

# Looking forward

Offshore wind PPAs  
in Europe

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# Our vision is a world that runs entirely on green energy with an aim to reach 50GW of installed capacity by 2030



## Offshore Wind

The global market leader  
Develops, constructs, owns & operates offshore wind farms across the world (7.6GW installed capacity)



## Onshore

Onshore wind farms, solar PV, energy storage (2.4GW installed capacity)



## Hydrogen

Build global leadership position in renewable hydrogen and green fuels



## Markets & Bioenergy

Biomass heat & power plants in Denmark  
Strong trading capabilities for route to market and optimisation  
Energy solutions for B2B customers

**Headquarters**

Denmark

**Number of employees**

6,200

**EBITDA 2020**

USD 2.9bn

# 2030 aspiration


Become the world's leading green energy major

Become the world's leading green energy major



One of the world's largest **green electricity producers**

**Global no. 1**  
in offshore 

**Global top 10**  
in onshore 

**A global leader** in renewable H<sub>2</sub> & green fuels 



One of the world's largest and most value creating **deployers of capital** into the green transformation



The world's **leading talent platform** in renewable energy



A **globally recognised sustainability leader**



A core contributor and **catalyst for change** towards a world running entirely on green energy

# Leading sustainability ambition



**2025**

Carbon neutral business

