

**Presentation Slides regarding comments
from Association members on
The Draft NEP 2021**

13th May 2021

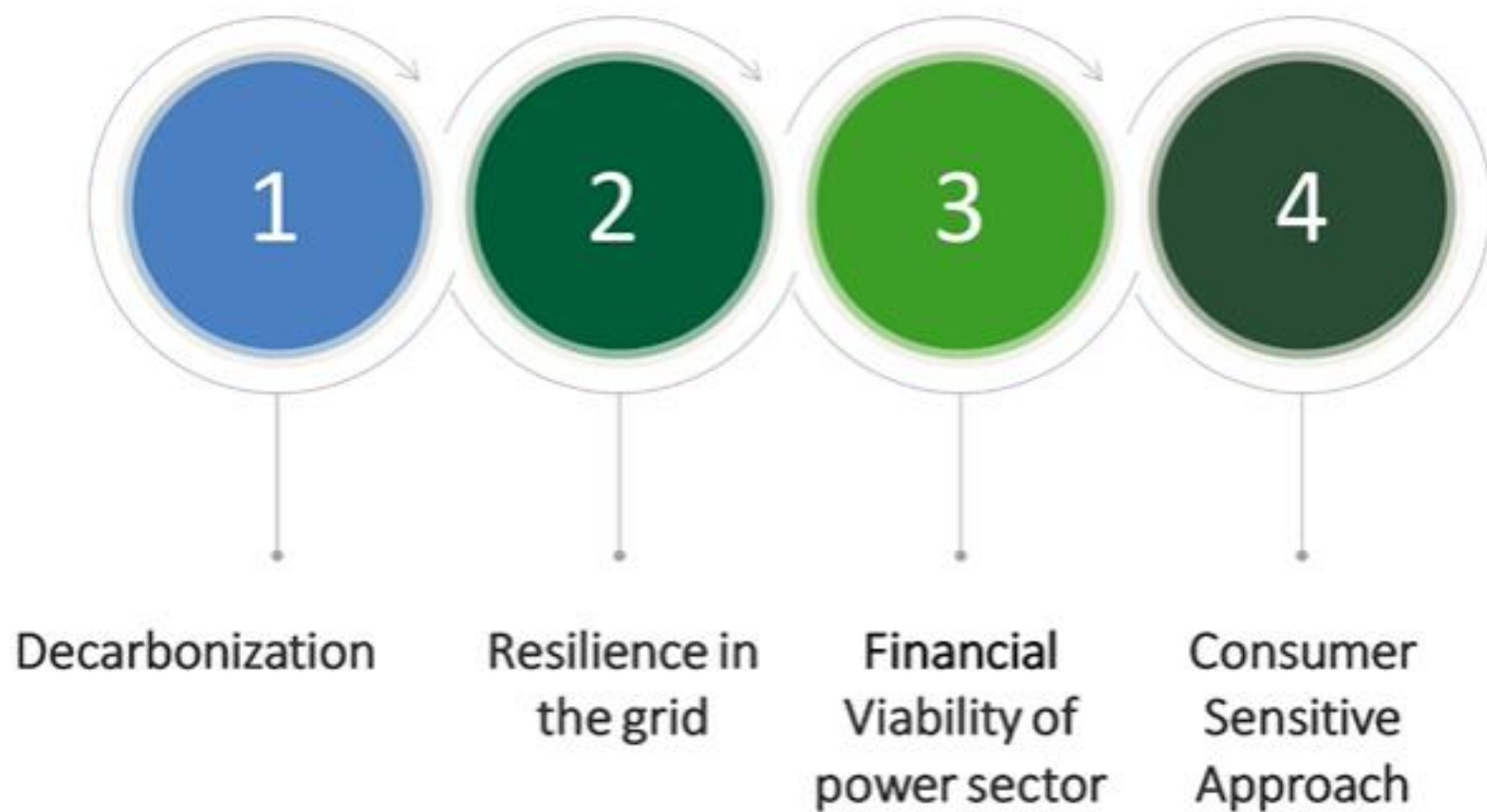
Key Challenges in Power Sector

- Availability of resources: Only Coal, No gas, not much of Hydro and nuclear development. New Hope: Solar, wind, BESS, Hydrogen etc
- Commitment for Green Environment: but challenge to have cost efficient balancing power
- Secure operation of the Grid: One of the largest synchronous grid and connected to four countries. (adequacy, cyber security, reliability) (Recent Mumbai case)
- **Financial** Viability of the sector: Stressed assets, **Distribution** in Financial stress
- Consumer dissatisfaction: poor service, poor quality **particularly in rural areas**. One who pays does not have any say in the policy making

Vision for Power Sector

A financially viable and environmentally sustainable power sector furthering energy security and providing reliable 24x7 quality power at a reasonable price

Focus areas for Future Power Sector



Decarbonization : Transition towards low carbon/ clean energy

1	Optimal Generation mix	Road map to increase share of Non fossil fuel including RE in the overall power generation portfolio Energy Security : in Indian condition (with no gas) : can we do away with Coal (optimal coal capacity required)
2	Balancing of RE variability and intermittency	Adoption of fast responding sources will help in balancing the intermittent output of renewable energy plants.
3	BESS/ Hydro PSP	Fast responding sources such as batteries and pumped storage to be utilized for grid balancing Road map to add such capacity
4	Hydrogen mission	Mission with focus on generation of hydrogen from renewable energy to help achieving Paris Agreement targets and reducing import dependency on fossil fuel.
5	Energy conservation and energy efficiency	Energy efficiency measures help in optimizing the usage of generated energy by optimizing energy consumption (Energy saved reduces carbon)
6	Electric vehicle	Adoption of electric vehicle will minimize the usage of ICE vehicles and thus reduce carbon footprint. High growth in EVs and use of RE to power such vehicles will also help in improving energy security of India.
7	Micro grid and Distributed generation (RE)	Use of distribution generation such as solar rooftop, battery storage, KUSUM scheme of MNRE etc. Agriculture load shifting.
8	Market Development	MBED, RE market, GDAM, Revamped REC mechanism

Resilience in grid: to at least ensure essential services are not affected due to outage

1	Ensure adequacy of network	<i>Network adequacy at all levels : Inter-State, Intra State and distribution network</i>
2	Ancillary Reserves in grid operation	Primary, secondary, Tertiary reserves (Optimised State and national level reserves) Need to introduce market-based procurement of the same for enabling newer technologies to participate in providing the services
3	Voltage regulations and Inertia in the grid	Using old thermal plants to improve the system voltage or inertia in the system Conversion of old thermal power plants to synchronous condenser
4	Policy for planning and design of distribution system	Planning and designing an effective distribution system to improve the overall reliability of system and manage unexpected power outages.
5	Underground cabling	Underground cables are less susceptible to damages from external environment such as wind, lightning, storms etc. (Disaster prone areas, Theft prone areas, Cities and towns , places of tourist importance)
6	Disaster Risk reduction	Disaster Resilience, well defined mechanism for faster restoration, measures to reduce such risk in case of future disasters
7	Cyber security	With increasing digitisation, Cyber security must be ensured.
8	Enhance security & reliability of Grid	implementation of schemes such as Automatic Demand Management System (ADMS), scheme for intra state deviation settlement, DSO

Viability of power sector: Ensuring financial viability of power sector

1	Ensuring Cash flow for entire value chain of power sector	<i>Payment security mechanism</i> <i>Prepayment smart meters/ Prepayment Meters</i>
2	Stranded assets	High number of stranded assets in power sector reduces the overall bankability of future projects and therefore hampers the growth of overall sector.
3	Distribution sector	Poor financial condition of distribution companies impacts the overall power sector. Distribution sector is considered vital for overall health of the power sector and its important to ensure financial soundness for the same
4	Create enablers	Ease of doing business in power sector Incubate new Technology Capacity building of power sector personnel of each field Ensuring the Sanctity of the contracts
5	Make in India initiative and Aatmanirbhar Bharat Abhiyan	Most important for energy security, cyber security and also making the balancing of trade favourable.

