



**Wind.** It means the world to us.™

# NYSERDA Offshore Wind Turbine Package Supplier Forum

*Vestas*

Atlantic Shores; Empire Wind 1 & 2

Marvin Talbert, Vestas  
December 8, 2022



# About Vestas

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# Business starts with safety

Safety is paramount in everything we do – safety comes first at Vestas

## Safety a fundamental element of our business

- Unified approach to safety
- Global safety processes
- Safety introduction programs

## Incident management

- Vestas incident management system – global knowledge sharing

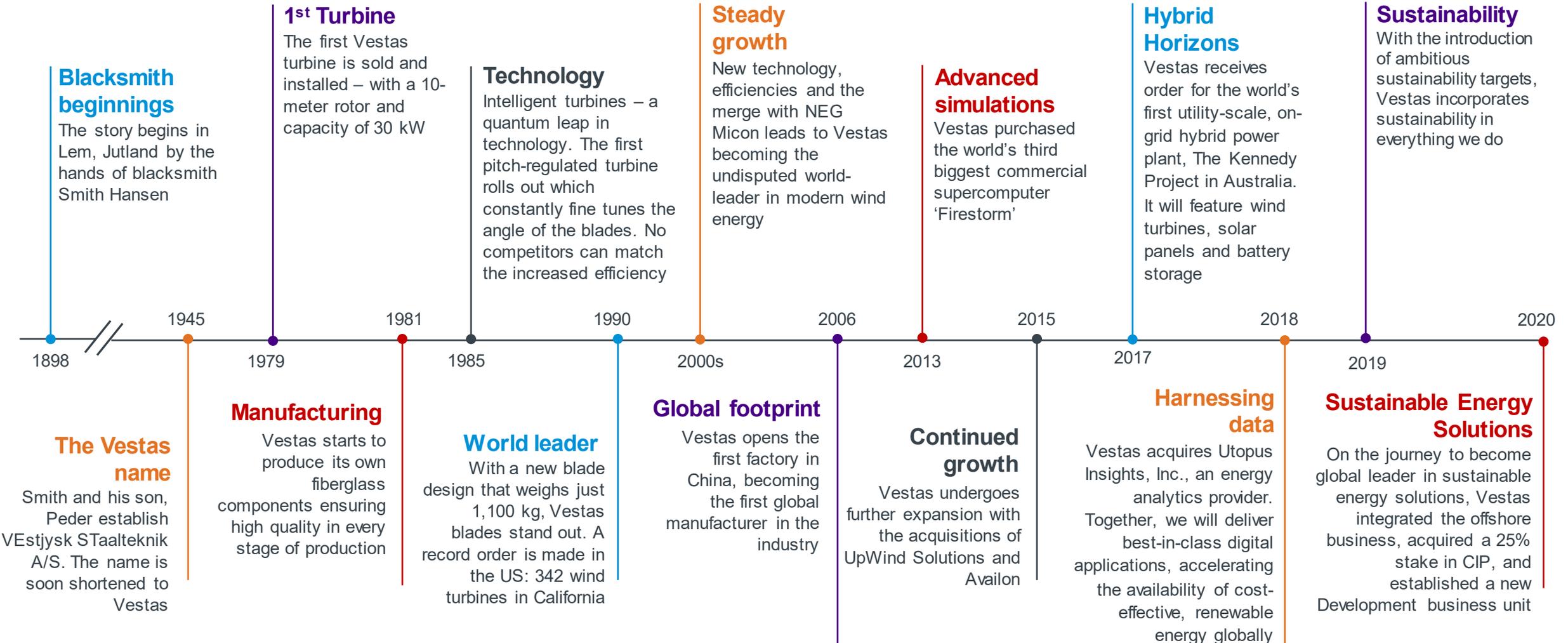
## Contractor safety

- Pre-qualification and intensified tracking of safety performance
- Global Contractor Health and Safety Requirements



