REGULATORY FLIPBOOK • CENTRAL ELECTRICITY REGULATORY COMMISSION

CERC Ancillary Services Regulations, 2022

Regulations + Statement of Reasons + Commencement Notifications + SRAS Detailed Procedure

2022

Notified

31 Jan 2022;
Statement of Reasons 26 Apr 2022

Dec 2022

Phase 1 + SRAS Procedure

PRAS/SRAS provisions live from 5 Dec 2022

Jun 2023

Phase 2 (TRAS)

Regs 14–19 etc. commence 1 Jun 2023

11 source documents • Coverage: Jan 2022 – Apr 2023 • Gazette of India, Part III—Section 4

WHY IT MATTERS

PRAS, SRAS and TRAS are the grid's automatic reflexes — this framework decides who provides them, how they're dispatched, and who gets paid.

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At a Glance

Core facts across the Ancillary Services framework

OBJECTIVE

Maintain grid frequency close to 50 Hz, restore it within the allowable band, and relieve transmission congestion.

NODAL AGENCY

National Load Despatch Centre (NLDC), implementing through Regional Load Despatch Centres.

SCOPE

Regional entities, including energy storage resources and qualified demand-response providers.

FUNDING MECHANISM

Deviation and Ancillary Service Pool Account — the same pool used for DSM settlement.

FOUR SERVICE TYPES

PRAS, SRAS, TRAS, and other Grid Code-specified services (e.g. voltage control, black start).

PHASED COMMENCEMENT

PRAS/SRAS live from 5 Dec 2022; TRAS and related provisions from 1 Jun 2023.

WHY IT MATTERS

Same pool account, three service types, one Nodal Agency — understand this map before diving into eligibility or payment detail.

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Objective, Scope & Service Types

Regulations 2, 4 & 5

OBJECTIVE (REG. 2)

Provide administered and market-based mechanisms for procurement, deployment and payment of Ancillary Services at regional and national level — maintaining grid frequency, restoring it within the allowable band, and relieving transmission congestion.

PRAS

Primary Reserve

SRAS

Secondary Reserve

TRAS

Tertiary Reserve

Other

Voltage Control, Black Start & more

SCOPE (REG. 4)

Applies to regional entities — including entities with energy storage resources, and entities qualified to provide demand response — and other entities as provided in these regulations.

WHY IT MATTERS

PRAS is governed by the Grid Code directly; only SRAS and TRAS get their full procurement-to-payment mechanism spelled out in these regulations.

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Key Definitions

Regulation 3 — the vocabulary behind every AS transaction

Area Control Error (ACE)

Instantaneous difference between a control area's net actual and net scheduled interchange, adjusted for frequency bias and measurement error.

AGC / Secondary Control Signal

Automated signal from the Nodal Agency that adjusts an SRAS Provider's injection, drawal or consumption.

AS Capacity Obligation

Capacity signalled for despatch under SRAS, or procured under TRAS, by the Nodal Agency.

Compensation Charge

Price declared by an SRAS Provider (other than a Section 62-tariff generating station) for SRAS participation.

Un-Requisitioned Surplus (URS)

Capacity at a generating station not requisitioned and available for despatch — the gap between declared/Pmax capacity and total schedule.

Nodal Agency

The National Load Despatch Centre — responsible for inter-State Ancillary Services implementation via Regional Load Despatch Centres.

WHY IT MATTERS

ACE is the single number that triggers SRAS activation — everything downstream (despatch, payment, incentive) traces back to this formula.

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SRAS — Eligibility & Activation

Regulations 7 & 8 — who can provide it, and what triggers it

ELIGIBILITY CRITERIA (REG. 7)

- Bi-directional communication with RLDC (NLDC accepted until fully established)
- AGC-enabled, in case of a generating station
- Minimum response capability of 1 MW
- Metering & SCADA telemetry in place for measurement
- Responds within 30 seconds; delivers full capacity obligation within 15 minutes; sustains for at least the next 30 minutes

ACTIVATION TRIGGER (REG. 8)

ACE = (Ia − Is) − 10 × Bf × (Fa − Fs) + Offset

Activated when regional ACE exceeds ±10 MW (or a Commission-notified threshold) — or on other Grid Code events. Operable in tie-line bias, flat frequency, or flat tie-line control mode.

WHY IT MATTERS

A 30-second response window with a 15-minute ramp-to-full-capacity requirement sets a real technical bar — not every resource can qualify as an SRAS Provider.

