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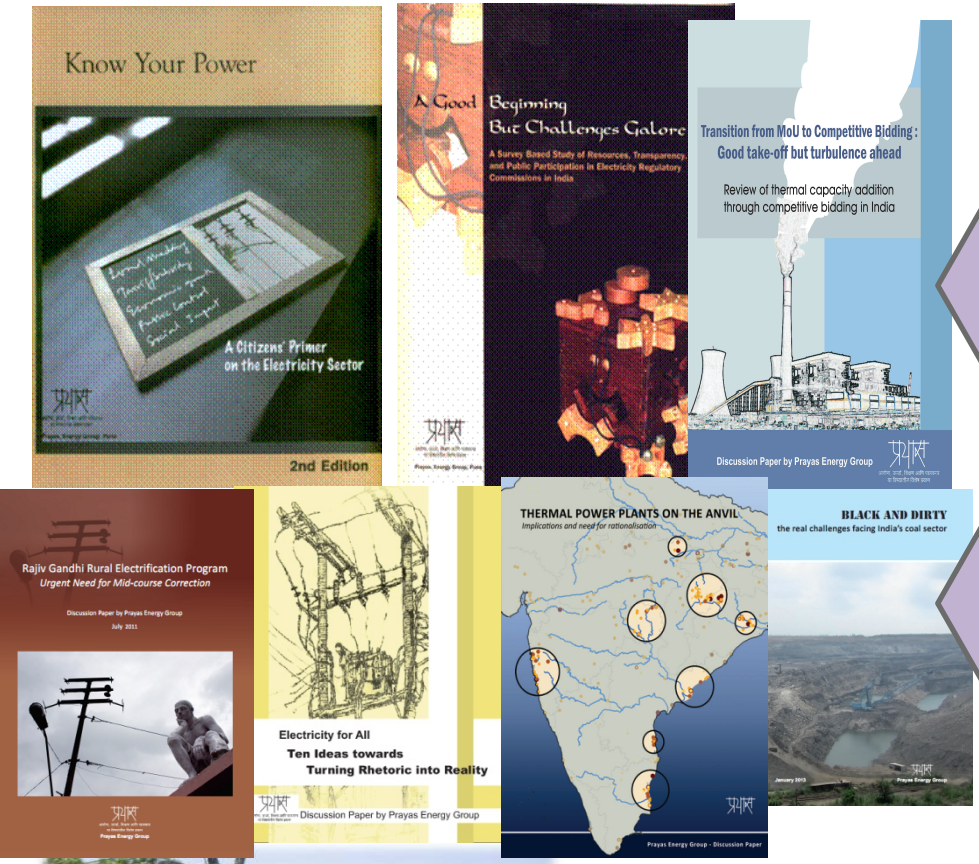
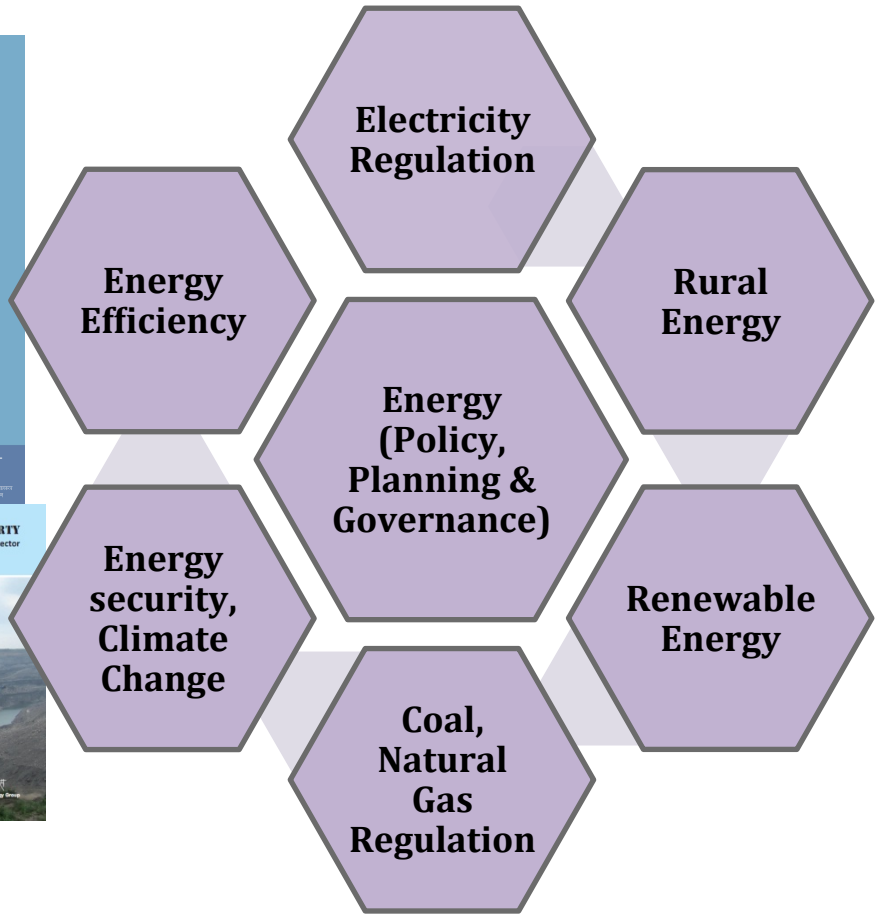