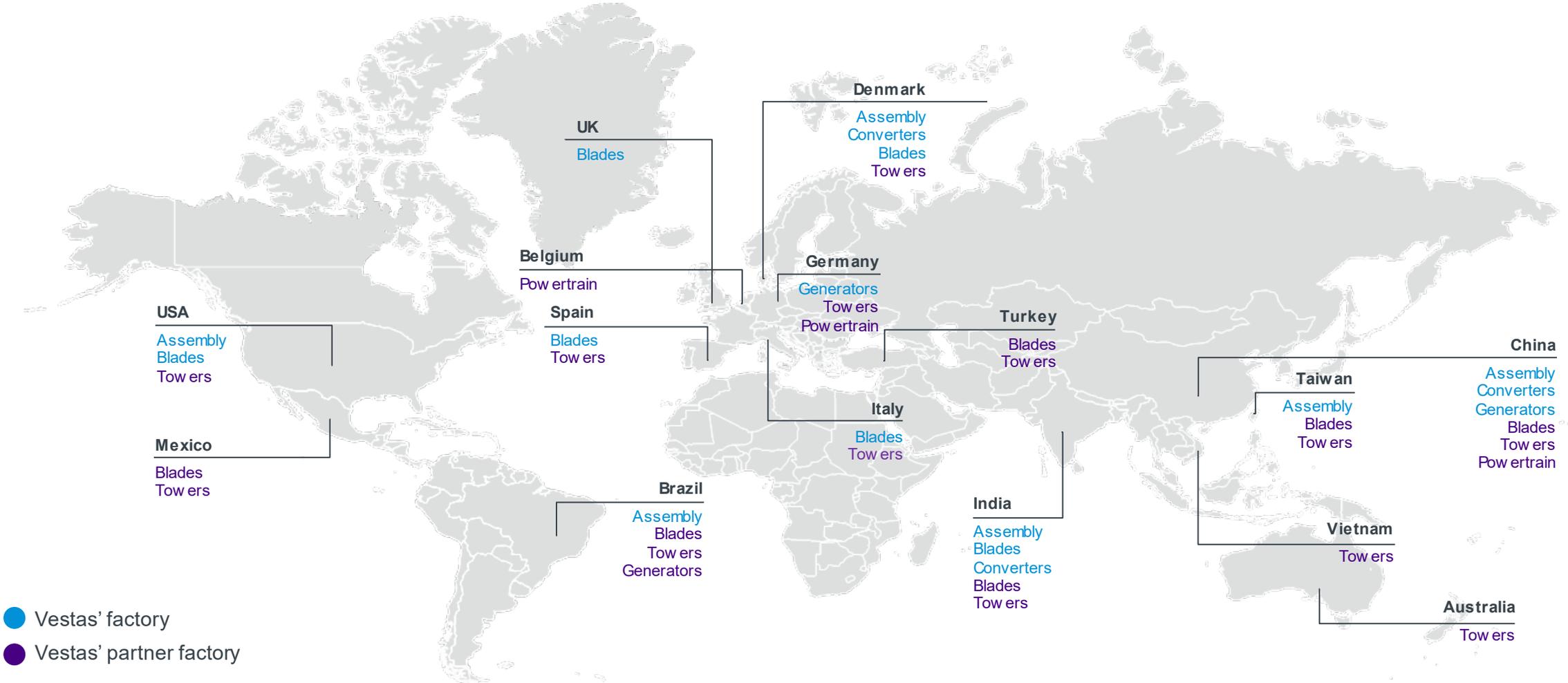
# The Vestas Story

Technology, vision and leadership build the strongest brand in the industry



# Global Manufacturing Footprint

A flexible setup with supply from Vestas' own factories and Vestas' partner factories



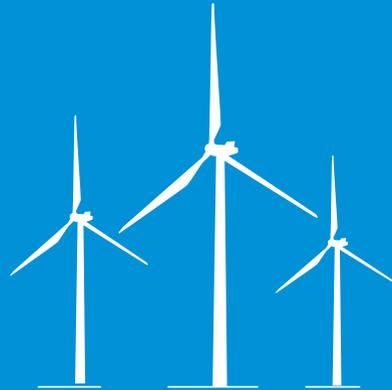
- Vestas' factory
- Vestas' partner factory

# Vestas is the energy industry's global partner on sustainable energy solutions



**+29,000**

We employ more than 29,000 people worldwide and have 40+ years of experience with wind energy



**+ 55,000**

We have over 55,000 total combined turbines under service, or more than 140 GW



**+ 83,000**

We have a total of 83,680 turbines or more than 157 GW of installed wind power capacity in 88 countries worldwide spanning five continents