**2040**

Carbon neutral footprint



SCIENCE  
BASED  
TARGETS



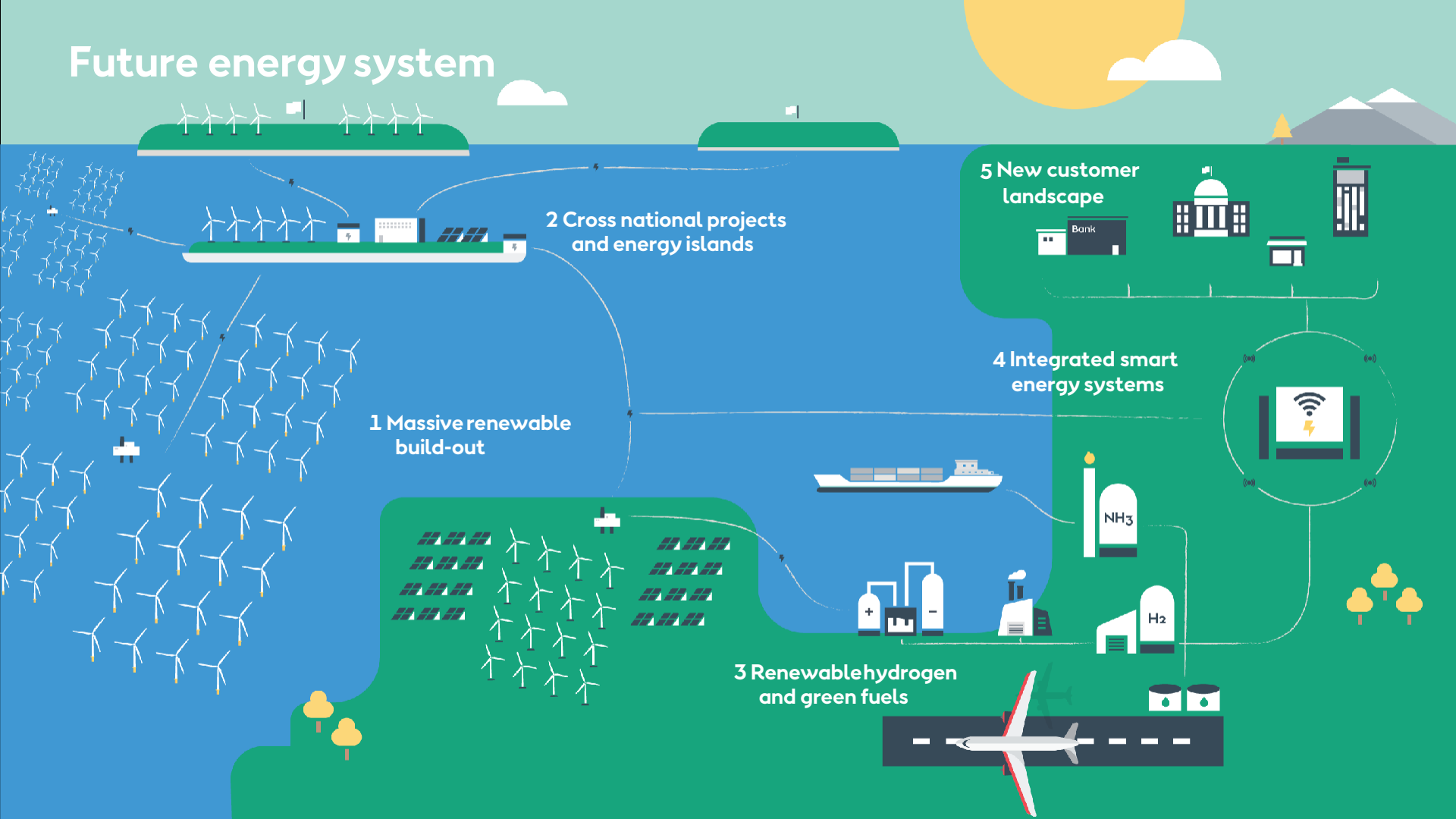
**2030**

No later than 2030, all projects commissioned must have net positive biodiversity impact

**Today**

Ban on landfilling of wind turbine blades

# Future energy system



1 Massive renewable build-out

2 Cross national projects and energy islands

3 Renewable hydrogen and green fuels

4 Integrated smart energy systems

5 New customer landscape

Bank

$\text{NH}_3$

$\text{H}_2$

# Long-term Power Purchase Agreements drive the development of renewable generation whilst providing long term price certainty

## What is it?

-  **Long term**  
10 – 20 years power purchase
-  **Fixed pricing**  
Structure for power and certificates (beyond current market options)
-  **Direct link to specific asset**  
100% renewable source attributes transferred to corporate to meet sustainability requirements

## Why do it?

-  **Achieve sustainability targets**  
PPAs can help you achieve your renewable targets and reach a sustainable energy supply
-  **Mitigate power price exposure**  
Budget certainty in volatile energy markets
-  **Become a leader in global energy transition**  
Increasing number of industries securing renewable energy capacities worldwide
-  **Additionality**  
Support the construction of new renewable energy projects



# Our CPPA Partners

## Borkum Riffgrund 3 Germany

**900 MW** capacity

German North Sea

Zero subsidy power  
Commissioned in 2025  
(subject to FID)