Empowering Consumer : Rights of Consumers

1	Choice to consumer	Giving choice to consumer to choose the supplier of power
2	24x7 power supply	24x7 availability of power will help in overall socio-economic development and improving consumer satisfaction.
3	Power quality	Improving the quality of power delivered to consumers helps the equipment to run on optimal energy consumption and thus reduces the power bill.
4	Right to quality Service	All the consumers need to be provided with a minimum standard of supply of electricity by the distribution company.
5	Reasonable price of power	Affordable electricity would encourage consumers to consumer more electricity and improve per-capita consumption in the country

Presented by Association Of Power Producers

Excess availability – from acute deficit to un-requisitioned surplus



- After the enactment of Electricity Act, 2003, there has been exponential addition to the generation capacity, leading to huge coal-based generation capacity addition during the 11th and 12th plan. Consequently we are facing a situation of un-requisitioned surplus (stranded generation assets – 19 GW coal and 24 GW gas based power plants)
- With rising RE influx, coal based PLF is set to fall even further from current 53.4% - below the technical minimum
- To meet this challenge, NEP needs to clearly define the way forward for sustainable utilization of existing power assets. In this context, our suggestions are:
 - **Expeditious retirement of old coal assets** which are inefficient and cannot meet emission norms in a viable manner
 - **Decoupling of coal linkages and PPAs** – part of recommendations made by HLEC
 - **Greening of coal – CCS technology** has great potential to reduce carbon footprint and needs to be adopted for use of coal assets in a sustainable manner. The Kyoto Protocol recognizes this clean development mechanism
 - **Inclusion of stranded gas assets in existing energy basket** – HLEC clearly lays down the necessary mechanism for their revival ; inclusion of gas within GST may be explored to improve viability of gas power as well as clearly setting out gas as a transition fuel in the NEP
 - **Go slow on creation of new coal based assets** – under construction assets should focus on ultra supercritical technology for reduced emissions

The power industry can simultaneously decarbonize and optimally utilize existing conventional generation assets on the ground if the right measures are planned and implemented

Changing Energy Mix – transitioning path towards higher RE



- The projected RE target capacity by 2030 signals a tectonic shift in India's energy mix – if the targets are met, then non-fossil sources (including hydro and nuclear), will account for **65% of total capacity** – surpassing India's NDC commitments by 25%.

Generation Capacity	As on 31.03.2021	Projected by end of 2029-30 (As per CEA)	CAGR increase (%)
Conventional (hydro, coal, lignite, gas, nuclear)	287,208	381,502	3.2%
RE (solar, wind, biomass, others)	94,433	450,000	18.9%
Total	381,641	831,502	9.0%

- The NEP should deeply analyze the investments required to achieve these targets and its spillover impact on related segments – coal, railways and loss of revenue for States and Centre. The economic financial and social impact of this tectonic shift in India's energy mix would need to be mapped, understood and managed by well considered intermediate targets to minimize the adverse implications.
 - Investment and land required** – estimated requirement of \$500-billion to reach the 450 GW capacity target by 2030; total land requirement of 3-4 lakh hectares – significant risk of socio-ecological conflicts
 - Accounting for real costs** – The existing RE framework provides substantial support in terms of free transmission and wheeling, avoidance of cross-subsidy charges, and discounted or aggregated land at solar parks. RE also raises costs on the rest of the grid through mismatch with peak demand periods, reduced output, increased ramping, lower utilization of existing plants, etc. CEA estimates these costs as Rs 1-1.5/kwh, excluding land support
 - With decreasing RE costs and largescale influx of RE, subventions need to be tapered slowly and NEP may consider an intermediary target gate where all fuel sources should compete on their own merits

Looking at the fallout impact of this massive shift in energy mix, NEP may like to calibrate the transition path by taking a balanced approach which considers all the possible pros and cons of the current trajectory of RE growth

- For deepening of power markets to increase liquidity and deliver efficient price discovery, the policy and regulatory framework needs to create enabling conditions:
 - **Removing the regulatory and policy impediments** to increase the liquidity and volume of power flow through the exchanges
 - **Removal of restrictive usage of coal** – Liberalizing fuel linkages and decoupling from PPAs for capacities to participate in wholesale markets, including short term transactions
 - **Segregated transmission access between long, medium and short term** – Transmission planning is presently based on LTOA/MTOA and STOA is only granted on the margins. Time to shift towards transmission planning and access based on GNA for economic network utilization, congestion management and flexible capacity trading.
 - **Coordinated scheduling and dispatch of supply resources at the regional and national levels**
 - Market Based Economic Dispatch (MBED) concept floated by CERC may be explored in more detail in the NEP with specific timelines for its introduction as it would help lead to significant cost optimization, lower RE curtailment and utilization of low cost stranded assets while taking care of legacy contractual arrangements..
 - **Efficient electricity markets to coordinate demand and supply**
 - Draft NEP 2021 has covered several important aspects related to future grid operations and power markets such as Ancillary services and its market based procurement, Automatic Demand Management Systems, Longer duration forward contracts, Derivatives etc – in order to assist with crystallizing these measures, tentative timelines may be specified for each so that stakeholders can focus on working towards the same.

Freeing of coal from PPA and introduction of GNA and MBED, in conjunction with recommendations already made in Draft NEP, will help to establish efficient and competitive power markets

Affordability, Access and Consumption



- Long strides taken in the recent past have ensured adequate availability and household connectivity. However, this has not yet translated to increase in electricity consumption - national average per capita consumption of electricity has marginally improved from 1181 in 2018-19 to 1208 in 2019-20.
 - However, significant inequity in per capita consumption exists between States - minimum of 332 (Bihar) to maximum of 15,517 (DNH), followed by Gujarat at 2388. Further, widespread inequity within States - in most States, 15-20% of households consume less than 30 units per month.
 - With regard to consumption, power sector presents striking similarity with food economy - paradox of abundance coupled with very low power usage amongst the poor households.
- **The low consumption by poor households can be largely attributed to affordability of power - biggest challenge to increase power consumption by poor households**
 - Avg cost of supply (ACoS) has increased from Rs 4.76/kwh in 2009-10 to Rs 7.44/kwh in 2018-19, making it unaffordable for many poor households to increase their electricity consumption.
- **Concerted efforts are required to ensure increase in consumption of poor households and reduction of inter and intra state inequities. Accordingly draft NEP must focus on the following measures to improve the affordability of power:**
 - Shift from generic subvention between different consumer categories to lifeline tariff and increase minimum consumption level for poor households to at least 60 units per month
 - Removing inefficiency in the entire value chain of power sector - this would need dismantling of cost plus regime which dominates 80% of sectoral value chain and removal of discrimination on basis of ownership for resource allocation and offtake agreements
 - Rationalization of taxes and duties on the electricity generation and distribution supply chain

Greater focus on increasing affordability of power for low income households and complete dismantling of inefficient cost-plus framework is required to ensure that true benefits of competition as envisaged under EA 2003 and NEP 2005 are realized

Sustainability – financial viability of distribution segment



- The distribution segment continues to be the weakest link in the power sector in terms of financial and operational sustainability. The current financial metrics paint a very grim picture – **overdue payables to generation companies** at Rs 74,206 Cr (as on Mar 2021); **total book losses** at Rs 49,600 Cr for FY 19 (close to pre-UDAY levels); **total debt** estimated to touch Rs 6 lakh cr by FY 22; **AT&C losses** rising again and almost at 24%; **ACS-ARR gap** doubled within a year to Rs 0.52/kwh in FY 2019; **Accumulated regulatory assets** in excess of Rs 1,16,000 Cr.
 - Above clearly shows that notwithstanding 3 bail out packages and the 4th in the offing, the distribution segment in its current form is not sustainable and threatens the entire value chain
- As the distribution segment is the primary revenue earner for the entire sector, immediate steps are required to ensure financial turn around of the segment in order to protect the power sector's existing and proposed investments (as envisaged in the NEP) and achieve sustainability for the future.
- The Draft NEP has clearly outlined a concerted list of interventions – creation of right environment for PPP, separation of carriage and content, cost reflective and timely tariffs, DSO for real time operation, technological interventions for reduction of AT&C losses, transparent reporting of reliability indices, improved demand forecasting, smart meters and DBT, etc.
 - However, most of the above had found a place in the NEP 2005 too. We need to attach timelines to these interventions and really think out of the box for evolving a suitable incentive/disincentive framework to ensure these measures are implemented within the defined timelines.
- **Additional aspect to be covered in NEP - Institutionalization of a rigorous payment security mechanism for generators:** Without this being in place, all investment (existing and prospective) in generation will always be under the threat of default and turning NPA, thereby causing collateral damage to banking sector.
 - The Expert group's attention is drawn towards the unimplemented HLEC recommendation which talks of direct devolution. If that does not appear feasible, the NEP may consider as an alternative the option followed in the liquidity infusion package of Rs 1.25 lakh cr. - bill discounting mechanism through REC/PFC backstopped by state government

National Electricity Policy – 2021

1. **Draft National Electricity Policy positively addresses some critical aspects:**

- Promotion of competition in award of Transmission projects.
- Consistency of “Sharing of Transmission Charges & Losses” mechanism at both Inter-State (ISTS) and Intra-State (InSTS) level.
- Alignment of States’ Regulatory Framework to Guidelines and Standard Bidding Documents issued by Ministry of Power.