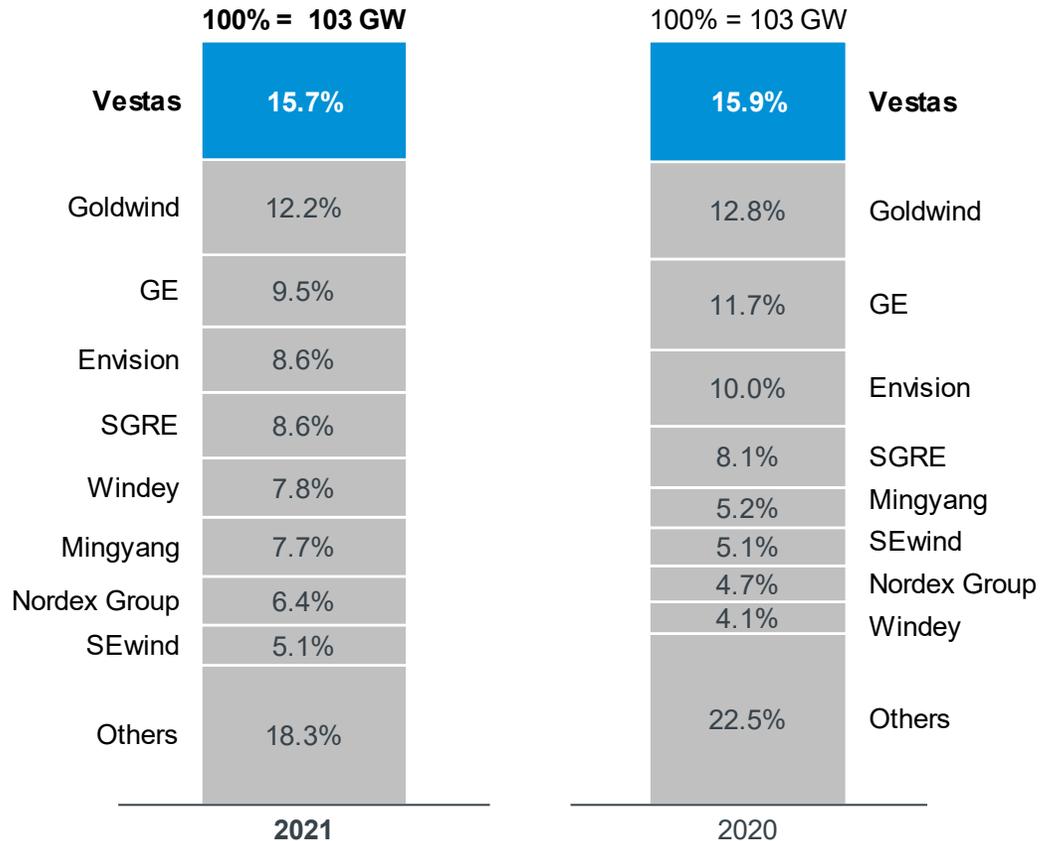
**€ 15.6bn**

Vestas' revenue for the full year 2021 was EUR 15.6bn

# Market Shares

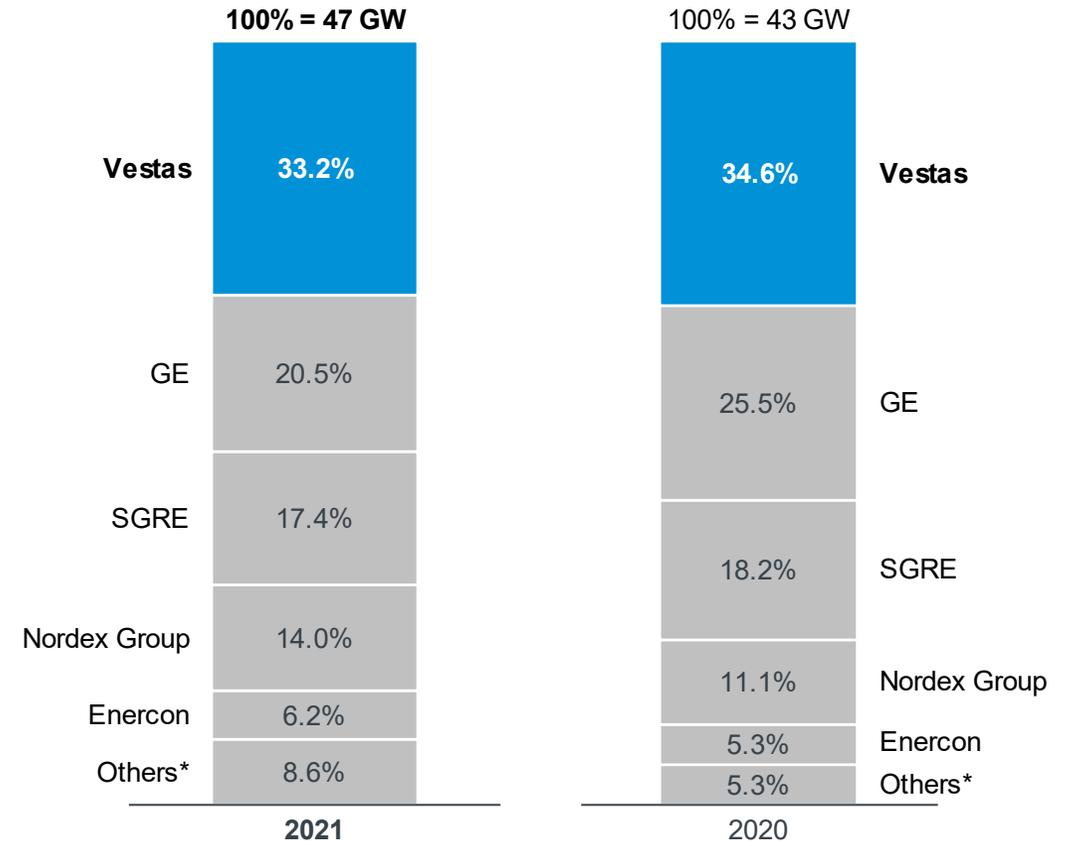
## Sustaining our global leadership position

Global onshore and offshore installations



Global onshore and offshore installations

Excluding China domestic market\*



Source: Historic wind turbine OEM market share 2021 Wood Mackenzie Power & Renewables (April 2022)

\*Others include Chinese OEMs volume outside China

# Vestas Values



**Simplicity.**

**We** strive to simplify our work and our solutions to the benefit of our customers.

**Collaboration.**

**We** win and lose together, and pick the best team for the job.

**Accountability.**

**We** have the courage to speak up and deliver on our commitments.

**Passion.**

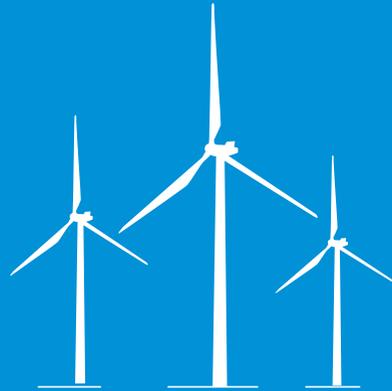
**We** are dedicated to our Planet, People and Vestas.

# Vestas is an undisputed leader in the American wind energy sector



**+ 6,100**

We employ more than 6,100 local employees  
≈1,736 of these are service technicians



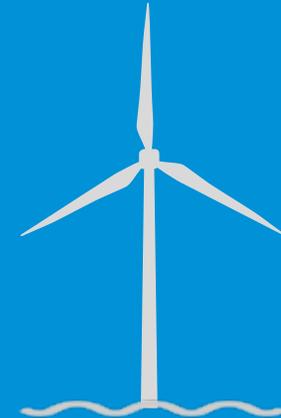
**+ 23,000**

Over 23,000 turbines installed in the U.S.  
34 GW of installed fleet under service contract  
Multi-brand service  
9.6 years – av. service contract duration  
~250 local service hubs and offices in the United States



**30 %**

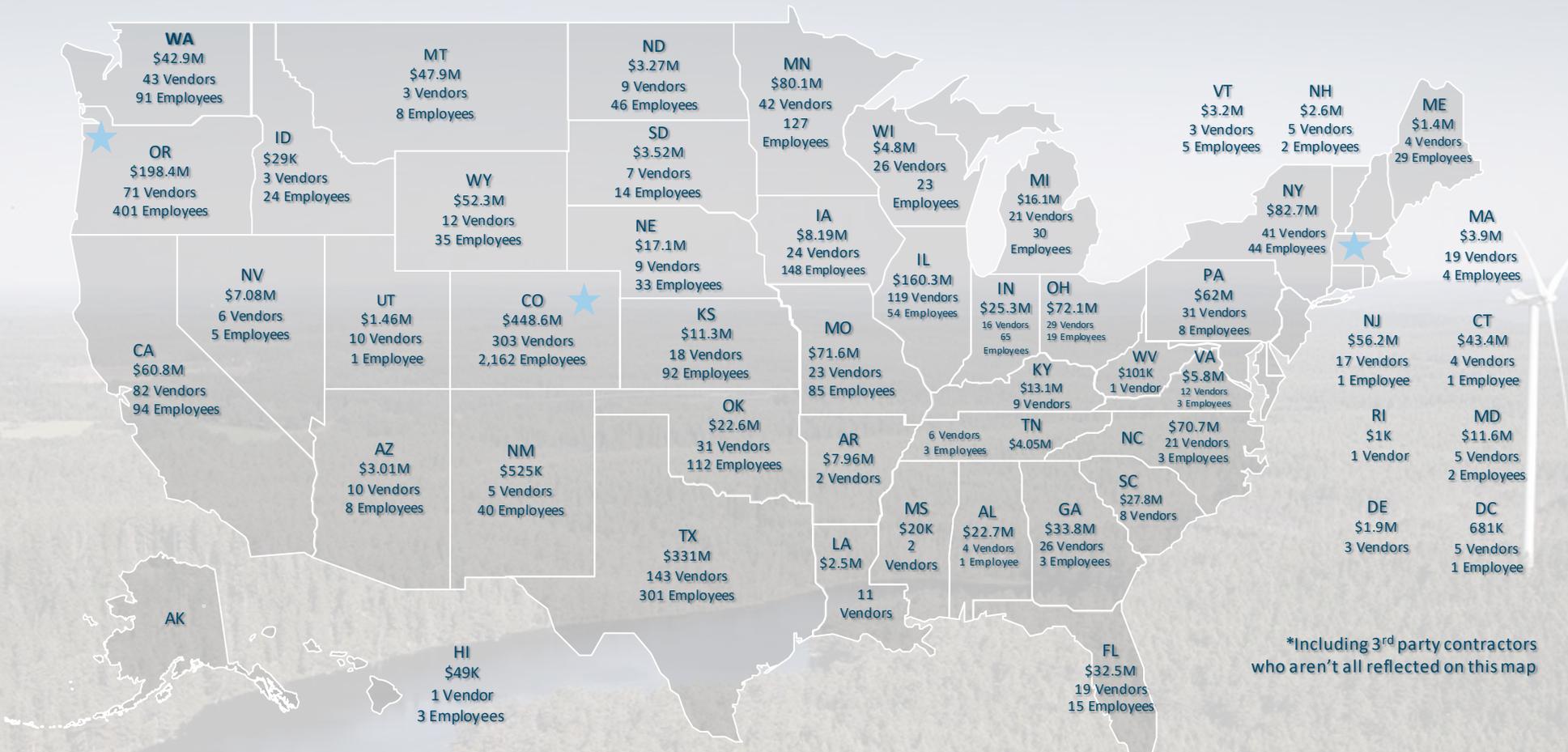
30% market share  
≈20 GW awarded over the last 5 years  
≈15.5B Euros of contract value



