REGULATORY FLIPBOOK • CENTRAL ELECTRICITY AUTHORITY

Flexible Operation of Coal-based Thermal Plants

CEA (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023

Notified: 25 January 2023 | **Published:** 30 January 2023 (Gazette No. 61)

Gazette of India • Extraordinary • Part III—Section 4 • In force from date of final publication

WHY IT MATTERS

A compact, 8-regulation rulebook: it sets the minimum turn-down and ramp-rate a coal unit must deliver so the grid can absorb more renewables.

POWERPPT.COM

Quick Reference

What this regulation requires, at a glance

APPLICABILITY

All coal-based thermal power generating units — Central/State-owned or private, grid-connected — and load despatch centres.

RAMP RATE BANDS

3%/min (70–100% MCR), 2%/min (55–70% MCR), 1%/min (40–55% MCR, phased).

EFFECTIVE DATE

In force from the date of final publication in the Official Gazette (30 Jan 2023).

INTERIM TARGET

Units unable to reach 55% minimum power level must do so within 1 year of notification.

MINIMUM POWER LEVEL

Flexible operation down to 40% of Maximum Continuous Power Rating (MCR), without oil support.

PHASING & RELAXATION

Full 40% capability rolled out per an Authority-specified phasing plan; case-by-case relaxation allowed under Reg. 8.

WHY IT MATTERS

Six facts cover the whole regulation — use this as your one-screen brief before reading the full text.

Applicability & Key Definitions

Regulations 2–4

Applies to all coal-based thermal power generating units — owned or controlled by the Central Government, State Governments, or any private company — that are connected to the grid, and to load despatch centres.

Flexible Operation

Ability of coal-based units to generate power at specified levels, as per grid requirement.

Max. Continuous Power Rating (MCR)

Maximum continuous output (MW) at generator terminals, guaranteed by the manufacturer at rated parameters.

Minimum Power Level

Minimum output, as % of MCR, that a unit can sustain continuously without oil support.

Ramp Rate

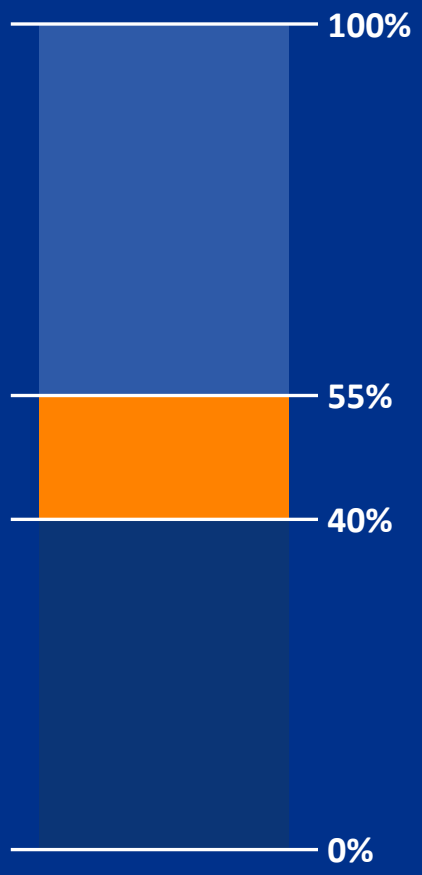
Rate of change of output power, expressed as % of MCR per minute.

WHY IT MATTERS

General requirements (Reg. 4) also apply: units must be designed or retrofitted for site ambient conditions and comply with applicable safety codes.

Minimum Power Level Capability

Regulation 6



55% — 100% MCR: NORMAL OPERATING RANGE

Units not yet capable of a 55% minimum power level must achieve it within 1 year of notification.

40% — 55% MCR: EXTENDED FLEXIBILITY

Full flexible-operation capability down to 40% MCR is the regulatory target, rolled out per the Authority's phasing plan.

BELOW 40% MCR: NOT COVERED

Sustained operation without oil support is not required below the 40% minimum power level threshold.

WHY IT MATTERS

Two clocks are running at once: a 1-year deadline for the 55% interim level, and a longer phased rollout for the full 40% target.

CEA (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023

POWERPPT.COM

Ramp Rate Capabilities

Regulation 7 — rate of change of output, as % of MCR per minute

70% – 100% MCR

3% / min

Minimum ramp rate; applies to all units.

55% – 70% MCR

2% / min

Minimum ramp rate; applies to all units.

40% – 55% MCR

1% / min

Phased in per the Authority's phasing plan (Reg. 5(2)).

COMPLIANCE TIMELINE

Units unable to meet the 3%/min and 2%/min ramp rates (70–100% and 55–70% bands) must comply within 1 year of notification. The 1%/min ramp rate for the 40–55% band is achieved as per the phasing plan under Regulation 5(2).

WHY IT MATTERS

Faster ramping in the top band (3%/min at 70–100%) is what lets thermal plants back down quickly when solar and wind output rises.

Implementation & Relaxation

Regulations 5 & 8

PHASED ROLLOUT (REG. 5)

- Coal-based units must be capable of flexible operation as per these regulations
- Implementation follows a phasing plan specified by the Authority from time to time
- Load despatch centres schedule units under their jurisdiction considering these flexible-operation capabilities

RELAXATION POWER (REG. 8)

The Authority may, by an order and for reasons recorded in writing, relax any provision of these regulations in respect of a matter referred to it — decided case by case.

WHY IT MATTERS

Compliance isn't fixed by the Gazette date alone — track the Authority's phasing plan, and know that relaxation is available on a reasoned, case-by-case basis.

Compiled for professional reference

Eight regulations, one job: make coal thermal plants turn down further and ramp faster for a greener grid.



WHY IT MATTERS

Bookmark this as your pre-scheduling checklist — confirm minimum power level and ramp-rate capability before committing a unit's despatch plan.