Activities:

- *Research & intervention (regulatory, policy)*
- *Civil Society training, awareness, and support*

Flow

- Importance of current process
  - Transparency and informed participation paramount to legitimise process
- Power Procurement and Capacity Addition
  - Accounts for 70% of costs, needs planning
- Tariff Design
  - Tariff increase in inevitable but current cross subsidy will result in more losses
- Energy Accounting and Load Shedding
  - Need to ensure scientific accounting for losses and equitable sharing of shortages

Importance of current process

- *True-ups- link to financial losses and performance*
- *Need for informed participation and data gaps in current process*

True-up of past expenses

- Is not a regular exercise:
  - Done once before in the past 12 years
  - Audited accounts for only five months of 2010-11 used

- Is an important exercise:
  - Ascertain extent of losses and regulatory assets
  - Evaluate performance to ensure controllable costs are not passed onto consumers

- Informed public participation is vital for such a crucial process to gain legitimacy
  - Need for availability of data for informed participation
  - Need for use of audited actuals

Data- gaps in Published Summary

- Sales and revenue
  - Category wise, slab-wise: number of consumers, sales, revenue and connected load ,with details on metered and unmetered consumers
  - Category wise assumptions for sales growth rate for the year 2014-15

- Power Purchase
  - Station wise contracted capacity ,energy supplied, fixed cost, variable cost including market purchases for true up.
  - Actual PLF,SHR and Auxiliary consumption for TANGEDCO power plants for past years
  - Capacity in pipeline, delays in commissioning for all plants and IDC accruing to TANGEDCO plants.
  - Projections of open access sales and wind banking and estimation of impact on TANGEDCO's sales and expenditure.

- Capital Expenditure and Loans
  - Scheme/DPR wise information of capital expenditure and capitalisation at the distribution level and plant wise for generation.
  - Short term liabilities, rate of interest, lender and term of loans incurred

Power Procurement and Planning

- *High cost performance of state generating plants*
- *Need for greater discourse and information sharing*
- *Need for more regulatory scrutiny and planning in capacity addition*

Increase in expenses due to Generation accounts for 56% of proposed tariff increase

Commissions cost estimates for the year 2014-15 (Rs. Cr)			
Selected components of ARR	As per previous Tariff Order	TNERC consideration for this process	Change in estimation
Expenses in respect of Generation	8851	12687	3836
Power Purchase Cost	17949	17946	-3
Gross Aggregate Revenue requirement	35918	39818	3900

[1] From sources other than TANGEDCO plants

What can be done?

