11th EU-India Smart Grid Workshop
Shakti, the Indian demonstration of IElectrix project

Speaker : *Pierre-Jacques Le Quellec*
IElectrix Project Coordinator
Enedis

The first EU funded project with an Indian partner implementing a physical demonstration in India

Coordinator ENEDIS

15 European partners from 8 different countries

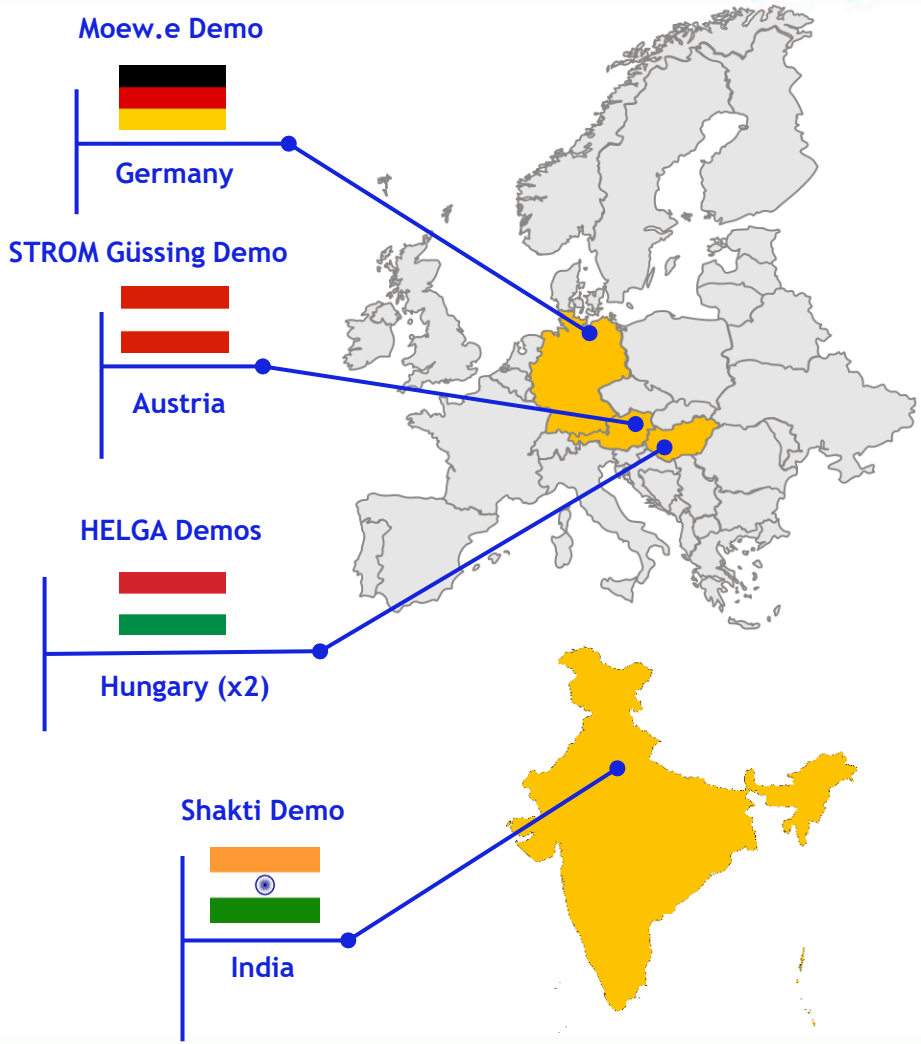
1 Indian partner TATA POWER-DDL

10.7 M€ total budget

42 months duration
05/2019 – 10/2022

DSO-coordinated real-scale demonstrators implementing embedded electric island systems and microgrids

5 Demonstrations in 4 countries



The context of Shakti, the Indian Demonstration of IElectrix project

Location:

