

SHELL FLOATING WIND

SHELL vision on the timeline to full-scale development & commercialization of floating wind

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Shell plc

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This presentation contains certain following forward-looking non-GAAP measures such as cash capital expenditure and divestments. We are unable to provide a reconciliation of these forward-looking Non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile those Non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of the company, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc’s consolidated financial statements.

Also, in this presentation we may refer to Shell’s “Net Carbon Footprint”, which includes Shell’s carbon emissions from the production of our energy products, our suppliers’ carbon emissions in supplying energy for that production and our customers’ carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions. The use of the term Shell’s “Net Carbon Footprint” is for convenience only and not intended to suggest these emissions are those of Shell or its subsidiaries.

Shell’s operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, Shell’s operating plans, outlooks, budgets and pricing assumptions do not reflect our net-zero emissions target. In the future, as society moves towards net-zero emissions, we expect Shell’s operating plans, outlooks, budgets and pricing assumptions to reflect this movement.

CONTENTS

SHELL VISION ON THE TIMELINE TO FULL-SCALE DEVELOPMENT & COMMERCIALIZATION OF FLOATING WIND

Shell wind business in a nutshell

Global Floating Wind markets

Shell is accelerating in floating wind

Global Floating offshore wind market development & timeline

SHELL WIND BUSINESS IN A NUTSHELL



50 YEARS

Experience in offshore engineering in the North Sea



20 YEARS

Experience in wind



20+ COUNTRIES

Shell's power trading



GLOBAL TEAM

Across Europe, USA and Asia



6+ GW

Total installed capacity in portfolio and pipeline



839.5 MW

Total installed capacity offshore*



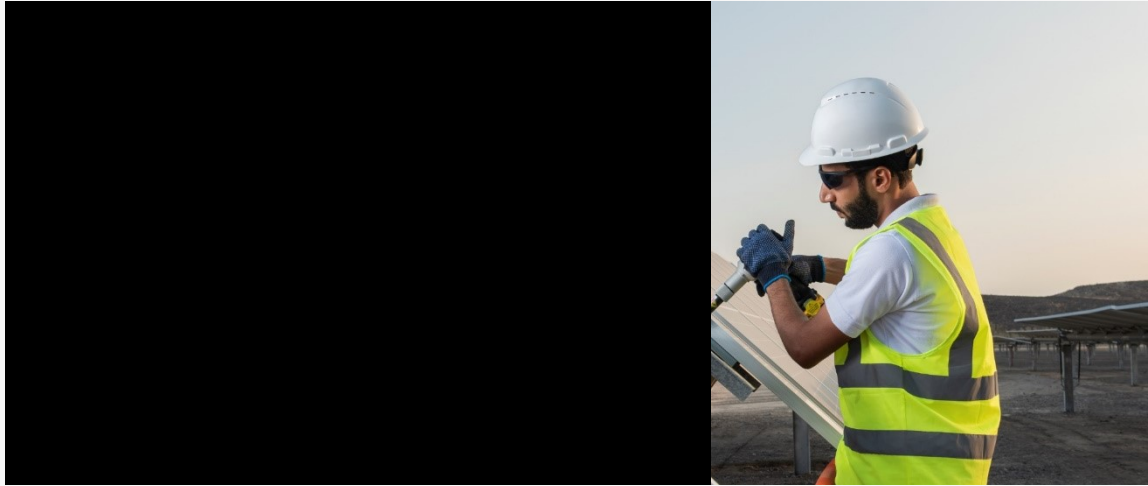
262.5 MW

Total installed capacity onshore**

* Shell's share: 254.3 MW

** Shell's share: 211.25 MW

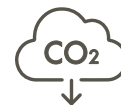
RENEWABLES & ENERGY SOLUTIONS



We want to find ways of helping customers – whether households, cities or businesses – to switch to these options through renewable and low-carbon energy and decarbonisation options.

