
Nuclear Tariff norms and Tariff

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Tariff determining governance

- DAE fixes tariff for nuclear power stations in consultation with CEA on cost plus basis-single part
- Tariff determined based on operational and financial norms specified by DAE for 5-year control period (ongoing 2022-27)
- DAE constitutes Adhoc Committee for revising norms for each control period ----comprising of members from DAE, CEA, NPCIL, BARC, FA from DAE
- Cost of NPCIL power plants vetted by AEC/CCS
- **Post SHANTI Act:**
 - ✓ Tariff to be fixed by DAE;
 - ✓ Disputes to be addressed by Atomic Energy Redressal Council (Chairperson, AEC, Director, BARC, Chairman, AERB and Chairman, CEA)
 - ✓ Further challenge before APTEL

Components of Tariff-1/2

Component	What it covers	PHWR	PWR
Return on equity	Allowed return on the equity invested in the project.	15.5%* + Tax	
Interest on debt	Financing cost on borrowed capital.	Actual weighted avg	
Depreciation	Recovery of the capital cost of the plant over time.	3% (existing)/[2.33% for 30 years+ balance spread over remaining life(new)]	
Operation and maintenance cost	Day-to-day running, staffing, and maintenance expenses.	2022-23: 27.89 lakh/MW (700 MW PHWR); 27.45 lakh/MW (1000 MW PWR) to be escalated @6% for future years	
Interest on working capital	Cost of short-term funds needed for operations, where included in the norm.	WC= 6 months Fuel cost (PHWR)/one time refuelling cost (PWR)+Stores inventory @ 2% of current capital cost+O&M for 1 month+45 days receivable; Interest Rate=12% for fuel and SBI Medium term loan for other component	

Components of Tariff-2/2

Component	What it covers	PHWR	PWR
Fuel cost	Nuclear fuel and associated fuel-cycle cost.	AFRC + Fuel Consumption	
Heavy Water Lease Charges	Charged on the heavy water inventory held by the plant	570 tonnes per reactor-recovered in terms of EMI	Nil
Heavy water makeup charges:	Charged for replenishment of heavy water	2 tonnes per reactor/annum	Nil
Decommissioning Fees	Funds set aside for end-of-life plant dismantling and site restoration.	12 paise/kwh	
Special Incentive	Incentives for operation beyond 30 years	50 paise/unit	
Foreign exchange / import cost adjustment	Revisions for imported equipment or currency-linked costs, where applicable.	Actual cost of hedging; if no hedging, as per Actual	

Technical Tariff Norms for PHWR/PWR

Parameters	PHWR (700 MW)	PWR (1000 MW)
PLF	72.5%	80%
Aux Consumption	11.25%	7.8%
Fuel Consumption	25 kg/MU	128 MWd/MU

Tariff of existing NPPs during 2022-27

SI No	Name	IC (MW)	CoD	Technology	Base Tariff (Paisa/unit)# (2022-27)
1	Madras Unit-1&2	2x220	Unit-1: 27.01.1984 Unit-2: 21.03.1986	PHWR	272.30
2	Narora Unit-1&2	2x220	Unit-1: 01.01.1991 Unit-2: 01.07.1992	PHWR	307.99
3	Kakrapar Unit 1&2	2x220	Unit-1: 06.05.1993 Unit-2: 01.09.1995	PHWR	322.30
4	Rajasthan Unit-2,3,4#	1x200+ 2x220	Unit-2: 01.04.1981 Unit-3: 01.06.2000 Unit-4: 23.12.2000	PHWR	332.50 (upto 23.07.24) 356.16 paisa/unit
5	Rajasthan Unit-5,6	2x220	Unit-5: 04.02.2010 Unit-6: 31.03.2010	PHWR	350.14

does not include decommission fees, special incentive, water and insurance charges, nuclear liability fund levy

