

# Webinar: Asegura la financiación de tu Proyecto de almacenamiento de energía

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Noviembre 2023

# octopus energy

We are a global leader in the world's transition to green energy, launched in 2016 to use technology to unlock a customer focused and affordable green energy revolution.

## Octopus Energy

- A global leader in the world's transition to green energy
- Operating in 13 countries including the UK, France, Germany, Italy, Spain, Japan, US, Australia and New Zealand
- Quadruple unicorn valuation following investment from Generation Investment Management and CPPIB in September 2021

**Originally backed by Octopus Investments, now backed by two of the world's largest energy companies, we are a mission-led sustainable investment manager and a \$500bn institutional investor**

CPPIB Investments

generation



TOKYO GAS

octopus

## Our business units:



Retail



OE Business



Octopus Energy  
Generation



Octopus Energy  
Services



Kraken  
Tech



Octopus Electric  
Vehicles



Centre for Net  
Zero

# Building the Worlds Leading Renewable Energy Business

Octopus Renewables' fund management business and the disruptive technology-led energy supply company Octopus Energy joined forces in 2021, enabling Octopus Group to approach the energy markets with a holistic view of the global energy landscape unlocking new products, energy tariffs and fund structures to expedite the development of new renewable generation

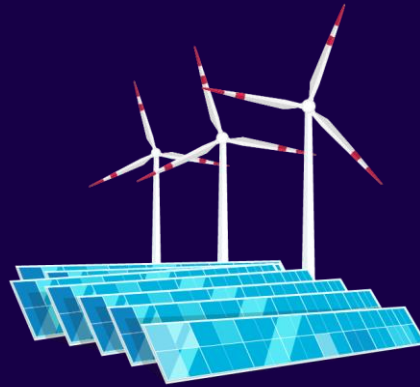
Renewable asset and  
fund management expertise  
**octopus**renewables



Technology and  
consumer-led approach



**octopus**energy



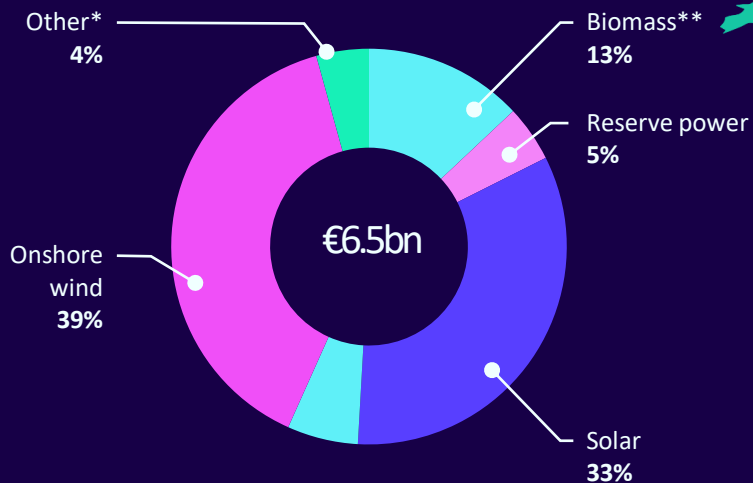
**octopus**energy  
**generation** investing for impact

## Our mission:

To change the entire energy lifecycle and make every green electron matter, delivering the best outcomes for customers, investors, the environment and society, accelerating the transition to net zero.

# Octopus Energy Generation

One of Europe's leading and most experienced specialist renewable energy investors, investing since 2010

