Session Name: 250 million Smart Meters Rollout

Title of the Presentation: Linky Project and Bihar Smart Metering Project

Presented by

Name: Akshat MISHRA

Designation: PMO Lead

Organisation: EDF International Networks India

EDF is a leading power company active in generation and supply

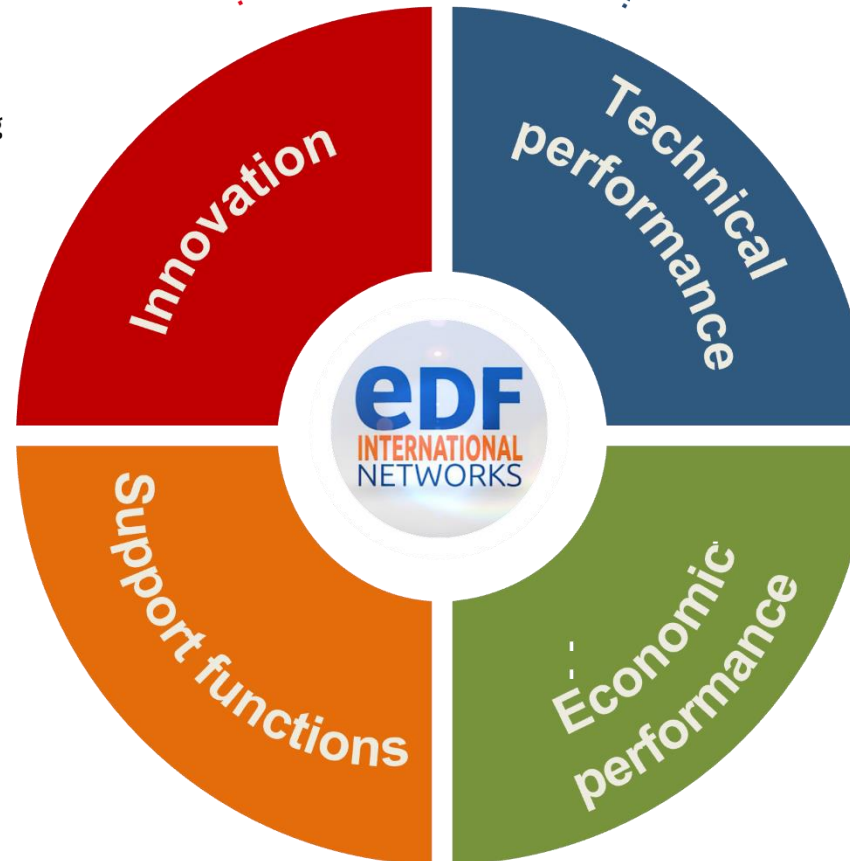| Generation	Transmission	Distribution	Supply