Tariff of existing NPPs during 2022-27

SI No	Name	IC (MW)	CoD	Technology	Base Tariff (Paisa/unit)# (2022-27)
6	Tarapur Unit-1,2	2x160	Unit-1&2: 28.10.1969	BWR	272.66
7	Tarapur Unit-3,4	2x540	Unit-3: 18.08.2006 Unit-4: 12.09.2005	PHWR	327.30
8	Kaiga Unit 1 to 4	4x220	Unit-1: 16.11.2000; Unit-2: 16.03.2000; Unit-3: 06.05.2007; Unit-4: 20.01.2011	PHWR	336.45
9	Kudankulam Unit 1&2	2x1000	Unit 1: 31.12.2014; Unit 2: 31.03.2017	VVER -1000 (PWR)	387.65

Indicative tariff of electricity from new units

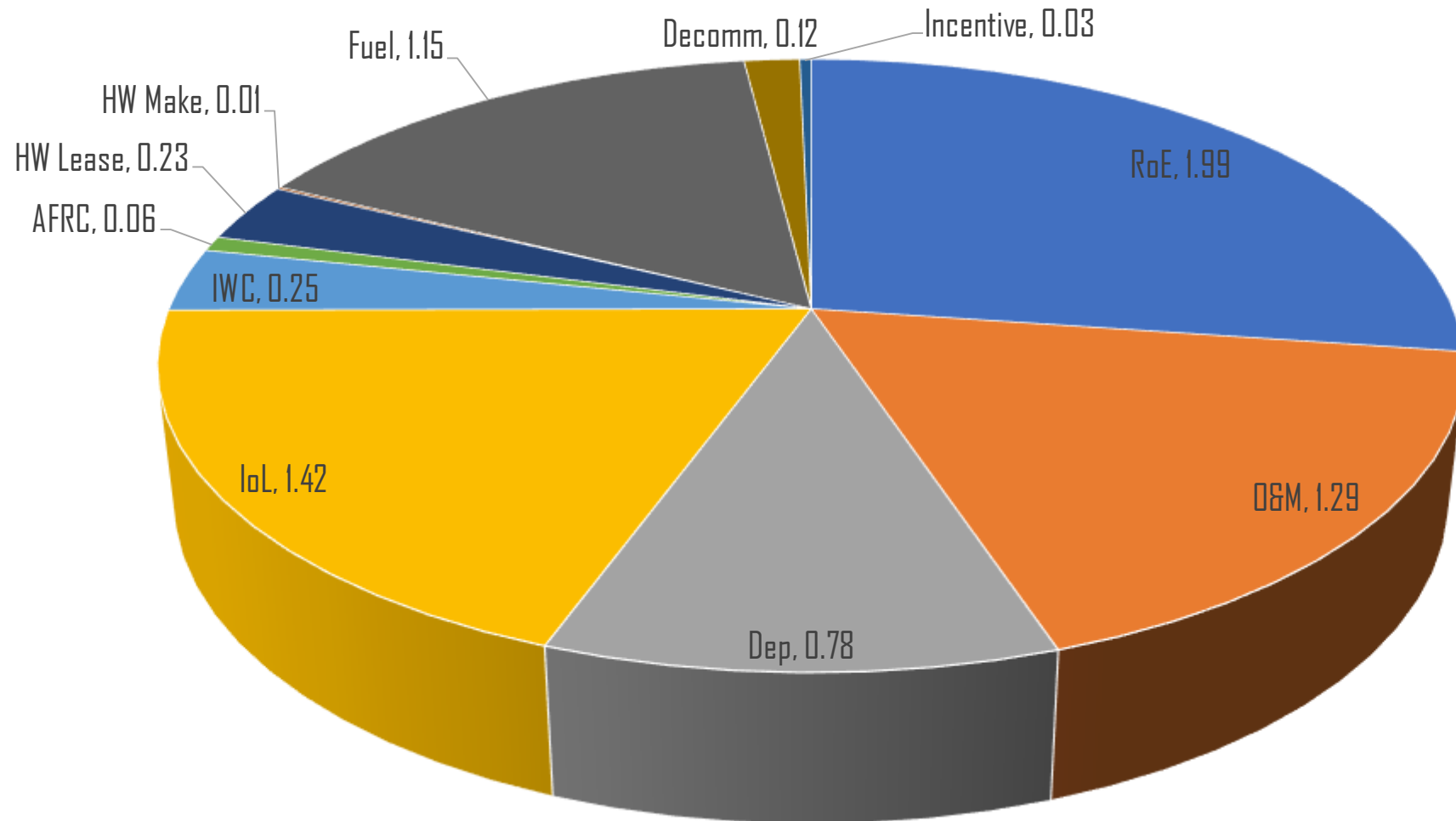
PHWR

A	Capital Cost (Rs Cr/MW)	15.00	17.00	19.00	21.00
B	First year Tariff (Rs/kwh)	6.18	6.70	7.23	7.76
C	Levelized Tariff (Rs/kWh)	6.41	6.86	7.31	7.77

