SALIENT FEATURES OF PAR-TAPI-NARMADA LINK PROJECT

1	Status	Proposed
2	Type of project	Multipurpose
3	General	
i)	River basin	Par, Auranga, Ambica, Mindhola and Purna
ii)	Location of project	In the state of Gujarat & Maharashtra
iii)	Location of reservoirs Jheri	Peint taluka (Nasik district) in the state of Maharashrta
	Mohankavchali, Paikhed, Chasmandva, Chikkar,Dabdar and Kelwan	Gujarat state
iv)	Access to the project a) Rail Western Railway	Distance from project varies from 70 km to 130 km
	b) Road N.H. No-8	-do-
	C)Airport/seaport Mumbai	230 km to 330 km
	Estimated life of the project	100 years
4	Hydrology	
i)	Catchment area upto dam site (sq km)	

Name of the dam site	Total area	Intercepted by State	
		Gujarat	Maharashtra
Jheri	425	-	425
Mohankavchali	206	127	79
Paikhed	315	46	269
Chasmandva	89	27	62
Chikkar	323	221	102
Dabdar	482	482	-
Kelwan	733	733	-
Total	2573	1636	937

ii)	Precipitation in the catchments	
	Maximum Minimum	4672 mm 654 mm

iii)	Annual yield at proposed dam site (Mm^3) period of record 1901 - 1985	
Dam site	Yield at	
	50% dep	75% dep
Jheri	487	358
Mohankavchali	236	174
Paikhed	327	244
Chasmandva	112	76
Chikkar	300	243
Dabdar	397	289
Kelwan	555	435

iv)	Utilisation of water through the link	1350 Mm^3
5	**Reservoir**	
i)	Water levels and storage capacities	

Reservoir	Water levels (m)			Storage capacity (Mm^3) at	
	MWL	FRL	MDDL	FRL	Live storage
Jheri	247.5	246	203.7	202.76	187.34
Mohankavchali	160.5	158	143.00	371.65	179.94
Paikhed	249.0	248	190.22	229.43	218.00
Chasmandva	214.5	214	189.92	82.00	75.08
Chikkar	210.5	210	178.15	141.91	130.00
Dabdar	170.5	169	137.06	223.00	205.42
Kelwan	165.0	164	136.06	284.33	257.82

ii)	Sedimentation after 50/100 years (Mm^3)			
Reservoir	50 years		100 years	
	Above MDDL	Below MDDL	Above MDDL	Below MDDL
Jheri	9.14	7.98	20.02	14.22
Mohankavchali	4.78	20.59	9.79	41.01
Paikhed	9.44	3.26	19.12	6.24
Chasmandva	2.10	1.5	4.28	2.91
Chikkar	8.13	4.87	17.37	8.63
Dabdar	12.13	7.29	26.64	12.22
Kelwan	18.32	11.20	38.49	20.53

6	Submergence a) Submergence ratio b) Total submergence are (ha) c) Villages affected (No) d) Population affected (No) e) Live stock affected (No)	 0.021 7559 75 14832 9029
7 i) a)	Head works Dams Earthen portion	

Particulars		Jheri	Mohan-kavchali	Paikhed	Chasm-andva	Chikkar	Dabdar	Kelwan
	Length(m)	515	600	925	2675	1444	830	955
	Top Width(m)	10	10	10	10	10	10	10
	Max.ht.(m)	76	70	57.4	51	60	51.4	50.1
b) Concrete portion (N.O.F.)								
	Length at top (m)							
	Left	82.5	123	185	64.5	82.5	82.5	130
	Right	125	155	145	64.5	78.5	82.5	130
	Top width(m)	8	8	8	8	8	8	8
	Max.ht.(m)	36.5	70.6	90.9	35.4	29.9	62.4	62.4
ii) Spillway								
	Type	Ogee	Ogee	Ogee	Ogee	Ogee	Ogee	Ogee
	Length(m)	51	69	51	33	51	51	69
	Max.ht.(m)	36.5	70.6	90.9	35.4	29.9	62.4	62.4
	Crest level (m)	236	148	238	204	200	159	154
	No.of gates	3	4	3	2	3	3	4
	Size of gates (m)	15x10	15x10	15x10	15x10	15x10	15x10	15x10
	Type of gate	Radial	Radial	Radial	Radial	Radial	Radial	Radial
	Type of energy dissipation arrangement	- Ski jump bucket type -						