Competitive activity We own and run different generation assets, including nuclear, thermal fuels, hydraulic and renewable energy plants	We operate high voltage transmission systems (400, 225, 90 and 63kV)	Enedis (35M consumers / 40,000 employees) operates and maintains 1.4 million km of medium (20kV) & low (230 to 400 V) voltage power lines	**Competitive activity** French is fully open to competition since July 1st, 2007
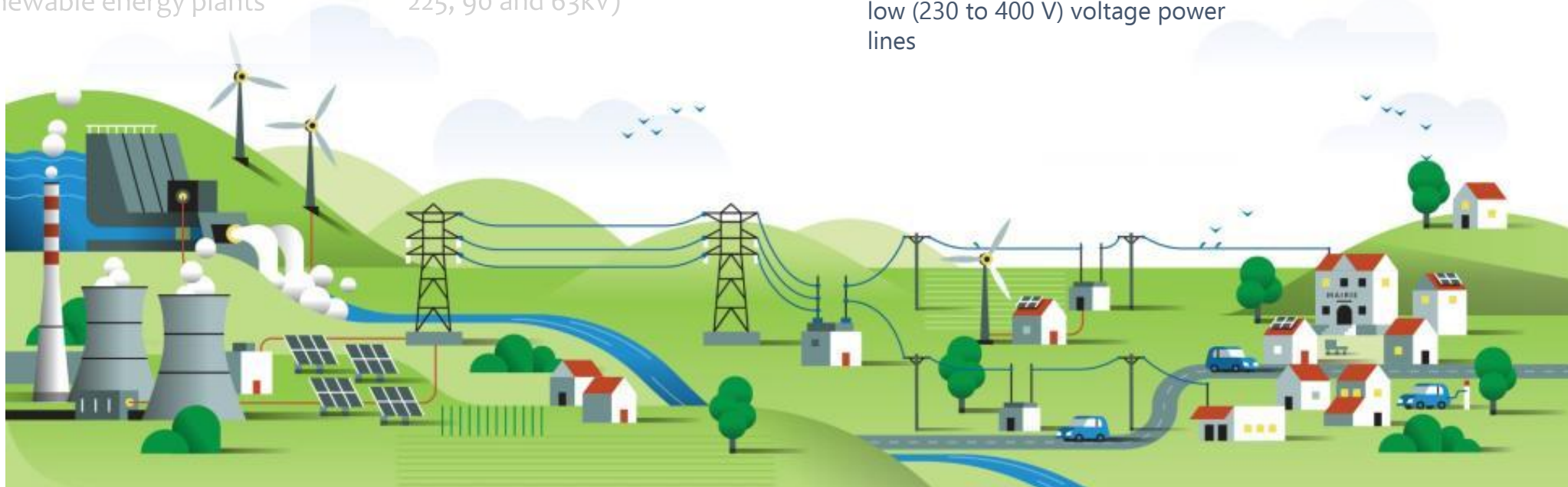
Innovation

