



# Improving Renewable Energy Predictability through Data Sharing

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Workshop with DG ENER – “Data sharing in renewable energy: experiences and incentives”

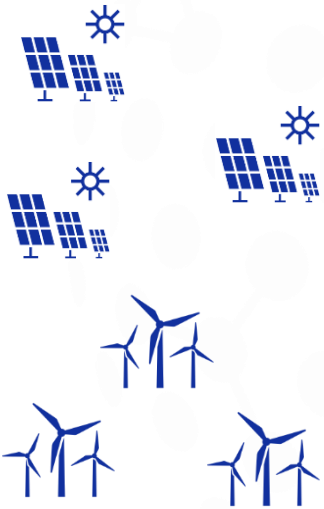


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# Smart4RES Business Case

## RES Forecasting

### Privacy & monetization



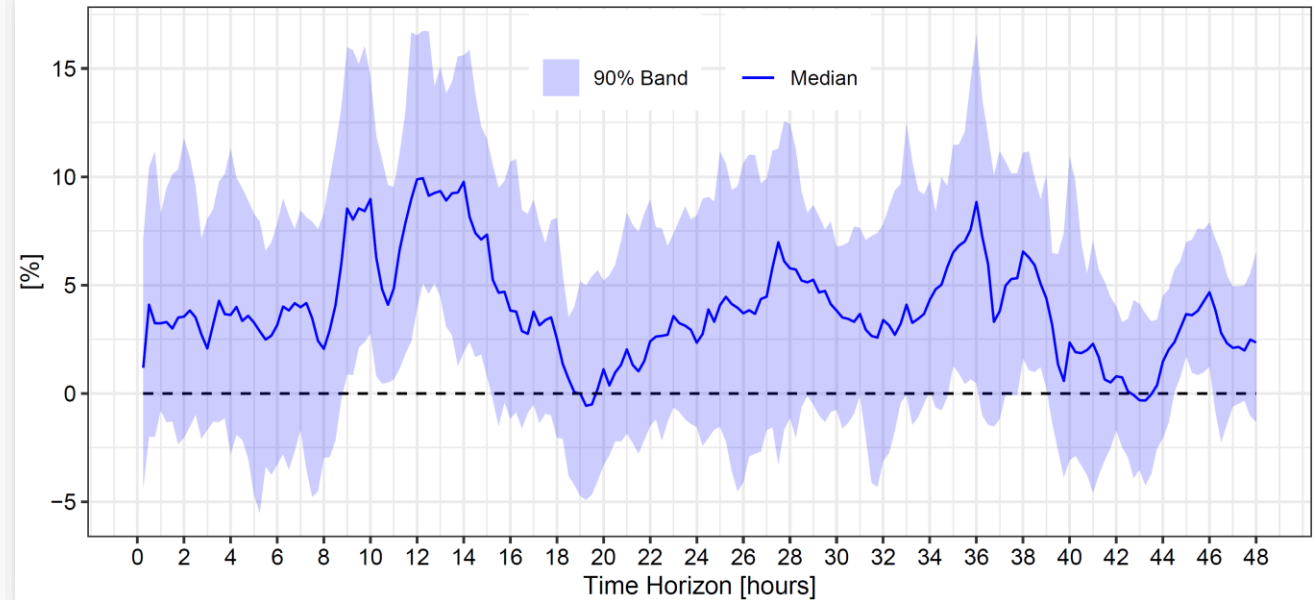
### Monetization



**Benefit:** Improve forecasting skill in minutes to day-ahead time horizon & exploit heterogenous data sources

## Results for 60 wind turbines located in the same region

RMSE improvement obtained with multi-turbine data sharing



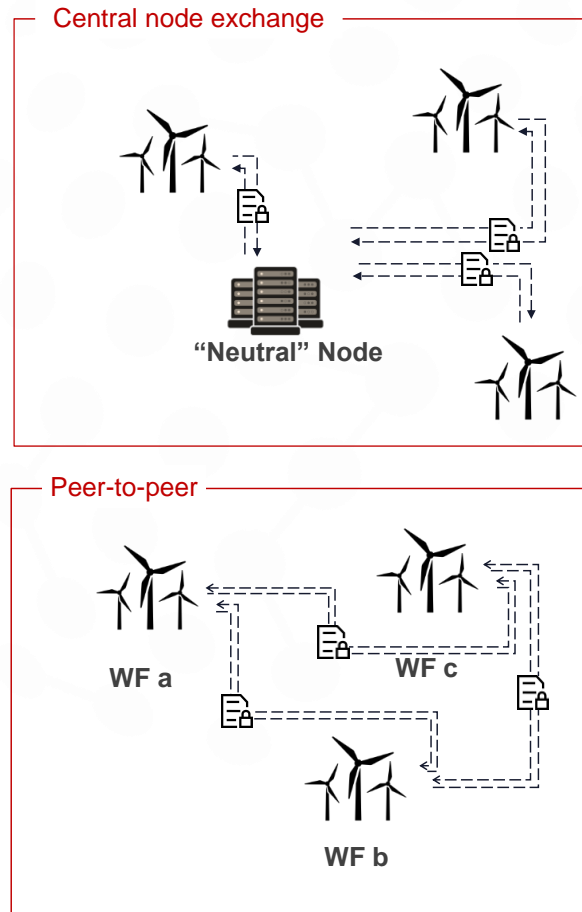
### Relevance of

**Historical data volume?** Non-critical. Avoid “data-intensive” models

**Geographical scope?