

**CDP Ireland Network
Knowledge Share**

Decarbonising the Electricity Sector

01st May



**DRIVEN TO MAKE
A DIFFERENCE**

Decarbonising the Electricity Sector

CDP Knowledge Share

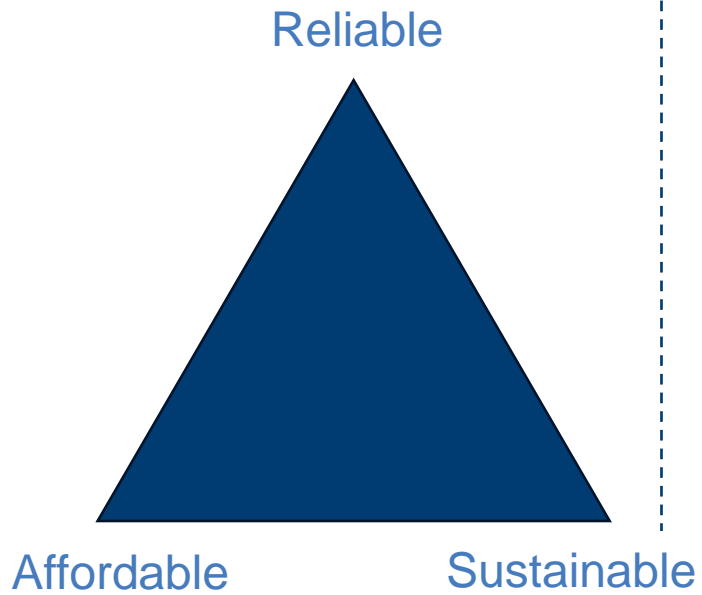
1st May 2025



**NET ZERO
BY 2040**

Context - Decarbonisation Trilemma

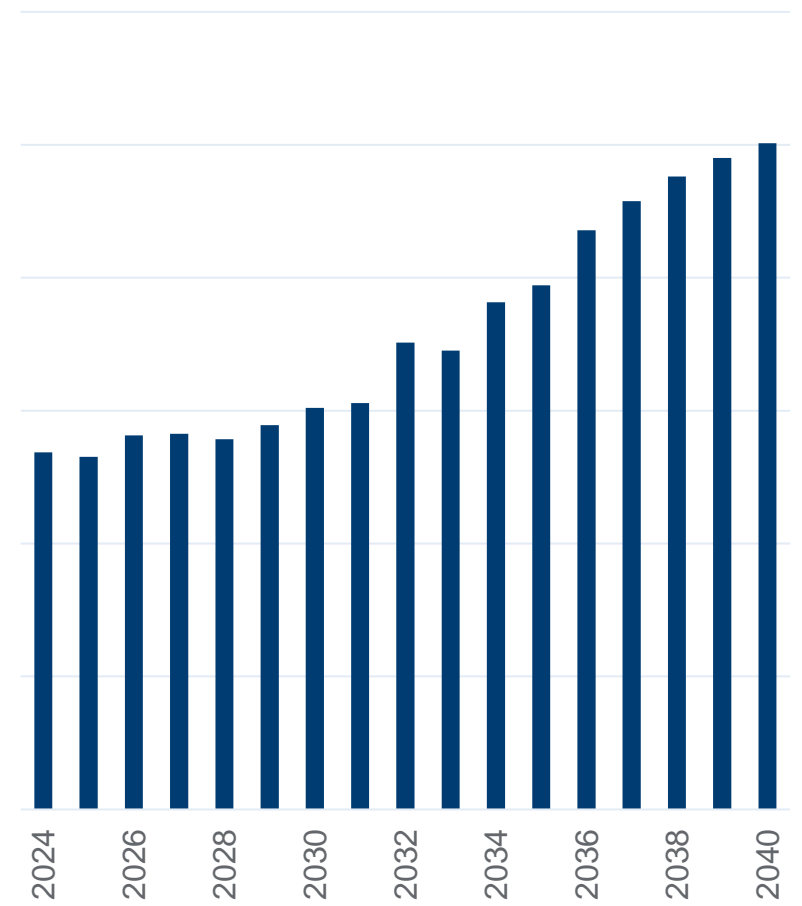
1 Energy trilemma



2 Decarbonisation (g CO2/kWh)



3 Growth (GWh)



Transformative power of electrification



- Process Emissions and Waste
- Electricity Generation
- Transport
- Residential
- Industrial and Commercial
- Agriculture

