



EU SUSTAINABLE ENERGY WEEK



BRIDGE Initiative

BATTERIES' ROLE IN ENERGY TRANSITION

Session#19

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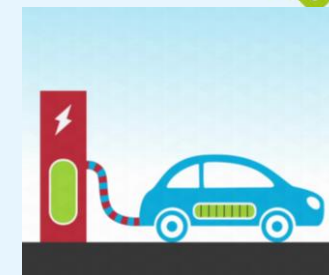
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InterFLEX



Christian Dumbs,
French distribution network company – Enedis
EUSEW 6 June 2018

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InterFlex, a major European Horizon-2020 Smart Grid project

3-years project duration

2017
2019

with a
total budget of

22,8M€

fostering collaboration among

5 major European DSOs

Technical Director



Project Coordinator



Chairman of the
General Assembly



Co-funded by the Horizon 2020
Framework Programme of the
European Union

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6 real-scale
demonstrators
involving 20
industrial
partners



Swedish Demos

German Demo



Czech Demo



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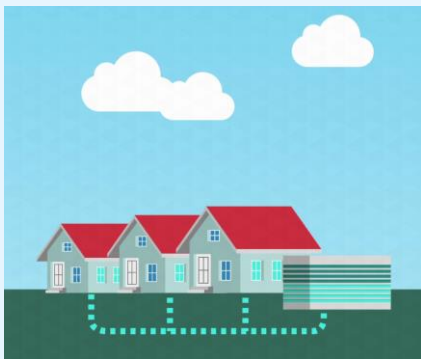


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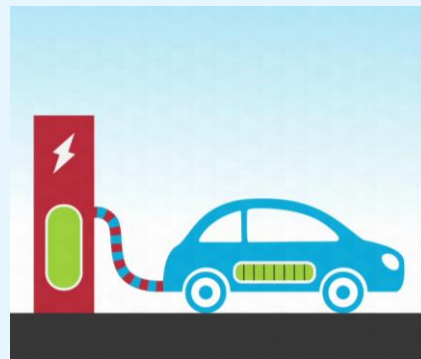
Batteries are involved in all InterFlex demonstrators

Devices are involved at the district/multi-household levels for various purposes



Shared large-scale batteries to both relieve grid constraints and enhance self-consumption

→ French, Swedish Demos



Large-scale central storage unit to enhance electrical vehicles smart charging

→ Dutch Demo



Home storage systems to increase the overall hosting capacity of distributed renewable generation units

→ Czech, German Demos

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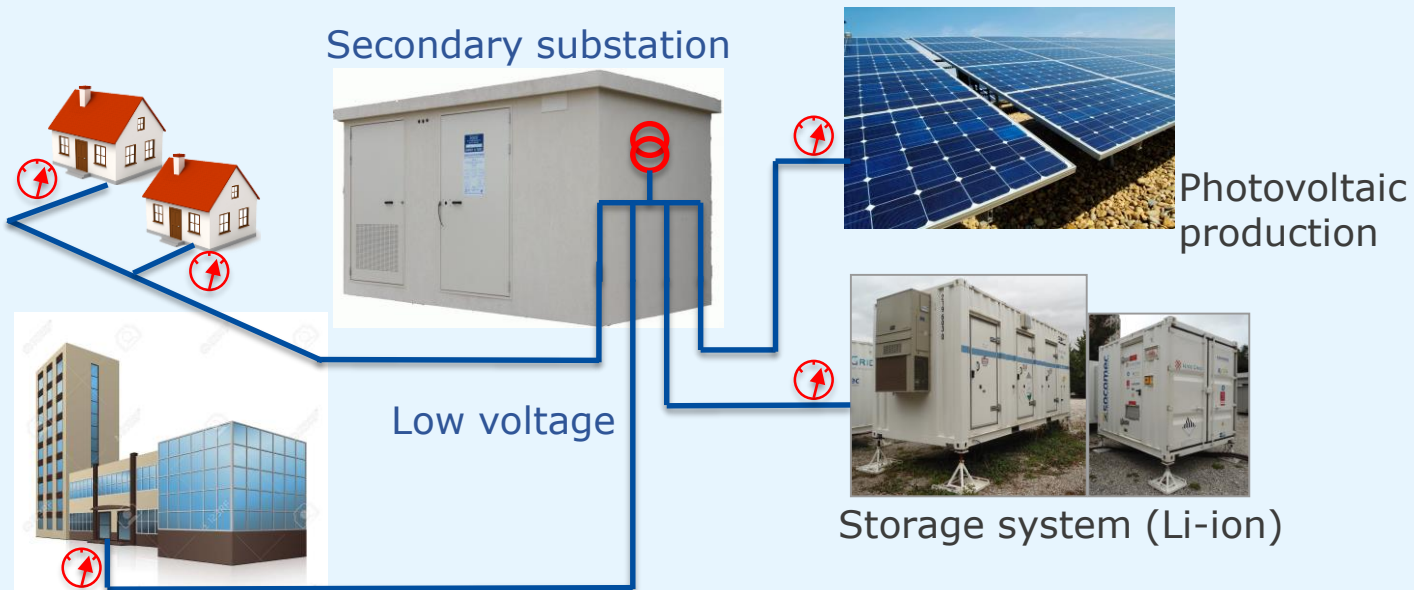
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Nice Smart Valley mutualizes storage capacities designed for islanding purposes with other uses