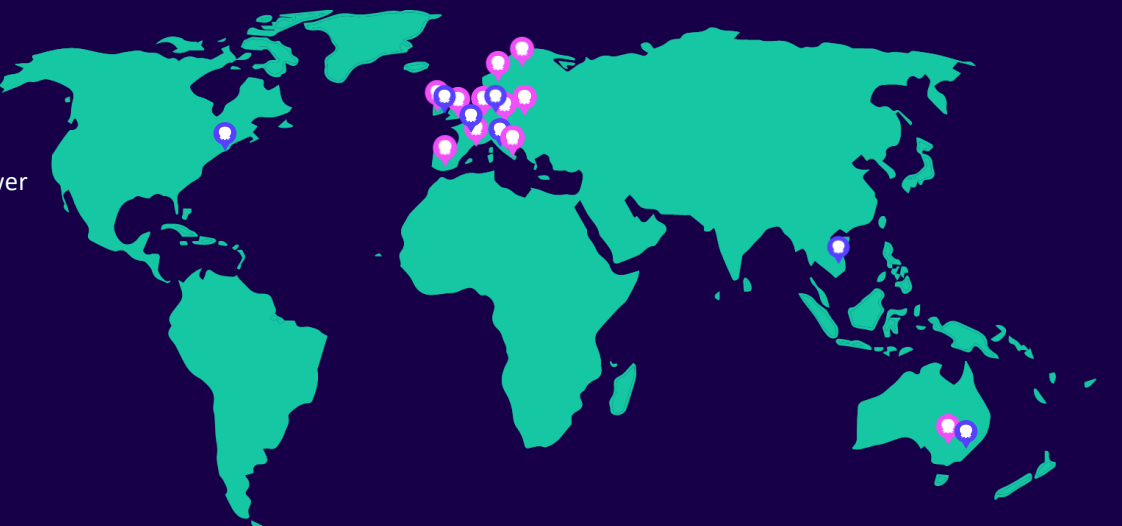


\*Includes Developers, GSHP, IDNO, EfW, cash

\*\*Includes a portfolio that also contains some landfill gas

AUM includes debt & equity (Gross Asset Value) and committed funds

All data as of December 31<sup>st</sup> 2022



>3GW

of potential generation capacity once fully constructed across **11 countries** and **8 technologies**

>350

large-scale energy assets acquired since inception in 2010. Current portfolio is nearly 250 large scale and over 4,500 small scale assets

>150

energy construction projects executed and managed historically



OEGEN managed assets



Origination team in place

## Current portfolio

Over **£95m** committed to developers with over 12GW in development



**Iberian solar PV developer**

Minority equity stake

First invested 2019



**UK commercial rooftop developer**

Full ownership

First invested 2020



**UK grid networks and connections business**

Minority equity stake

First invested 2018



**UK based solar and storage**

Full ownership

2021



**Global floating offshore wind developer**

Minority equity stake

First invested 2021



**UK onshore wind developer**

50:50 JV

2021



**Nordic focussed solar and wind developer**

Joint Development Agreement  
2022



**UK solar and storage developer**

Minority equity stake

2022



**Italian solar PV and onshore wind developer**

Majority JV stake (51:49)

2022

**Sparkwave Energy**

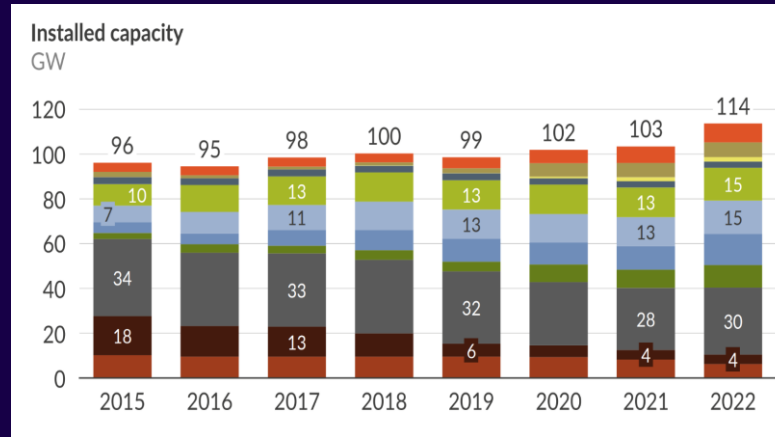
**New vehicle for C&I in Portugal**

Majority JV stake (51:49)

2023

# UK Storage Market: an Overview

- Since the implementation of Electricity Market reform (EMR) in 2013, the UK has been progressively shifting from thermal generation towards renewables.
- Installed capacity of coal has decreased from 20GW to 4GW in 2022. The UK aims at displacing coal by the 2020s and CCGTs in the 2030s.
- The share of renewable generation of total production has increased from 15% in 2013 to 43% in 2022, mainly driven by wind and solar.
- Battery storage has increasingly grown in capacity, reaching almost 3GW by Q3 2023. This technology plays a key role in national efforts to reach net zero.
- There is no specific target, but projections estimate that the UK will require between 20 and 30GW of electricity storage by 2035.