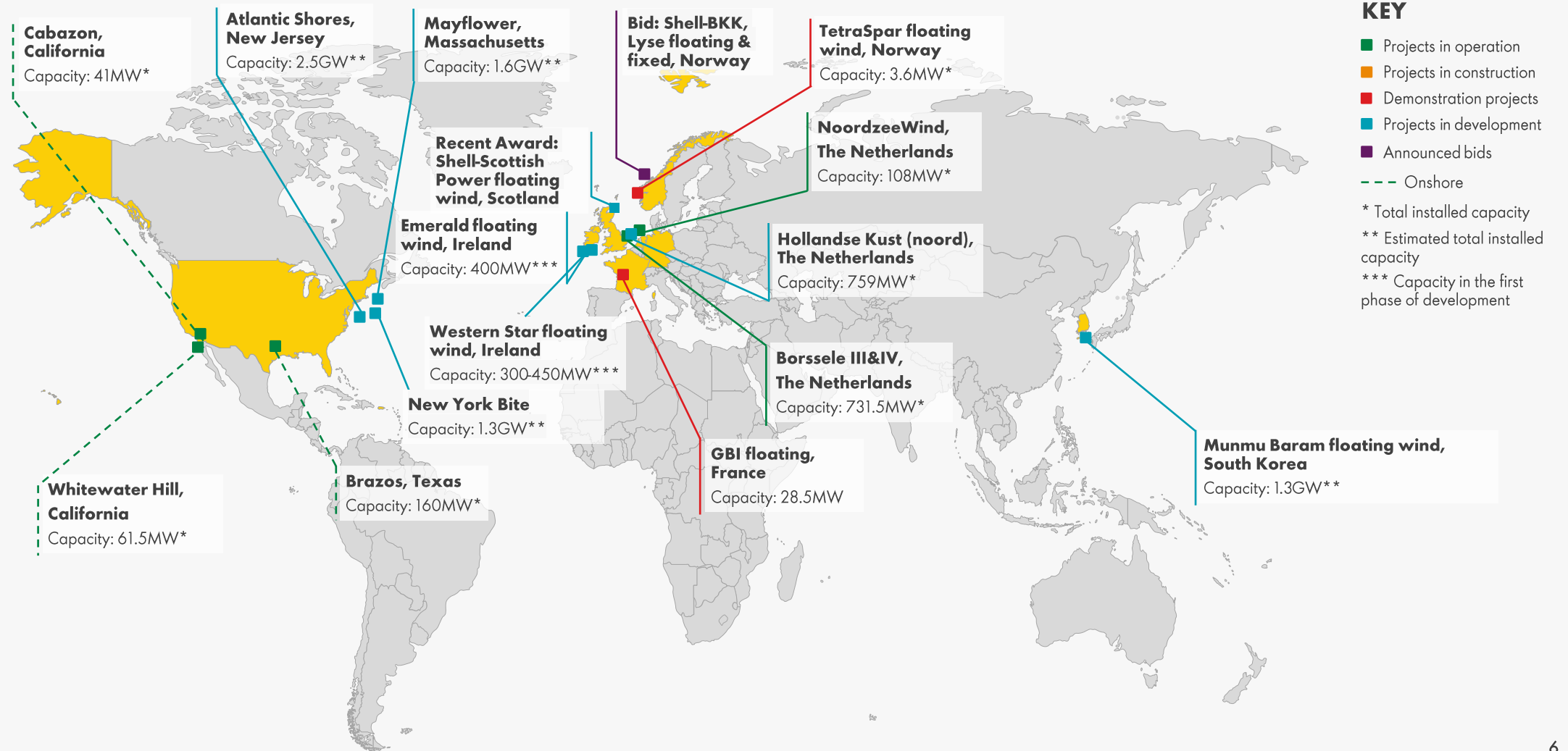


Shell's Renewables & Energy Solutions is key to this mission. It is the part of Shell that includes integrated power, hydrogen and nature-based solutions (NBS).