- Smart metering
- Smart grid
- Renewable integration planning
- Microgrids
- Automation
- Data management
- Digitalization
- Predictive maintenance
- Smart electrification

Technical performance

- General technical assistance
- Technical audit
- Network Planning:
  Master plan & Smart Planning
- Emergency planning
- Network monitoring
- Operation & Maintenance
- Engineering
- High/Medium/Low
  Voltage Live Works
- Protection plan

Support functions

- Training
- Framework and standards
- Prevention, safety and health
- Supply chain
- Emergency management
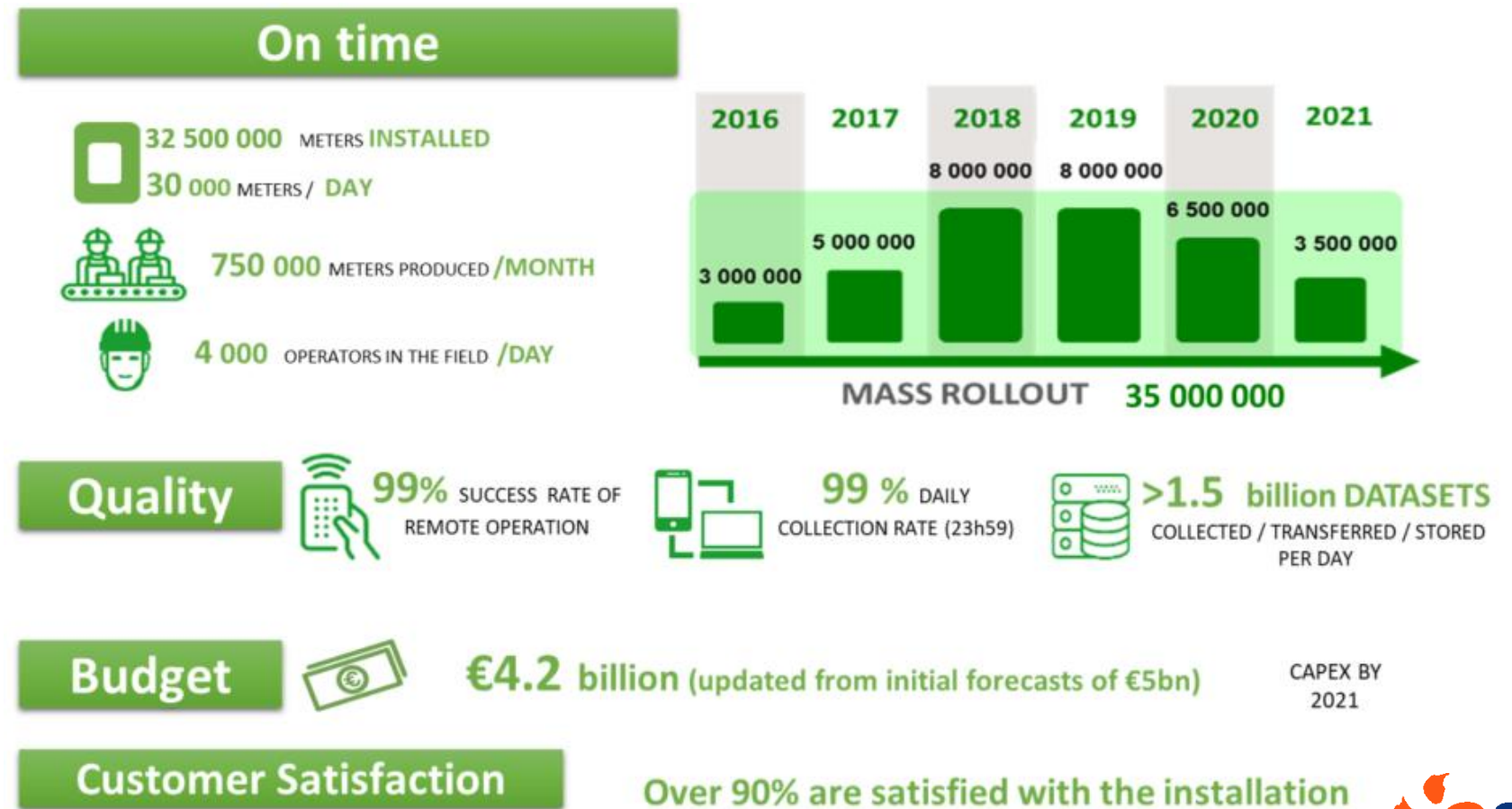- Human Resources
- Information Technologies