**Europe's largest offshore wind PPA**

**10-year** agreement from 2025

**250 MW**



**Germany's first offshore wind PPA**

**10-year** agreement from 2025

**100 MW**

## Race Bank UK

**573 MW** capacity

Between Lincolnshire & North  
Norfolk coasts

Commissioned in 2018



**Commitment to local  
communities**

**15-year** agreement from 2020

**31 MW**



**UK's first Offshore Wind PPA**

**10-year** agreement from 2019

**23 MW**

## Horns Rev2 Denmark

**209 MW** capacity

30 km off the western coast of  
Jutland

The wind farm came out of  
subsidy in October 2020



**Out of subsidy wind farm PPA**

**10-year** agreement from 2021

**27 MW**

## Greater Changhua 2b&4 Taiwan

**920 MW** capacity

Off the coast of Changhua County  
Commercial operation 2026<sup>1</sup>



**World's largest renewables power  
purchase agreement**

**20-year** agreement from 2026

**920 MW**

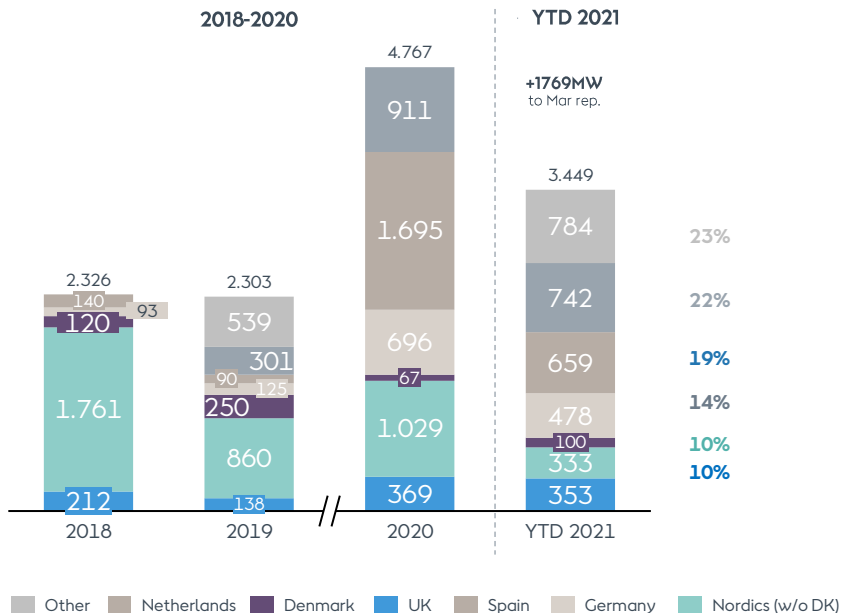


# High European CPPA deal activity in 2021 with 3,4GW already signed Closed

YTD 2021 mainly in Spain, the Netherlands, Germany and the UK

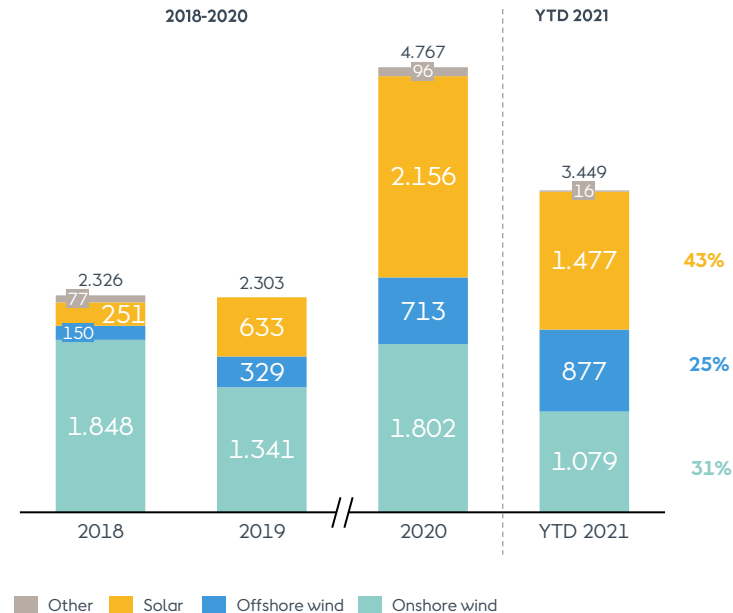
## CPPAs by country in Europe 2018-YTD 2021