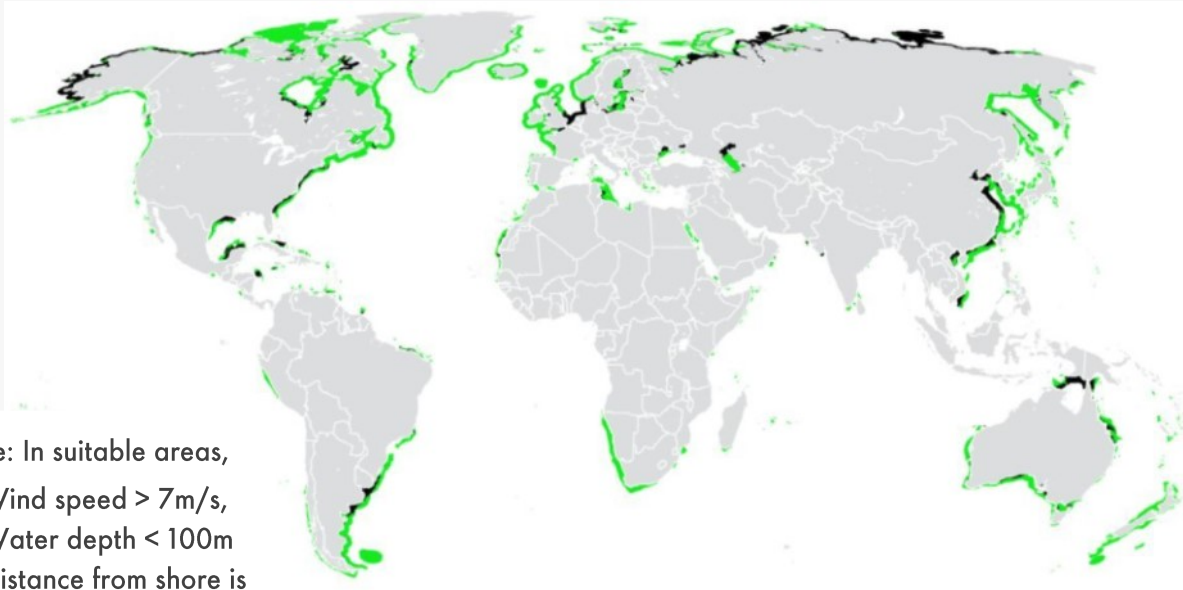
Our work intends to move Shell closer towards its target of being a net-zero emissions business by 2050, in step with society, while helping our customers – and the world – limit global warming to 1.5 Celsius.

WORKING TO DEVELOP A DIVERSE PORTFOLIO



GLOBAL FLOATING WIND MARKETS

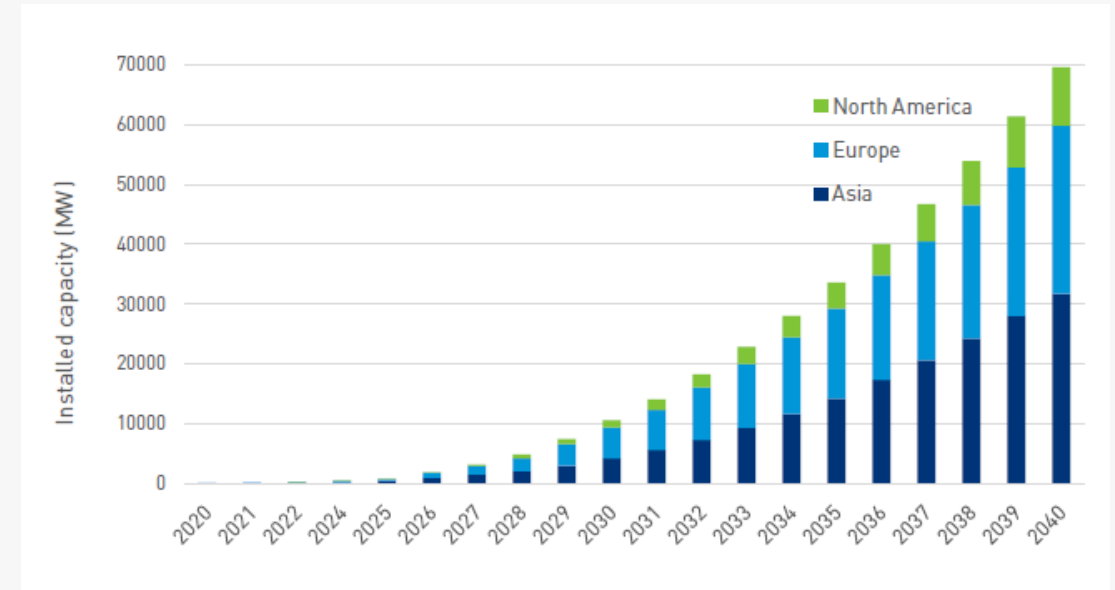
80% OF GLOBAL OFFSHORE WIND POTENTIAL IS FLOATING



