

ACRONYMS	EXPANSION
TIFAC	Technology Information Forecasting & Assessment Council
TOD	Time Of The Day
TOR	Terms of Reference
TOU	Time of Use
TPES	Total Primary Energy Supply
TPP	Thermal Power Plant
TPS	Thermal Power Station
UAVs	Unmanned Aerial Vehicles
UDAY	Ujwal DISCOM Assurance Yojana
UHD	Ultra High Definition
ULB	Urban Local Bodies
UJALA	Unnat Jyoti by Affordable LED for All
UMPP	Ultra Mega Power Project
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNNATEE	Unlocking National Energy Efficiency Potential
USC	Ultra Super Critical
UT	Union Territory
VAT	Value Added Tax
VCFEE	Venture Capital Fund for Energy Efficiency
VRE	Variable Renewable Energy
WTE	Waste to Energy

PREAMBLE FOR NATIONAL ELECTRICITY PLAN, 2022-27

Section 3(4) of Electricity Act, 2003 stipulates that, the Central Electricity Authority (CEA) shall prepare a National Electricity Plan in accordance with the National Electricity Policy and notify such plan once in five years.

Provided that the Authority while preparing the National Electricity Plan shall publish the draft National Electricity Plan and invite suggestions and objections thereon from licensees, generating companies and the public within such time as may be prescribed:

Provided further that the Authority shall –

- a) Notify the plan after obtaining the approval of the Central Government;
- b) Revise the plan incorporating therein the directions, if any, given by the Central Government while granting approval under clause (a).

Further Section 3(5) of said act stipulates that, the Authority may review or revise the National Electricity Plan in accordance with the National Electricity Policy.

Para 3 of National Electricity Policy, 2005 stipulates that, assessment of demand is an important pre-requisite for planning capacity addition. Also, section 73 (a) of the Electricity Act provides that formulation of short-term and perspective plans for development of the electricity system and coordinating the activities of various planning agencies for the optimal utilization of resources to sub serve the interests of the national economy shall be one of the functions of the CEA. The Plan prepared by CEA and approved by the Central Government can be used by prospective generating companies, transmission utilities and transmission/distribution licensees as reference document.

Accordingly, CEA shall prepare the National Electricity Plan that would be for a short-term framework of five years while giving a 15-year perspective and would include:

- Short-term and long term demand forecast for different regions;
- Suggested areas/locations for capacity additions in generation and transmission keeping in view the economics of generation and transmission, losses in the system, load centre requirements, grid stability, security of supply, quality of power including voltage profile etc. and environmental considerations including rehabilitation and resettlement;
- Integration of such possible locations with transmission system and development of national grid including type of transmission systems and requirement of redundancies; and
- Different technologies available for efficient generation, transmission and distribution.
- Fuel choices based on economy, energy security and environmental considerations.

While evolving the National Electricity Plan, CEA will consult all the stakeholders including State Governments and the State Governments would, at state level, undertake this exercise in coordination with stakeholders including distribution licensees and State Transmission Utilities (STUs). While conducting studies periodically to assess short-term and long-term demand, projections made by distribution utilities would be given due weightage. CEA will also interact with institutions and agencies having economic expertise, particularly in the field of demand forecasting. Projected growth rates for different sectors of the economy will also be taken into account in the exercise of demand forecasting.

Accordingly, the first National Electricity Plan covering the review of 10th plan, detailed plan for 11th plan and perspective Plan for 12th Plan was notified in the Gazette in August, 2007.

The Second National Electricity Plan covering the review of 11th plan, detailed plan for 12th plan and perspective Plan for 13th plan was notified in the Gazette in December, 2013 in two volumes (**Volume-I, Generation and Volume-II, Transmission**).

The Third National Electricity Plan covers the review of 12th Plan, detailed Plan for 2017-22 and perspective Plan for 2022-27 and was notified in the Gazette of India (Volume-I-Generation in March 2018 and Volume-II – Transmission in January, 2019)

In order to initiate the work of preparation of NEP for the next five years (2022-27), a committee on National Electricity plan under the chairmanship of Chairperson, CEA has been constituted by CEA vide office order no.

File No.CEA-PL-11-12/1/2019-IRP Division dated 16.06.2020.In order to elicit views of various experts in Power Sector in the work relating to the preparation of the National Electricity Plan for the next five years (2022-2027), a committee for National Electricity Plan is constituted with following composition and Terms of Reference (TOR).

