

CEA generation planning studies on Optimal Energy has projected the requirement of 260 GW of coal-based generation capacity and 24.8 GW of gas-based generation capacities by 2031-32 for meeting the peak requirement of 366 GW.

In case of shutdown of existing but without offtake arrangements thermal generation plants, following scenarios / options emerge:

- i. Additional investments for new thermal capacity addition for meeting the balancing and peaking requirements. Investment in such additional capacity would need to be serviced for further 25 years by payment of depreciation, interest on loan and other elements of tariff. Further there may be requirement to support their technical minimum during off-peak hours for their useful life. All these costs would have to be eventually borne by the end consumers.
- ii. Installation of larger capacities of BESS/PSP will be required to provide for balancing requirements. Deployment of BESS in large quantum is dependent on factors as high capital costs, availability of critical raw material, production batteries or on imports – all adding to uncertainty in balancing resources. Development of PSPs has its own challenges. Further, both the above options are much costlier as compared to continued operation of these well-maintained generation plants with almost all the investment cost paid.

In view of long gestation period required for the construction of new thermal capacities and impending retirement of old inefficient thermal plants, it would be prudent to continue to operate the existing efficient thermal capacities of CPSUs whose PPA duration have expired and defer the capital expenditure required for creation of new capacities. It is required to ensure continued operation of these gas-based power plants to provide peaking/balancing power for smoother and affordable energy transition towards RE & for Resource Adequacy.

Accordingly, with the objective of maintaining resource adequacy, conserving capex, and utilizing the capacity already available in the grid a proposal for Genco-wise Pooling of Thermal Stations of central sector has been formulated in consultation with the Stakeholders.

3. Principles and Operation Methodology for Genco-wise Pooling of Thermal Stations

a) Creation of Common Pool

A Central sector Genco-wise Common Pool of thermal generating stations (Coal and gas-based) which have completed the terms of their earlier PPAs shall be created. As and when any Station of the Generating Company completes its PPA period, the same shall be automatically added to the pool. Further, the plants/capacity which have already completed their PPA period but have already signed fresh PPAs post the expiry of the original PPA shall be excluded from the pool. In future all Central Generating capacity which complete their PPA tenures would be added to the pool.

b) Requisition of Power

A single Window System shall be created through which the desiring State(s)/Discoms including the existing beneficiaries shall submit their willingness for power allocation (quantum as well as period) within 15 days from the formation of Common Pool. The minimum requisition period for power from the Common Pool shall be 5 years. The States/DISCOM shall have to enter a contract (PPA) for a minimum period of 5 years from the intended date of Start of drawl of power from the Common Pool.

c) Allocation of Power

All the PPA holders shall be made allocations from the Common Pool.

d) Power not allocated

The power in the Common Pool for which there are no PPAs shall remain at the disposal of the Generating Company and shall be sold by the Generating Company through alternate arrangements including through Power Exchanges. The existing coal linkages and supply of coal as per the present FSA provisions at notified rate shall be continued and allowed for the balance power available with the generating company. The gains from such sale in power markets shall be shared with DISCOMs having PPAs in pool as per Electricity (Late Payment Surcharge and Related Matters) Rules, 2022.

e) Power Purchase Agreement (PPA)

The allocation of power from the Common Pool to the willing States/DISCOMs shall be subject to signing of new PPA with the pool and ensuring compliance with the financial terms of the PPA signed with the Generating Company.

f) Uniform Capacity Charges

The total capacity charge of the pool will be worked out by adding the capacity charges of each station in the pool as per the extant Tariff Regulations of CERC. The States/DISCOM(s) shall be billed a uniform capacity charge in Rs Cr/MW based on percentage allocation and total capacity charge of power from the Common Pool.

A sample illustration for the calculation of uniform capacity charges as applicable to a single beneficiary 'A' is given below.