■ Floating (more than 60m) ■ Traditional offshore

Source: *Bloomberg*, 2021

Data: *British Oceanographic Data Centre, Global Wind Atlas*

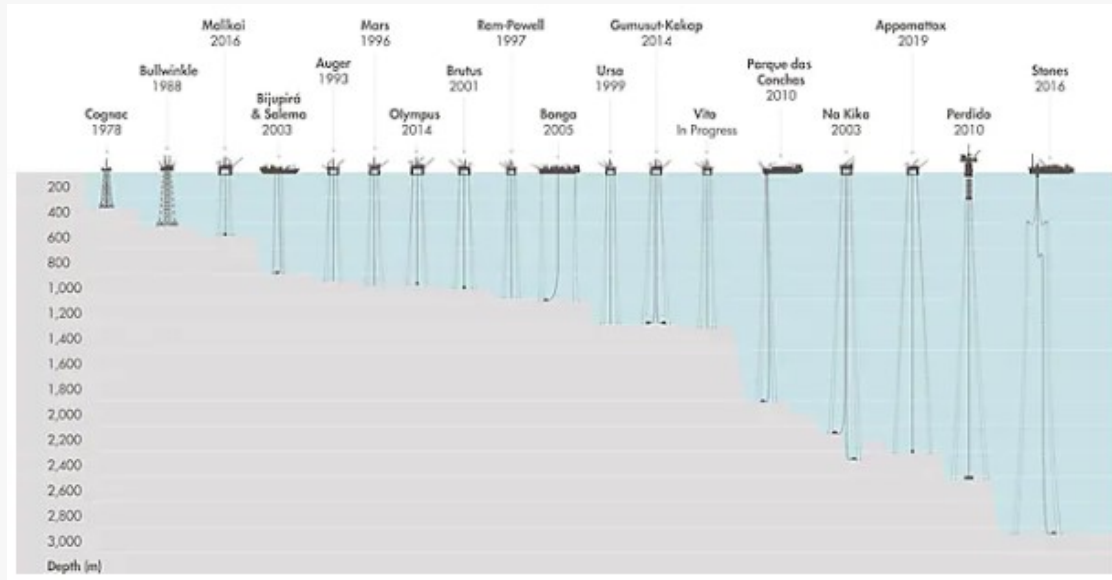


2020-2040 Global floating wind deployment (Source: ORE Catapult July 2020)

FLOATING STRUCTURES ARE NOT NEW TO SHELL

Shell's expertise in deep water development...