ESB's enabling actions



Enabling electrification and flexibility



Helping to build the hydrogen economy



Supporting adoption of electric vehicles



Connecting renewable electricity generation



Inspiring, empowering and supporting customers



Building a greener supply chain



Smart metering

[Net Zero Pathway Report](#)

OUR PURPOSE

OUR PURPOSE IS TO CREATE A BRIGHTER FUTURE,
FOR THE CUSTOMERS AND COMMUNITIES WE SERVE



OUR STRATEGY

WE'RE DRIVEN TO MAKE A DIFFERENCE:
ACHIEVING NET ZERO BY 2040

DECARBONISED
ELECTRICITY

RESILIENT
INFRASTRUCTURE

EMPOWERED
CUSTOMERS

EMPOWERED PEOPLE • DIGITAL & DATA DRIVEN • FINANCIALLY STRONG • SUSTAINABLE

OUR CULTURE

OUR VALUES

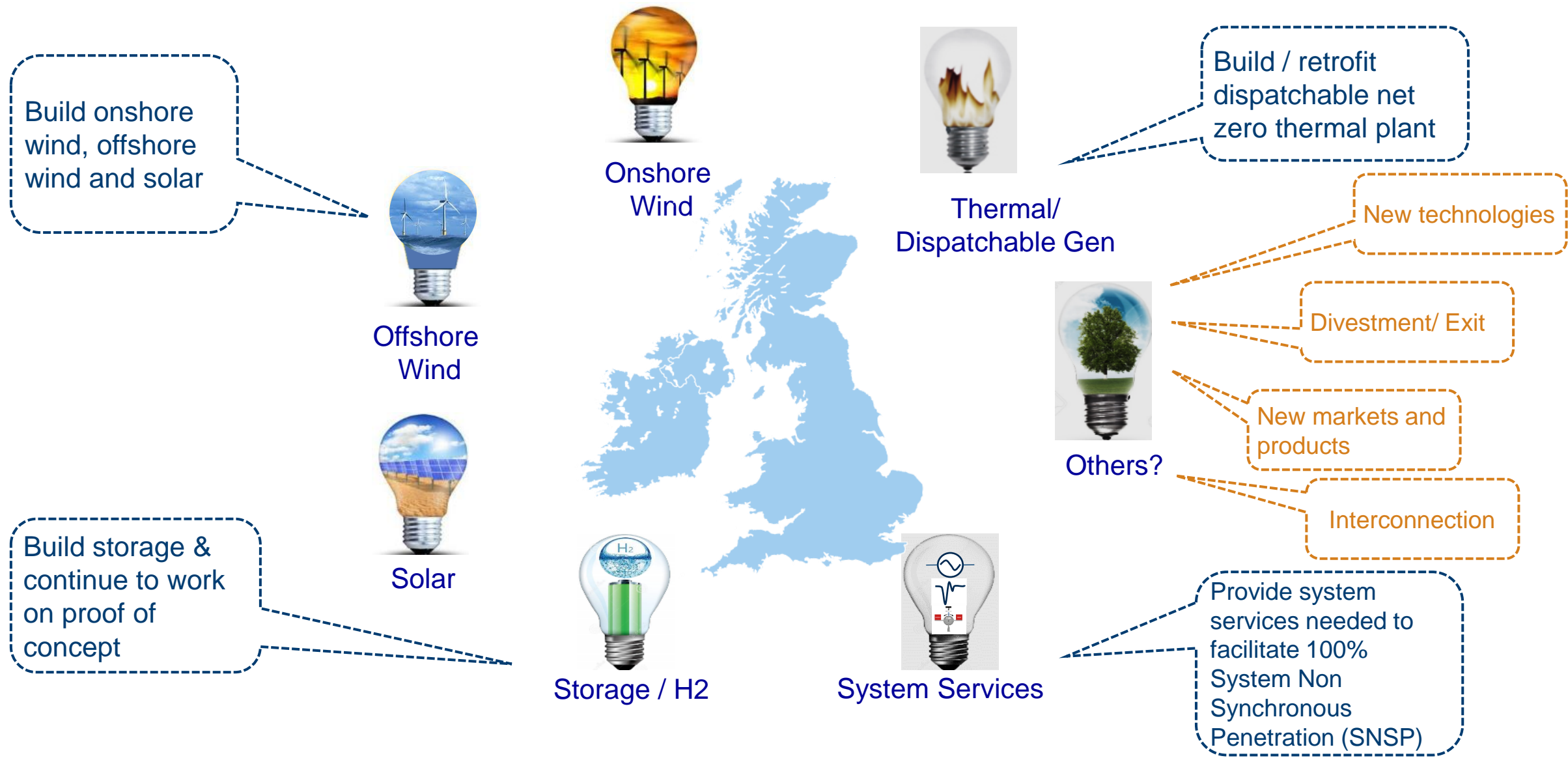
WE'RE
COURAGEOUS

WE'RE
CARING

WE'RE
DRIVEN

WE'RE
TRUSTED

Decarbonisation options



Decarbonised Electricity – 2024 Update



Develop and connect renewables to decarbonise the electricity system by 2040.