COMMITTEE FOR PREPARATION OF NATIONAL ELECTRICITY PLAN 2022-27

A. CONSTITUTION:

- i. Chairperson, CEA - **Chairman**
- ii. Chief Engineer(IRP), CEA - **Member Secretary**

MEMBERS

- i. All Members of CEA
- ii. Economic Advisor, MOP
- iii. Representative of MNRE not below the rank of JS, (MNRE)
- iv. Director General, BEE
- v. Advisor(Energy), NITI Aayog
- vi. Director General, CPRI
- vii. Chairman cum Managing Director, NTPC
- viii. Chairman cum Managing Director, NHPC
- ix. Chairman cum Managing Director, PGCIL
- x. Chairman cum Managing Director, PFC
- xi. Chief Executive Officer, (POSOCO)
- xii. Chairman cum Managing Director, NPCIL
- xiii. Chairman cum Managing Director, REC
- xiv. Chairman cum Managing Director, EESL

B. TERMS OF REFERENCE OF THE COMMITTEE FOR NATIONAL ELECTRICITY PLAN, 2022-27

- i. To review the likely achievements vis-à-vis targets set for the 2017-22 period towards generation from conventional sources along with reasons for shortfalls, if any.
- ii. To assess the peak load and energy requirement for the period 2022-27 and perspective forecast for 2027-32.
- iii. To assess the incremental capacity requirement to meet the projected load and energy requirement after considering retirements, renewable and captive injection and suggest the feasible break up in terms of thermal, hydro, nuclear ,renewables etc.
- iv. To make an assessment of the resource requirement like fuel, land, water, indigenous manufacturing capabilities, infrastructural, human resource for meeting the capacity addition requirements.
- v. To assess investment requirement for generation and transmission capacity addition during 2022-27 and beyond.
- vi. To suggest energy conservation measures through Demand Side Management and suggest a strategy for low carbon growth.
- vii. Review of latest technological development and R & D in the power sector and to assess its suitability for Indian conditions.
- viii. Development of integrated Transmission Plan for the period from 2022-27 and perspective plan for 2027-32 including Grid Security, evacuation of Renewable Energy Sources and exploring SAARC integration.

- C. 1. The NEP committee may co-opt any expert as may be considered necessary.
2. NEP committee may constitute separate sub-Committees on any aspect. The report of the Sub-Committee(s) shall be submitted to NEP Committee for consideration.

The first meeting of the Committee for the National Electricity Plan (NEP), 2022-27 was held on 6th August, 2020 under the chairmanship of Chairperson, CEA wherein, it was decided to constitute 10 nos. of Sub-Committees to look into different aspects of power sector and provides inputs to committee for NEP. Thereafter NEP Committee had met on 21.01.2022.The constitution and TOR of the Sub-Committees are given as:

**CONSTITUTION AND TERMS OF REFERENCE OF 10 SUB COMMITTEES CONSTITUTED UNDER
COMMITTEE FOR NATIONAL ELECTRICITY PLAN, 2022-27**

1. SUB-COMMITTEE- 1- DEMAND SIDE MANAGEMENT, ENERGY EFFICIENCY & CONSERVATION

CONSTITUTION:

- Director General(BEE)- Chairman
- Chief Engineer(TPE&CC), CEA - Member Secretary

MEMBERS:

- Representative from NTPC, EESL,PCRA,CII,IEEMA,ELCOMA
- Chief Engineer(DP&T), CEA
- Representative from Energy Intensive Industry
- Representative from Major DISCOM

TERMS OF REFERENCE OF SUB-COMMITTEE:

- Assess and review energy efficiency & conservation measures implemented and achievements till 2022.
- Major Plans for efficiency improvement during the period 2022-27 and 2027-32
- Assessment of reduction in energy requirement and peak load demand through demand side management (DSM) and energy efficiency.

2. SUB-COMMITTEE 2: DEMAND PROJECTION

CONSTITUTION:

- Member (Planning), CEA - Chairman
- Chief Engineer (PS& LF), CEA - Member Secretary

MEMBERS:

- Representative from MNRE, NITI Aayog, BEE, POSOCO,NTPC
- Chief Engineer(DP&T),CEA
- Representative from State Discoms
- Representative from Energy Intensive Industry

TERMS OF REFERENCE OF SUB-COMMITTEE:

- In coordination with the 20th EPS committee, demand assessment in terms of peak load and energy requirements for the period from 2022-2027 & 2027-2032.
- To assess captive demand including Solar roof top and its impact on Grid demand.
- To assess the impact of various Govt. schemes for ex. Kusum, Saubhagaya, National Electric mobility mission plan, etc on Grid demand.