Name of Station	Station IC (MW)	Annual Fixed Cost (Rs Cr)	Beneficiary 'A' - 13.57% allocation of Power (MW)	Beneficiary 'A' Capacity charges (Rs Cr)
Korba STPS I	2,100	1,003	285	136.2
Vindhyachal Stage I	1,260	725.7	171	98.5
Kawas Gas	656	399.1	89	54.2
Gandhar Gas	657	504.6	89	68.5
Farraka STPS Stage I & II	1,600	910.7	217	123.6
Khalgaon Stage 1	840	597.6	114	81.1
Ramagundam STPS I & II	2,100	1,061.1	285	144.0
Singrauli STPS	2,000	912.8	271	123.9
Rihand Stage 1	1,000	575.4	136	78.1
Unchahar Stage I	420	307.4	57	41.7
Dadri Stage I	840	555.1	114	75.4
Anta Gas	419	215.6	57	29.3
Auraiya Gas	663	302.5	90	41.1
Dadri Gas	830	300.4	113	40.8
Total	15,386	8,371	2,089	1,136
Uniform Fixed Charges (Rs Cr/MW)		0.54		0.54

g) Uniform Energy Charge Rate (ECR)

The States/DISCOM(s) shall be billed a uniform weighted average pooled energy charge computed based on station-wise monthly ECR and final

implemented schedule. However, the station-wise monthly ECR shall continue to be computed as per the extant CERC Regulations. There will be no incentive on the energy charge. Further, there shall be a quarterly truing up of ECR billed to the DISCOMs.

The total ECR billed to the beneficiary(ies) shall be the aggregate of total schedule of the beneficiary from each station of the pool times the uniform weighted average pooled ECR. A sample illustration for the calculation of weighted average ECR as applicable to the Pool is given below:

Sr. No	Station	Capacity (MW)	Schedule Energy (Mus)	Actual ECR (Rs/kwh)	Total Energy Charges for normative generation (in million Rs)
			A	B	A*B
1	Singrauli	2000	13490.2	1.40	18886.28
2	Rihand-I	1000	6427.5	1.37	8805.68
3	Unchahar-I	420	2025.7	3.57	7231.75
4	Dadri-I	840	2422.5	4.13	10004.93
5	Korba-I&II	2100	14857.3	1.36	20205.93
6	Vindhyachal-I	1260	7966.4	1.77	14100.53
7	Kahalgaoon-I	840	5203.0	2.20	11446.60
8	Farakka-I&II	1600	9548.7	2.54	24253.70
9	Ramagundam-I&II	2100	13080.3	2.60	34008.78
10	Auraiya	663	413.2	4.08	1685.86
11	Dadri Gas	829.78	1792.4	4.42	7922.41
12	Anta	419.33	264.8	5.67	1501.42
13	Gandhar	657.39	377.2	3.06	1154.23
14	Kawas	656.2	1378.4	2.84	3914.66
Single Pool		15386	79247.6	Weighted Average Pooled Energy Cost (Rs/kWh)	2.08

h) Scheduling and Dispatch

- i. The Generating Company shall provide information of all stations which have completed their PPA period to respective RLDC/SLDC along with

requisite details such as station capacity and allocated/contracted shares of different beneficiaries from each station.

- ii. Each generating station of the Common Pool shall give their Declared Capability (DC). Based on the DC given by each generating station of the pool, the beneficiaries will get their share of power from the Common Pool. RLDC shall convey ex-bus station-wise dispatch schedules for each station of the pool based on the drawl schedules advised by the beneficiaries.
- iii. The Stations in the Common Pool will participate in all regulatory mechanisms operated and coordinated by NLDC/ RLDC such as SCED (Security Constrained Economic Dispatch), RRAS (Reserve Regulatory Ancillary Services), AGC (Automatic Generation Control) etc., based on their individual Energy Charge Rate and Fixed charges as determined by CERC.
- iv. The billing of beneficiaries shall be based on the aggregation of station-wise schedule provided by the beneficiary to each station at uniform weighted average pooled energy charge and the fixed charge determined as per entitlement.

i) Implementation of Merit-order Dispatch

The Generating Company shall declare the station-wise monthly Energy Charge Rate (ECR). The States/DISCOM(s) shall stack power requisitioned from each individual station in the Common Pool into the merit order list. The System Operator shall provide the schedules for operation of SCED, RRAS and AGC as per the existing methodology based on ECR of each station in the Common Pool. The generating company must fully utilise low-cost generation for supply to the beneficiary States/ Discoms and only the marginal power from the stations may be offered in the power exchanges in case of a surplus. If a generating company is found selling power in the market from a station whose tariff is less than the power stations supplying power to the States/ Discoms, then the generating company shall have to pay a penalty of twice the market clearing price (MCP) to the Discoms.

j) Bundling of RE Power

The Generating Company shall bundle RE power as per the "Scheme for Flexibility in Generation and Scheduling of Thermal/ Hydro Power Stations through bundling with Renewable Energy and Storage Power" issued by