- Rationalise fixed cost
  - Clarity on how implementation of transfer scheme, FRP will impact interest payments.
  - Benchmarking capital and performance parameters with penalties for non-compliance

- Reduce variable cost
  - Explore possibility of using imported coal for coal based TPPs of TANGEDCO if transport costs are high.

Need to ensure public discourse

- Need to share important information
  - Gain public support
  - Urge other stakeholders into action

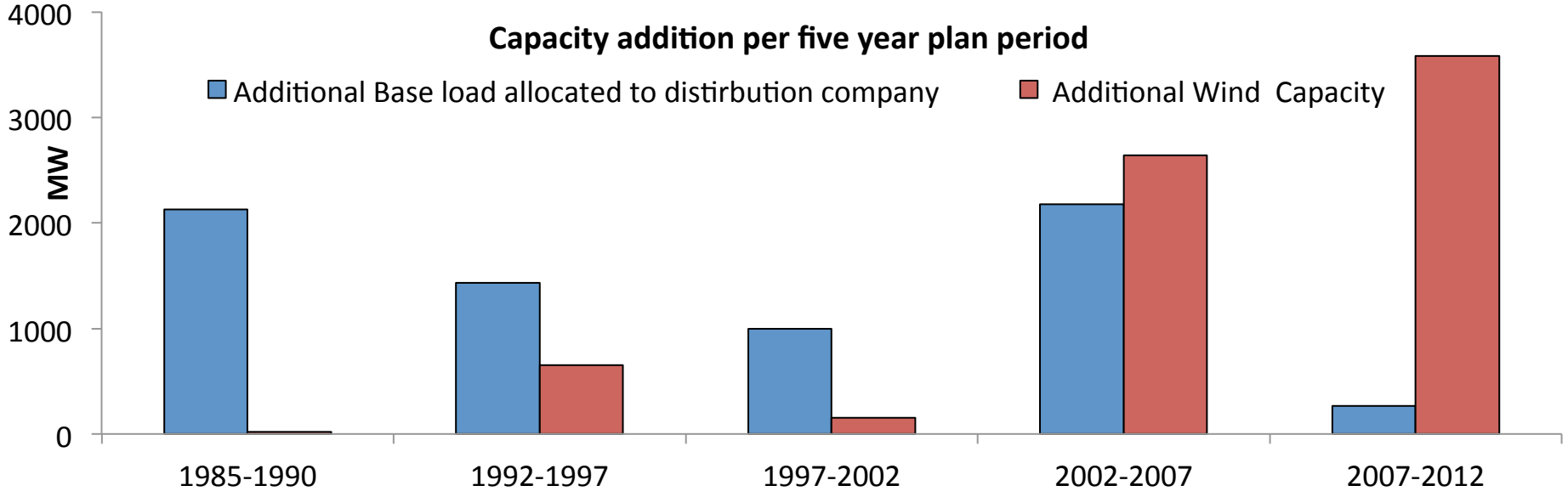
- TANGEDCO plants
  - Unit-wise source wise quantity and cost of coal procured on monthly basis.
  - Unit-wise performance, fixed and variable costs on a monthly basis.
  - Status of plants under construction, reasons for delay , unit-wise annual IDC

- For Distribution and Generation Functions
  - Capital works planned, undertaken and completed per unit/scheme/ circle with amount spent, expected benefit from scheme annually
  - Details on loans taken including term of loan, purpose of loan, interest rates, annual interest payments and details of lenders on an annual basis.