**3.6 GW**

Biggest American offshore project awarded to Vestas  
Vestas getting ready to deploy 3.6 GW offshore

# Supplier Partnerships || Vestas has +1,300 suppliers across 50 states



\*Including 3<sup>rd</sup> party contractors who aren't all reflected on this map

# Vestas' value chain

World leading wind energy solutions with a comprehensive range of capabilities



## Research & Development

Vestas has a strong focus on continuously developing and optimizing to lower the cost of energy thereby meeting customer needs and remaining the technology leader in the wind power industry

## Project planning & design

Ensuring high quality project planning and design helps us to maximize total return on investment from project start up.

## Procurement & manufacturing

Vestas' versatile and agile procurement and manufacturing concept provides competitive advantage.

## Construction & installation

Vestas possesses construction and installation expertise to coordinate cooperative efforts or assumes full responsibility for wind power plant construction and commissioning.

## Operation & maintenance

Vestas provides preventative and corrective service and maintenance for consistently optimized performance.

# Technology strategy and solutions

## Technology evolution

- Onshore turbine
- Offshore turbine

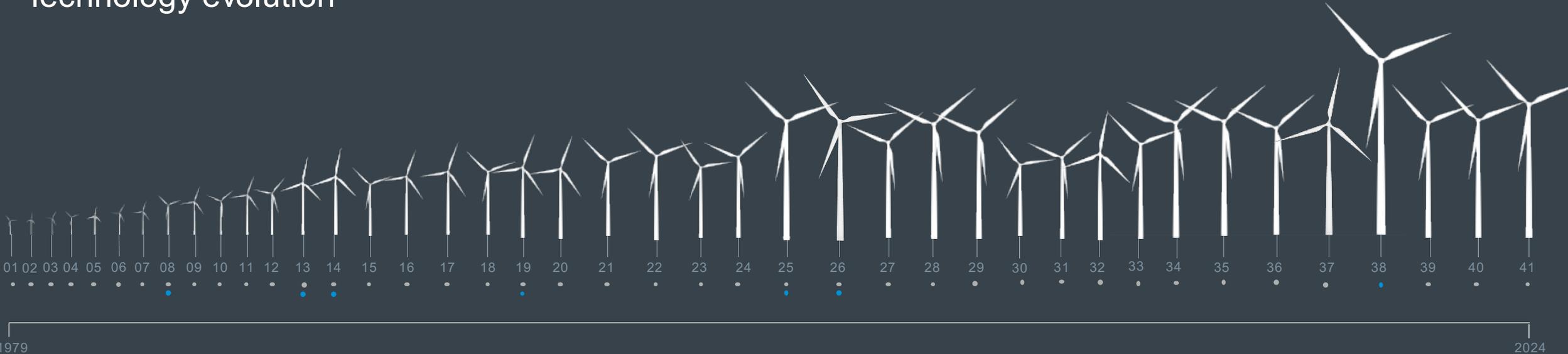


Diagram No.	Turbine model	Year of prototype	Diagram No.	Turbine model	Year of prototype	Diagram No.	Turbine model	Year of prototype	Diagram No.	Turbine model	Year of prototype
● 01	V10-30 KW	1979	● 11	V52-850 KW	2000	● 21	V117-3.3 MW	2013	● 31	V120-2.2 MW	2017
● 02	V15-55 KW	1981	● 12	V66-1.75 MW	1999	● 22	V126-3.3 MW	2013	● 32	V117-4.2 MW	2017
● 03	V17-75 KW	1984	● 13	V80-2.0 MW	2000 / 2002	● 23	V105-3.3 MW	2014	● 33	V136-4.2 MW	2017
● 04	V19-90 KW	1986	● 14	V90-3.0 MW	2002 / 2005	● 24	V110-2.0 MW	2014	● 34	V150-6.0 MW	2019
● 05	V20-100 KW	1987	● 15	V82-1.62 MW	2003	● 25	V164-8.0/9.5/10.0 MW	2014	● 35	V162-6.2 MW	2019
● 06	V25-200 KW	1988	● 16	V90-2.0 MW	2004	● 26	V174-9.5 MW	2014	● 36	V136-4.5 MW	2020
● 07	V27-225 KW	1989	● 17	V100-1.8 MW	2009	● 27	V136-3.45 MW	2015	● 37	V150-4.5 MW	2021
● 08	V39-500 KW	1991 / 1995	● 18	V100-2.6 MW	2009	● 28	V155-3.6 MW	2016	● 38	V236-15.0 MW	2022
● 09	V44-600 KW	1995	● 19	V112-3.0 MW	2010/2013	● 29	V150-4.2 MW	2017	● 39	V162-7.2 MW	2023
● 10	V47-660 KW	1997	● 20	V100-2.0 MW	2013	● 30	V116-2.0 MW	2017	● 40	V163-4.5 MW	2023
									● 41	V172-7.2 MW	2024



# Offshore wind

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# Introducing the V236-15.0 MW™

- Underlines Vestas' full return to offshore wind
- Leverages modular approach and proven system designs from Vestas' onshore and offshore turbine technology
- Delivers industry-leading performance with fewer number of turbines required, to optimise our customer's business case at park level