Economic performance

- Technical losses
- Nontechnical losses
- Customer management
- Metering, billing and recovering chain
- Pricing regulation
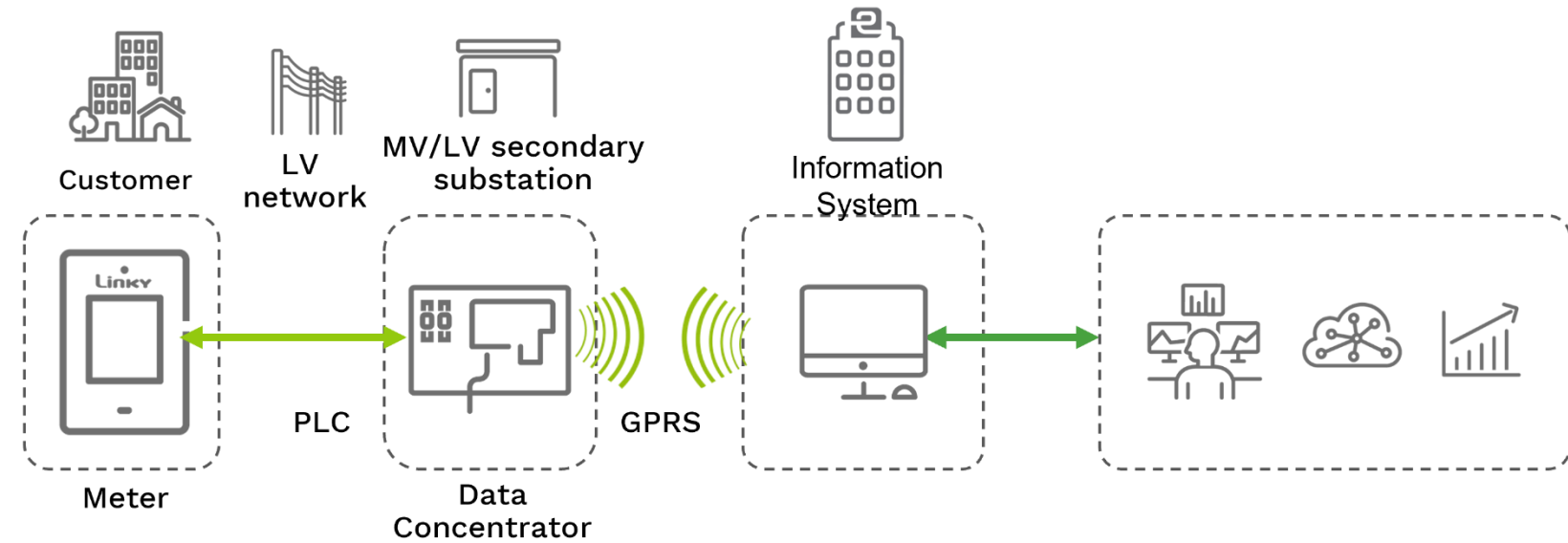- Performance management
- Delegated management

Under Linky Project, EDF to deploy and manage 35 million Smart Meter Infrastructure in France

In May 2015, Enedis started the deployment of Linky smart meters to improve customer management and satisfaction, accelerate renewable energies integration to the grid and optimize its operations on the distribution networks.

By end 2021, Enedis will have replaced all the old meters in 35 million homes and installed 700,000 concentrators in France

On time

32 500 000 METERS INSTALLED
30 000 METERS / DAY

750 000 METERS PRODUCED /MONTH

4 000 OPERATORS IN THE FIELD /DAY

2016	2017	2018	2019	2020	2021
3 000 000	5 000 000	8 000 000	8 000 000	6 500 000	3 500 000

MASS ROLLOUT   35 000 000

Quality   99% SUCCESS RATE OF REMOTE OPERATION   99 % DAILY COLLECTION RATE (23h59)   >1.5 billion DATASETS COLLECTED / TRANSFERRED / STORED PER DAY

Budget   €4.2 billion (updated from initial forecasts of €5bn)   CAPEX BY 2021

Customer Satisfaction   Over 90% are satisfied with the installation

Advantages of the **technical possibilities offered by Linky AMI** to improve network development, operations, and quality of supply