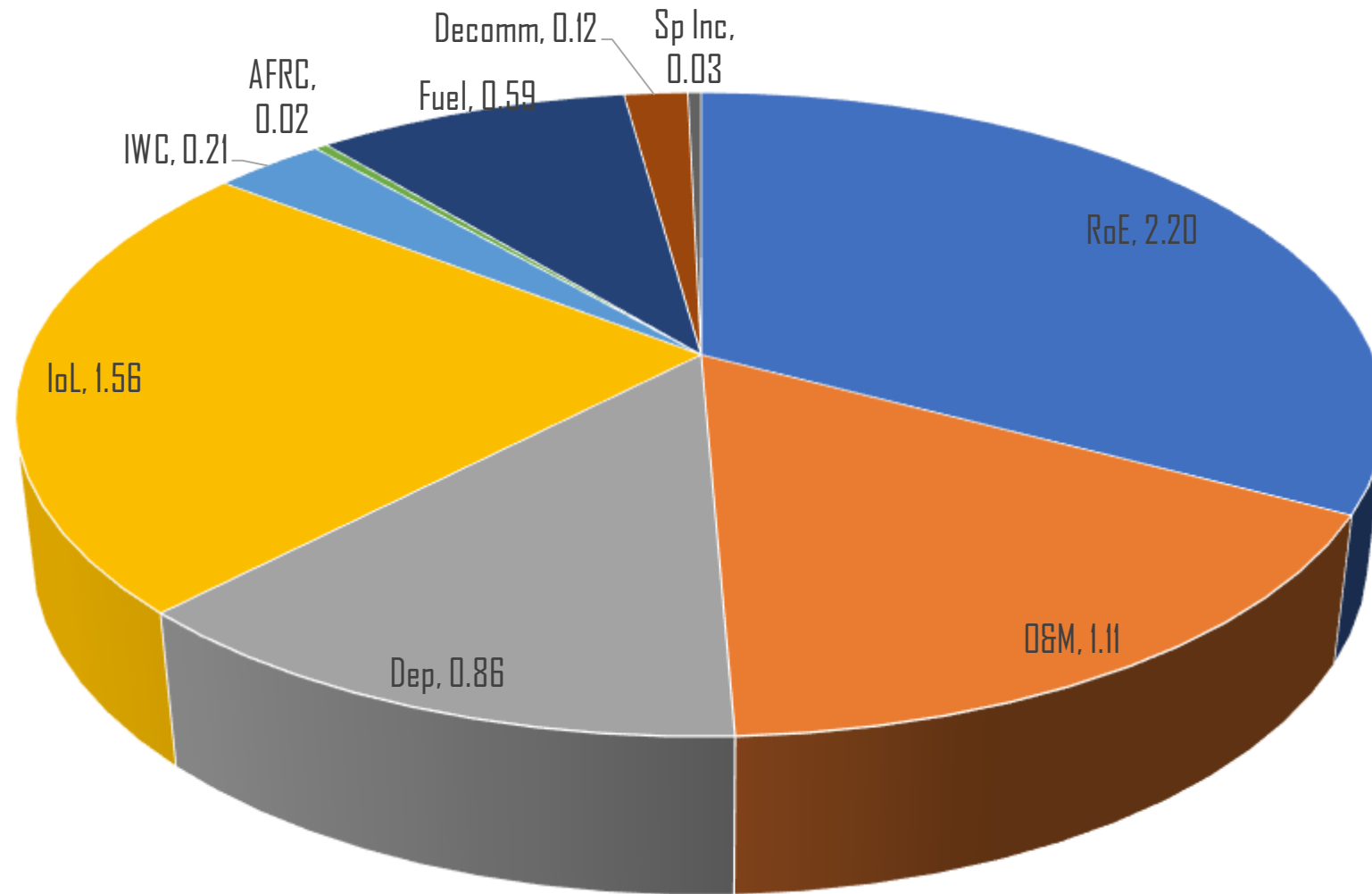
PWR

A	Capital Cost (Rs Cr/MW)	24.00	26.00	28.00	30.00
B	First year Tariff (Rs/kwh)	6.80	7.26	7.72	8.18
C	Levelized Tariff (Rs/kWh)	6.69	7.09	7.49	7.88