2. **It would be imperative to ensure mitigation of challenges envisaged in implementation of new ideas:**

- All stakeholders including States and Appropriate Commissions should treat the NEP as mandatory and act accordingly.
- Aligning of other related guidelines, bidding documents and norms in accordance with provisions of NEP.

3. **There is an urgent need to addressing planning/ execution related bottlenecks:**

- Co-ordinated and advanced planning of Transmission with RE Generation and Demand.
- Equitable treatment of Sec. 62 and Sec. 63 projects for Change in Law and Force Majeure events. Further, contracts to be flexible to address unforeseen events, and provide for sharing of costs.
- Right of Way challenges.
- Forest/ Wildlife Clearance delays.

Transmission – Long term planning visibility and monitoring

- Promote transparent planning – CEA to publish NCT and RPCTP meeting agenda and minutes in regularly and timely fashion.
- Provide visibility of long-term transmission planning – SERCs direct STUs to annually file 5-year transmission rolling plan for new lines, system strengthening schemes, and upgrade/ uprate of projects.
- Objective evaluation of schemes – Evaluation based on capital efficiency, minimal completion time, limited environmental impact and least service disruption.

Suggested language (modifications in red)	Remarks
<p>6.3 The CTU and the STUs should draw up implementation plans for Inter-state (ISTS) and Intra-state (InSTS), respectively and for up to next five (5) years period on a rolling basis every year identifying specific transmission projects and upgrade/ uprate projects for system strengthening for the existing transmission lines which are required to be taken up along with their implementation time lines ... A similar approach should also be undertaken by STUs for development of the transmission system in their respective states. These plans should be submitted to the state regulators for approval and to ensure compliance with transmission plan.</p> <p>CERC and SERCs to monitor strict adherence of the Transmission planning and filing of Transmission plan annually and five year Multi Year Plan on a rolling basis.</p>	<ul style="list-style-type: none"> • As on date, many states do not develop 5-year transmission plans and transmission planning is restricted to a year. • Uncertainty and lack of long-term visibility is not conducive for competitive bidding and enticing investor interest. • State Governments and Regulators need to ensure that 5-year long term transmission plan on a rolling basis is followed in all states.

Transmission – Execution of State Transmission Projects via TBCB

- Draft NEP 2021 calls for Transmission Projects to be awarded under either Sec. 62 (Regulated Tariff Mechanism) or Sec. 63 (Tariff Based Competitive Bidding) in line with the Tariff Policy.
- Strict adherence by the States to the Tariff Policy – Call for immediate attention by the Ministry and Appropriate Commissions.

Suggested language (modifications in red)	Remarks
<p>6.8 The transmission projects as approved by the appropriate government(s) would be executed either through regulated tariff mechanism under Section 62 of the Act or through tariff based competitive bidding under Section 63 of the Act, as to be notified by the respective government, in accordance with the Tariff Policy of Government of India.</p> <p>State Governments to strictly adhere to the provisions of the Tariff Policy of Government of India. The appropriate State Commissions to identify projects that could also be developed under Tariff Based Competitive Bidding before approving the Transmission Projects/ Investments.</p>	<ul style="list-style-type: none">• Average reduction of ~35% in project tariffs discovered via competitive bidding compared to the cost-plus under CERC norms.• Recently, Punjab, Bihar, Haryana, and Rajasthan have identified Threshold Limit for award of Projects under TBCB.• Uttar Pradesh & Gujarat have initiated action.• There is a pressing need for other states to strictly adhere to the Policies and Guidelines laid out by the Central Government.

Adoption of New Technologies – Demonstration Projects

- Explore all possible new technologies to support large-scale RE Integration – Energy Storage Solutions as well as FACTS technology and power flow controllers.
- Detailed study on new technology on all aspects, in order to have System Operators gain experience – deployment of Energy Storage in the Grid at various connection points offers with differing applications (Generation/ Transmission/ Distribution).

Suggested language (modifications in red)

11.2 ... Options to repurpose the facilities and amenities of decommissioned coal plants or scheduled to decommission coal plants to set up new renewable generating plants and energy storage systems assets to be explored. Demonstration projects for new types of balancing technologies for intermittent generation including MW scale batteries, hydrogen storage, **FACT Devices, Power Flow Controllers** etc., should also be encouraged.

CEA, in consultation with all relevant Stakeholders and experts, to identify locations and sizing for multiple demonstration projects. CEA along with the System Operators should also conduct regular technical studies of the new technologies to understand various system benefits and limitations.

Remarks

- Repurposing of Coal Plants that would get decommissioned in the upcoming years into RE and/ or Energy Storage Solutions deployment.
- Adoption and uptake of FACT devices and Power Flow Controllers – to provide grid flexibility & controllability.
- CEA to identify locations and quantum for the demonstration projects in consultation with stakeholders and experts.



Confederation of Indian Industry

Draft National Electricity Policy, 2021

RECOMMENDATIONS TO MINISTRY OF POWER, GOI

DOCUMENT DATE: 13 May 2021

National Electricity Policy: CII Recommendation Themes

- The Draft NEP 2021 has been issued by Ministry of Power after a gap of 16 years, considering the developments since the last policy of 2005 (“**NEP 2005**”), particularly in the renewable energy (“**RE**”) space

It rightly focuses on policy interventions to address four major challenges in the decade ahead for the Indian Electricity sector



High-level recommendations

1. Customer should be at the heart of all reforms
2. It is important to specify targets with responsibilities and timelines to ensure effective implementation of Policy proposals.
3. The historical data setting the context to the NEP-2021 may be set out in a Statement of Reasons which shall accompany NEP-2021

Section 5: Optimal Generation Mix (1/2)

Setting horizons

- Instead of setting a 'net zero' emissions target, a 'peak coal' year be declared after which as a rule only lower-emission generation be commissioned such that coal fired generation shall be permitted only to replace old units with efficient ones. A gradual efficiency-linked phasing out plan for coal (with life extension for existing plants permitted in exceptional cases after an ex-ante robust techno-economic-enviro cost benefit analysis, and consent of all concerned)
- In the EPS, the CEA shall declare a phased roadmap for national, regional, and state level requirement of energy storage and related services in line with Renewable Energy ("RE") capacity addition, distributed generation and proliferation of e-Vehicles
- **Peak/Off-Peak Tariffs** be implemented in a time-bound manner from April 2023 to secure efficient demand-side management

Managing Energy Mix

Gas-fired plants – Use stranded capacity for balancing power

- *Supply of gas be pooled and used in more efficient plants and RE dominant states to meet grid balancing requirements*
- *With maturity of markets, reduction in tenures of PPAs is expected to avoid technology lock-ins, for which 5 to 15 year contracts for gas + RE bundled contracts may be considered*
- *Waivers and concessions akin to RE procurement through open access may be extended to gas-based power for large C&I consumers*

Coal-based plants – Phase out retired

- *Coal GCV must be measured on "as received basis"*
- *Promote washing of coal to reduce ash content and transportation costs*
- *Additional capacity to be added after optimizing the current*
- *Allow for expanding the current to avoid tedious land acquisition*
- *New plants must be environmentally friendly and based on technologies notified by CEA*
- *Notify closure timeline for plants older than 25 years*
- *Introduce 'carbon intensity-based merit order dispatch' system*

Section 5: Optimal Generation Mix (2/2)

Managing Energy Mix contd...

RE Generation and Cogeneration:

- **Compensation for any curtailment of must run RE generation by Discoms must be introduced from 1 April 2022 – either two-part tariff or 'deemed generation'**
- **All future RE procurement must only be on competitive bid basis, while providing appropriate incentives for new technologies during their early deployment such as green-hydrogen, offshore-wind, grid-scale storage etc.**
- **Some guided flexibility is needed as energy transition unfolds and new technologies mature. Only small-scale projects which do not qualify under bidding guidelines may be permitted to sell under Section 62 route**
- **Floating solar plants be made mandatory for hydro sources**
- **The definition of RE and the key promotional measures (including 'banking' of energy) may be outlined in the NEP**
- **Power-intensive industries use fossil fuel for manufacturing, which harness excess heat produced in the primary manufacturing process for generation of electricity without any secondary fossil fuel usage. Though exempt from obtaining Environmental Clearance such units have been denied incentives by some SERCs. Policy must encourage installation of waste to heat recovery plants at par with RE consistent with Sections 61(h) and 86(1)(e)**
- **Distributed generation be encouraged through net-metering and other mechanisms like virtual power plants, storage, demand aggregation, demand side response**
- **India has offshore wind ("OFW") potential of approx. 70 GW which offers scalability of generation and is a relatively more stable source compared to onshore sources of RE and must be encouraged**