Power procurement from other sources

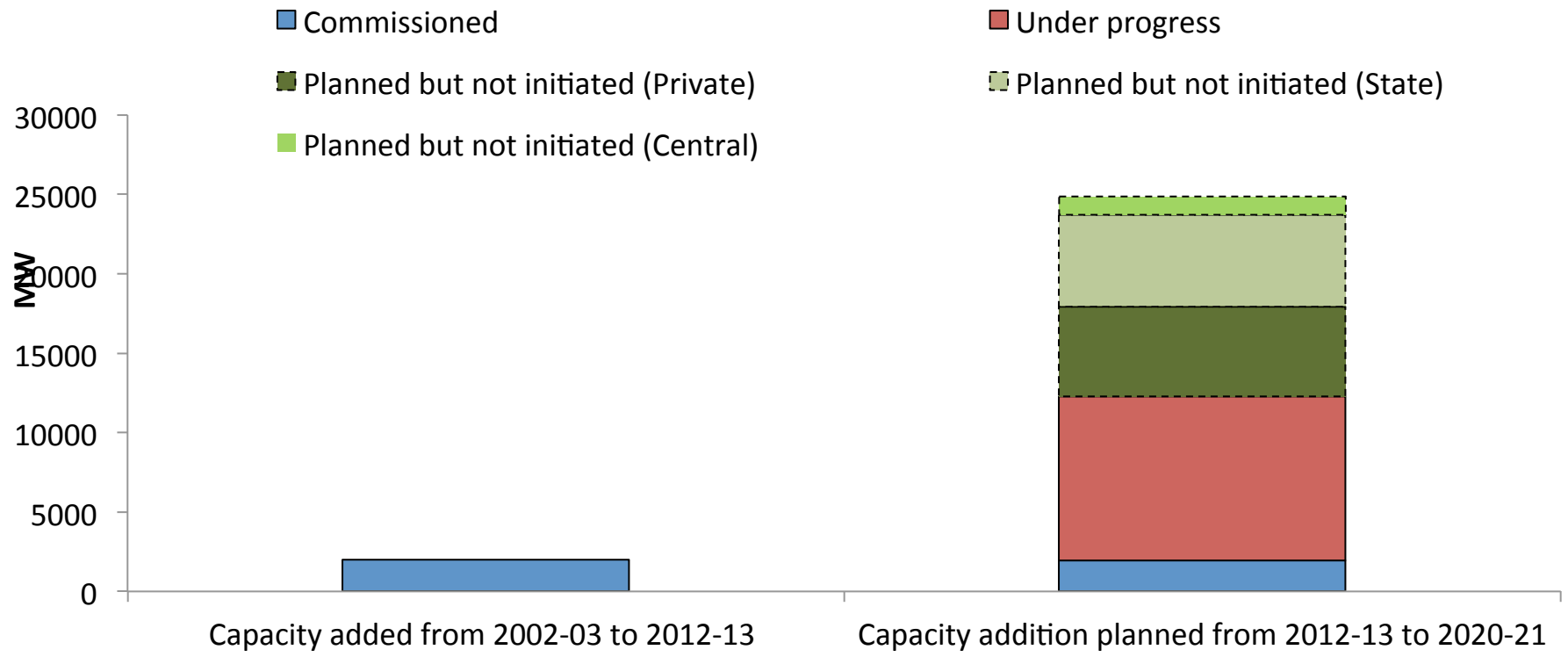
- High cost IPP contracts will need to be renewed:
  - Extension of the PPA with approval of TNERC with prudent evaluation of costs.
  - Capital costs of plants have been paid for over lifetime, PPA revision should account for this.
- Power procured via Case 1 Bidding
  - TANGEDCO contracted 3330 MW of power from 11 at a levelised tariff of Rs.4.91/kWh for a period of 15 years from 2014 to 2028.
  - Power procurement from these sources is not considered for 2014-15.
  - Commission and TANGEDCO should ensure that the tariff adoption order is passed expediently

Capacity Addition: No attention to base load



- When base load capacity increase by just 2%,wind capacity almost doubled.

CAPACITY ADDITION



- To the tune of 25,600 MW -3 times present installed capacity
- Extremely ambitious plan- no public debate or regulatory scrutiny on feasibility
- Work has not started > 60% of planned projects
- Without strict scrutiny capacity addition in future could be abysmal.
- Delay would result in future high cost capacity and present high cost power purchase.

Need for regulatory oversight

- Annual Regulatory oversight of TANGEDCO projects
  - Includes evaluation of costs and benefits and monitoring planned time-lines.

- Annual performance evaluation of private projects based on terms of PPA
  - Adherence to timelines and reasons for delay (failure in securing land, issues with EC, water linkage)
  - Supply of power as per availability norms for contracted supply specified in the contract
  - Imposing penalties involved.
  - Sharing of revenue from sale of surplus power generated as per PPA terms.