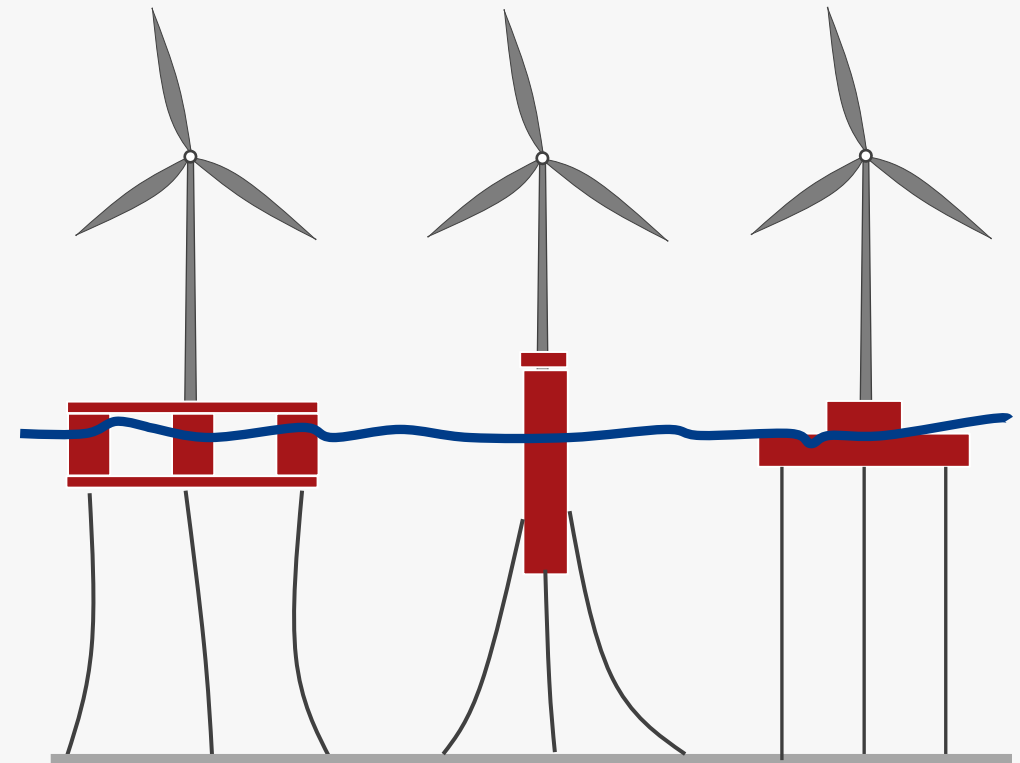
... is an advantage in floating offshore wind.



Semi-Submersible

Spar

Tension Leg Platform



THE TECHNOLOGY IS REACHING COMMERCIAL READINESS

Technology				Technology readiness level (TRL)								
Concept	Designer	Material		1	2	3	4	5	6	7	8	9
				Initial concept	Proof of concept	Numerical modelling	Tank testing	Scaled testing (<1MW)	1 - 5MW demo	> 5MW demo	Pilot (20 - 50MW)	Commercial project (>50MW)
Semi-Sub	WindFloat	Principle Power	Steel									2021
	OCG	Ocergy	Steel									2024
	XCF	Mareal - Eiffage	Concrete									2025
	OO-Star	Olav Olsen	Concrete									2023
	Nautilus semi-sub	Nautilus - S7	Steel									2024
	Tetrasub	Stiesdal	Steel									
	Trifloater	NOV-Gusto	Steel									
	Brunel	Fred Olsen	Steel									
	T-Floater	Bassoe - CIMC Raffles	Steel									
	w.semi	Wison	Steel									
NereWind	DORIS	Steel										
TLP	TLP	SBM	Steel								2022	2025
	WindSub	Marine Power Systems	Steel									2023
	FOWTLP	Bluewater	Steel									
	Gazelle	Gazelle	Steel									
	Modec TLP	Modec	Steel									
	SOF	GICON	Steel									
Spar	Hywind	Equinor	Both versions									2021
	Crown	Seaplace	Concrete									
Barge	Damping Pool	Ideol	Both versions							2018		2024
	Swach	Sevan	Concrete									
	Triwind	Beridi	Concrete									
Self-aligning platforms	Sath	Saitec	Concrete							2020	2022	2025
	Twin Wind	Hexicon	Steel							2018		2025
	Nezzy ²	EnBW-Aerodyn	Steel								2024	
	Eolink semi-sub	Eolink	Steel							2018	2023	
	PivotBuoy	X1 Wind	Steel								2021	
Counter-weight	W2Power	Enerocean	Steel							2018		
	Tetraspar	Stiesdal	Steel								2021	
	Hexafloat	Saipem	Steel									2024