**>60%  
Capacity  
Factor**

**Increase of  
84% in swept  
area and 65%  
in Annual  
Energy  
Production\***

\*Compared to V174-9.5 MW™, depending on site-specific conditions



# AMBITIOUS TARGETS FOR OUR SUSTAINABILITY JOURNEY

## CARBON FOOTPRINT

Carbon neutral company by 2030 – without using carbon offsets



## CIRCULARITY

Producing zero-waste wind turbines by 2040



## PEOPLE

Safest, most inclusive & socially-responsible company in the energy industry



## ENERGY TRANSITION

Leading the transition towards a world powered by sustainable energy

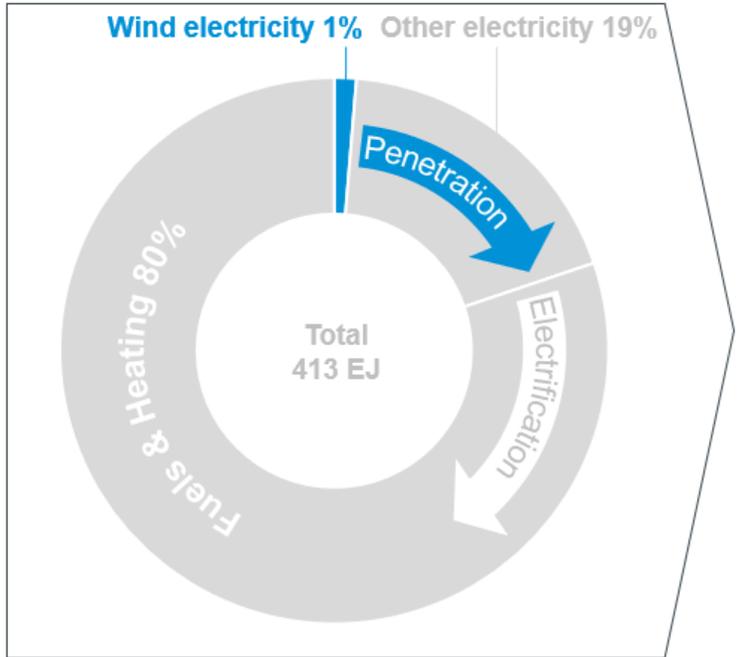


**LICENSE TO OPERATE**

# FOR WIND WE WILL SEE A STEP CHANGE IN ANY SCENARIO

World energy consumption by source 2020

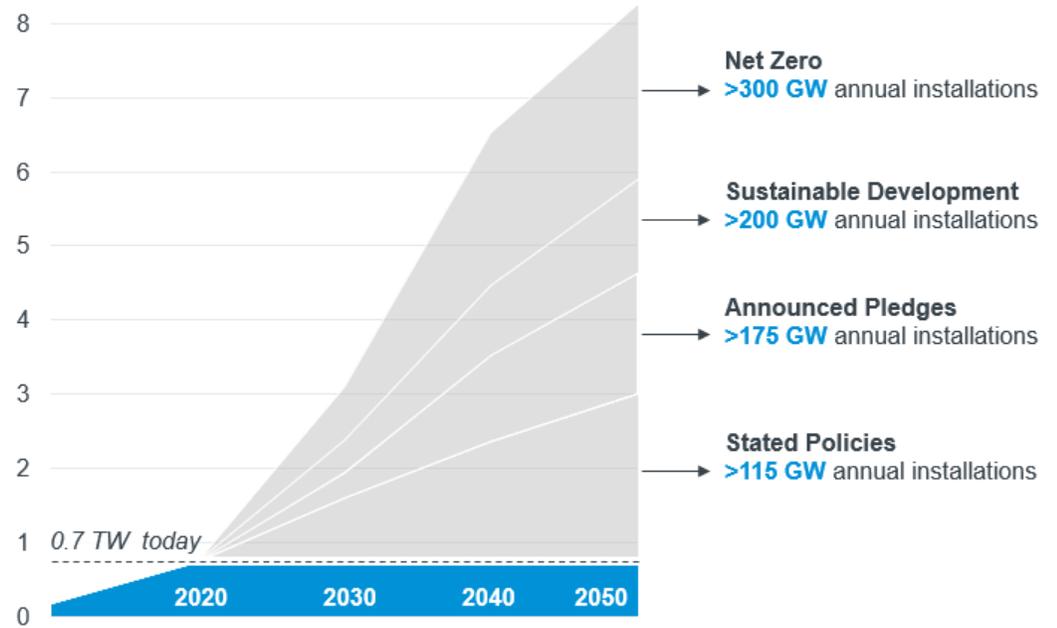
In exajoule (EJ) and percent (%)



Source: IEA World Energy Outlook 2021

Global wind generation capacity scenarios

In terawatts (TW)