Section 6-8: Transmission, Distribution, Grid Operation

Transmission

- Provide for **time-bound formation of State Level Transmission Committee** for approval of InSTS projects of STUs
- **Upgradation** et al for the system may be **planned on a 5-year basis**
- All Transmission projects, with just exceptions, be competitively bid out

Distribution

- Provisions relating to reduction of losses and **timely tariff setting by SERCs be made time-bound**
- Outright privatization of distribution circles, as proposed for the UTs, should be considered
- **A level playing field must be ensured for incumbent and new participants**, establishing a path for retail competition with time-bound targets and enabling criteria
- **Sub-license must be awarded only through competitive bid process**, with time bound targets for 100% metering, use of smart meters and supporting demand side response
- **Policy must spell out roadmaps, timelines, and accountability** be established for (i) reduction of Cross Subsidies, (ii) introduction DBT, (iii) C&C separation, (iv) Distribution Sub-Licensee, and (v) DSOs, while addressing fundamental issues

Section 8: Grid Operations

- Establish implementation timeline for an expanded **Ancillary Services Market Regulations covering grid support services**
- Introduce a **uniform national system for forecasting/ scheduling of RE generation** wherein:
 - Grid operators are responsible for running the grid smoothly despite large infirm RE generation
 - Cost of variances is borne pro-rata by all RE generators in the control area
 - Forecasting/ scheduling penalties are applied at a discom's control area rather than at each generating station/ pooling sub-station level

Section 9 onwards: Power Markets & others

Power Markets

- Significant C&I consumer-based demand for such products remains unaddressed. RE based projects must be required to tap into merchant markets with market-dynamics based pricing
- Buyers and sellers should be free to explore exchanges, financial contracts, open access, OTC bilateral deals, captive modes etc. for varying periods/terms
- A roadmap with timelines for implementing all elements (viz. Capacity, Forward, Day Ahead, Real Time and Ancillary markets) of the wholesale power market be established. Within ancillary service market, 'capacity market' or 'GBO – Grid Balancing Obligation' be created giving states/markets the ability to choose between hydro/ pumped hydro storage/ battery storage or gas power
- New contractual mechanisms like virtual PPAs, contract for differences et al will increase liquidity and transparency of power prices. Multiple exchanges may set up to encourage various products
- A wholesale market can open alternate mechanisms to complement the existing secured fixed-term/tariff market
- A time bound trajectory may be stipulated for bringing down current Open Access thresholds

Other issues

Environmental issues

- Usage of Fly Ash may be allowed
- TPPs with FGD will incur higher cost to produce power than TPPs without FGD; Existing price discovery mechanism on Power Exchange and DEEP portal must be suitably adjusted for offsetting such impact

Skill Building and Human Resource Development

Statutory / public-sector bodies should be free to engage the services of able private sector professionals on deputation and vice versa

Improving Investment Climate

- Decision-making framework for all stakeholders in the sector must be predicated and required to establish due consideration of economic, environmental, social and technological dimensions of such decisions
- Matters outside administrative control of MoP which influence the fulfilment of the NEP-2021 objectives may be identified with suitable implementation mechanism

Suggestions on Section 5

Thermal Generation

- NEP should give emphasis on efficiency of thermal plants in power generation rather than only Variable cost (VC). Current MOD approach gives undue advantage to pithead-based coal plants as compared to more efficient coastal or plants based in hinter land
 - MOD based on SHR instead of VC will help save natural resources and protecting environment due to lower emissions.
- The coal quality issue can be addressed by abandoning the current grade based per MT pricing regime and move to Calorific value-based pricing. This squarely puts the onus on the coal supplier to manage delivery of proper coal quality. (5.7)
- Power plants with existing long-term/medium-term linkages may be allowed to access balance portion of allocated linkage coal for generating power from untied capacity and sell the same through alternate routes.
- ACQ in the FSAs were fixed by Coal India way back in 2009, based on certain GCV prevalent at that time. After the significant mine re-grading exercise carried out over the past few years, policy makers may consider to re-fix the ACQ quantum under FSAs so that the generators receive the correct amount of coal due to them as per the current grade of coal supply.

Suggestions on Section 5

Renewable Generation

- While the policy encourages discontinuation of long term PPAs, there are significant barriers for merchant projects
 - Route to market is very difficult to change. Grid connection and levy of charges should be delinked to R2M
- A two-part tariff may not completely mitigate the risk of curtailment and contractual compliance. It can be considered with a robust mechanism to ensure deemed generation. (5.21)
- Proposal for sharing of costs due to variability in RE generation is undesirable. RE rich states benefit from increased investment and should balance between economic benefits and costs due to variability in generation. (5.25)

Renovation and Modernization (R&M)

- Guidelines may be issued by MoP and/or CEA for closure of old thermal power plants (including captives) in a phased manner (plants completing 30 years life and having SHR of > 2600)
- Considering huge stranded thermal capacity in the country, and even with newer plants of central and state gencos running at low PLF, the policy for R & M for old power plants should be kept in abeyance for 10 years.

Suggestions on Section 6

Transmission

- Implementation of General Network Access (GNA) in power sector within 1 year of policy may be specifically provided
- Implementation plans should be submitted to state regulators for approval. CERC and SERCs should monitor strict adherence of the Transmission plan. (6.3)
 - STU planners should carry out objective evaluation of transmission plans against factors such as capital efficiency, minimal completion time, limited environmental impact and least service disruption
- NEP should mandate that all transmission projects should necessarily be developed through TBCB. (6.8)

Suggestions on Section 6 and 7

Distribution

- Other than the input based or revenue sharing franchisee models, state distribution licensees may opt for innovative PPP models e.g. outsourcing of consumer services including metering, revenue collection, energy audit etc. or JV arrangements (7.7)
- Forum of Regulators, along with CEA, shall also develop cyber security framework for smart grid systems (7.11)
- Pre-paid metering should be mandated for all Government services considering high arrears from Government departments (7.17)
 - Discoms need to decide on the placement of smart meters (to avoid cost burden) on a selective basis.
 - 100% Pre-paid metering within 3 years may put pressure on tariff. It should be done for consumers above certain consumption.
- Apart from the audit metering purpose, the DT metering shall also be utilized for remote health monitoring of the DT asset and downstream network condition. In addition, analytics on DT metering data shall be used for early prevention of asset failures (7.19)

Suggestions on Section 8, 9 and 10

Grid Operation

- SAMAST scheme with 5-minute settlement shall be implemented in all inter and intra state points in a timely manner (8.4)
- Forecasting & scheduling deviation should also provide for aggregating RE projects located in a specific location, to ensure that sudden changes in RE source do not lead to penalization of all developers (8.5)

Power Markets

- For the aggregator model to become successful, Open Access needs to be streamlined as it is non-uniform across states and also prohibitive in certain states. (9.4)

Regulatory Process

- Regulatory procedures at Central and State commissions should move from actual to normative parameters-based cost fixation, this will encourage efficiency even in regulated tariff projects. (10.1)

Suggestions on Section 13 and 14

Energy Conservation and Energy Efficiency

- Studies have shown that majority of India's incremental electricity demand is going to come from space cooling. District Cooling has been proven to offer 20 – 40% reduction in energy intensity of cooling.
 - NEP should consider creating a special mission for District Cooling on the lines of initiatives such as Ujala, ECBC, PAT, etc.

Environmental Issues

- In order to economize use of land for transmission lines, transmission towers, sub-stations etc, various technologies options should be comprehensively evaluated & considered including upgradation of existing lines to higher voltage lines using MCMV towers, uprating by use of HTLS conductors, Power Flow Controllers, and FACT Devices. (14.2)
- Suitable cost compensation mechanism towards installation of FGD for thermal units without Section-62 / Section-63 PPAs is desired to avoid stranding of assets. These assets are already stressed and may not be able to bear additional burden of FGD. (14.5)

Your microphone is muted.