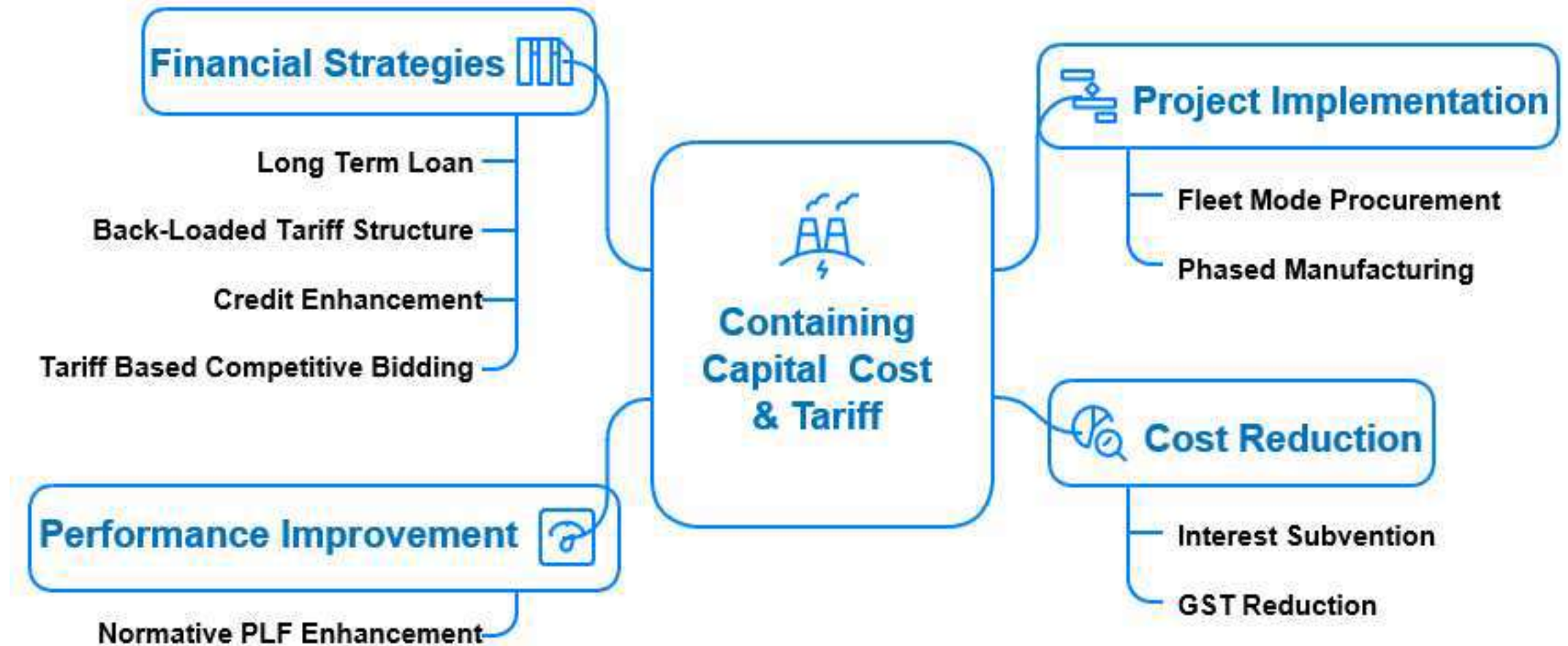
Contribution of different components in levelised tariff of 7.31 Rs/unit (Completed cost –Rs 19 crore/MW)



Contribution of different components in levelized tariff of PWR reactor of ₹7.88 per unit (cost-
Rs 30 crore/MW)



Measures to reduce cost and tariff



Thank you