Hywind Scotland, 5 WTGs, 30MW, COD 2017
1st multi-WTGs floating wind farm



WindFloat Atlantic, Portugal, 3 WTGs, 25MW, COD 2020
1st project financed floating wind farm



Kincardine, Scotland, 6 WTGs, 50MW, COD 2021
3rd floating wind farm in the world, 2nd in Scotland



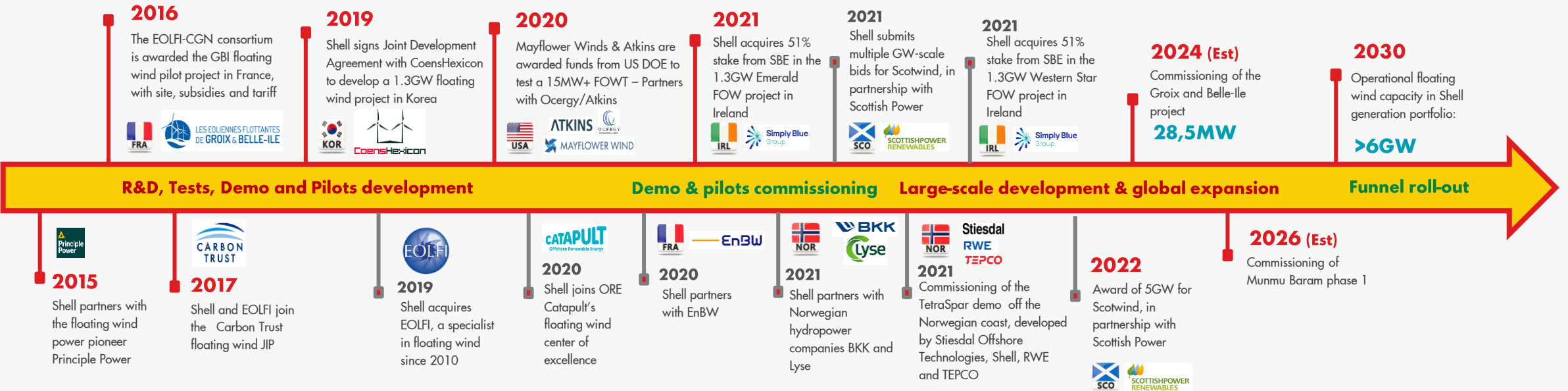
Hywind Tampen, Norway, 11 WTGs, 88MW, COD 2022
1st floating wind farm to supply O&G platforms