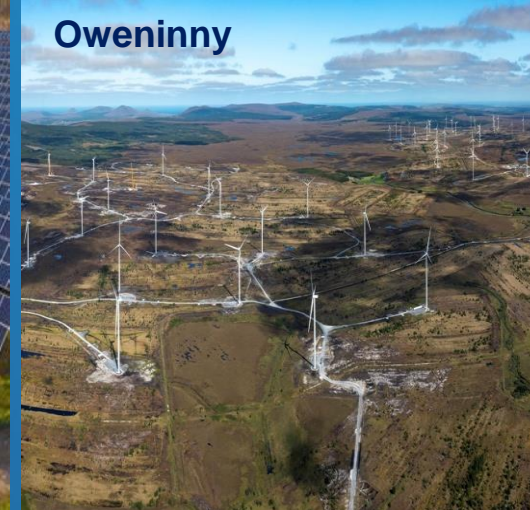
OUR FOCUS

Connect renewable generation to our Distribution and Transmission networks

Grow our Renewable Generation portfolio

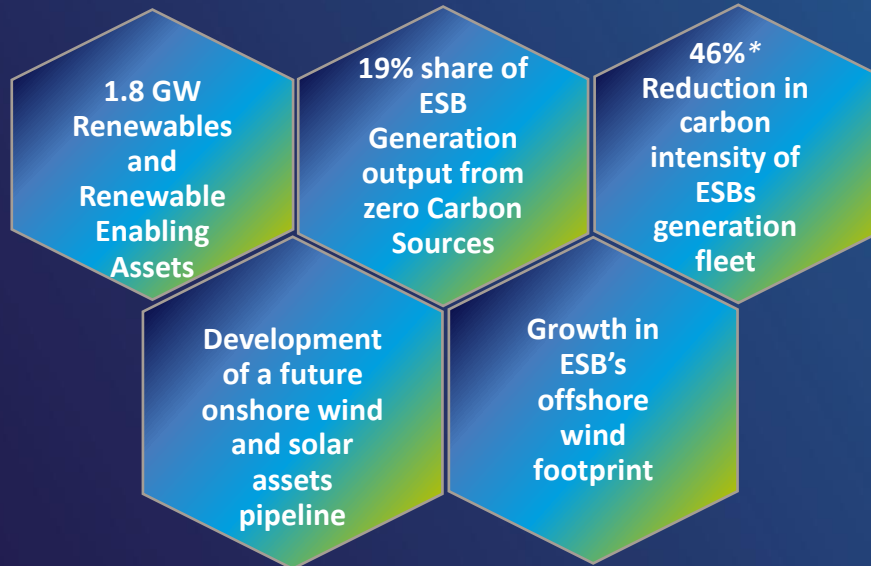


Solar



Oweninny

PROGRESS



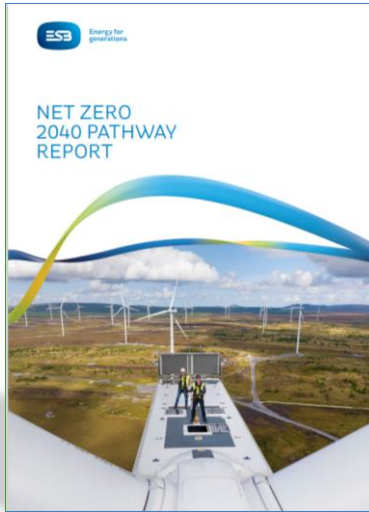
NNG



* Compared to baseline year 2005

2024 Sustainability Progress

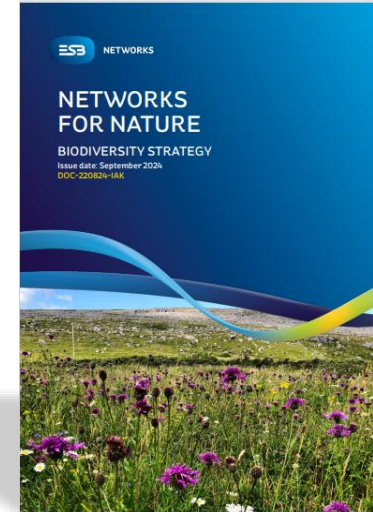
March '24



Apr '24



Oct '24



Dec '24



