INDIA ENERGY STACK

Peer-to-Peer Energy Exchange

Surplus solar, sold neighbour to neighbour. Even across DISCOMs.

A consumer with rooftop solar sells surplus energy directly to a buyer, on the same DISCOM or a different one, through an exchange app. IES carries the trade contract, the meter evidence and the settlement. No central exchange.

Think of UPI. Money moves from any bank to any bank, with no central body holding the funds. Peer-to-peer energy exchange works the same way: trades settle DISCOM to DISCOM, with the rules applied identically by everyone.

01 THE PROBLEM TODAY

Surplus solar with nowhere to go

The prosumer cannot sell.

Many homes and businesses generate more solar power than they use. Beyond net metering, there is no practical channel to sell the surplus to a willing buyer, especially one served by a different DISCOM.

No common rails for a trade.

Matching a buyer and seller, collecting meter evidence, allocating energy and settling money across two DISCOMs would today need bespoke integrations and ad-hoc spreadsheets. So the trades simply do not happen.

A prosumer with rooftop solar has surplus energy. She opens an exchange app, which verifies her identity and credentials through IES. She lists her surplus; a buyer on a different DISCOM finds and accepts the offer. IES enables the trade contract, the meter evidence and settlement reconciliation across both DISCOMs.

02 SCOPE

What it is, and what it covers

One trade, recorded end to end. It covers:

- the offer: price, quantity and delivery window, listed by the seller's platform;
- the contract: buyer, seller, both DISCOMs, and the published rules that govern the trade;
- the meter evidence: actual injection and consumption per interval, used to reconcile delivery;
- the settlement: who owes whom, including each DISCOM's wheeling charges, computed by signed rules.

What it deliberately leaves out

- × No central exchange. No single platform holds the money, the energy or the data.
- × The physical grid is untouched. Energy flows through the same wires; the trade is a commercial layer on top.
- × Personal data stays home. Each side's details and meter data remain with its own DISCOM and platform.

03 HOW IT WORKS

Four steps, start to finish

1

List

The seller's app publishes the offer. Identity and credentials are verified through IES before anything is listed.

2

Contract

A buyer accepts. The signed contract is recorded with both DISCOMs' ledger providers.

3

Deliver

The seller injects, the buyer consumes. The meters provide the evidence, interval by interval.

4

Settle

Published rules compute the allocation and each side's dues, including wheeling charges. The buyer pays the seller through the platforms, and monthly bills adjust.

FOUR TERMS, IN PLAIN WORDS

Prosumer ·a consumer who both uses and generates electricity, and can sell the surplus.

Trading platform ·the app that represents a buyer or seller and matches offers.

Ledger provider ·a regulated service that keeps each DISCOM's record of the trade.

Wheeling charge ·the fee a DISCOM earns for carrying traded energy over its network.

04 THE RAILS UNDERNEATH

What IES provides

Verified identity for every trader.
Buyers, sellers, platforms and DISCOMs all carry checkable identities. The seller's solar and meter can be attested by her Energy Passport.

A standard offer and contract format.
Every platform speaks the same trade language, so one integration works across the network.

Meter evidence on the same rails.
Delivery is reconciled from meter data flowing over the same standards as the rest of IES.

Rules as signed code.
The regulator's trading and settlement rules are published as signed code, applied identically by every participant.

05 VALUE UNLOCKED

What each stakeholder gains, and how

Prosumers & consumers

Value: rooftop solar earns beyond net metering, and buyers gain access to cheaper, greener power, even across DISCOM boundaries.

How: they trade through an app; contracts and settlement run on IES rails.

Trading platforms

Value: one integration works within a DISCOM and across DISCOMs. Allocation and settlement come from signed rules, not custom code per deployment.

How: they build to the published trade protocol once.

DISCOMs

Value: wheeling charges and deviation penalties become the output of a signed calculation over a signed contract, not a bilateral spreadsheet. Visibility into peer trade comes as a by-product.

How: each DISCOM's ledger provider records its side of every trade.

Regulators

Value: the network rules are themselves the regulation. A policy change is a new signed rule bundle, picked up by every participant at once.

How: rules are published as signed code and evaluated locally by all.

WHERE IT STANDS TODAY

In build. The trade protocol and schemas are stable in the developer kit, and pilot integrations are being staged under the CERC Innovation Sandbox framework.

Protocol & schemas stable | CERC Innovation Sandbox | Pilot integrations staged

BEFORE IES
Peer-to-peer trade needed a central intermediary and bespoke integrations, so it did not happen.

WITH IES
Direct, signed trades between prosumers, settled by published rules. No central exchange.

WHAT IES DOES NOT DO

IES is not an exchange. No central platform holds money, energy or data.

The physical grid is unchanged. Energy flows through the same wires as before.

Personal data stays home. Each side's details remain with its own DISCOM and platform.

Read the full specification india-energy-stack.gitbook.io/docs → Use Cases → P2P Energy Exchange