

REScoopVPP: together towards Smart Communities

by Vincent Dierckx, EnergielD

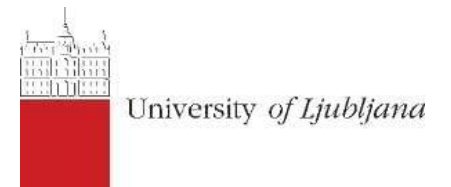


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 893240



Our ambition

“The REScoopVPP project wants to create the **most advanced community-driven smart building ecosystem for energy communities.**”



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We're an EU project developing energy flexibility tools by co-ops for co-ops!



REScoopVPP

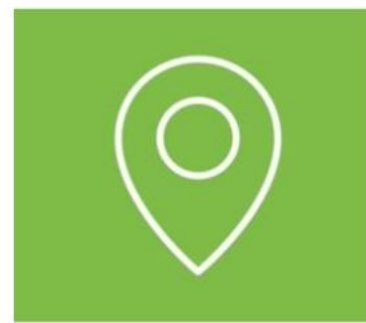
The main aim of REScoopVPP is to set-up a community-driven virtual power plant that can actually provide flexibility services to the grid and contributes to a 100% share of renewable energy sources into the grid.



Start - June 2020



12 project partners

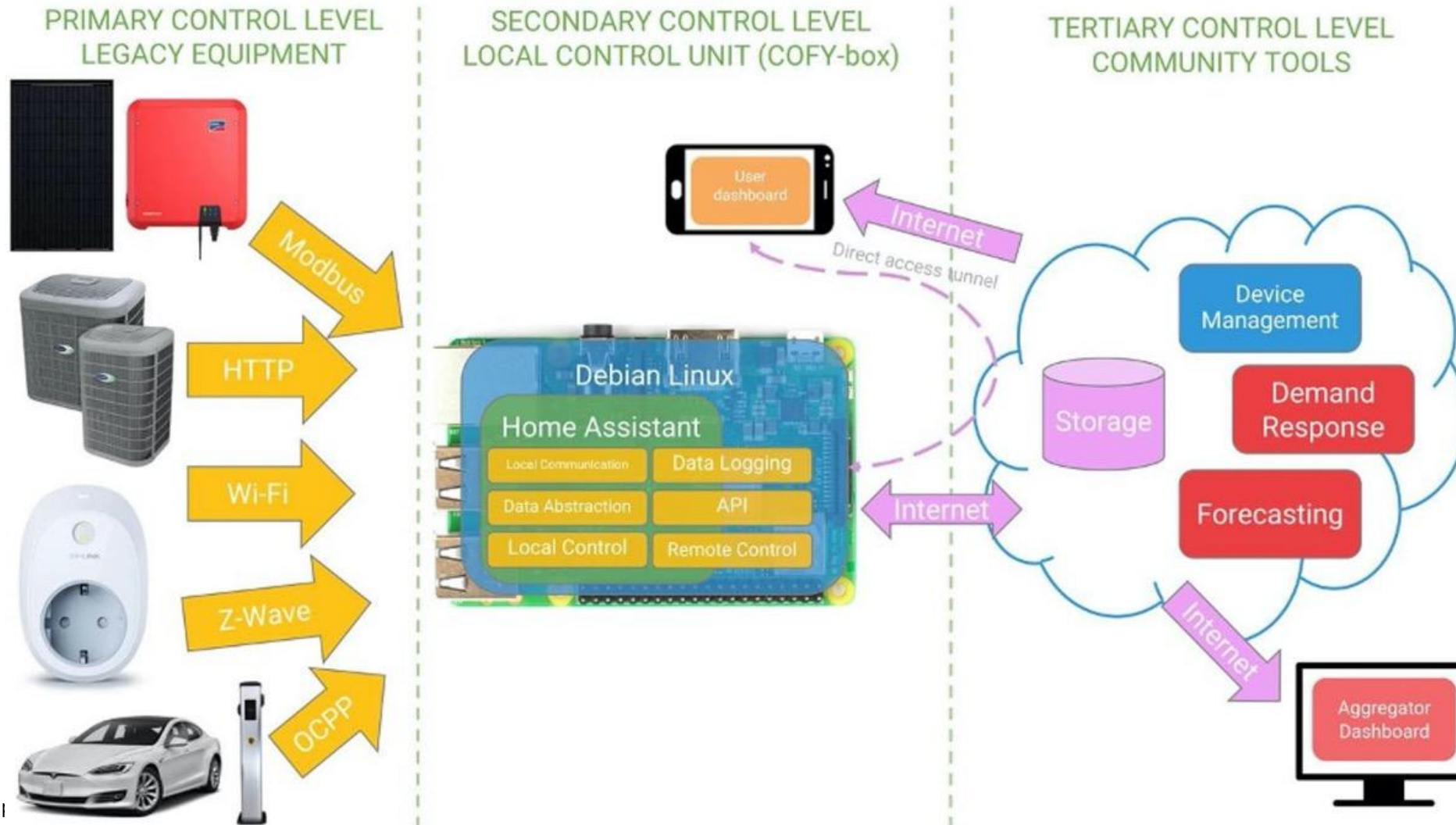


5 pilot sites



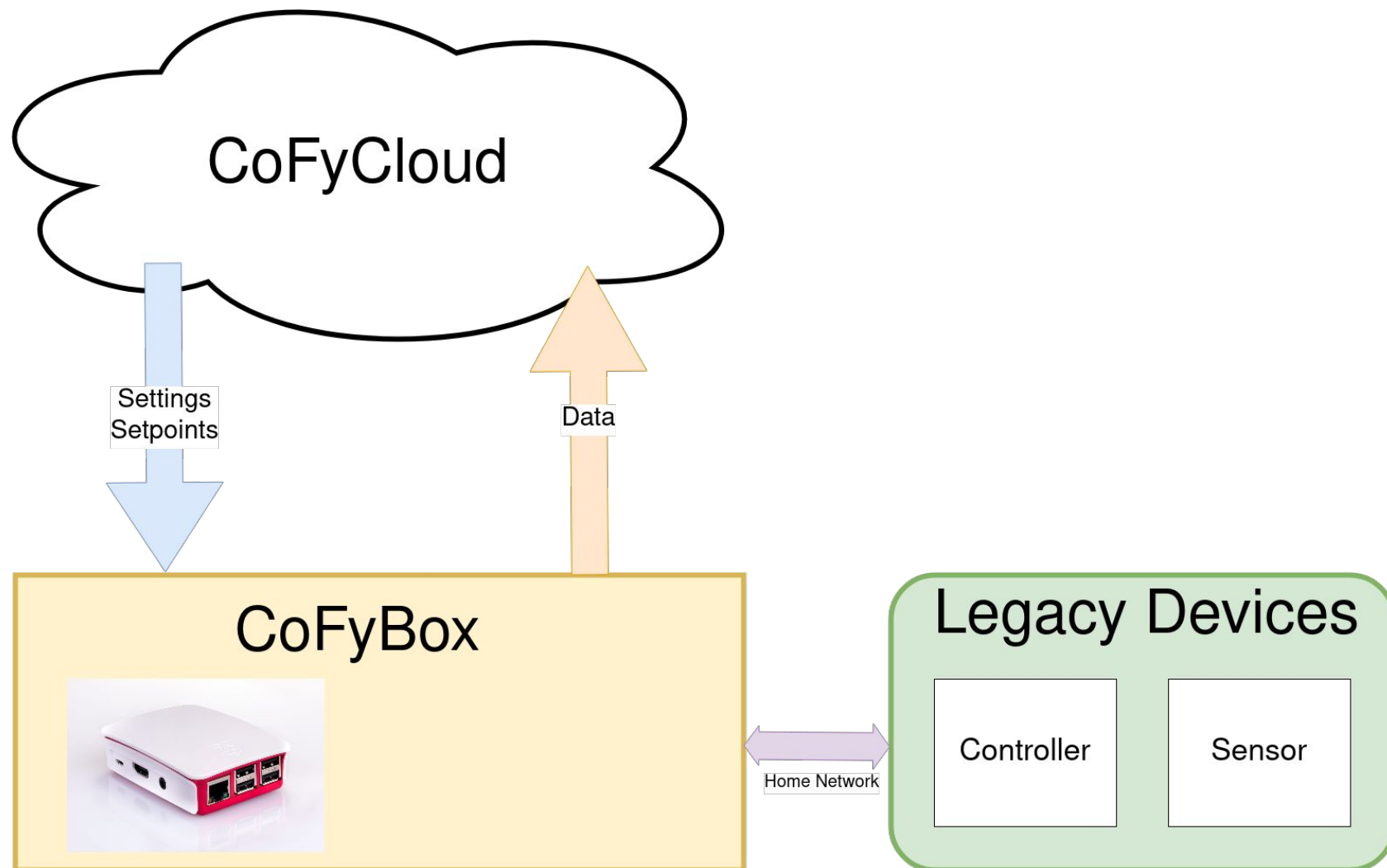
Tools for a community-driven flexibility system

General overview



This is

The CoFy Ecosystem



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Connecting legacy equipment

Equipment already installed in homes, buildings, ...