Achieving Govt set RE targets – Clause 5.19



- Given the nature of Wind and Solar Energy, it is measures such as “Must Run” and “Year-long Banking” that have led to its large-scale deployment in states like Tamil Nadu, Karnataka etc.,
- Unfortunately, not at all the states have provided Banking facility and in states where it is provided , it is under challenge before different legal for a; further, the MUST RUN is not strictly adhered to by SLDCs of some states, since they have not been explicitly provided for, in the Electricity Act or in the National Electricity Policy
- The Draft Electricity (Change in Law, Must-run status and other matters) Rules, 2020 and APTEL’s order dated 28/01/2021 in Appeal No. 195 of 2018 refer to these respectively
- *It is requested that “Must-Run” and “Year-long banking” be provided for in NEP, 2021*

Balancing of power – Clause 8.4



- In RE rich states like Tamil Nadu, with a variable penetration of around 42% and 6,000 MW in capacity, it is not feasible to maintain the demand deviation within +/- 10 MW or adhere to sign change as per CERC Regulations even with adequate spinning reserve due to inherent / natural characteristics of wind/solar. Hence the CERC shall exempt RE rich states from the sign change requirement and provide meaningful and pragmatic margin in frequency bandwidth for RE rich states to absorb the variable RE electricity generation. Accordingly, the clause 8.4 may be modified as below.
- *In case of inadequacy of balancing power in a RE rich state, CERC may devise appropriate provisions to share the balancing power from national level.*
- *It would be better if the RE power of each state is scheduled by the RLDCs or NLDC and any variation from RE schedule be handled by the RLDC/NLDC without any technical or financial impact on host states*
- *The appropriate Commissions shall also devise their grid and DSM codes to provide appropriate margin in frequency bandwidth limit for RE rich states to absorb the variable RE electricity generation.*

Separation of SLDCs from State Transmission Companies – Clause 8.7



- The separation of SLDCs from State Transmission Companies is welcome.
- *The SLDC and the concerned State REMC shall be brought under the control of POSOCO.*

Availability of Real Time System Operation – Clause 8.8



- In addition to making real time system operation available on the website, we suggest the following for providing compensation to RE generators for curtailment of wind power. Conventional sources of power are paid capacity charges when the power is not scheduled or curtailed . Similarly RE generators should be paid for the curtailment (for any reason) at the tariff (considering that there is no variable cost in the case of wind/solar) applicable for the generator
- *All SLDCs shall be mandated to host in its website the real time data relating to generation from various sources . Whenever the SLDC curtails the RE power for any reason, the SLDC shall webhost the reasons for all such curtailments of RE power supported by relevant data as per the law. In case the RE power which is under must-run provisions is curtailed by SLDC for any reason, including for grid security, the generators shall be compensated for the deemed generation loss at the tariff as fixed by the Commission for sale to Distribution licensee or at the tariff as applicable to the captive user in the case of CGP or at rate of sale in case of third-party sale.*



**SUGGESTIONS
ON
DRAFT NEP 2021**

Domestic Coal Based Power Producers' Association
(DCPPA)



SECTION 5 CLAUSE 2

“In future, coal-based stations may have to resort to two shift operation and may have to be operated at reduced generation levels to provide flexibility to cope with variable generation from renewable energy sources.”

- IPPs are already under financial stress due to non-availability of LT/ MT PPAs as well as long term coal linkages resulting in NPAs;
- The viability of the thermal power projects and debt servicing to lenders is based on 85%PLF
- Curtailing to two shift operation should be subject to technical min. load/base load operations of the plant;
- Proper financial compensation coverage mechanism should be in place considering this as change in law event so that complete fixed cost recovery is achieved at technical minimum itself:



SECTION 5 CLAUSE 7

“Adequate coal should be made available to meet the requirements of the power plants so that generation capacity is not stranded due to shortage of coal.....”

- Not only adequate coal should be made available to the power plants, but also coal should be supplied at Notified Price. Due to Two-sided auction mechanism, on one hand IPPs are securing coal under auction at premium and on the other hand they must compete for power tariffs. Level playing field to be created for both Conventional & Non-Conventional power producers for achieving the aim of moving towards a mature power market.
- Delinking of PPAs to Linkage Coal is need of the hour for drawl of coal at Notified Price for sustainability of the IPPs;



SECTION 9 CLAUSE 4

“.....This would help promotion of open access.....”

- Cross Subsidy Charges and Additional Surcharges being levied by various State Governments on the power to be supplied by the IPPs to the industrial/bulk consumers in the States are so high that it deters such Industrial/Bulk Consumers to procure power competitively from the power producers. Due to this the industrial consumers are deprived of getting power at cheaper rates.
- High Cross Subsidy Charges and Additional Surcharge is making the cost of power very high for the industrial user which is making them non-competitive in the export market.
- The IPPs are also suffering huge losses as they become uncompetitive to sell power to potential industrial buyers.
- Draft Electricity (Amendment) Bill 2020 so far as it proposes to amend Section 42(2) and Section 61(g) of Electricity Act, 2003 so as to make it mandatory for the SERC to reduce Cross Subsidy in the manner as provided in the Tariff Policy should be passed and implemented in letter and spirit.



SECTION 9 CLAUSE 4 (...CONT...)

Probable Solution/ Suggestion

- Maximum ceiling of levy of cross subsidy surcharge which at present is 20% of the applicable tariff, should be changed to an absolute number i.e say Rs 0.50 / Kwh. This can be progressively reduced to nil within a period of 3 to 4 years
- Maximum ceiling of levy of additional surcharge should be included in the Tariff Policy. This should also be limited to Rs 0.50 / Kwh and progressively reduced to nil in next 3 to 4 years;
- To explicitly capture a mechanism for reduction of Cross Subsidy Charge and Additional Surcharge in the Tariff Policy;
- Cross subsidy surcharge, additional surcharge, and any other charges including taxes and duties should not exceed Re. 1/ Kwh and should progressively reduce as per tariff policy;
- The proposed amendments to the Electricity Act 2003 to be expeditiously notified.



SECTION 2 CLAUSE 3

“.....Revitalization of DISCOMs.....”

- The major impediment for the DISCOMs are the high cost-plus tariffs under long term PPAs.
- It would be imperative to open up all the Long Term PPAs and fresh Long Term auctions should be conducted for discovery of tariffs at competitive price.



SECTION 5 CLAUSE 7

“Adequate coal should be made available to meet the requirements of the power plants so that generation capacity is not stranded due to shortage of coal.....”

- Not only adequate coal should be made available to the power plants, but also coal should be supplied at Notified Price. Due to Two-sided auction mechanism, on one hand IPPs are securing coal under auction at premium and on the other hand they must compete for power tariffs. Level playing field to be created for both Conventional & Non-Conventional power producers for achieving the aim of moving towards a mature power market.
- Delinking of PPAs to Linkage Coal is need of the hour for drawl of coal at Notified Price for sustainability of the IPPs;



SECTION 7

Suggestions: There is an urgent need to encourage the DISCOMs, by way of the draft NEP, 2021, to make timely payment of power procurement bills and late payment surcharge. Following points should be covered in NEP 2021-

- The payment of energy bills shall be done directly by Bankers just after receiving the bills. Bankers shall at least pay 80% of total energy bill immediately and the balance shall be paid after confirmation from DISCOMs.
- Also, as RLDC's have role in power scheduling between DISCOMs & ISTS Generator, in similar way there shall be role of RLDC's to ensure the timely payment of energy bills and late payment surcharge if any.



Industry Presentation on Draft National Electricity Policy 2021

May 13, 2021

Discussion Points



#	Draft Provisions	Comments / Suggestions / Remarks
1	3.0. National Electricity Plan	<p>National Electricity Plan can be more dynamic in nature. Short-term, Mid-Term and Long-term review can be undertaken by CEA.</p> <ul style="list-style-type: none"> ▪ Short term planning – 3 years horizon ▪ Mid-term planning – 5 years horizon ▪ Long term planning – 10 years horizon
2	5.0. Optimal Generation Mix	<ul style="list-style-type: none"> ▪ <u>Integrated Energy Resource Planning (IERP):</u> The power has already started replacing oil and gas as source of energy. Hence, a strategic plan for securing reliable and cost-effective energy resources should prepared and should include oil and gas scenarios also, ▪ The plan can be exhaustive, research-based examination of potential risks and opportunities in procuring future energy supplies.
3	5.3. Curtailment of Demand in part or full load to get the benefit of lower tariff.	<ul style="list-style-type: none"> ▪ Strategies to be adopted for demand side response to shift from peak load to off-peak load to flatten the load curve. ▪ The sanctity of all existing PPAs are to be maintained in terms of Capacity Charge and Energy Charges. Renewable energy projects have single part tariff structure, therefore, for such mechanism which seeks curtailment of RE sources, the interest of RE generators must be secured

Discussion Points



#	Draft Provisions	Comments / Suggestions / Remarks
4	5.4. Development of Spinning Reserves	<ul style="list-style-type: none"> ▪ Spinning reserves will play a critical role as penetration levels of RE sources increases in near future ▪ For attracting adequate investments in spinning reserves (primary, secondary and tertiary) along with ancillary services, regulators must come with new market structure which prices the services optimally. ▪ It will help if a timelines for regulations in this regard are specified in the policy
5	5.23. Long term trajectory of RPO	<ul style="list-style-type: none"> ▪ Uniform and mandatory long term RPO trajectory for all obligated entities across all States. <ul style="list-style-type: none"> – 10 years RPO trajectory can be published by Government – The RPOs should be uniform across the States – Policy must also have certain penalty mechanism for non-achievement of targets
6	5.26 Distributed generation	<ul style="list-style-type: none"> ▪ The potential of distributed generation should be extended to < 10 MW plants that can be embedded generation to distribution networks. It can help in reducing investments in transmission network ▪ Incentive structure must be created for Discoms coming out with such tenders