A - Score *



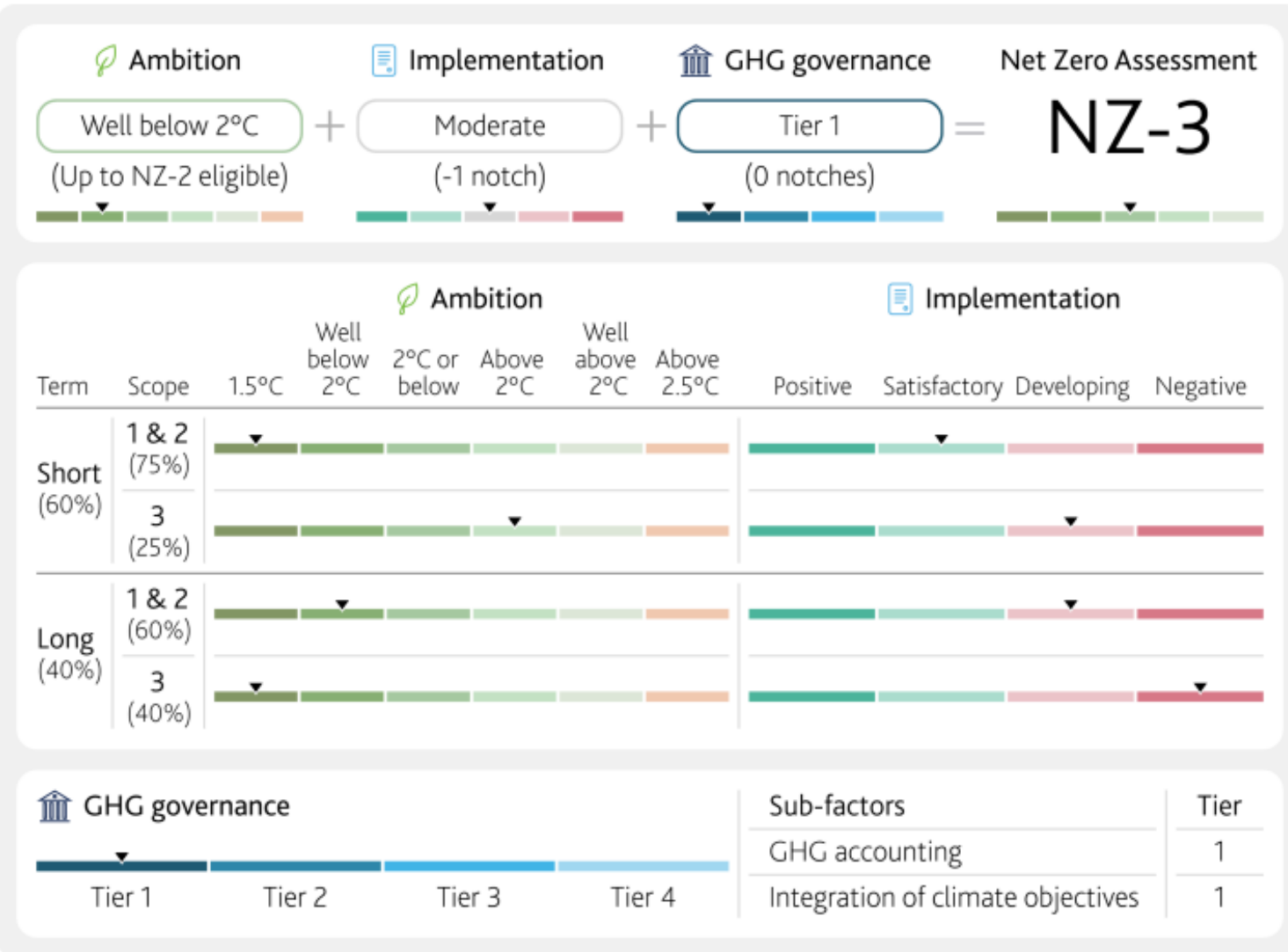
Top 25% of Electric Utilities

MOODY'S

NZ-3 Report – Significant

<https://esb.ie/sustainability>

* A- achieved in 2023. At time of publication 2024 score yet to be finalised.



Net Zero Pathway Report

‘NZ-3 net zero assessment (NZA) score (significant).

ESB's ambition score is well below 2 degrees Celsius on our scoring scale (that is, within a 1.55 C-1.80 C temperature range), consistent with Paris Agreement goals.

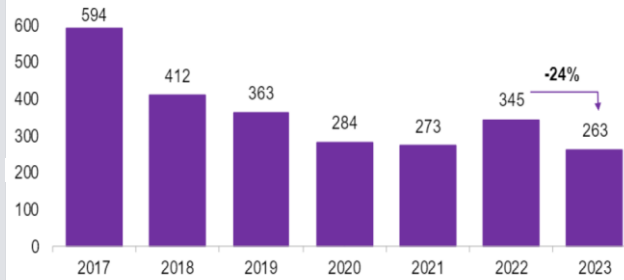
ESB's implementation score is moderate, driven by a credible action plan on scope 1 and 2 emissions in the short term, but higher uncertainties for long-term targets, especially for scope 3 emissions.’

[Moody's NZA Report](#)

Industry trends

Figure 5.8: Historical prices for turnkey energy storage systems of four-hour duration

\$/kilowatt-hour, usable (2023 real)