System design for islanding (Lérins islands, French demo)

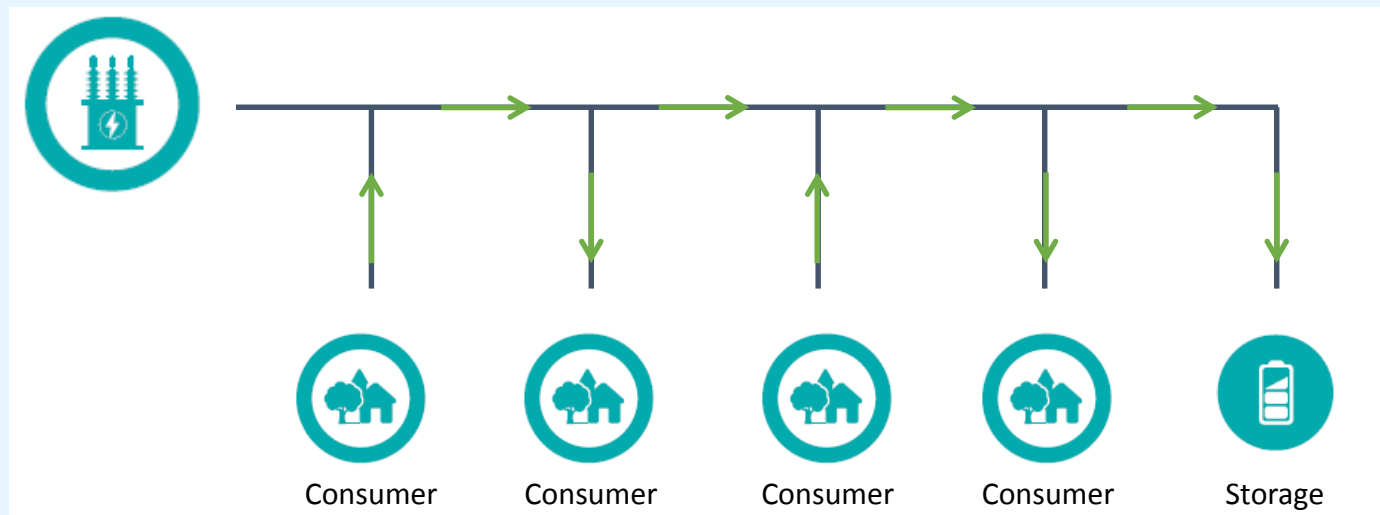


- Multi-battery system based on multi-service approaches (2 batteries)
- Each battery is connected to a different secondary substation.
- Battery capacities:
 - 250 kW / 620 kWh
 - 100kW/300KWh

Nice Smart Valley: shared batteries storage for collective self-consumption of solar energy

Cloud storage: a shared community storage system

- A legislative decree in France allows for collective self consumption downstream of a given secondary substation
- Nice Smart Valley will test this collective self consumption with a shared battery-based storage system
- Meters will contribute to reconstitute the share of consumed/generated/stored energy



Dutch Demo: electric vehicle batteries & smart charging

Storage system main features

- Strijp-S neighbourhood in Eindhoven: recently converted from factories into a buzzing business and residential area
- PV installations
- Electric Vehicle charging stations
- Central storage unit capacity to be installed: range between 250 and 500kWh

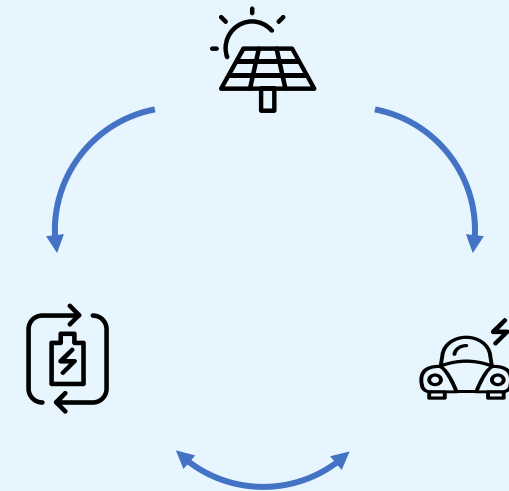


Strijp-S area in Eindhoven

Dutch Demo: electric vehicle batteries & smart charging

A flexibility market including a central battery and EV charging infrastructure

- **Congestions problems** can appear as electric vehicle charging stations require big power loads.
- These problems are solved by using flexible energy resources:
 - Batteries
 - Smart Charging: postponing or even interrupting the EV charge
- Main challenge: without affecting the electric vehicle user's experience.





Identification of relevant business models constitute major objectives of the project



French demo: shared use of batteries to maximize benefits both for the **distribution grid and market-related activities** such as renewable self consumption



Dutch demo: experiments aim at validating the use of batteries for **congestion management and EV integration**

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Expected Benefits



French Demo:

- Massive development of clean renewable energy sources taking into account local specificities
- Increased security of supply for the island inhabitants – often in environmentally protected environments



Dutch Demo

- Integration of EV in a buzzy neighborhood
- Increased supply quality while integrating local & clean renewable energy sources

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Thank you for your attention!



Christian Dumbs,
InterFlex Project Coordinator



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