Discussion Points



#	Draft Provisions	Comments / Suggestions / Remarks
6	5.30. Renovation and Modernization (R&M)	<ul style="list-style-type: none"> Guidelines may be issued by MoP and/or CEA for closure of old thermal power plants retiring in a phased manner in coming three years, five years and ten years.
7	R&M /Repowering of Wind Power	<ul style="list-style-type: none"> Apart from Repowering, the Hybridization/addition of Storage to the existing power plants shall also be considered as modernization and shall be encouraged and given special preference/upgradation for promoting grid balancing solutions especially in cases where there is no additional tariff impact on the off-taker. CERC/SERCs should also come up with principles for tariff determination of storage in their respective RE tariff orders
8	Regulatory Process	<ul style="list-style-type: none"> Given the focus on light touch regulation, disputes which are contractual in nature may be referred to a Dispute resolution entity which may be created with appropriate benches to expedite resolution of disputes
9	Private Sector Participation in Distribution	<ul style="list-style-type: none"> Distribution Franchise model had limited success, hence alternate models need to be evolved which are more conducive to private sector participation. Policy must create provision for a study in this regard

Discussion Points



#	Draft Provisions	Comments / Suggestions / Remarks
10	Timely Tariff Orders	<ul style="list-style-type: none"> ▪ Procedural delays in the past from the side of regulatory commissions have impacted the timely commissioning of projects in the past and also puts unnecessary financial burden developers who are already experience liquidity crunch. ▪ We would like to suggest the Government to advise the Forum of Regulations (FoR) that it should publish an annual report of performance of all distribution licensee in India and should include compliance on various parameters including payments, financial prudence and health of the utility. ▪ Report should also adequately rank licensee on parameters such as contract sanctity and should be reckoner for lending institutions while providing finance facilities to the licensee
11	Reliability of Supply	<ul style="list-style-type: none"> ▪ Despite improvement power supply, reliability continues to be a problem – there is absence of reliable data in this regard ▪ Policy may consider provision of creating a institutional structure at central level which does third party audit is able able to publish district wise quality index periodically
12	Prepaid metering	<ul style="list-style-type: none"> ▪ Govt consumers like Municipal corporations are typically largest defaulters of Discoms and given services involved cannot be disconnected ▪ Prepaid must be made compulsory for them

Discussion Points



#	Draft Provisions	Comments / Suggestions / Remarks
13	Land – Promotion of floating solar	<ul style="list-style-type: none"> ▪ Land is indeed a rare resource, but India is also endowed with huge reservoirs which can be used for solar power generation ▪ Policy should encourage the floating solar plants
14	RE Resource Assessment by CEA as a Part of National Electricity Plan	<ul style="list-style-type: none"> ▪ Assessments may be made available in the public domain in an open-data format and can be accompanied by high-resolution GIS layers of transmission lines, substations, roads, forest areas etc. to assist in planning and easier project development.
15	RE Forecasting	<ul style="list-style-type: none"> ▪ Government may designate an entity (e.g. POSOCO) as the Central Nodal Entity and SLDCs at the State level for the task of developing forecasts for all RE generation connected to the grid. All RE generators will provide all production data to the Nodal Entity and follow the dispatch schedule accordingly.
16	Behind-the-meter RE Generation	<ul style="list-style-type: none"> ▪ A RE generation unit may deliver energy to consumers without using the transmission/distribution system/facilities. Such behind the meter RE generation can be utilized for; <ul style="list-style-type: none"> – Captive Generation – Distributed Generation – Grid Connected Generation for Utilities having its own facilities for interconnection – Eligible for RPO Compliance

Discussion Points



#	Draft Provisions	Comments / Suggestions / Remarks
17	National RE Fund	<p>MNRE can establish a national RE fund with following features</p> <ul style="list-style-type: none">• To be used for up-scaling deployment by reducing risk and cost of capital• Infrastructure development of RE projects• R&D, adoption of international best practices
18	RE Demand Aggregator Model	<p>In order to encourage consumption more and more clean energy, RE demand aggregation may kindly be allowed, where an Aggregator may tie up with RE Generator for supply of energy directly to the customers with collective load being more than 1 MW.</p>



IESA Suggestions on Draft National Electricity Policy'2021

Presented by

Dr. Rahul Walawalkar

**President, India Energy Storage Alliance
President & MD, Customized Energy Solutions (India)**



IESA: THE ALLIANCE

India Energy Storage Alliance

VISION

To make Indian energy grid & transportation sector more competitive by providing a knowledge sharing platform for creating awareness about advanced energy storage and e-mobility solutions.

MISSION



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IESA Suggestions on Draft NEP'2021

Aims and objectives of the draft rightly included promoting clean and sustainable generation of electricity, revitalization of discoms, development of efficient markets, supply of reliable and quality power, move towards light touch regulations and promotion of manufacturing of goods and services in India under Atmanirbhar Bharat Abhiyan etc

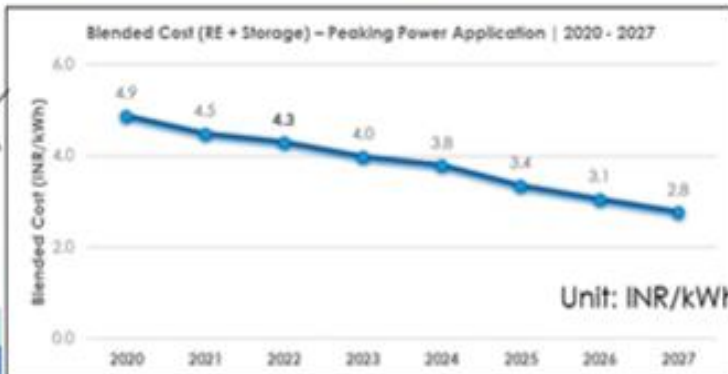
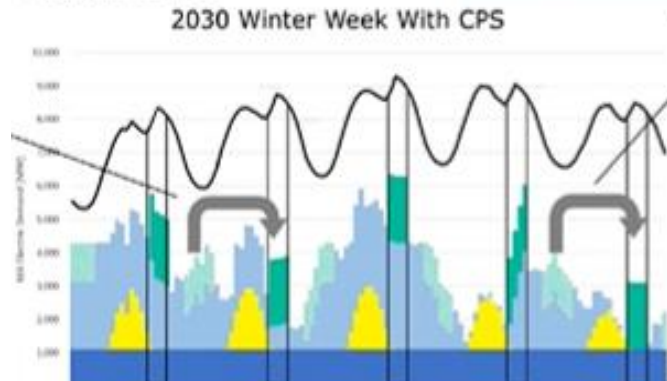
However, it is equally important to include **“Replacing Peaker Power Plants with Clean Energy”** and **“Retirement of inefficient Fossil Fuel based plants by 2030/2035”** under objectives and vision of the policy in order to achieve the primary aim of achieving optimal generation mix and promoting clean and sustainable generation of Electricity. **Renewable Energy and Energy Storage Hybrid power plants can meet all the requirements for India’s peaking power capacity TODAY in a cost effective way, allowing us to retire older fossil fuel based plants and avoid building any new fossil fuel based peaker plants.**

Suggestion 1

Aims & Objectives

India is the second-largest coal consumer in the world. Currently, more than half of India’s 382GW power generating capacity comes from coal-fired power plants (approximately 234GW). Even Ministry is also planning to retire more thermal power plants and this space allocation to be allotted to RE plants. Hence, this plan for retiring fossil fuels needs Plan and Strategy and has to be included in NEP directive.

Ref: Department of Energy Resources, Massachusetts, Clean Peak Standards



Storage Blended LCOE with other fuel sources

Fuel Source	Low	Average	High
Small Hydro	3.6	5.8	8.0
CCGT	5.3	6.7	8.7
Coal	2.9	4.3	5.5
OCGT	8.8	14.2	22.6

Suggestion 3

Introducing Storage Purchase Obligation and keep the definition of storage, technology agnostic to promote innovation.

Energy storage technologies include wide range of technologies including Mechanical storage (Pumped Hydro Storage, Compressed Air Energy Storage, Gravity Storage, flywheels), Electrochemical storage (lead acid, li-ion, flow batteries, metal air and solid state batteries), Electrical storage (Ultracapacitors), Thermal Storage, Chemical storage (Hydrogen) etc. A lot of research and development effort is being put forward for development of all forms of storage technologies, which together can support various objectives set forward in NEP2001.

