



# IEA Wind TCP Task 50

ENGIE Participation

PUBLIC

INTERNAL

RESTRICTED

SECRET





## Leader of the energy transition, building today the low-carbon energy system of tomorrow to achieve Net Zero Carbon by 2045 for us and our customers

### In 2020

- 170,000 employees
- €55.8 billion revenue
- €190 million spent on R&D
- 3GW extra installed renewables capacity
- €4 billion growth investment
- 101 GW installed power generation capacity

### Business activities

- Renewables
- Networks
- Energy Solutions
- Thermal production & energy supply

### An international player



# ENGIE Laborelec

In a nutshell

- ENGIE Laborelec is a leading **expertise and research center** in **electrical power technology** with a strong focus on the **Energy Transition** and **Net Zero Carbon**.
- ENGIE Laborelec has a **global presence** with offices in Belgium, France, the Netherlands, Germany, Chile and the Middle-East.
- With a strong focus on **high value delivery** for ENGIE and for our external customers, we combine:

Expert  
knowledge

Operational  
experience

State-of-the-art analysis  
& measurement capability

- With a **highly skilled workforce** of more than 335 colleagues (PhD, engineers, specialized technicians),
- We offer:

Operational  
R&D

Specialized  
expertise

Tailor-made  
global solutions



# Interest in Hybrid Power Plants

Different opinions exist within the Group

**We see the advantages of hybrid power plants, but there are questions around the trade-offs between co-location and aggregation.**

Our interest:

- Reduction in land costs: **colocation** of storage, wind and PV significantly reduces land cost and infrastructure costs, as well as permitting costs
- Solving local grid issues: potentially **less grid reinforcement** needs and reduction of congestion due to time-shifting flexibility
- Being able to reduce power forecast errors → Reduced **balancing costs**
- **One interface** to communicate to: less imbalances to manage in real-time due to using storage
- Enhancing the potential to deliver **ancillary services**

Our questions:

- Reducing forecasting errors: Forecast errors even out over a Balancing Area → Optimization at hybrid plant level might be suboptimal?
- Sizing tools, integrated with financial models → What are the sensitivities? Interactions between sizing and lay-out?
- Examples of existing plants?
- Practical implementation issues?

WPs: (1), 2, 3 and 4

Focus: PV+ BESS + WIND (+ Hydrogen)

# Participants



**Matthijs Doclo**  
Research Program Manager  
Storage Lab

Expertise: Li-ion storage  
integration BTM and FTM,  
battery technologies



**Cyril Daniels**  
Multi-Disciplinary Project  
Manager

Expertise: Power  
networks, Energy  
Management System,  
Renewables



**Luana Berriel**  
Project Engineer  
Solar Lab

Expertise: PV design  
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**Celine Carbonez**  
Project Engineer  
Solar Lab

Expertise: PV  
performance analysis, PV  
design