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Connecting legacy equipment

Equipment already available on the market



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Open-source & collaborative tools

Challenge: how to measure and control legacy devices?

















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Open-source & collaborative tools

- Leverage work done by open source community
- Home-Assistant as pathfinder
- Contribute own developments in turn

 Advantage Air	 Ambiclimate	 Atag	 AVM FRITZ!SmartHome
 BSB-Lan	 Climate	 CoolMasterNet	 Daikin AC
 Danfoss Air	 devolo Home Control	 Dyson	 ecobee
 Elk-M1 Control	 EPH Controls	 eQ-3 MAX!	 EQ3 Bluetooth Smart Thermostats
 EZcontrol XS1	 Fibaro	 Flexit	 Generic Thermostat

<https://www.home-assistant.io>

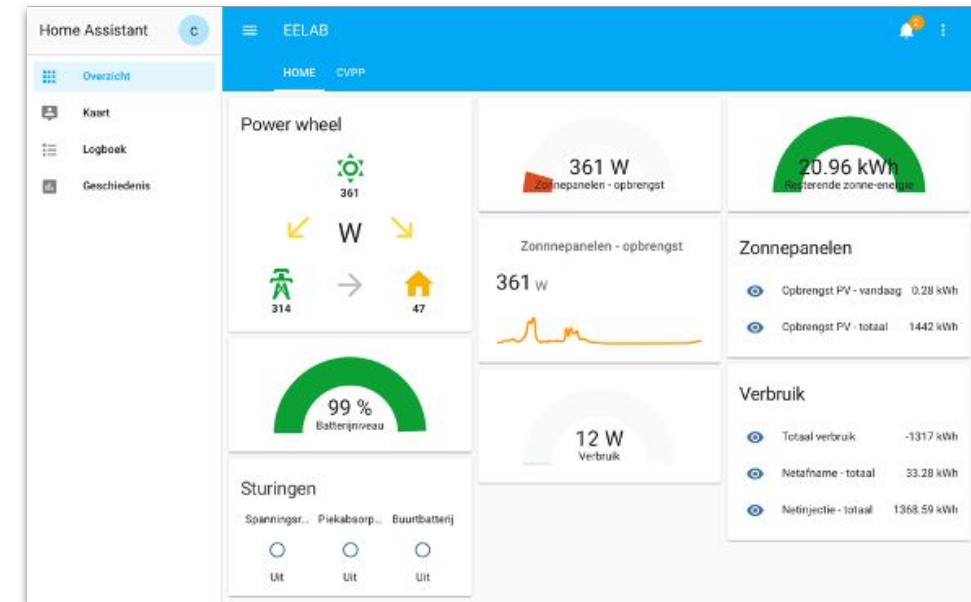