Ministry of Power vide Order dated 12.04.2022 for the coal based thermal generating stations of the Common Pool. The RE power (with or without energy storage system) shall be supplied to the beneficiaries at a tariff which shall be less than the station-wise Energy Charge Rate (ECR) of the Common Pool.

k) Sharing of benefits with beneficiaries

The generating units shall be required to share benefits arising out of regulatory mechanisms and operational gains, if any with the beneficiaries as per the provisions of extant CERC Regulations.

l) Modification in Regulation 17 of CERC Tariff Regulation 2019

As per the prevailing CERC Tariff Regulations 2019, under Regulation 17, States/ DISCOMs have an option to either retain or exit from PPAs of stations that have completed 25 years of COD. Considering the above Regulation and MOP guidelines dated 22.03.2021, many States/Distribution companies are exiting from PPAs of costlier plants while retaining the cheaper plants. For the implementation of proposed pooled tariff mechanism, the unilateral right to States/DISCOMs to continue to draw power even after expiry of PPA must be withdrawn. Accordingly, Regulation 17 of CERC Tariff Regulations 2019 is required to be modified for operationalization of the Common Pool.

m) Common Pool- Administrative Cell

Each such generating company shall set-up a dedicated administrative cell and commercial team to ensure that the capacity of the Common Pool is utilized to a maximum through sale of contracted power to the beneficiaries and the sale of unallocated power through alternate arrangements including Power Exchanges.

n) Exclusion of Power Station for Common Pool

The Hydro generating plants have zero marginal cost of generation with useful life of 40 years and beyond. Moreover, the tariff of hydro stations reduces drastically with time. In view of the above reasons, hydro station shall not be made part of Common Pool. Also, the Merchant Plants shall not be made part of the Common Pool as their tariff is not determined by the Appropriate Commission under Section 62 of Electricity Act 2003.

4. Roles & Responsibilities of Stakeholders

a) Generating Company:

- i. The Generating Company shall create a Common Pool of Thermal Generating station (Coal/Gas based plants) which have completed their PPA period.
- ii. The Generating Company shall inform the existing beneficiaries one year in advance, the date from which Power shall get deallocated from the Generating station and get added to the Common Pool.
- iii. The Generating Company shall be responsible for developing a Single Window System (SWS) for seeking the willingness of States/DISCOMs for signing of PPA for power from the Common Pool. The SWS shall contain the information related to the number of generating stations which shall constitute the Common Pool and the capacity to be offered from each generating station, the likely uniform capacity charges, and the Energy charges (fuel wise in case of gas station) etc. In addition to above, the SWS shall also include the information related to year wise addition of new capacities likely to get added in the Common Pool in next five (5) years along with the tentative change in uniform capacity charges and the likely revised weighted average pooled Energy Charge Rate.
- iv. The Generating Company shall provide information of all stations which have completed 25 years of CoD to respective RLDC/SLDC along with requisite details such as station capacity and allocated/contracted shares of different beneficiaries from each station of the Common Pool.

b) States/DISCOMs:

- i. The States/DISCOMs may give their willingness to the SWS for allocation of power including period of requisition which shall be a minimum period of 5 years.
- ii. The States/DISCOMs shall enter into Power Purchase Agreements (PPAs) with the Common Pool.
- iii. The States/DISCOMs shall be responsible for taking due approval from the State Regulator in respect of the PPA and the quantum of power for which it signs PPA with the Common Pool.

c) **RLDC/NLDC:**

The Scheduling & Dispatch of power, Metering & Accounting etc. for each generating station of the Common Pool shall be done as per the CERC IEGC Regulation issued from time to time.

d) **Ministry of Power:**

The allocation of power shall be done by the Ministry of Power based on the requisition received from the willing States/DISCOMs through SWS. Preference shall be given to original beneficiaries of thermal generating stations constituting the pool. In case the total requisition of power is more than the capacity available in the Common Pool then the allocation power to the willing beneficiaries (excluding original beneficiaries, if any) shall be made on a pro-rata basis. Scheme of unallocated pool of Central power will continue as such.

e) **Regulatory Commissions:**

Required regulatory changes would be carried out for effective and timely implementation of the scheme.

f) **Central Electricity Authority:**

CEA will coordinate all the activities for implementing the scheme.