Customer

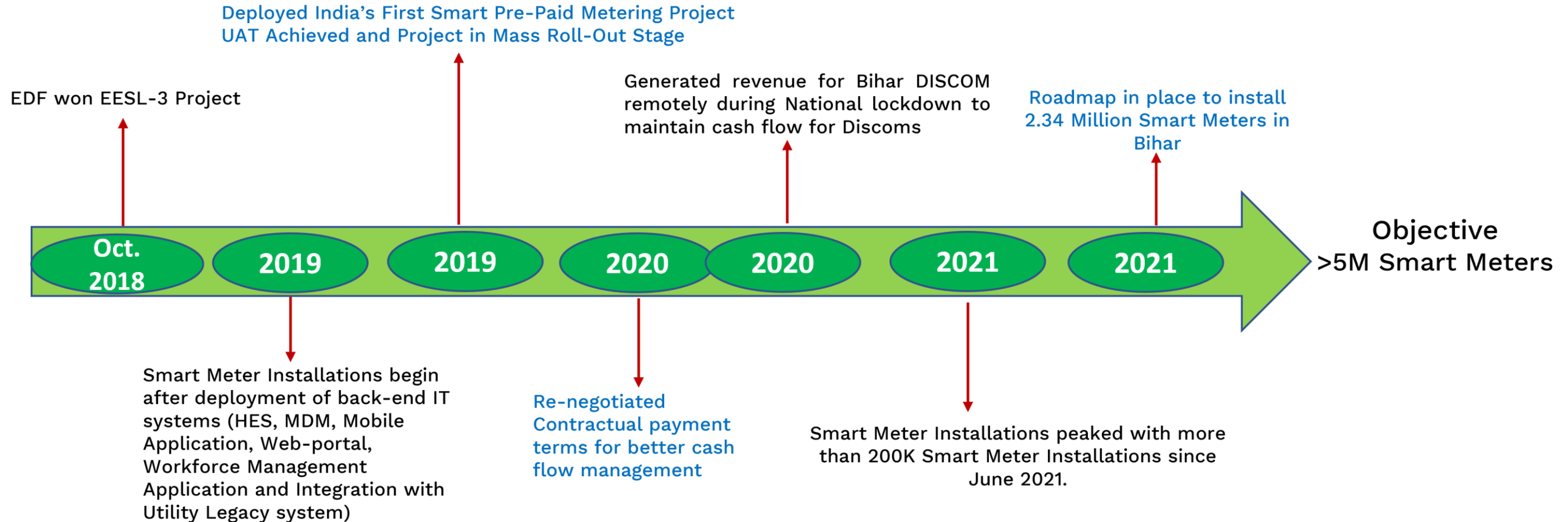LV network

MV/LV secondary substation

Information System

Meter

PLC

Data Concentrator

GPRS

1 Communication system
to collect data from meters and data concentrators

2 Qualify and process
measurements, to convert them into alarms

3 Alarms/measurements
- to detect and manage faults on LV or MV networks,
- to improve quality of supply monitoring
- to improve network planning
- to update databases and cartography

Bihar Smart Meter Project

Deployed India's First Smart Pre-Paid Metering Project
UAT Achieved and Project in Mass Roll-Out Stage

EDF won EESL-3 Project

Generated revenue for Bihar DISCOM remotely during National lockdown to maintain cash flow for Discoms

Roadmap in place to install 2.34 Million Smart Meters in Bihar

Oct. 2018 — 2019 — 2019 — 2020 — 2020 — 2021 — 2021

Objective
>5M Smart Meters

Smart Meter Installations begin after deployment of back-end IT systems (HES, MDM, Mobile Application, Web-portal, Workforce Management Application and Integration with Utility Legacy system)

Re-negotiated Contractual payment terms for better cash flow management

Smart Meter Installations peaked with more than 200K Smart Meter Installations since June 2021.

*EDF IN currently employs more than 1500 resources in India (including internal and external)