- A MV/LV substation located at St Xavier Sec. High School, north of Delhi

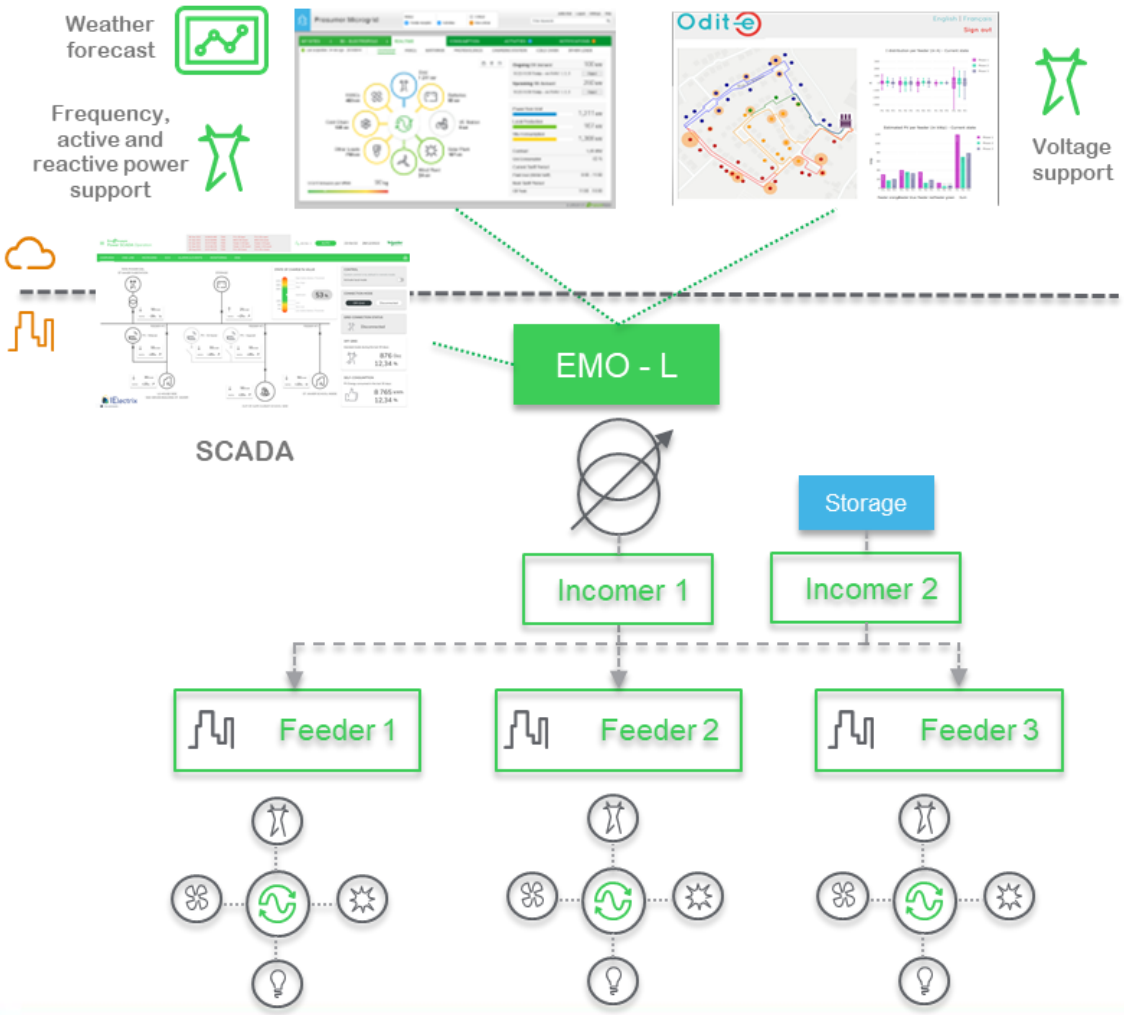
Energy Community:

- Large school with 4,000 students, a community center and several households and buildings, with 200 kWc power production provided by PV panels installed on the roofs of the school and neighbourhood buildings

Partners:

- Tata Power-DDL: Distribution System Operator, India
- Enedis: Distribution System Operator, France
- Schneider Electric: Supplier of digital energy and automation solutions for Energy Transition, France & Spain
- Odit-e: Supplier of digital solutions for LV network monitoring, France
- GECO Global: Research and advisory consultant dedicated to customer behaviour in the energy industry, Denmark

Shakti system architecture & main objectives



Objectives

Energy Storage

To increase renewable energy sources integration without additional network investments and enhance local use of **local renewable energy**

Power quality improvement

To make power supply more efficient and reliable by digitizing the network and introducing automation

Community prosumer involvement

To enable flexibility of the customer's demand and enhance **customers' involvement**

Resilience

To increase the **reliability and resilience** of the electricity supply

An Urban Microgrid for Energy Transition with islanding capability

Battery Energy Storage System 200kVA

Community engagement and energy awareness

GECO Global Green Energy Consultancy

LV Energy Control Center Switchboard

Monitoring & control system (SCADA)

ENEDIS

INNOVATIVE SOLUTIONS TO IMPROVE RESILIENCE OF THE LV GRID AND MAXIMISE RENEWABLE ENERGY SOURCES PENETRATION

Schneider Electric

MV/LV Smart transformer with OLTC

Renovated secondary substation

TATA POWER-DDL

PV Panels

Smart meters

Odit-e

LV grid digitization software

Energy Management System

Opening event scheduled for 24 March 2022

Key Takeaways/ Recommendations

- A project ecosystem built on close collaboration among European and Indian partners
- Difficulties faced during the project execution due to the sanitary crisis
- Give preference to equipment manufactured in India to avoid paying very high import costs
- Local expertise support required

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India Smart Grid Forum
CBIP Building, Malcha Marg,
Chanakyapuri,
Delhi-110021
Website: www.indiasmartgrid.org