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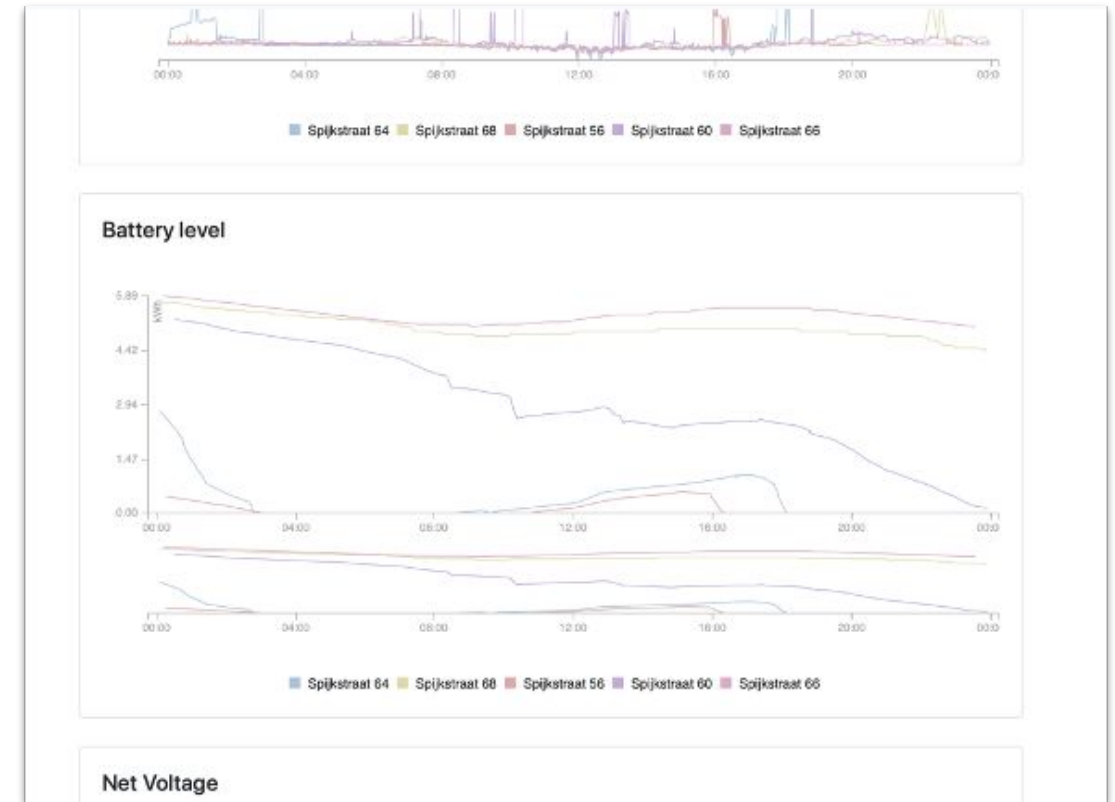
The CoFyBox

- In-home device
 - Connected to home network and legacy devices
 - Connected to the CoFyCloud over the internet
- Runs “blocks” of software - for example
 - Home Assistant - used for automations
 - Metering
 - Explicit and implicit demand response schedule calculator
- Blocks can be developed using Docker and Python code



The CoFyCloud

- Individual data storage and sharing
- Community management
 - Device management
 - Connection to CRM
 - Support
- Smart community
 - Data aggregation
 - Forecasting
 - Explicit and implicit demand response actions



The Forecasting Tools

Calendar data



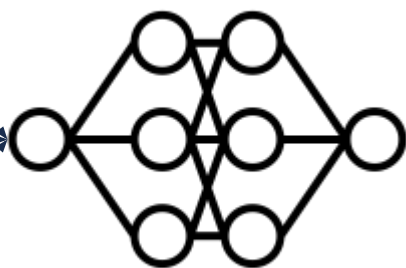
Supplier Portfolio



Weather data

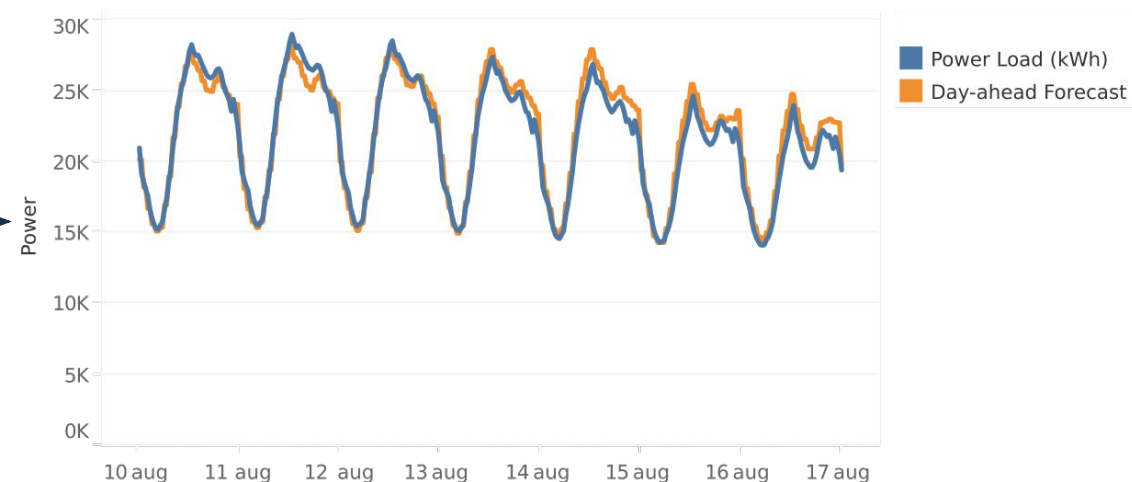


A set of tools to forecast the total load and total production of a supplier's portfolio