iii) Weirs				
	Type	Length(m)	Crest level (m)	Maximum discharge capacity
Paikhed	Conc.	205	143	3600
Chasmandva	Conc.	225	132	3151
Chikkar	Conc.	225	129	3076

8 Canal system	
i) Main canal	
a) Purpose	Irrigation
b)Type c) Flow/Lift d) Lined/unlined e) Discharging capacity of the main canal f) Type of lining	 Flow Lined Varying from 44.13 to 90.90 cumecs Concrete lining in M-10 grade

ii) Main canal data		Par-Tapi	Tapi-Narmada
a)	Length (Km)	205.34 (including 33.271 km of feeder)	190.14
b)	F.S.L. (m)	140.70	81.79
c)	Full supply depth at head(m)	3.12	3.5
d)	Bed width at head(m)	6.60	12.5
e)	Side slope at head (H:V)	1.5:1	1.5:1
f)	Bed slope(range)	1 in 7,000 to 1 in 10,000	1 in 10,000
g)	Maximum discharging capacity at head (Cumec)	44.13	70.83
h)	Total no.of canal structures on main and branch canals	148	84
i)	Total assumed losses across the structures(m)	17.39	8.40
j)	G. C. A. (ha)	24873	244290
k)	C. C. A. (ha)	17411	171003

9. Power			
i)	Head race (canal)	Kelwan	Dabdar
a)	Length (m)	5925	8300
b)	Shape	Trapezoidal	Trapezoidal
c)	Size (m)	3.50 X 2.35	3.50 X 2.34
d)	Designed discharge (cumecs)	20.17	19.95

ii) Penstock/pressure shaft						
	Jheri	Paikhed	Chasmandva	Chikkar	Dabdar	Kelwan
a) Number	One	One	One	One	One	One
b) Diameter(m)	2.5	2.5	1.5	2.0	2.0	2.0
iii) Power house						
a) Type	Surface					
b) Head (m)						
Maximum	64.00	83.00	49.00	56.00	11.22	16.03
Average (design)	49.90	63.74	40.97	45.38	11.22	16.03
c)Installed capacity(MW)	8	10	3	4.5	3	4

10	Benefits i) Irrigation (ha) a) G.C.A. b) C.C.A. c) Annual irrigation d) Intensity of Irrigation For enroute command For Narmada command e) Cost per ha of CCA irrigated f) Cost per 1000 cu m water delivered	 2,69,163 1,88,414 1,69,339 125% 80% Rs.3,19,320 Rs.44,566
	ii) Hydropower a) Installed capacity (MW) b) Energy generated (Mkwh) c) Cost per KW installed	 32.5 92.975 Rs.77,031
11	Cost	
i)	Cost of the project	

Unit		Cost Rs. in lakhs
a.	Unit – I Head works	2,61,220
b.	Unit – II Canal & their structures	3,15,389
C.	Unit-III Hydropower installation	25,035
d.	Unit-IV Command area development work(included in unit-II)	--
	Total	6,01,644
ii)	Allocated cost	
a)	Irrigation	5,76,609
b)	Power	25,035

12	Annual benefit/revenue	Rs. in lakhs
i)	Irrigation (Food production)	56,301
ii)	Power (92.975 Mkwh)	5,523
	Total	61,824
13	Economic analysis	
i)	Irrigation and power component (B.C. ratio)	1.08
ii)	Internal rate of return from irrigation and power component	
a)	With distributional and employment effect	8.82%
b)	Without distributional and employment effect	7.56%