	Internal Rate of Return (IRR)	<b>11.90</b>