MW



## CPPAs by technology in Europe 2018-YTD 2021

MW





# PPA market trends in Europe



Growing focus on **additionality**



Demand for **cross-country** PPAs



**24/7** – 100% renewables **at all times**



PPA **supply chain** programs

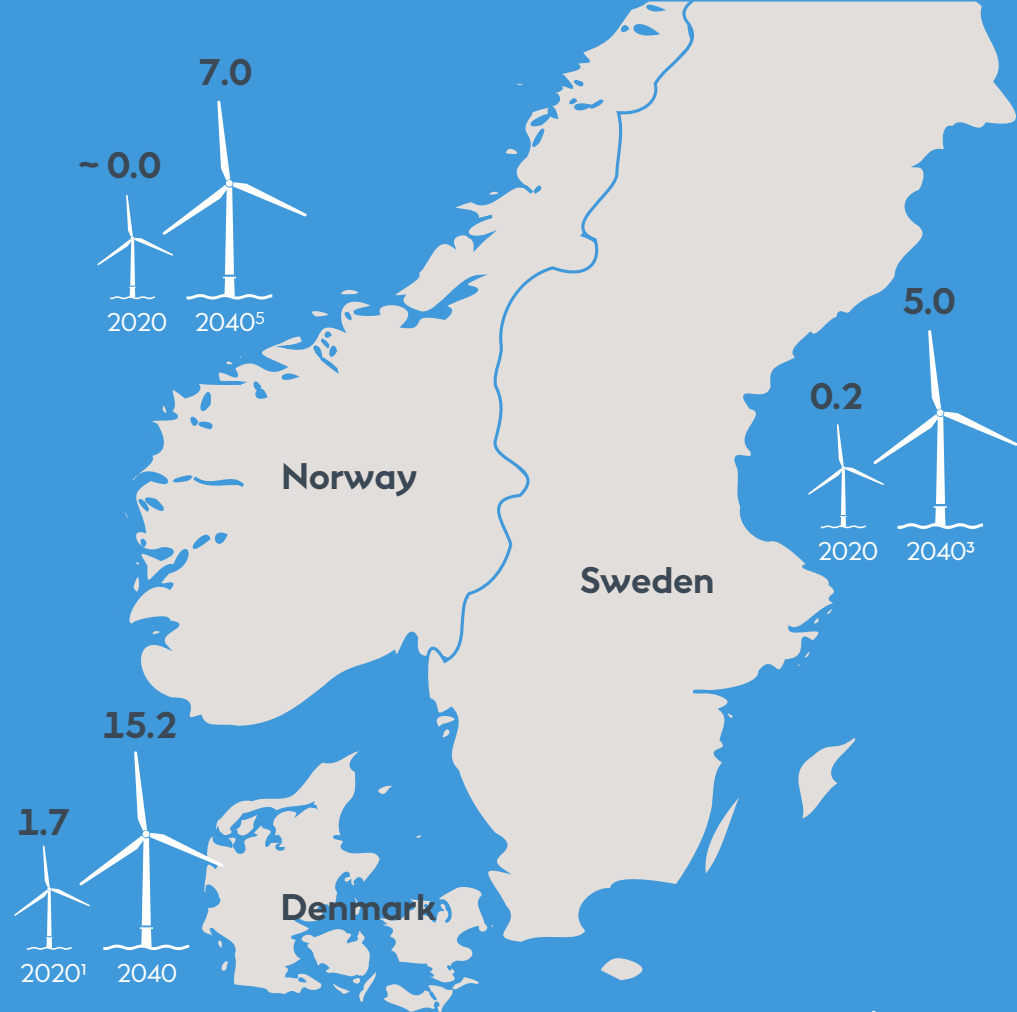
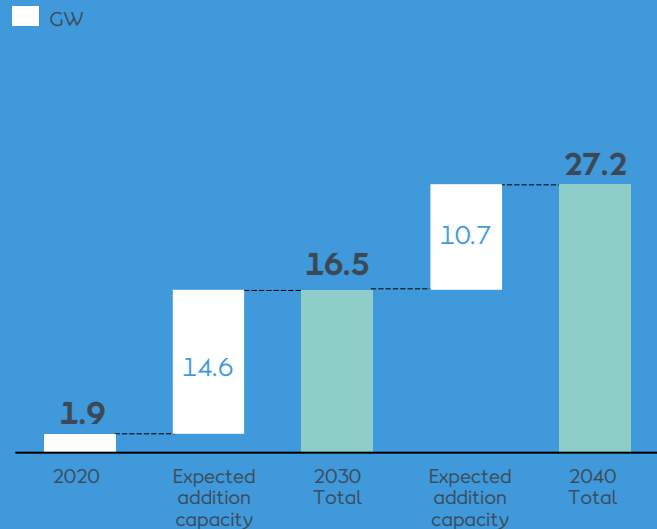