Source: BloombergNEF

Continuing cost reduction in PV and storage



Demand growth driven by Gen AI



Offshore auction results in Brittany and Med



National Biomethane strategy launched



Hydrogen auctions in the UK and EU



The rise and fall and rise of Small Modular Reactors

Impactful emerging technologies over the medium term



Biomethane



Flow Batteries



Industrial Heat Pumps



HVDC interconnectors



Floating Offshore Wind



V2X to provide flexibility

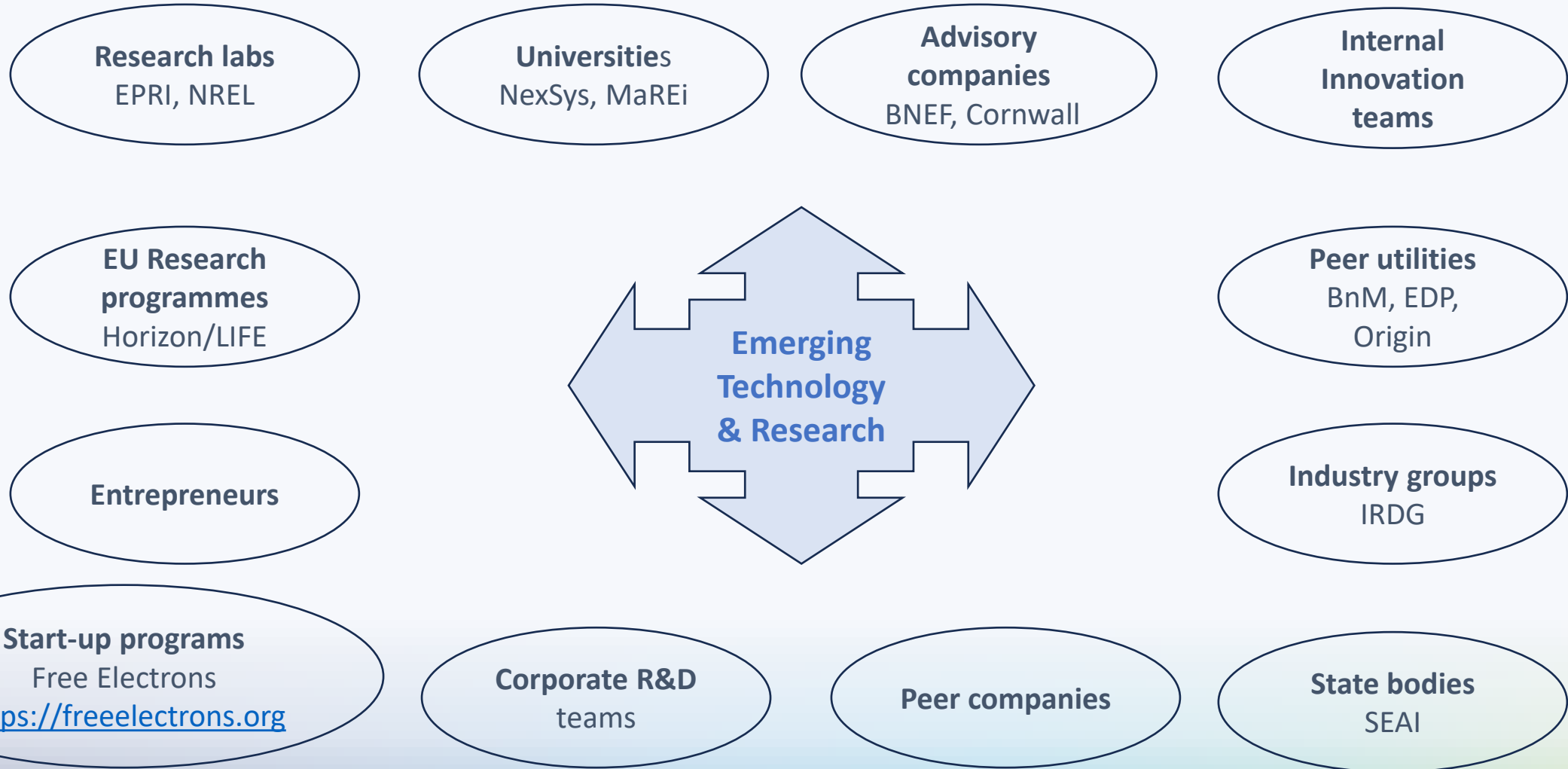


Long duration energy storage



Hybrid grid connections

Collaboration is key in the transition to the Net Zero energy system



Summing Up



There is a credible pathway towards net zero through building out renewables, supported by storage and flexibility, replacing synchronous generation remains a challenge



We will continue to grow our portfolio of renewables and storage, with a significant pipeline of projects under development



Conventional gas plants remain an important component of security of supply, some can be converted to net zero fuels; may be partly replaced by 100hr+ storage



Continue to explore solutions to fully decarbonise our CCGTs from the mid 2030s



Long duration storage, hydrogen and net zero fuels are developing slower than hoped but will play a pivotal role in the long-term