■ Nuclear ■ Coal ■ CCGT ■ Other renewables<sup>3</sup> ■ Offshore Wind ■ Onshore Wind ■ Solar ■ Pumped Storage ■ Battery Storage ■ Peaking<sup>2</sup> ■ Interconnectors

# Market Framework

- Generation assets in the UK can participate in five key markets.

Capacity market	Wholesale market	Local flexibility markets	Balancing mechanism	Ancillary services	Embedded and BTM (Behind-the-meter Benefits)
<ul style="list-style-type: none"><li>• Ensures national security of supply by procuring a sufficient level of firm capacity to meet peak electricity demand.</li><li>• Contracts awarded 1-4 years in advance for lengths of 1-15 years.</li><li>• Payments made on a capacity basis in £/kW/year and de-rated based on contribution to security of supply,</li></ul>	<ul style="list-style-type: none"><li>• Provides platform to buy and sell power to meet demand every half hour</li><li>• Day ahead &amp; intraday</li></ul>	<ul style="list-style-type: none"><li>• Flexibility services procured by DNOs to manage constraints on distribution network.</li><li>• Opportunities in constrained regions, e.g. Scotland</li><li>• Contracted in advance on monthly-yearly basis</li></ul>	<ul style="list-style-type: none"><li>• The BM is used to satisfy balancing requirements of the GB Power system in real time.</li><li>• Energy can go up or down.</li><li>• Contracted over different timescales, including within delivery periods.</li></ul>	<ul style="list-style-type: none"><li>• Maintains operational grid requirements and provides secondary balancing. Activated after BM.</li><li>• FFR, Dynamic containment, Dynamic moderation.</li><li>• Contracted in advance on monthly-yearly basis</li></ul>	<ul style="list-style-type: none"><li>• Benefits that BTM assets or demand consumers receive for reducing demand on the system.</li></ul>

Different battery storage assets can fill different roles on the system:

- Short duration batteries are more suited to providing Frequency Response and short duration BM actions
- Longer duration batteries are less suited for Frequency response, but can capture more value in the wholesale and capacity markets

# What has happened in the UK?

September 12, 2023

## Battery storage revenues drop by 71%

PREMIUM

NEWS

## UK BESS project premiums, valuations down as revenue expectations drop

By [Cameron Murray](#)

October 19, 2023

- BESS projects saw unprecedented profits beginning in late 2020 and continuing to escalate until 2022, driven by high energy prices.
- In 2022, revenues for 1-hour duration batteries reached above 200k/KW/year.
  - Much of this increase was due to ancillary service revenues, coming from the Dynamic Containment (DC) frequency response service.
  - DC was introduced in September 2020, is an ancillary service product that provides ultra-fast battery flexibility which ensures the stability of the electrical grid.
  - High prices were due to not enough market participants to meet the National Grid ESO's dynamic containment needs.
  - Now this market is no longer underserved, as there are over 3 GW of batteries competing for a 2GW DC market. So the market has saturated, explaining the sharp decrease in revenues in 2023.



# What can we learn from the UK experience?

- Revenue stack. Be a first comer pays off!!
  - Batteries that are connected in the system earlier will benefit from higher revenues from the ancillary services markets.
  - Capacity market prices are getting lower now, due to higher de-rating factors for thermal technologies that reduce the need for new capacity due to longer durations. However, Capacity Markets are expected to have high prices in the future once old CCGTs and nuclear are retired, plus the mandatory closure of coal plants.
  - Energy trading will play a more relevant role in the revenue stack once more intermittent capacity comes online.
- Battery duration:
  - Unless there are other drivers (i.e. subsidies), 1h battery size is sufficient to capture the revenues in ancillary services markets.
  - However, a long-term strategy should consider longer duration batteries to capture more revenues from energy trading and capacity markets.
  - Recent battery developments in the UK are >100MW and 3-4h duration.
- Location will become key in the future.
  - UK, as Spain, is not a nodal system. However, a more regionalised and regionally managed system is expected.
  - Developers are now locating their batteries in constrained areas (i.e. the interconnector between England and the UK) or areas with large offshore wind capacity.
- Financing and investment:
  - Institutional investors like assets with contracted revenues as opposed to merchant exposure.
  - Some banks are taking merchant risk on batteries, as the technology has been proved in the past year. They give extreme relevance to the optimiser.

# Get in touch with us

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