3. SUB-COMMITTEE 3: REVIEW OF GENERATION CAPACITY ADDITION (2017-22) AND GENERATION PLANNING

CONSTITUTION:

- Member (Planning), CEA- Chairman
- Chief Engineer (IRP), CEA – Member Secretary
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MEMBERS:

- Representative from MNRE,CTU,POSOCO, NPCIL,BHEL ,Sterlite, L&T, TPPDL,

- Representative from Solar Energy Corporation of India
- Representative from National Institute for Wind Energy
- CEA- CE(RPM),CE(TPM),CE(TPRM),CE(HPM),CE(TPP&D),CE(HPI),CE(GM)

TERMS OF REFERENCE OF SUB-COMMITTEE:

- To review generation capacity addition achievements vis-à-vis targets during 2017-22 including new & renewable energy and reasons for shortfalls if any.
- Assessment of generation capacity addition during 2022-27 and 2027-32 including renewable energy sources and its integration thereof.

4. SUB-COMMITTEE 4- RESEARCH AND DEVELOPMENT IN POWER SECTOR**CONSTITUTION:**

- Director General, CPRI - Chairman
- Chief Engineer(R&D),CEA - Member Secretary

MEMBERS:

- Representative from MNRE, National Institute for Solar Energy & National Institute for Wind Energy
- Representative from NETRA,NTPC
- Representative from IEEMA, IIT Kanpur, PGCIL, DST, BHEL
- CEA- CE(TETD), CE(HETD), CE(SETD)

TERMS OF REFERENCE OF SUB-COMMITTEE:

- Review of existing R&D facilities & programmes in Power sector
- Recommendation regarding R&D activities to be taken up during 2022-27 & 2027-32,
- Issues relating to cyber security
- To assess the infrastructure requirement to promote R&D activities in Power Sector.
- To identify future technologies in power generation including waste (Municipality, hospital, Industrial etc.)

5. SUB-COMMITTEE 5- FUEL REQUIREMENT**CONSTITUTION:**

- Member(Planning), CEA as Chairman
- Chief Engineer,(FM), CEA as Member Secretary

MEMBERS:

- Representative from MOP&NG, MOC, NTPC, NPCIL, NLC, GAIL,CIL
- CEA- CE(IRP),CE(TPP&D)

TERMS OF REFERENCE OF SUB-COMMITTEE:

- Identify and quantify the different types of fuels required to meet the electricity demand for the period 2022-27 and 2022-32
- To assess the availability of fuel source wise.

6. SUB-COMMITTEE 6- FUND REQUIREMENT**CONSTITUTION:**

- Member, (E&C), CEA as chairman
- Chief Engineer(F&CA), CEA as Member Secretary

MEMBERS:

- Representative from MOP, MNRE, NITI Aayog, NTPC,PGCIL ,NHPC, NPCIL, PFC, REC
- CEA-CE(TPP&D),CE(HPI),CE(PSP&A I)

TERMS OF REFERENCE OF SUB-COMMITTEE:

- Review of financial issues related to power sector
- Identify the investment required to meet the capacity addition and associated transmission system and possible sources of fund etc.

7. SUB-COMMITTEE 7: KEY INPUTS FOR POWER SECTOR**CONSTITUTION:**

- CMD, NTPC as Chairman
- Chief Engineer(TETD), CEA as Member Secretary

MEMBERS:

- Representatives of MoP&NG, Ministry of Railways, Ministry of Steel, Ministry of Road Transport and Highway, Ministry of Shipping, MNRE, CPRI,PFC,BHEL, NHPC, Private Equipment Manufacturer, CII.
CEA-CE(TPP&D),CE (PSP&A-I), CE(SETD), CE(TPRM)

TERMS OF REFERENCE OF SUB-COMMITTEE:

- Identify the key inputs required for meeting the capacity addition requirements
- To assess infrastructural support required for Power capacity addition during 2022-27 & 2027-32.
- Land , water Requirement & its availability
- Transport(Railways, Roads, Waterways, pipeline, LNG terminals), Port facilities
- Construction & manufacturing capabilities specifically erection machinery and agencies including civil and BOP contractors. Steel, cement, aluminium & other materials required for construction work in power sector.
- Assessment of sourcing inputs for power Sector under the Atmanirbhar Bharat initiative.

8. SUB-COMMITTEE 8- TRANSMISSION PLANNING**CONSTITUTION:**

- Member(PS), CEA as Chairman
- Chief Engineer (PSP&A-I) as Member secretary

MEMBERS:

- Representative of MNRE,PGCIL,POSOCO,PFC,REC, State Transmission Utility, CTU Distribution Licensee
- CEA- CE(PSP&A-II),CE(PSPM),CE(SETD),RPCs

TERMS OF REFERENCE OF SUB-COMMITTEE

- Review of achievement of targets for the period of 2017-22 for transmission and reasons of shortfall if any.
- Development of integrated transmission plan for the period from 2022-27 and perspective plan for 2027-32.
- Technology development in transmission