

# NEOEN



## Webinar : Energy Storage

*July 2020*

# About us

Founded in 2008, Neoen is the leading french independent producer of renewable energy and a major player on the world stage.

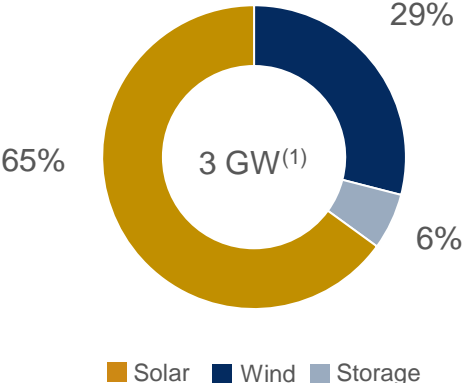
Our mission: we design and implement the means to produce the most competitive renewable electricity, sustainably and on a large scale.

Our total capacity in operation or under construction is currently over 3.0 GW and we are aiming for more than 5.0 GW by end 2021.

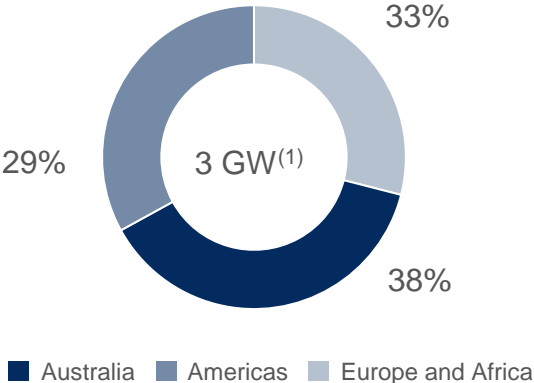


# Key figures

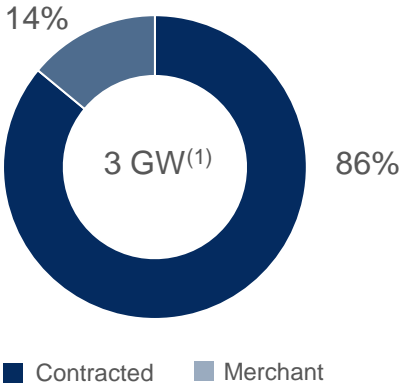
Technology breakdown



Geographic breakdown



Revenue type breakdown



**1980 MW**  
Solar



**875 MW**  
Wind



**185 MW**  
Storage



**4 continents**  
14 countries



**213**  
Employees



**253 M€**  
Revenue  
2019



**3.39 B€**  
Balance  
2019



**216 M€**  
EBITDA  
2019

(1) In operation or under construction at end of 2019

# International operations



# Neoen Portugal

- Neoen is present in Portugal since 2010, with a portfolio of three PVs in operation since 2014.
- During the last call for tenders in 2019, Neoen has been awarded for 50MWc grid injection certificate with a 15-year Governmental PPA by the Portuguese Government (fixed price).
- Neoen continues to develop a vast portfolio in Portugal with focus on solar and storage opportunities.



**Cabrela**

Installed power	13.192,2 kWp
Solar modules	143.820 modules First Solar
Inverters	8 Inverters SMA SC900 & 6 SMA SC800
Connection to the grid	30/06/2014
Provisional acceptance	26/09/2014
O&M contractor	Gensun PVS



**Coruche**

Installed power	2.203,2 kWp
Solar modules	18.360 modules "AVANCIS - PowerMax" 120Wp
Inverters	4 SMA inverters "SC500 CP-XT"
Connection to the grid	27/01/2014
Provisional acceptance	41642
O&M contractor	Gensun



**Seixal**

Installed power	8.800 kWp
Solar modules	34.992 modules BenQ - PM245P
Inverters	10 inverters SMA SC800 CP-XT
Connection to the grid	14/07/2014
Provisional acceptance	18/09/2014
O&M contractor	Gensun PVS

# Why considering storage?

## Problems addressed

1. Solve the issue of power intermittency inherent to renewable energies and thus boost renewable development
2. Replace peak hour costly and polluting thermal power plant (avoid stop-and-go of thermal plants)
3. Provide security to the electrical grid
4. Avoid new grid investment when HV lines are reaching full capacity

## Main storage uses

1. **Grid services:** to sustain grid frequency level or to provide reserve capacity in case of contingency events on the grid
2. **Load shifting:** to shape the production peaks of a renewable power plant, replace peak plants or perform electricity trading on the market
3. **Energy arbitrage**

# Neoen expands storage integration capacity



DeGrussa 2015  
Hybrid solar + storage power plant



6 MW / 1.4 MWh

**SAMSUNG**



Hornsdale Power Reserve 2017  
Largest lithium-ion battery worldwide



100 MW / 129 MWh

**TESLA**



Azur Storage 2018  
Grid battery storage facility



6 MW / 6 MWh

**Nidec**



Albireo Power Reserve 2020  
First storage power plant in Central America



3 MW / 2 MWh

**Nidec**



Hornsdale Expansion (HPRx)  
Should be commissioned in Q2 2020



50 MW / 64.5 MWh

**TESLA**



Bulgana  
Should be commissioned in Q2 2020



20 MW / 34 MWh

**TESLA**



2 projects won in Q1 2020  
As part of RTE tender



13 MW (6 MW + 7 MW)

# Hornsedale Power Reserve (South Australia)



- The world's largest lithium-ion storage facility was installed by Tesla for Neoen, adjacent to the 300MW Hornsedale wind farm, as part of South Australia's plan to reinforce grid reliability.
- The plant was commissioned within 5 months of Neoen getting awarded by the South Australian government, just in time for Australia's 2017 summer
- In the Project Management Institute's list of 50 most influential projects in history, HPR was ranked 24<sup>th</sup>, ahead of Wikipedia, France's high-speed train (TGV) or the Sydney Opera House.



**309 MW**  
Wind Farm



**100 MW**  
**129 MWh**



**650 M€**  
Wind + storage  
overall investment



**In operation since December 2017 – New extension (50MW/67MWh) under construction**  
**Use case: continuous & contingency frequency regulation + some energy arbitrage**

# Yllikkälä Power Reserve (Finland)

- The largest battery storage unit of the Nordics and the 1st independent, large capacity battery to be connected to the grid.
- It will provide the national electricity system with the benefits of rapid storage to mitigate frequency variations
- The facility is set to play a key role in stabilizing the national electricity system managed by Fingrid. Aside from greater reliability and lower electricity grid stabilization costs, the plant will facilitate the integration of future renewable energies projects.



**30 MW**  
**30 MWh**



Currently under construction  
Use case: frequency regulation



Thank you