CERC (Ancillary Services) Regulations, 2022

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SRAS — Procurement, Selection & Despatch

Regulations 9 & 10

CUSTOM PARTICIPATION FACTOR (CPF)

SRAS-Up

∝ Rate Participation Factor (normalised)

∝ 1 / Cost Factor (normalised)

SRAS-Down

∝ Rate Participation Factor × Cost Factor (both normalised)

Rate Participation Factor = ramping capability (MW/min) • *Cost Factor = energy charge or compensation charge*

DESPATCH MECHANICS

- Secondary control signal sent to each SRAS Provider's control centre every 4 seconds
- Provider follows the signal automatically, without manual intervention
- SRAS-Up/Down MW averaged every 5 minutes (performance) and every 15 minutes (payment)
- No commitment charge for capacity ascertained but not signalled for despatch

WHY IT MATTERS

SRAS-Down rewards providers who are both fast AND cheap simultaneously (a product, not a ratio) — a subtle but deliberate asymmetry with SRAS-Up.

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SRAS — Payment & Performance Incentive

Regulations 11 & 12

PAYMENT (REG. 11)

SRAS-Up: paid from the Pool Account at energy/compensation charge, per 15-min block. SRAS-Down: Provider pays back to the Pool Account at the same rate.

PERFORMANCE INCENTIVE TABLE (REG. 12)

Actual Performance vs. Signal	Incentive Rate (paise/kWh)
95% and above	**+ 50**
75% to below 95%	**+ 40**
60% to below 75%	**+ 30**
50% to below 60%	**+ 20**
20% to below 50%	**+ 10**
Below 20%	**0**

WHY IT MATTERS

Below 20% performance for two consecutive days disqualifies a provider from SRAS for a week — the incentive table has real teeth at both ends.

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TRAS — Eligibility, Procurement & Price Discovery

Regulations 14, 16 & 17

ELIGIBILITY (REG. 14)

Can vary active power output/drawal/consumption on despatch instruction; capable of providing TRAS within 15 minutes and sustaining for at least the next 60 minutes.

TRAS-UP: UNIFORM MARKET CLEARING PRICE

Highest cleared Energy-Up bid sets the Market Clearing Price — all cleared TRAS-Up providers receive this same price.

TRAS-DOWN: PAY-AS-BID

Energy-Down bids stacked highest to lowest; each selected provider is paid its own bid price until requirement is met.

Bids submitted per time-block (or min. 2 consecutive blocks) in the Day Ahead AS Market or Real Time AS Market; energy and TRAS capacity offers in the same block must be separate and non-overlapping.

WHY IT MATTERS

TRAS-Up and TRAS-Down use deliberately different pricing rules — uniform clearing rewards scarcity on the Up side, pay-as-bid controls cost on the Down side.

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TRAS Payment, Shortfall & Emergency Conditions

Regulations 19 & 20

TRAS PAYMENT (REG. 19)

- TRAS-Up Provider: MCP-Energy-Up for despatched quantum, plus commitment charge (10% of MCP, capped at 20 paise/kWh) for cleared-but-undespatched capacity
- TRAS-Down Provider: pays back at its own Energy-Down bid rate for despatched quantum
- Forced outage of a cleared unit: no payment for a full-station outage; reduced-quantum payment for a partial/unit outage

MARKET SHORTFALL (REG. 20)

URS generating stations deployed for TRAS-Up: paid 110% of energy charge. Deployed for TRAS-Down: pay back at 90% of energy charge.

EMERGENCY CONDITIONS (REG. 20(6))

Compensated at Section 62/63 energy charge, or the AS provider's declared compensation charge, as applicable.

No transmission charges, losses, or transmission deviation charges apply to SRAS or TRAS (Reg. 22).

WHY IT MATTERS

The 110%/90% shortfall rates create an automatic penalty-and-premium pair — the URS station is compensated for stepping in, but pays extra to step back.

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Accounting & the Commencement Timeline

Regulations 21–23 — settlement mechanics and phased rollout

ACCOUNTING & SETTLEMENT (REG. 21)

Regional Power Committee accounts SRAS/TRAS weekly (SCADA data for SRAS, interface meters + schedules for TRAS). Net pool charges settle through DSM Regulations; no retrospective settlement of energy or compensation charges.

31 Jan 2022 — Regulations notified

26 Apr 2022 — Statement of Reasons

5 Dec 2022 — Phase 1 live: PRAS/SRAS + SRAS Detailed Procedure

Feb–Apr 2023 — TRAS commencement date deferred twice

1 Jun 2023 — TRAS & Regs 14–19 finally commence

DETAILED PROCEDURE (REG. 23)

Nodal Agency issues the Detailed Procedure after stakeholder consultation, within 3 months of notification — covering communication systems, metering, technical declarations, Custom Participation Factor, and settlement methodology.

WHY IT MATTERS

TRAS commencement was pushed back twice (Feb→Apr→Jun 2023) — always check the latest commencement notification, not just the original Gazette date.

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WHY IT MATTERS

Bookmark this deck as your AS quick-reference — confirm which service type, eligibility test and payment rule applies before you bid or dispute a settlement.