Growing number of **global PPA partnerships**



# Offshore Wind in Scandinavia: expected build-out of 14.6GW until 2030

## Total, Denmark, Norway and Sweden



10 Sources: 1) Energistyrelsen DK (2020), Analyseforudsætninger til Energinet 2020 – Vindmøller på havet, 2) Ørsted Market Price Committee (2020) & Swedish Wind Energy Association (2019), 100 percent renewable electricity by 2040, 3) Statens Energimyndighet (2021), Nationell strategi för en hållbar vindkraftsutbyggnad, 4) Capacity committed for development by the Norwegian Ministry of Petroleum and Energy (2020), 5) Norges Vassdrags- og Energidirektorat (NVE) (2020), Langsiktig Kraftmarkedsanalyse 2020-2040 & Statnett (2020), Langsiktig Markedsanalyse Norden og Europa 2020-2050.

# Power-to-X: Leading Danish companies join forces

Pursuing the ambitious Green Fuels for Denmark sustainable fuel project in the Copenhagen area



Supported by  
COWI  
BCG

**Phase 1:**  
Develop hydrogen production

**Phase 2:**  
Enter carbon to produce maritime and aviation fuel

**Phase 3:**  
Scale through aviation demand

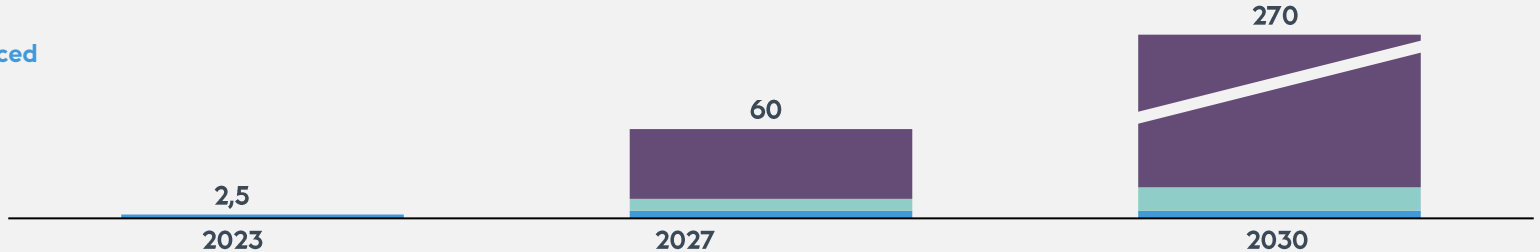
**Electrolyser size (cum.)**

~10 MW

~250 MW

~1.3 GW

**Fossil fuel replaced (kt)**



# Let's create a world that runs entirely on green energy – together!





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# Our global footprint





**United States of America**

-  In operation: 30MW  
Under development: 7,500MW
-  In operation: 1,658MW  
Under construction: 940MW
-  In operation: 420MW  
Under construction: 907MW
-  In operation: 40MW

**Denmark**

-  In operation: 940MW
-  In operation: our CHP plants, 2,865MW power and 3,560MW heat
-  Sales of energy

**United Kingdom**

-  In operation: 4,938MW  
Under construction: 1,386MW  
Under development: 4,000-5,000MW
-  In operation: Renescence Northwich
-  In operation: 20MW
-  Sales of energy

**Sweden**

-  Sales of energy
-  Under development: 3,000MW

**Poland**

-  Under development: 2,500MW

**Germany**

-  In operation: 1,370MW  
Under development: 1,142MW
-  Sales of energy

**The Netherlands**

-  In operation: 752MW

**Japan**

-  Under development: 370 MW





**South Korea**





-  Under development: 1,600MW

**Taiwan**

-  In operation: 128MW  
Under construction: 900MW  
Under development: 3,490MW

## Activities

-  Offshore wind
-  Onshore wind
-  Solar
-  Biomass-fired power plant

-  Fossil-fueled power plant
-  Bio plant
-  Storage
-  Sales of energy

## Status

-  In operation
-  Under construction
-  Under development