Machine
Learning
Algorithms

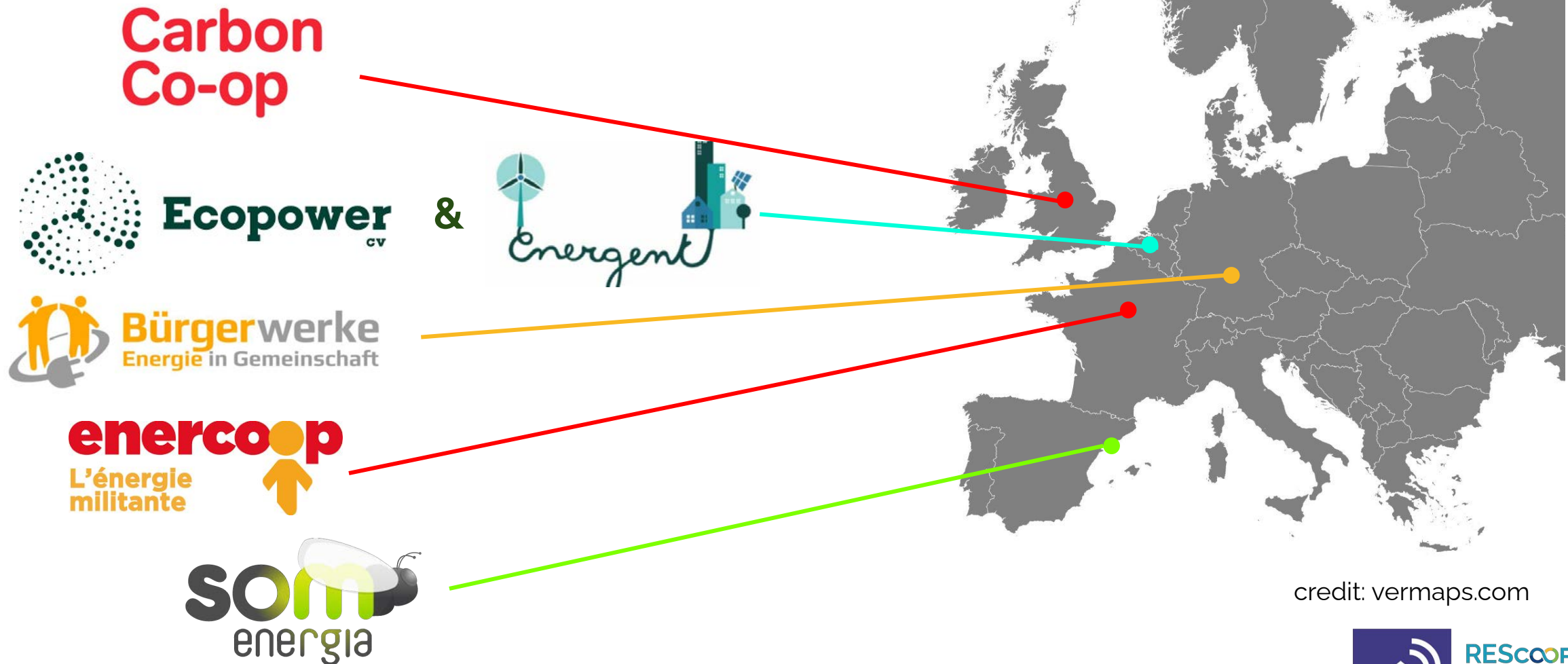
Load day-ahead forecast vs real data, 30min time step



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Demonstration pilots



credit: vermaps.com



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More Information

- Documentation Site - <https://docs.cofybox.io/>
- Gitlab Group - <https://gitlab.com/rescoopvpp/>
- Enercoop Forecasting Github Repository - <https://github.com/enercoop/enda>