Energy for generations

Knowledge Share Discussion



How we measure carbon footprint

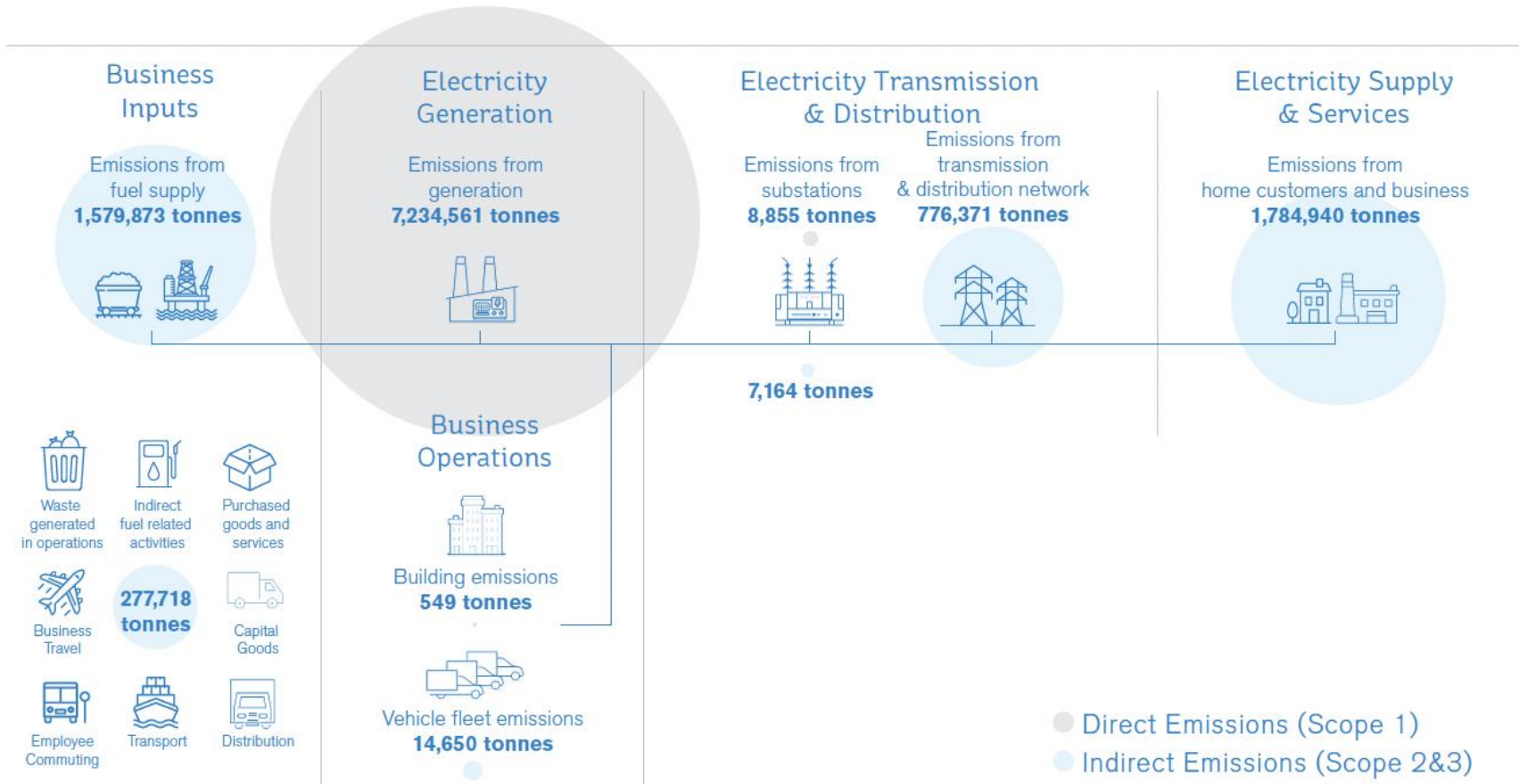
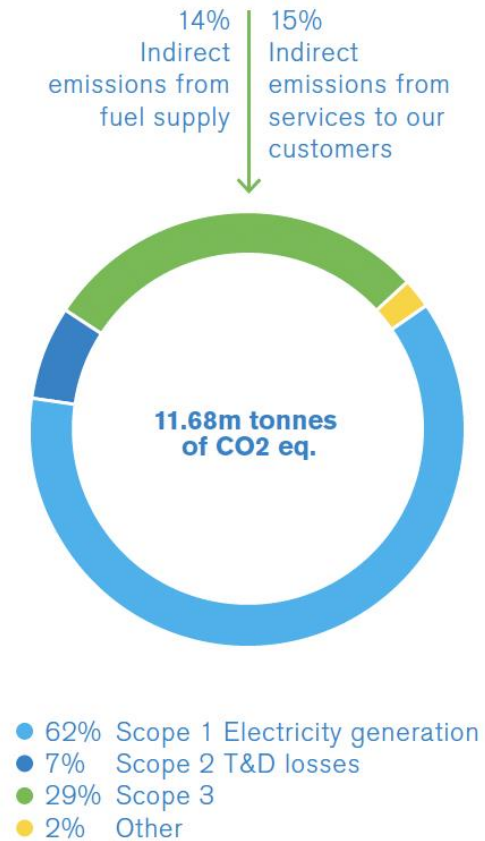
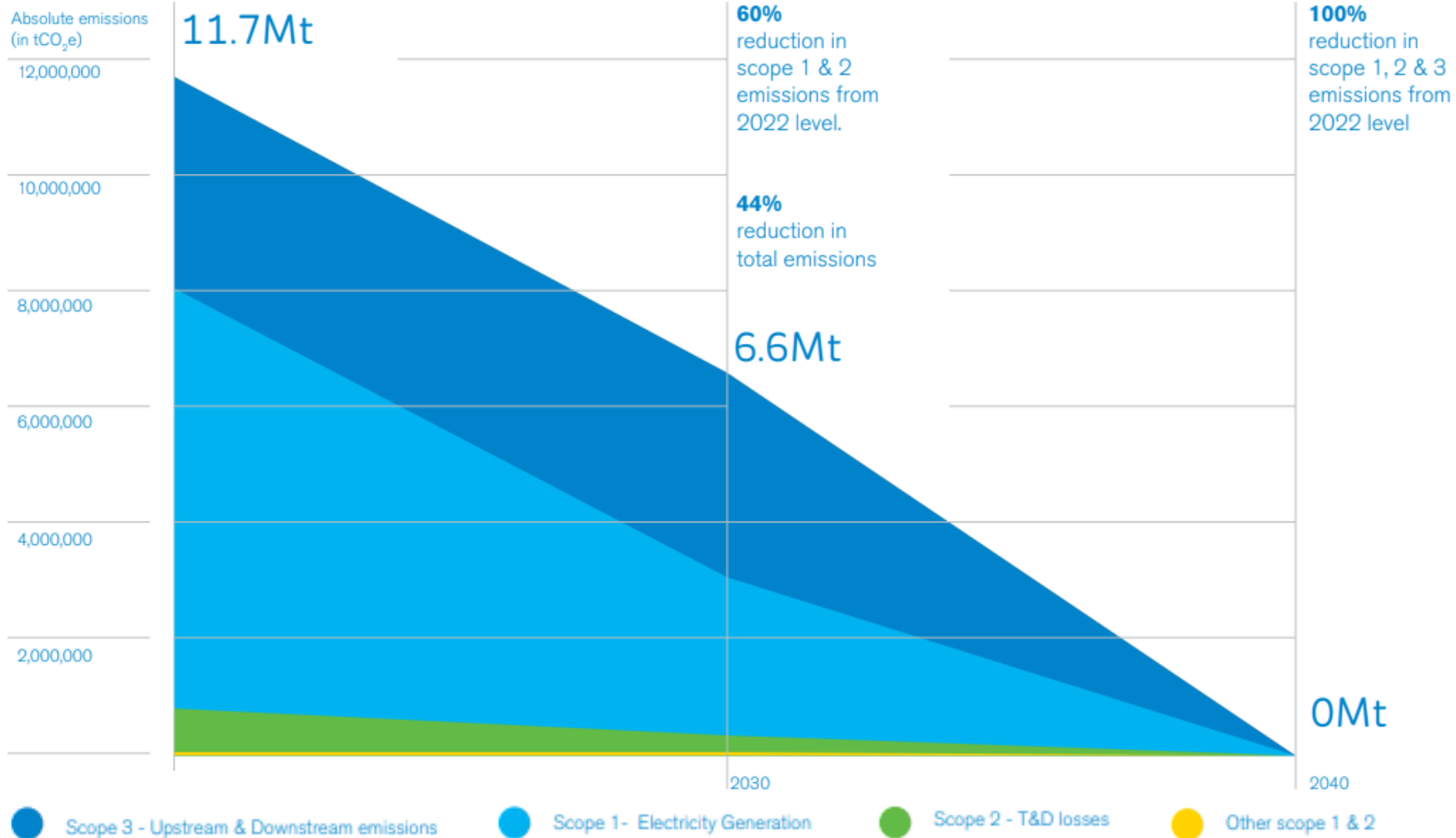


Figure 15 Split of ESB's emissions in 2022



Note: 'Other' refers to other scope 1 & 2 emissions including SF6, employee commuting, own electricity consumption accounts for 2% of total emissions

ESB's Net Zero Pathway



Thank you