Traditional Pumped Hydro although proven, has significant challenges in terms of environmental and operational limitations. Large hydro power projects in India commonly get embroiled in social and political issues mostly related to loss of significant areas of agricultural flood plains and forest lands, and forced relocation without just compensation for affected rural communities. Interstate disputes over water rights compound environmental issues such as flood safety concerns and agricultural needs. Further, with seasonal water flows and mountainous, remote locations, hydro-electricity requires very patient capital, and engineering technology is certainly challenged. India's enormous plans for new low-cost, deflationary, domestic renewable energy also comes with an associated, critical need to accelerate the deployment of storage. Distributed energy storage technologies (including newer forms of closed loop PHS) can be deployed in accelerated manner (typically less than 1 year) to respond to uncertainties.

Instead of a Hydro Purchase Obligation, Storage Purchase Obligation (SPO) which can comprise of various existing and emerging cost-effective solutions that provide appropriate flexibility should be advocated. DISCOMs should be free to choose specific form of procurement - hybrid RE + storage or RE and storage independently.

IESA Suggestions on Draft NEP'2021

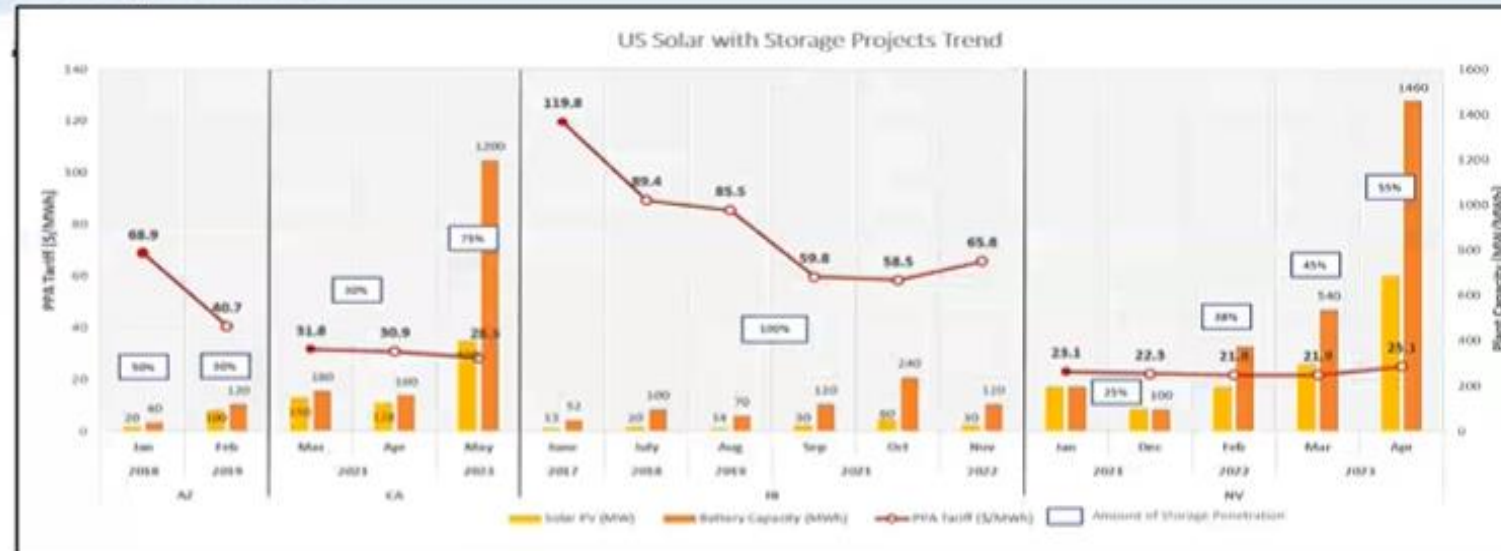
Suggestion 4

Including Storage capacity under 5.1 Optimal Generation Mix



India Energy Storage Alliance (IESA) has estimated the stationary energy storage market potential in India to be around 230 GWh during the period 2020-2027. Due to lack of clear regulatory guidelines for grid scale storage, the share of grid scale applications contribution is expected to be only 15%, with behind-the-meter applications making up the rest. In grid application, renewable energy integration takes up majority of this share, split between solar and wind projects. CEA projects requirement of 500 GWh (136 GW) of storage in the grid at various levels by 2030.

With the rapid reduction of RE energy prices, many developed countries have started doing RFPs with 4+ hours of storage with up to 50% or higher storage capacity. This provides ~25% RE energy to be stored for smoothing and firming of the variable RE sources. This can also help optimization of the existing conventional generation sources, which otherwise need to be ramped from min gen levels to max gen levels, thus increasing emissions and causing wear and tear.



IESA Suggestions on Draft NEP'2021

Suggestion 5

Power Quality

In addition to norms on power quantum, it shall be the duty of every supply licensee to ensure power quality (covering voltage, harmonics, frequency, surges, etc.) as per norms prescribed by the relevant authority. The licensee shall be allowed to offer different qualities at different price points subject to regulatory approval as well as meeting a minimum power quality as mandated.

We need to create power quality benchmark and monitor power quality across grid, so that consumers are aware of the power quality issues and improvements can be monitored systematically.

Power quality might require the creation of new services and markets, such as ancillary services, and these need to be enabled by the relevant authorities immediately as per the original ancillary services procurement guidelines developed by CERC in 2017.

Suggestion 6

Smart Grids and Grid interactive Micro Grids

All states shall produce roadmaps to enable the following, building upon the National Smart Grid Roadmap released by MoP:

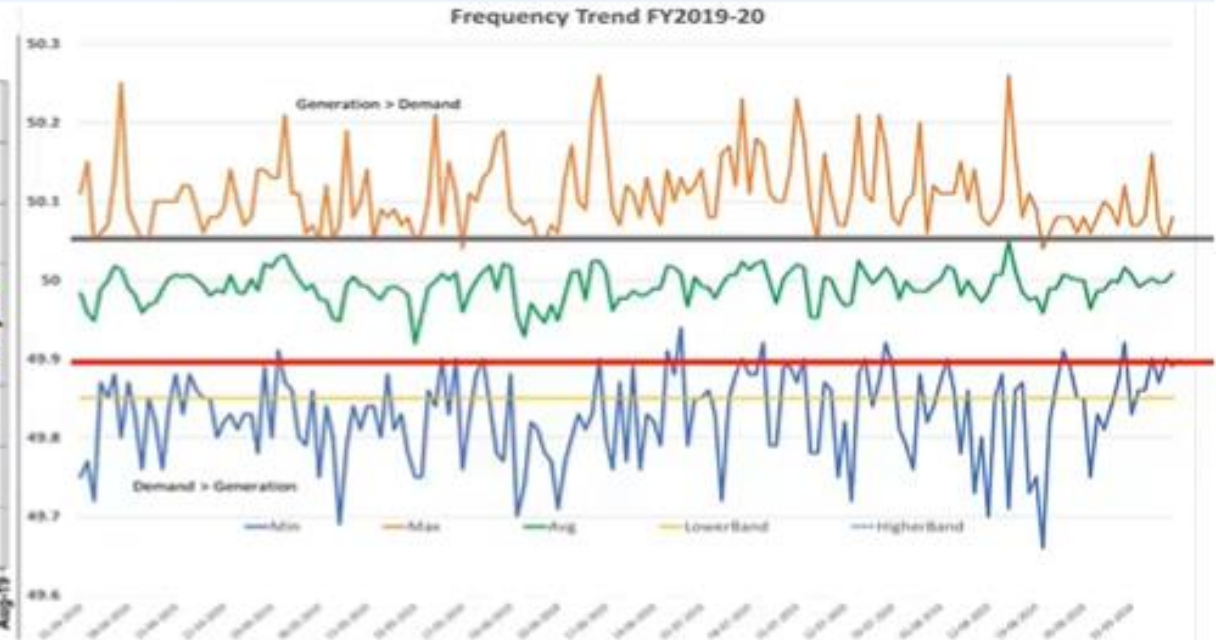
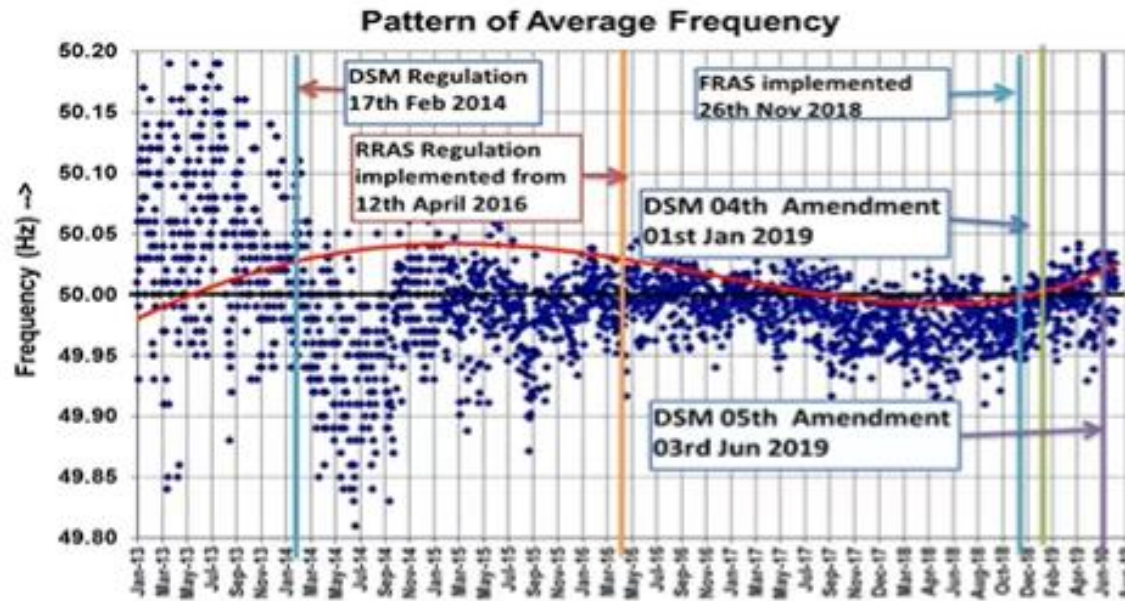
- ✓ Consumer production participation (“prosumers”)
- ✓ Renewable energy integration, including required support mechanisms,
- ✓ Micro-grids (with or without grid connectivity)
- ✓ Electric Vehicle Integration (V2G and Charging Infra Integration with utilities)
- ✓ Differentiated supply (time of use, guaranteed supply, power quality etc.)
- ✓ Demand Response or dynamic load management.
- ✓ Licensee model can provide incentives for townships / campuses to opt for investments in such campus microgrids and adoption of smarter technologies.