Source: The Carbon Trust, Shell analysis

Most active concepts, non-exhaustive

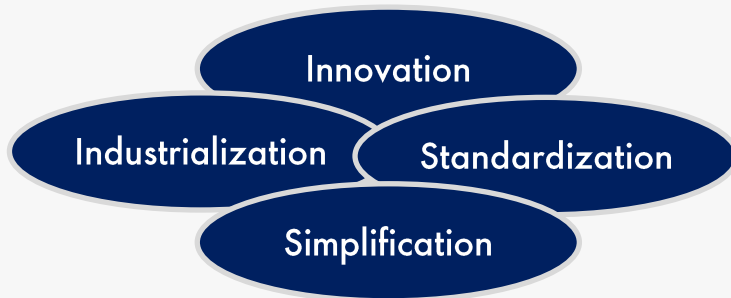
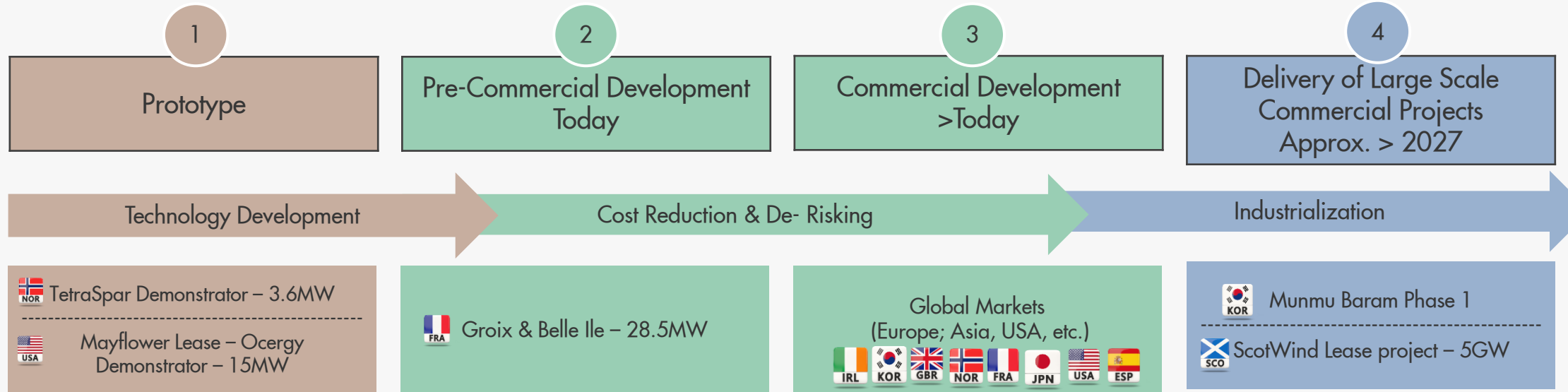
SHELL IS **ACCELERATING IN FLOATING WIND**

SHELL IS GOING FROM TECHNOLOGY DE-RISKING TO LARGE-SCALE AND GLOBAL EXPANSION



- Shell is active in the main floating wind markets, actively prospecting large projects pipeline
- Priority on delivering our floating wind projects to benefit from supportive regulations, de-risk the technology, deliver small/larger scale projects and accelerate costs reduction
- The opportunity to secure large scale floating wind projects is now as regulations are progressing towards deployments in the early 2030s

GLOBAL FLOATING OFFSHORE WIND MARKET DEVELOPMENT & TIMELINE



- Challenges & Opportunities**
- Bankability
 - FOW technologies consolidation
 - Reduce cost (LCOE 40-60€/MWh in 2030)
 - Mobilize supply chains
 - Industrialize and scale up
 - Digitalization
 - Build robust delivery model (project execution)
 - Local content & participation
 - Etc..

FLOATING WIND: **THE NEXT SUCCESS IN RENEWABLES?**

- ❑ Energy transition is commonplace, cheap, green power is increasing its energy market share, and offshore wind has demonstrated to deliver green power at scale at competitive rates
- ❑ Floating offshore wind is a promising, yet nascent technology catering for areas not suitable or too expensive for bottom fixed or onshore alternatives
- ❑ Floating offshore wind can already be competitive in certain areas (high water depths, earthquakes, wind climate – yield, installation costs, schedule (no piling / noise allowed))
- ❑ Political attractiveness/ government support of FOW is important with clear volume, policies and support mechanisms (e.g. France); attractive power price levels; etc.
- ❑ Pathway to de-risking technology in design, execution and operations, requires societal & industry support
- ❑ We have progressed from prototypes development (Tetraspar) to pre-commercial projects (Groix & Belle Ile) and we are now entering in the commercial phase of Floating Offshore Wind development (ScotWind lease)