# Market Outlook || Inflation Reduction Act is a game changer for U.S.

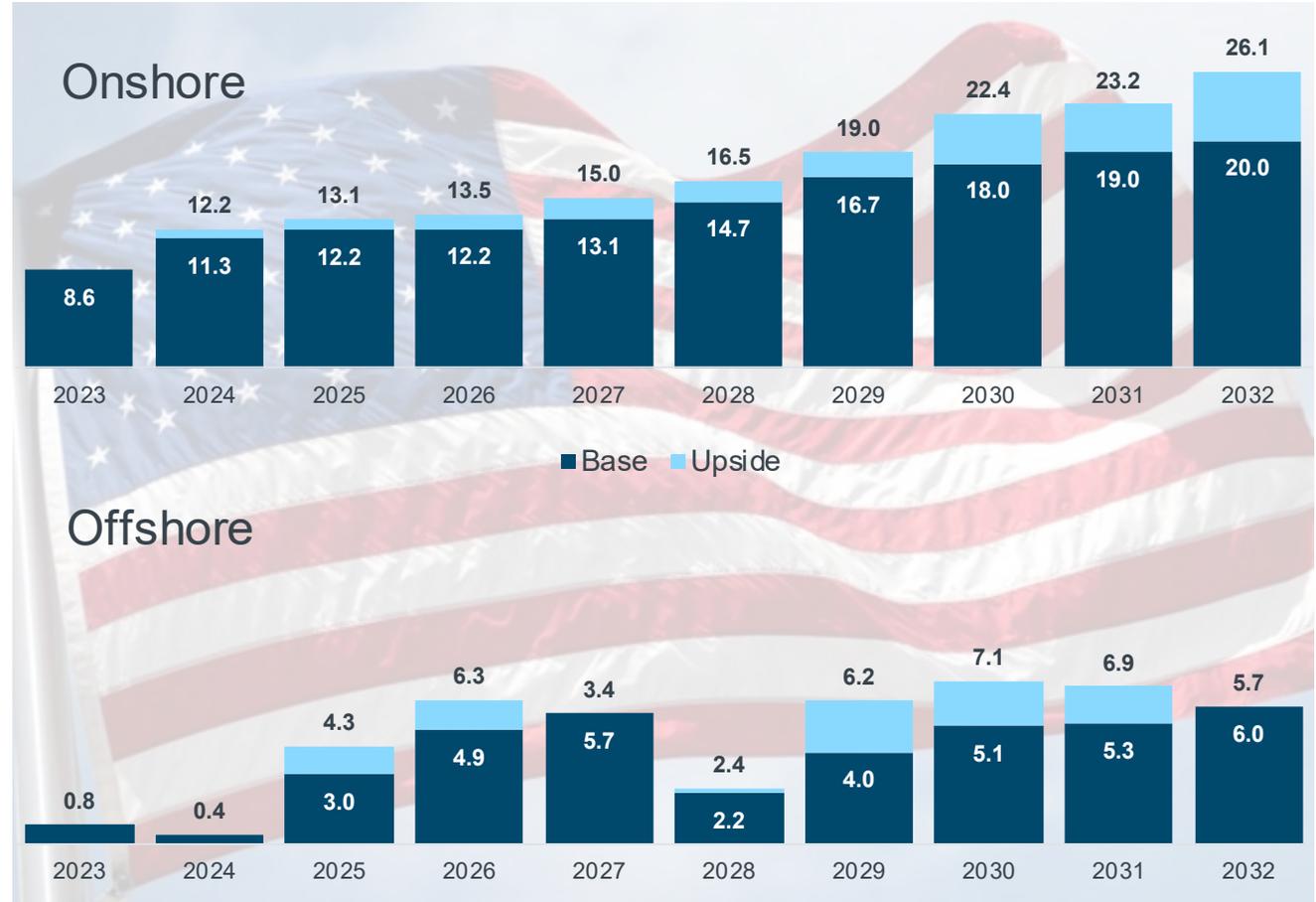
## What is in the Inflation Reduction Act?

\$385 billion in funding for clean energy build-out

New Policy	What Changes for U.S. Market
<b>10+ years of 100% Production Tax Credit</b>	<ul style="list-style-type: none"> <li>For first time ever, developers have over 10 years of certainty to build out their wind pipelines</li> </ul>
<b>Labor Requirements</b>	<ul style="list-style-type: none"> <li>Compliance with prevailing wage and apprenticeship requirements will increase construction and some O&amp;M labor costs</li> </ul>
<b>Domestic Content</b>	<ul style="list-style-type: none"> <li>100% US iron &amp; steel and 40-55% domestic content threshold provide a 10% PTC boost</li> </ul>
<b>Domestic Manufacturing Incentives</b>	<ul style="list-style-type: none"> <li>U.S. manufacturing of nacelles, blades, and towers now competitive with international sourcing</li> </ul>
<b>Green Hydrogen</b>	<ul style="list-style-type: none"> <li>A \$3/kg production tax credit makes green H2 competitive with gray H2</li> </ul>

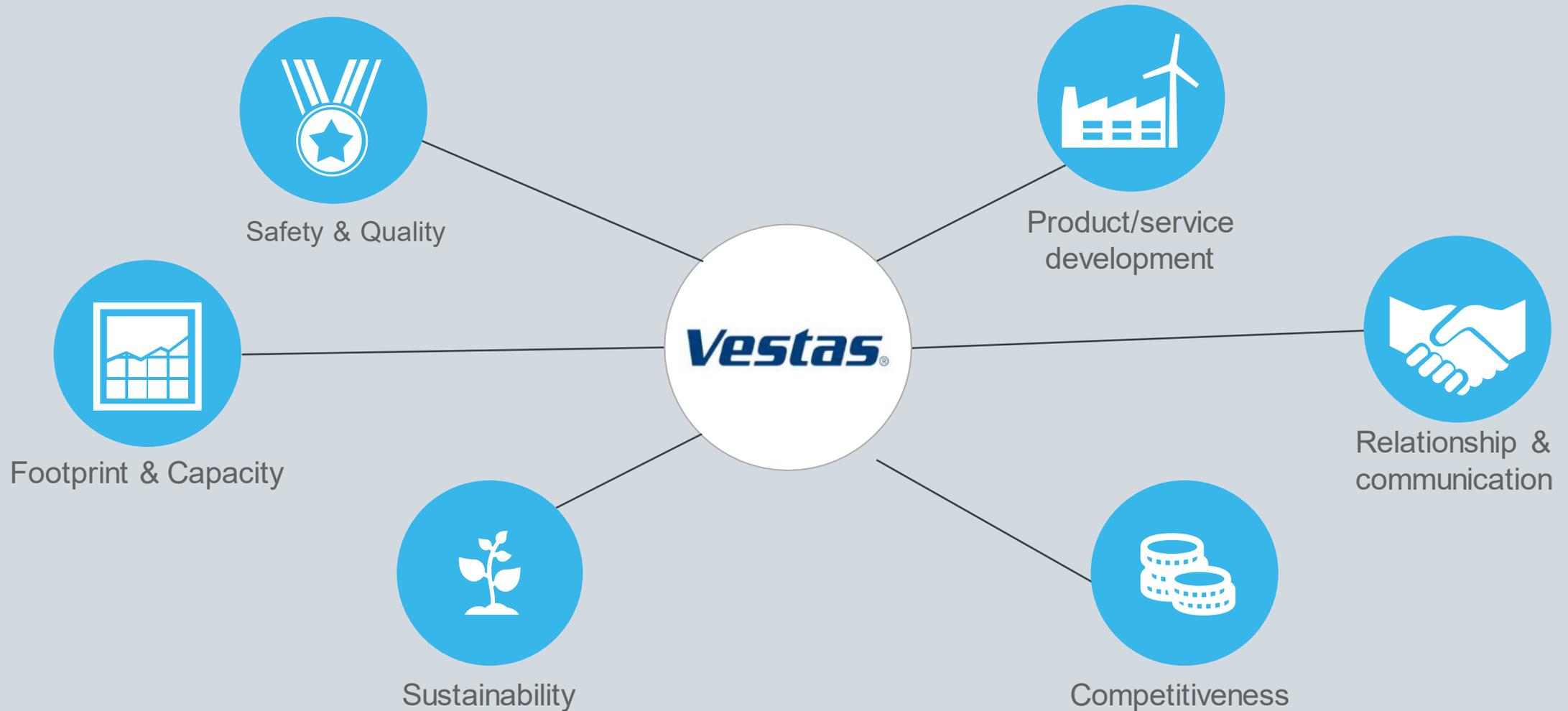
## New installation market (GW)