Bihar Smart Metering Project: System Architecture

Bihar Smart Meter Project: Customers & Stakeholders
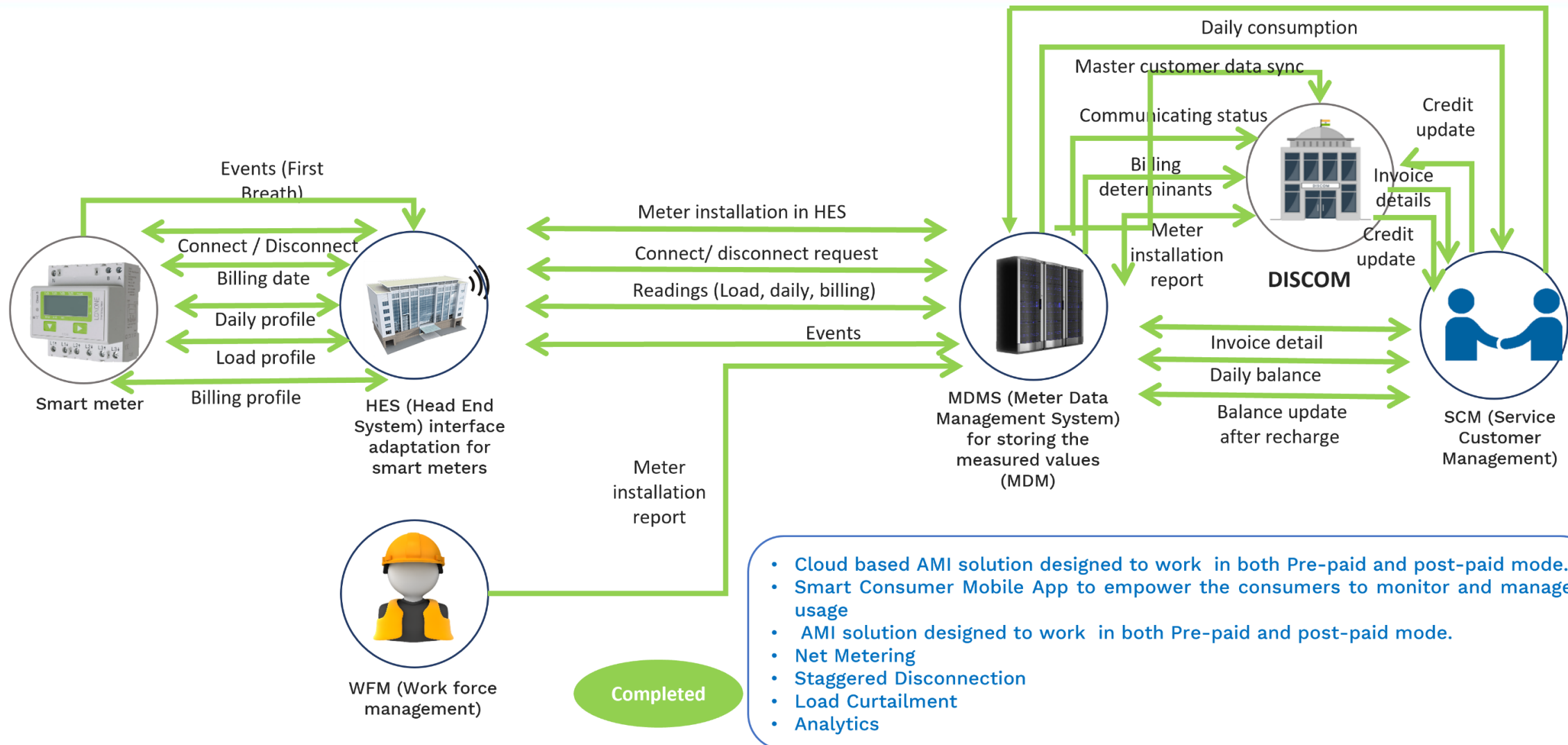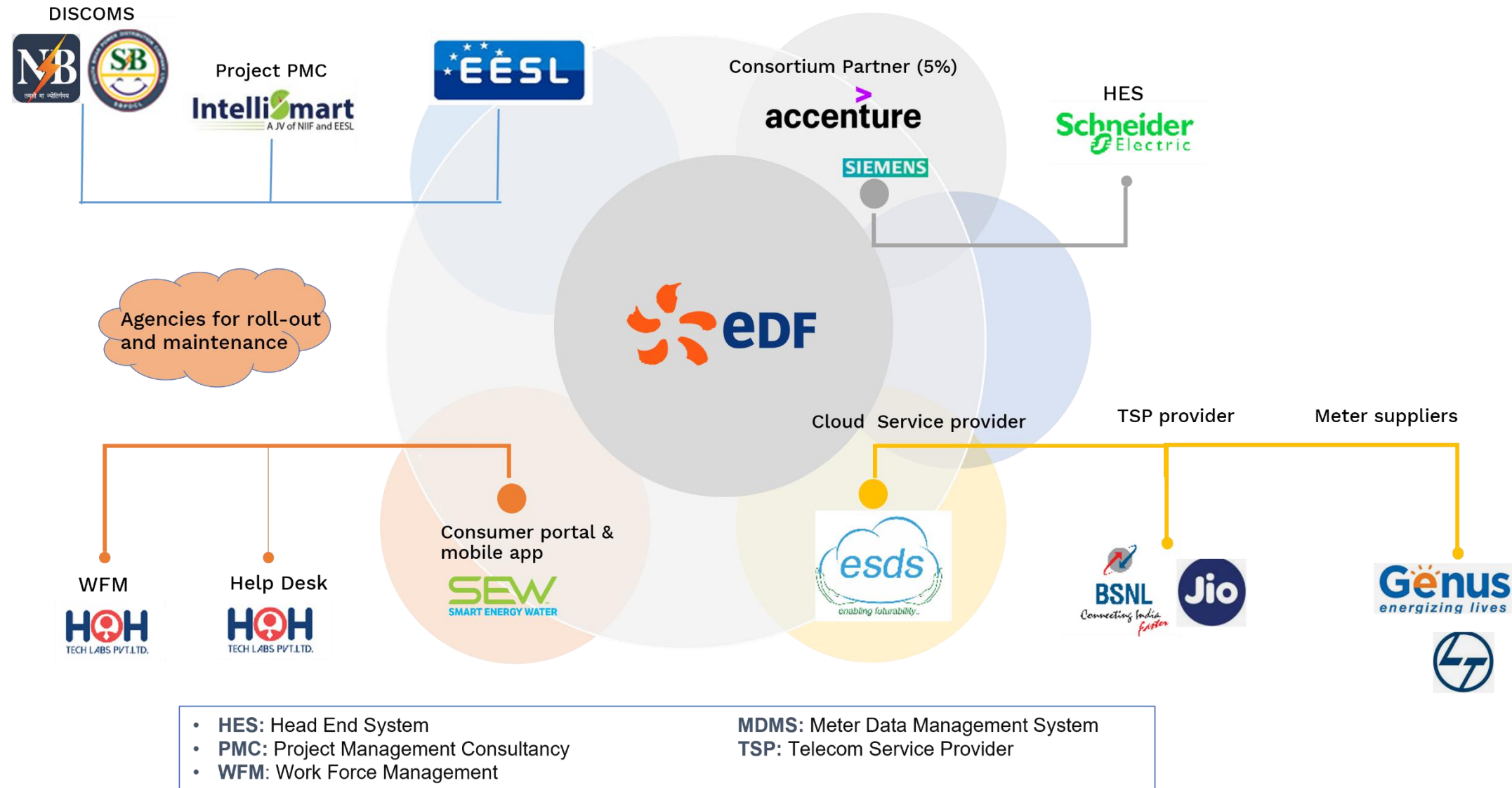
First Smart Meter Project with Prepaid Solutions

