



INDIA ENERGY STACK

DER Visibility

Every solar panel, battery and EV charger. Visible to the grid at last.

A verified register of the energy resources connected behind consumers' meters, published by the DISCOM feeder by feeder, with no personal data. Grid operators and aggregators read it directly.

Think of vehicle registration. Every vehicle is registered once, and the authorities always know what is on the road. DER Visibility does the same for energy devices: every solar unit, battery and charger is registered once and visible to the grid.

01 THE PROBLEM TODAY

The grid cannot see behind the meter

What is on feeder F-02?

As rooftop solar, batteries and EV chargers spread, the grid operator often cannot answer the basic question: what is connected on a given feeder, at what capacity, where on the network, and is it controllable?

Planning runs on stale data.

Forecasting, outage analysis and new-connection decisions depend on asset data that is missing, outdated or scattered across systems. Before IES, no reliable sector-wide method existed to fix this.

A DISCOM engineer needs to know how much distributed generation sits on a specific feeder. Through IES, every installation is linked to its premise and meter using standard identifiers, giving her a single, trusted view across systems in minutes, with no consumer personal data exposed.

02 SCOPE

What it is, and what it covers

One register per feeder, substation or licensee. It states:

- the issuing DISCOM and the network area the register covers;
- the distribution transformers in scope, where known;
- each resource behind them: solar, battery, EV charger or inverter, with capacity, inspection status, equipment details and the meter it sits behind;
- how the assets connect: panel to inverter to meter to transformer, and any aggregator a resource is enrolled with.

What it deliberately leaves out

- × No consumer names or personal details. The register carries asset facts only.
- × No live output readings. Telemetry flows separately, over the Smart Meter Data Exchange, and connects to the register through the same asset identities.
- × No new database. The register is built from connection and inspection records the DISCOM already holds.

03 HOW IT WORKS

Four steps, start to finish

1

Register

Every energy resource gets a verified digital identity when it is first connected. Existing asset codes are reused.

2

Compile

The DISCOM assembles the asset facts for a feeder or substation, leaving out all personal data.

3

Publish

The signed register is published in a catalogue and refreshed on a schedule, or when something material changes.

4

Use

Grid operators and aggregators read it directly, for planning, forecasting, dispatch and enrolment.

FOUR TERMS, IN PLAIN WORDS

DER : a distributed energy resource: rooftop solar, a battery, or a controllable load such as an EV charger.

Feeder : the power line that serves a group of premises from a substation.

Aggregator : a company that groups many small resources so they can act together for the grid.

Verified identity : a digital identity for a device that anyone can check independently.

What IES provides

A verified identity for every asset.

Each solar unit, battery, charger, meter and transformer carries an identity anyone can check. Existing codes are reused, not replaced.

One credential, two views.

The register is the grid-side issue of the same credential behind the Consumer Energy Passport. Both are built from the same records, so the consumer view and the grid view never drift apart.

A tamper-proof, refreshable record.

The register is signed; when assets change, it is revoked and re-issued, so readers are never left with silently stale data. One format works across every licensee.

Privacy by design.

The grid-side register carries no consumer identity. The consumer's own record lives separately, in their Energy Passport.

What each stakeholder gains, and how

Grid operators

Value: first-class visibility into what sits behind every feeder. Forecasting, planning, dispatch and outage analysis all gain a clean, current input.

How: they read the signed register per feeder, straight from the DISCOM's catalogue.

DISCOMs

Value: the same data that backs every consumer's Energy Passport is republished once for grid use. No duplicate data system, and no consent burden, since no personal data is in scope.

How: the register is issued from connection and inspection records already held.

Aggregators

Value: a trustworthy discovery surface for controllable resources. Enrolling a battery or smart device for flexibility becomes mechanical.

How: they match the signed register against their own enrolments.

Regulators & government

Value: a consistent, auditable register of distributed resources across licensees, and better ground truth for schemes such as PM Surya Ghar.

How: every DISCOM publishes to the same public specification.

WHERE IT STANDS TODAY

Live in pilot. Solar units have been registered with verified digital identities, and grid-operator visibility has been confirmed.

APEPDCL · Andhra Pradesh

DGVCL · Gujarat

Tata Power · Mumbai

PVVNL · Uttar Pradesh

BEFORE IES

No reliable, sector-wide way existed to know what sits behind consumers' meters.

WITH IES

A verified, regularly refreshed register of every connected resource, feeder by feeder.

WHAT IES DOES NOT DO

IES does not store any data. The register is built from records the DISCOM already holds.

IES publishes no personal data. Only asset facts reach the grid side.

The DISCOM adds one small piece of connecting software, called an adapter. Nothing else changes.

[Read the full specification](#)

india-energy-stack.gitbook.io/docs → [Use Cases](#) → [DER Visibility](#)