Near-term market impact limited from long U.S. development timelines



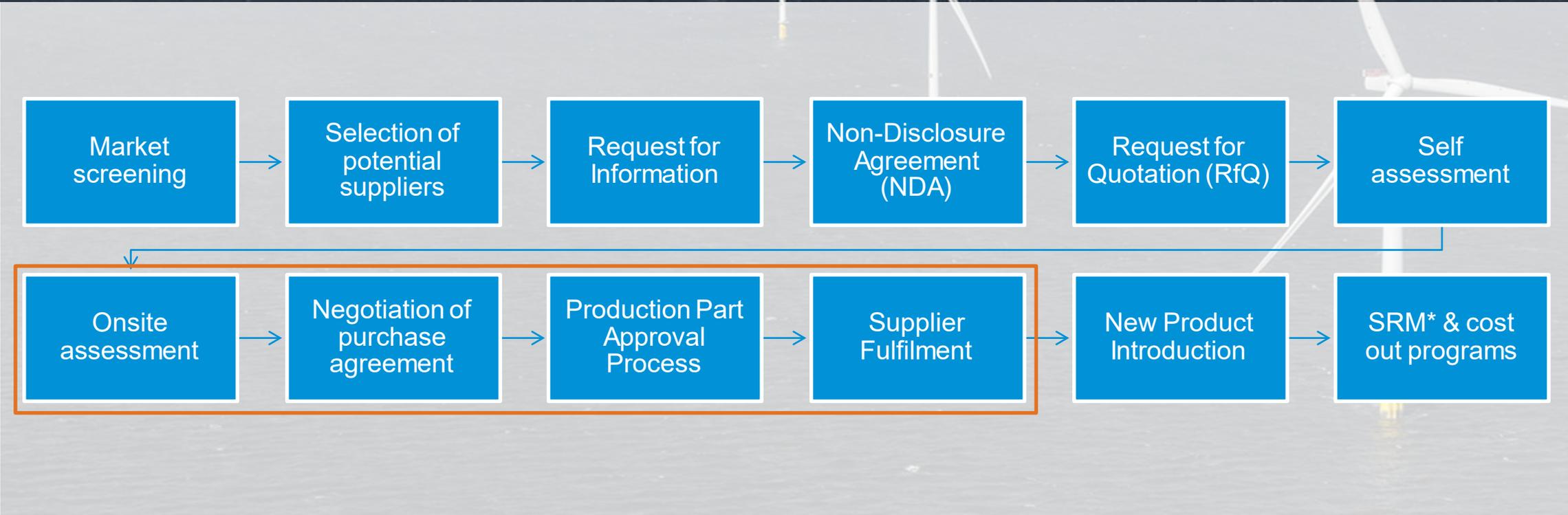
# Expectations to Vestas suppliers

Key levers continuously evaluated and developed with suppliers through performance measurement

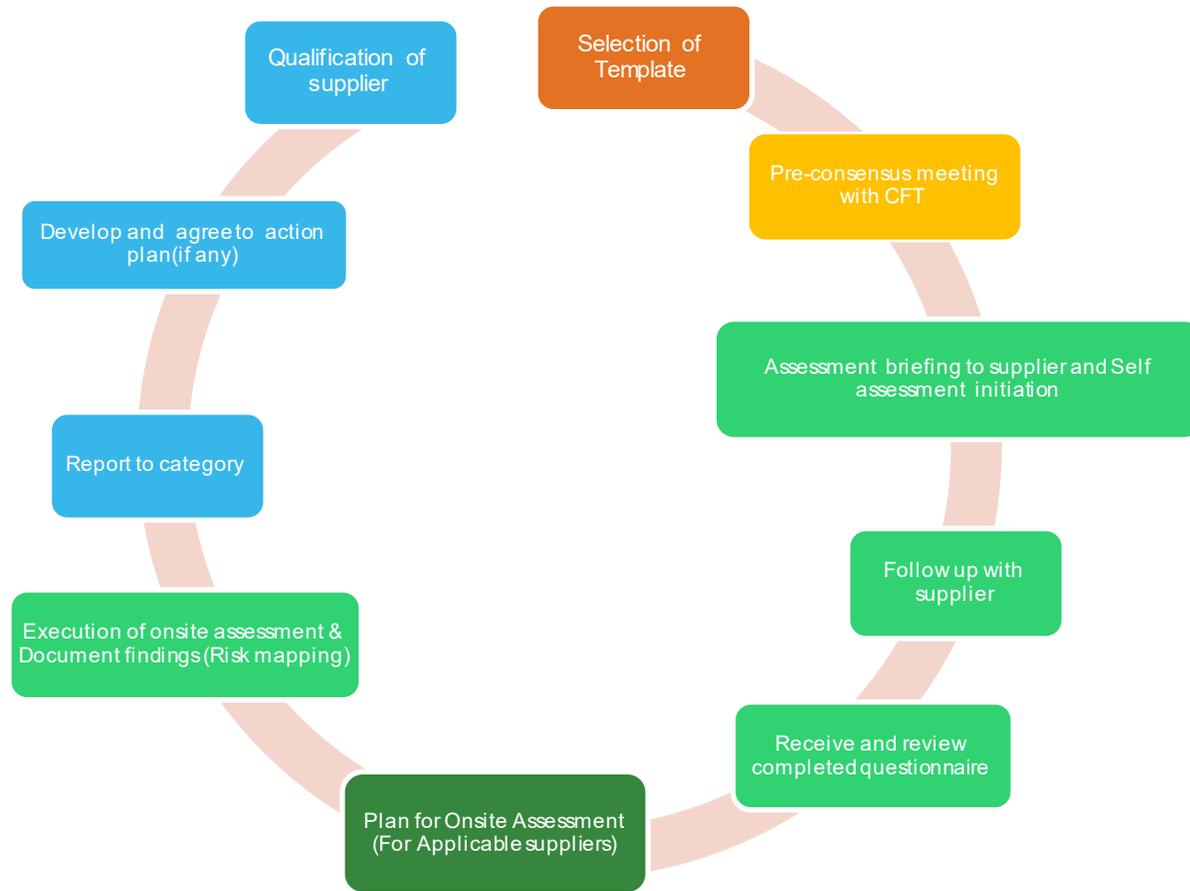


# Our Sourcing Process

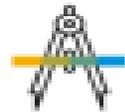
6-36 month long process, depending on complexity of component and/or services