** Important due to spatial-temporal dependency of RES

# Data Sharing Incentives: the need for algorithmic solutions

## Cross-silo federated learning (EPO patent)



## Data & regression markets

### Buyers

**Objective:** Improve forecasting skill

Payment depends on the **gain** obtained by using market **sellers'** data



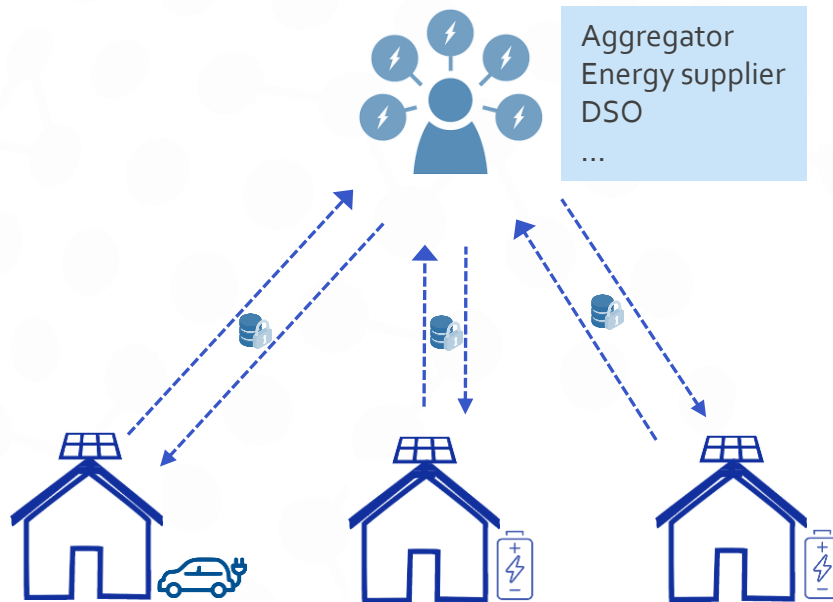
### Sellers

**Objective:** Monetize their data

Revenue depends on the actual contribution to **Buyers** forecast skill

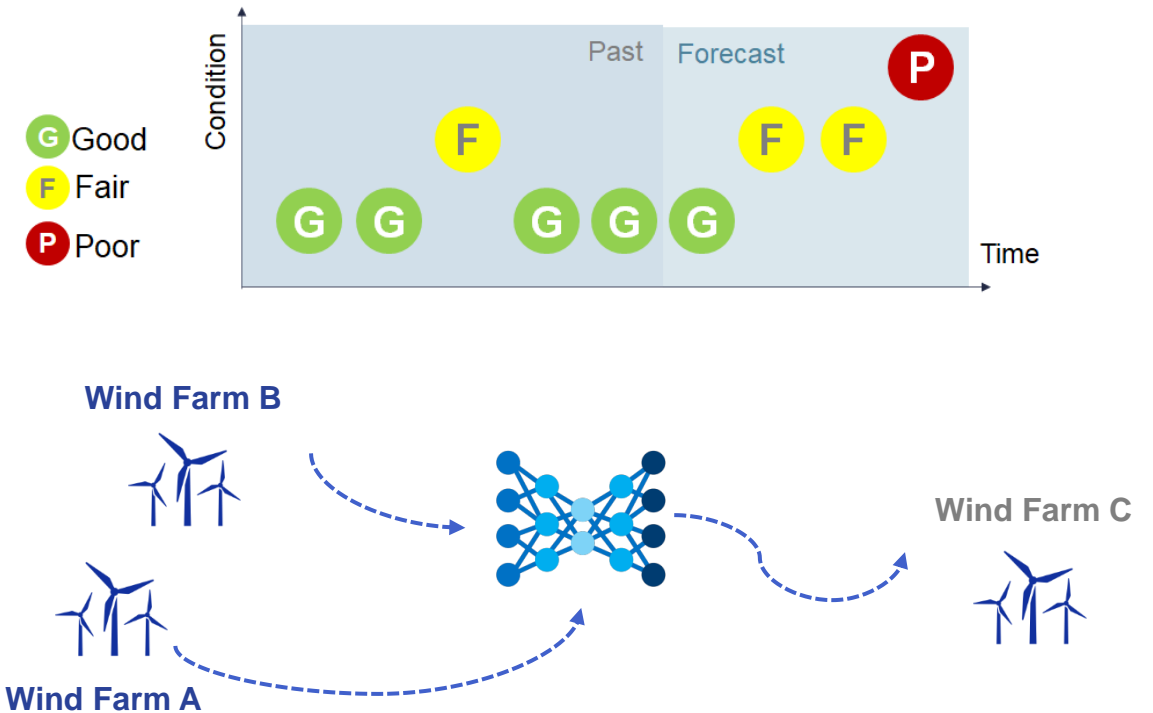
# Business Cases: Beyond Smart4RES

## Privacy-preserving Net-load Forecasting



**Share data with a service provider** to improve predictability of prosumers net-load in a privacy-constrained environment

## Asset Condition Prediction



**Data/model sharing between peers or across the value chain**  
→ data augmentation for improved maintenance policies