- Framework for rationalising capacity addition plan
  - Regulatory to approve capacity addition plan based on feasibility of projects.
  - Feasibility decided by pre-determined criteria.
  - Criteria could include completion of land procurement, obtaining fuel linkages, obtaining necessary clearances etc.

Need for comprehensive demand estimation exercise

- Demand estimation to include:
  - State-level indicators, progress of government programs, environmental/ resource factors, (e.g.-ground water levels)
  - historic trends of sales, elasticity of sales to tariffs,
  - historic trends of migration of consumers to open access and renewable options, change in appliances used etc.
  - Scenario building exercises to assess impact of increase in number of captive plants, open access, advances in renewable technology and its uptake, energy efficiency schemes on future demand.
  - Assess impact on costs and power shortage due to capacity addition delay.

- Estimation should be for 15 year,10 year and 5 year intervals .

- Evaluation of capacity addition based on demand estimation:
  - Review capacity addition if capacity addition > 20% in excess of projected demand,
  - Exercise should be repeated on a regular basis, say every five years.

Tariff Design

- *Tariff increase inevitable but limit to current tariff increase*
- *Need for change in tariff design- reduce cross subsidy*
- *OA needs operationalization- impacts tariffs and quality of supply*
- *Redesign agricultural tariffs and subsidies – assess willingness to pay*

Tariff Philosophy and Design

- Protect interest of small consumers
- Ensure revenue recovery
- Encourage conservation and promote energy efficiency
- Simple to understand and easy to implement

HT/LT	Category	Average tariff increase
LT	Domestic	14%
	Agriculture	13%
	Commercial	13%
	Industrial	23%
	Others	17%
HT	Industrial	22%
	Commercial	13%
	Others	36%

- TNERC estimated 17% tariff increase - certain categories face a higher increase than others.
- Commercial and Industrial consumers have incentives to migrate from grid at these tariffs

Very High Levels of Cross Subsidy

Consumer	ABR (Rs./kWh)	% cross subsidy	Cross Subsidy (Rs. Cr)
Huts	4.09	32%	105
Domestic	3.97	34%	4695
Industry	7.97	-32%	-1074
Agriculture	2.95	51%	3395
Commercial	8.98	-49%	-1832
Others	6.69	-11%	-245
LT	5.02	17%	5043
HT Industries	9.40	-56%	-3566
HT Commercial	9.98	-65%	-691
HT Railways	8.69	-44%	-213
Others	8.81	-46%	-737
HT	9.37	-55%	-4994

Implications of tariff increase or high paying categories

- Increasing trajectory in tariffs for the already high paying industrial and commercial consumers would force such consumers to migrate to other alternatives for power (group captive, rooftop solar, open access etc.).
  - OA sales grew from 4878 MU in 2010-11 to 8200 MU in 2012-13

- Implications of migration of high paying consumers:
  - Long run-with LTOA power will be freed up for small consumers
  - Short run- With current tariff design TANGEDCO finances with deteriorate
    - revenue loss due to Open Access is about 1/5th of the revenue gap in the year 2012-13.
    - With proposed tariffs 14% of revenue recovery from increase tariffs could be foregone
  - With aggressive capacity addition:
    - TANGEDCO to bear costs of high cost long term power procurement.

- Urgent need to revisit tariff design

Domestic Category

- Current status:
  - Unique slab wise telescopic tariffs
  - Consumers are price inelastic
  - Need for more slabs and intra-category cross subsidy
    - Average monthly consumption of >250 units is 425 units
    - At proposed tariffs, the ABR for > 250 slab is only 29% higher than 0-50 units slab.