IESA Suggestions on Draft NEP'2021

Suggestion 7

Measures for Grid Stability to be part of National Electricity Plan

Directive might be issued to CEA/ POSOCO while working on National Electricity Plan to consider appropriate technical measures for ensuring grid stability and safety. Current frequency band needs to be tightened further and also enforcement of instantaneous frequency needs to be improved. CEA may develop a plan for storage system requirement for India by 2025/2030 to mitigate unpredictability and variability of renewable energy. It is also recommended to conduct an in-depth study on the cost evaluation and environmental impacts of using thermal plants to meet ancillary services and RE integration and compare it with the use of energy storage for providing flexibility to the grid

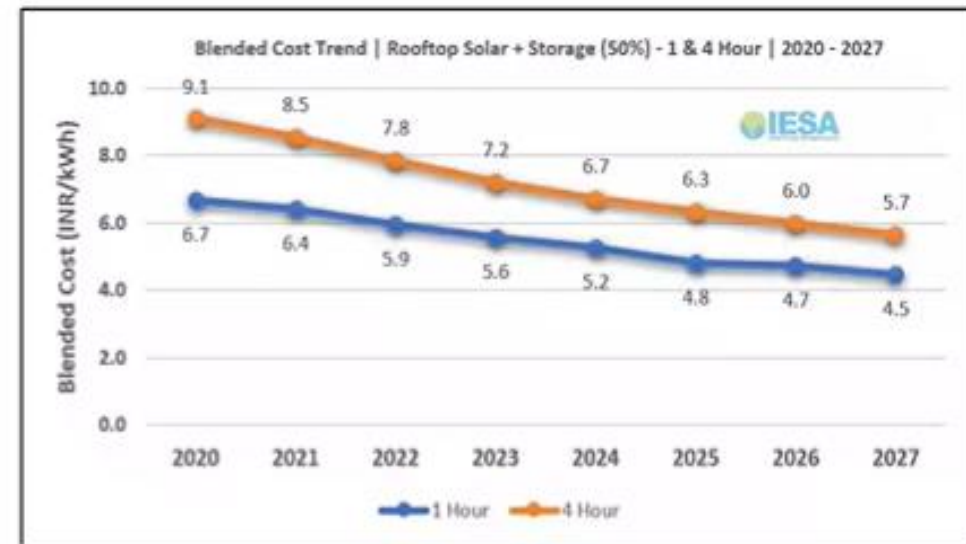
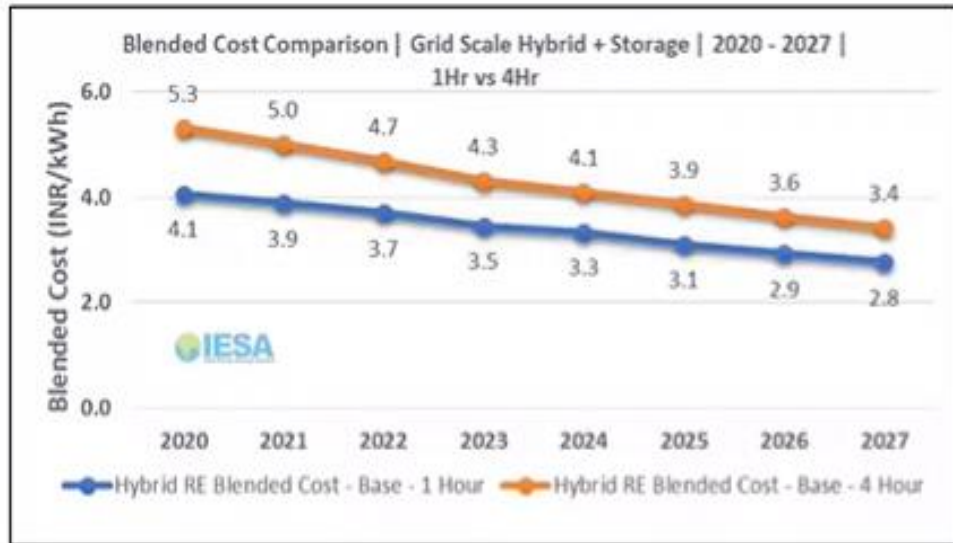


IESA Suggestions on Draft NEP'2021

Suggestion 8

Separate tariff for renewable energy with storage assets

Separate tariff for renewable energy with storage assets as these hybrid assets could also be used to provide a firm and dispatchable renewable power and serve the peak load demand. Unfortunately number of announcement of such hybrid projects have not resulted in any deployment. we need regulators to take thought leadership and guide the state regulators and tendering authorities to take prudent decisions. Directions to State discom to encourage and procure from Storage Projects.



IESA Suggestions on Draft NEP'2021



Suggestion 10

Including Draft Hydrogen Energy Mission and applicability of Hydrogen storage role in RE Sector

Currently GOI in consultation with all key stakeholders drafting National Hydrogen Energy Mission to support development and widespread commercialization of green hydrogen technologies for meeting India's energy future. Pilot Projects are planned renewable energy integration using electrolysis to produce and store excess energy generation as hydrogen and also for decentralized energy applications. Hence it is important to include applicability of Hydrogen storage and NHEM mission at suitable areas of National Electricity Policy'2021 including RE integration, Research & Innovation.

Under Make in India Initiative, it may be included to scaling up of Manufacturing of electrolyzers, including large ones. These electrolyzers could be installed next to existing demand centres in larger refineries, steel plants, and chemical complexes. They would ideally be powered directly from local renewable electricity sources.

Green hydrogen has potential to allow us to undertake deep decarbonization of industrial and transportation sector beyond the electricity sector.

IESA Suggestions on Draft NEP'2021

Other Suggestions

- ✓ Finalizing suitable Policy & Regulatory amendments needed to deploy energy storage within 6 months after publishing this policy.
- ✓ **Set up mechanism to monitor the timely implementation of projects announced.**
- ✓ Evaluating the use of energy storage for deferring upgrade of transmission & distribution assets to reduce renewable generation curtailment or meeting load growth
- ✓ Setting up of a fund for accelerating the deployment of grid scale energy storage projects in the early years to explore learnings from these projects, which can help market adoption by addressing technology, policy and commercial risks
- ✓ Conducting a study on determining optimum storage targets for individual states.
- ✓ Conducting a study on the impact of meeting rooftop solar targets on system cost for discoms to determine the possible role of storage
- ✓ Formulating a regulatory framework to monetise the value of firming/smoothing of solar power, ramp rate control, peak shifting, demand response etc
- ✓ Following an integrated approach to define the policy around energy storage for grid services and electric vehicles. This will be spread across ministries including, but not limited to, the Ministry of New and Renewable Energy, Ministry of Power, Ministry of Heavy Industries and Public Enterprises, Department of Industrial Policy and Promotion and Ministry of Finance



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THE END