First Smart Meter project with 3 sessions of DC-DR drill

Arrear Management and Staggered Disconnection

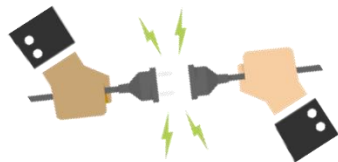Demand Side Management
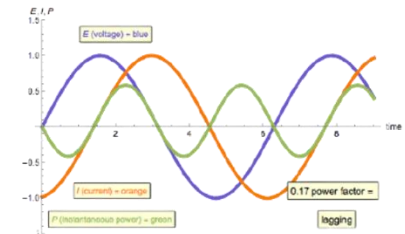
Live Monitoring Dashboards

Net Metering

340 000+
Smart Meters Installed

≥95%
Communication Rate
Improving with the use of 4G meters

10 Million+
Smart Meter Events Per Day

13 Million+
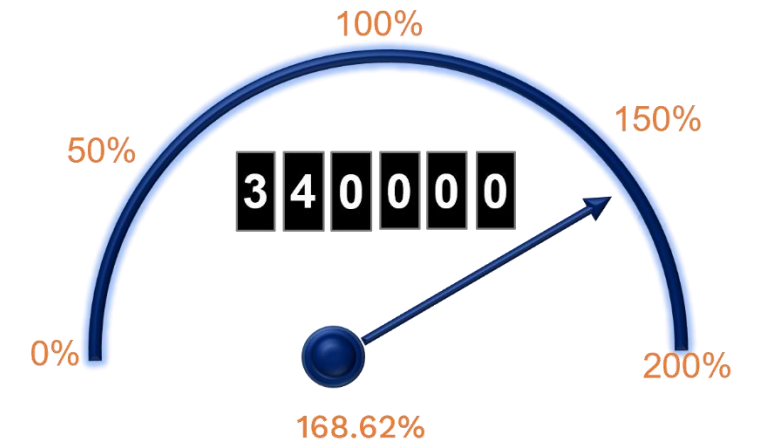Smart Meter Parameters
Retrieved Daily

≈200,000
Monthly Remote Smart Meter
Disconnection/Re-Connection Operations

$38 M
Revenue billed
for Bihar

$21 M
Revenue handled by
EDF Consumer
Mobile Application

340000

168.62%
Revenue increase of Bihar DISCOMs
since EDF implemented AMI System

Smart Metering Project: Key success factors

- Learning from others (In Europe 49 % of the meters all already Smart)

- Plan your project and think long term (business model, Use cases, choice of technologies)

- Standards and interoperability are key at all levels

- Training the staff and preparing for the transformation

- Strengthen the quality of distribution infrastructure and Discom database

- Engaging with customers to secure their acceptance

- Sizing the logistics (suppliers, installers, operations)

- Go for mass roll-out

THINK

PLAN

EXECUTE
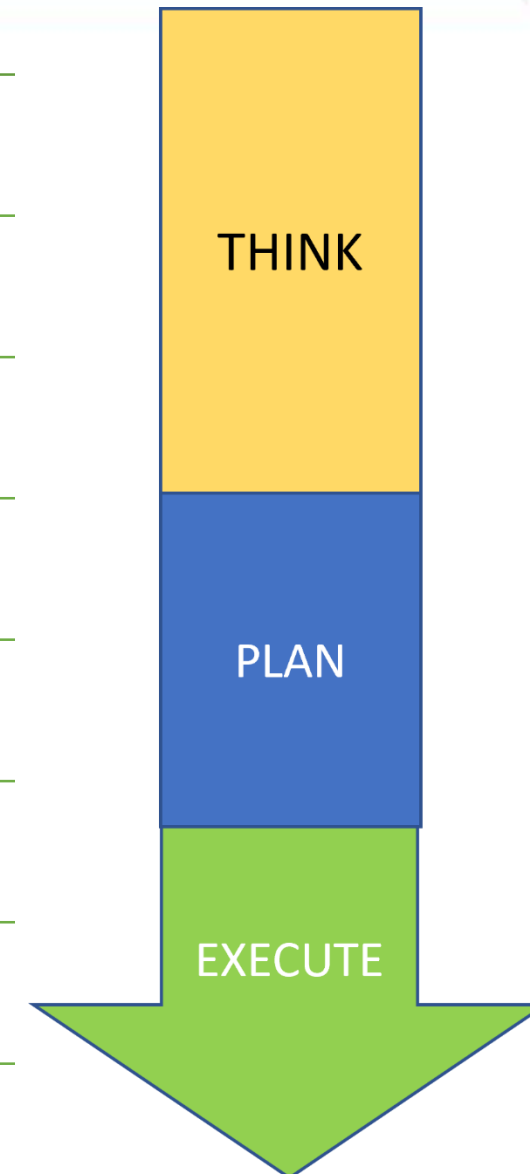
Thank You

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