- Proposed Changes:
  - Category 1:Consumers < 200 units/month, uniform fixed costs ,tariff increase with every 50 units.
  - Category 2:Consumers > 200 units, higher fixed charge and energy charges

Category 1			Category 2		
Slabs	Fixed Charge	Energy Charge	**Slabs**	Fixed Charge	Energy Charge
Units/month	Rs./month	Rs./unit	**Units/month**	Rs./month	Rs./unit
0-50	30	3.0	**0-300**	50	4.6
51-100	30	3.5	**301-400**	50	5.5
101-150	30	4.0	**401-500**	100	6.6
151-200	30	4.6	**>500**	100	7.9

Small LT Consumers

- LT Commercial tariffs are very high, does not support productive load
  - Impacts small consumers (shops, mills etc.) who are dependant on electricity.
  - Consumers using < 50 units to pay 4.86/unit and above 50 units to pay 8.06/unit
  - Small consumer (2kw, 150 units) will be paying Rs.1489 per month.
- Proposed changes
  - LT Domestic, LT Commercial, LT Industrial consumers with < 200 units consumption to be to be grouped into 1 category
  - High level of intra-category subsidy.
  - Ensure certainty in tariff increase by pegging increase in tariff to the rate of inflation minus, say, 2%.
  - Any further increase in revenue which might be required can be obtained from other categories of consumers.

Open Access

- Open Access can be detrimental to the current operations (power procurement, capacity addition, revenue realisation etc.) of TANGEDCO
  - Operationalization should ensure that the interest of small consumers
  - All consumers, even those below 1 MW are eligible for short term and long term Open Access
  - Short term OA makes power purchase planning impossible
  - Opportunistic OA for over-drawal results in load shedding

- Proposed Amendments in Open Access Regulations
  - Short term OA to be disallowed for a period not less than 1 year.
  - A lower limit for open access should be set (say 1 MW),keeping in mind the constraints of TANGEDCO.
  - All eligible consumers must sign a contract TANGEDCO to avail supply for DISCOM.
  - OA consumers to pay standby charges/ temporary supply tariffs for TANGEDCO power
  - OA standby demand from TANGEDCO should not result in load shedding for other consumers.

Rationalising Agriculture tariffs and exploring possible

- Tariff Design
  - State Government pays for power for average consumption on a flat rate basis.
  - State Government has no incentive to meter consumers- will lead to increase in subsidy by 50%
  - TANGEDCO has no economic incentive to ensure quality supply

- Gradually increase effective tariffs
  - Help farmers hold the utility accountable for quality supply
  - Pilots studies to assess willingness to pay
  - Based on results gradual phasing out of free power

- Regional Benchmarking for Agricultural Consumption
  - For interim period : unmetered farmers pay part of tariff
  - Account for agro-climatic and water table variations

- Feeder level solar based pumps
  - One time capital subsidy instead of recurring
  - Easier to monitor than individual solar pumps
  - Experiments in AP and Karnataka

Energy Accounting and Load Shedding

- *Need for scientific method to estimate losses and unmetered sales*

- *Need for an equitable way to share shortages*

Energy Accounting

- Current Status
  - Numerous Directives by Commission for metering
  - Order for scientific benchmark consumption study
    - Circle-wise data from DTs with AMR meters in agriculture and hut feeders
    - Line losses and voltage wise T&D losses from metered feeders with metered consumers.
  - Study not completed and TANGEDCO : loss levels approved at loss reduction trajectory.

- Proposal
  - TNERC to direct TANGEDCO to install AMR meters on all feeders to supply hourly data automatically to the commission.
  - Based on data, Commission can estimate Hut and Agricultural consumptions as well as T&D losses.
  - This is a relatively cost effective way to obtain energy data on a regular basis.

Load Shedding

- Current Status
  - Likely to continue , especially in the summer
  - Not shared equitably
  - No principle being applied to decide sharing of shortages
  - Need for fairness, transparency and predictability in load shedding

- Proposal
  - Commission to prepare discussion paper on possible load shedding protocol
  - Protocol can divide the state into regions based on levels of AT&C losses
  - More power can be supplied to regions with lower losses.
  - State-wide consultations and public hearings to be held based on paper
  - Based on inputs TNERC to issue order to ratify protocol
  - A similar scheme was operational in Maharashtra.

Thank you.

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