# Supplier Qualification Flow



Template Selection



Assessment



Supplier Qualification

Supplier Spend, segmentation

Item complexity

Self assessment

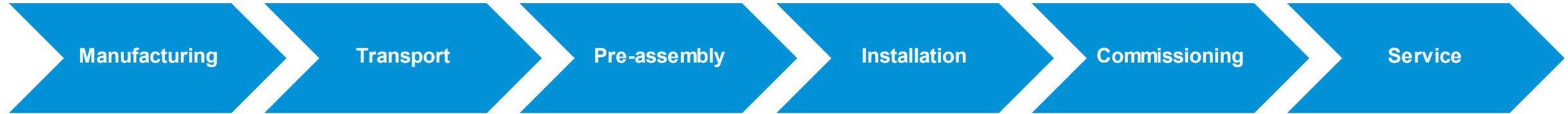
Onsite assessment

Risk Mapping & mitigation

Management Summary

# Indirect Sourcing

Supporting installation and operations locally



- Tools manufacturing
- Labor Hire
- Logistical setup
- PPE & Safety
- Etc.

- General Transport
- Transport of oversized components
- Transport of WTG main components
- Crew transportation
- W2W Vessel
- Etc.

- Cranes
- Labor Hire
- Tools (Manufacturing, Service & Certification)
- Security
- Training
- Accommodation
- Catering
- Rental cars
- Etc.

- Labor Hire
- Stevedoring
- Training
- Bunkering
- PPE & Safety
- Etc.

- Tools (Manufacturing, Service & Certification)
- Labor Hire
- Training
- Crew Transfer vessels
- Accommodation
- Bunkering
- PPE & Safety
- Etc.

- Labor Hire
- Tools (Manufacturing, Service & Certification)
- Training
- Crew Transfer Vessels
- Accommodation
- Bunkering
- ETC

# Partnership is the new leadership

*...but how do we define a partnership?*

A Strategic Partnership is a voluntary, **long-term**, collaboration between Vestas and a Supplier, based on a **shared ambition** to achieve **mutual and individual objectives** with a **significant business impact** for **both parties** through exchanging, sharing and/or creating resources.



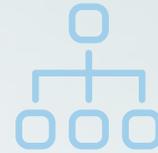
# Elements of a successful Partnership

From a **practical** point of view



## Shared Vision & Objectives

- A shared vision for the relationship agreed.
- Transparency on short and long term objectives for the business and relationship.



## Governance

- Shared meeting structure and management agendas.
- Regular evaluation of performance (financial, operational, strategic and relationship dimensions) and new business opportunities



## Priority & Transparency

- Proactively Sharing of business plans and scenarios
- Early sharing of Product Roadmaps perspectives
- Priority access to Innovation teams
- End-to-end and lifecycle cost insight sharing



## Committed Account Plan

- Clear line of sight and aligned strategic priorities
- Objectives, targets, activities and risk defined
- Regular calibrated and improved according to business need and developments.



## Team Captain & Team players

- Organized according to 'Diamond' principle.
- Senior Management sponsorship
- Assigned Account Manager on both sides



## Partnership Behaviour

- 'We win together, we loose together'
  - Commitment to agreed partnership values
- Proactively look for ways to improve the collaboration

# INTRODUCTION TO VESTAS' BUSINESS PARTNER CODE OF CONDUCT



Vestas' mission is to deliver best-in-class wind energy solutions to benefit our customers and the planet. Our Business Partners play a key role in supporting our mission, and therefore Vestas have developed our Business Partner Code of Conduct.

Vestas Business Partner Code of Conduct outlines the minimum requirements our Business Partners must respect when conducting business with Vestas. Vestas Code of Conduct applies to all Vestas Business Partners and is included in all Business Partner contracts

# Vestas supplier engagement

Part of an increased engagement for key suppliers

## Webcasts with CPO

### Objective:

- Increase connection with key suppliers
- Share strategic direction of Vestas
- Provide insight to the priorities and hot topics at Vestas.

- **Quarterly** webcasts
- **Duration:** 1 hour

## Communication platform

- **Objective:** Share communication on e.g. Quality, Sustainability, market outlooks, activity calendar, material regarding Supplier Forum.
- **Format:** Sharepoint/Hub setup

## Webinars/ panels

- **Objective:** Engage with relevant group of suppliers on specific topics
- **Topic:** Must-win-battles, Market perspective, risk management, PtX etc.

## Supplier Survey

- **Objective:** Understand supplier perspective on business relationship.
- **Timing:** June 2022

## Vestas Supplier/Partner Forum

- **Objective:** Increase connection with key suppliers and provide insight to the priorities and hot topics at Vestas.
- **Timing:** Fall 2022.

**Vestas**<sup>®</sup>

**Wind.** It means the world to us.<sup>™</sup>

Thank you for your attention

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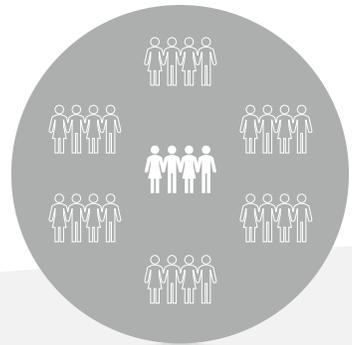
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**BACK UP – INTERNAL USE ONLY**

# Value aligned eco-systems

*Unlocking profitability and scalability through partnership networks*



**FUNCTIONAL**  
Procurement price focus  
*Accelerate Earnings* ✓



**CROSS-FUNCTIONAL**  
Procurement R&D co-operation  
*Accelerate Earnings<sup>Pro</sup>* ✓



**E2E MULTI-FUNCTIONAL**  
Full value chain optimisation  
*Accelerate Earnings Phase III* ✓



**ECO-SYSTEMS**  
Business network optimization  
*Continues cost out structure embedded* ✓





# NYSERDA Offshore Wind Supplier Forum

## Siemens Gamesa

Buffalo, NY – 12/8/22

Brett Persons / Zachary Gillett

# Agenda

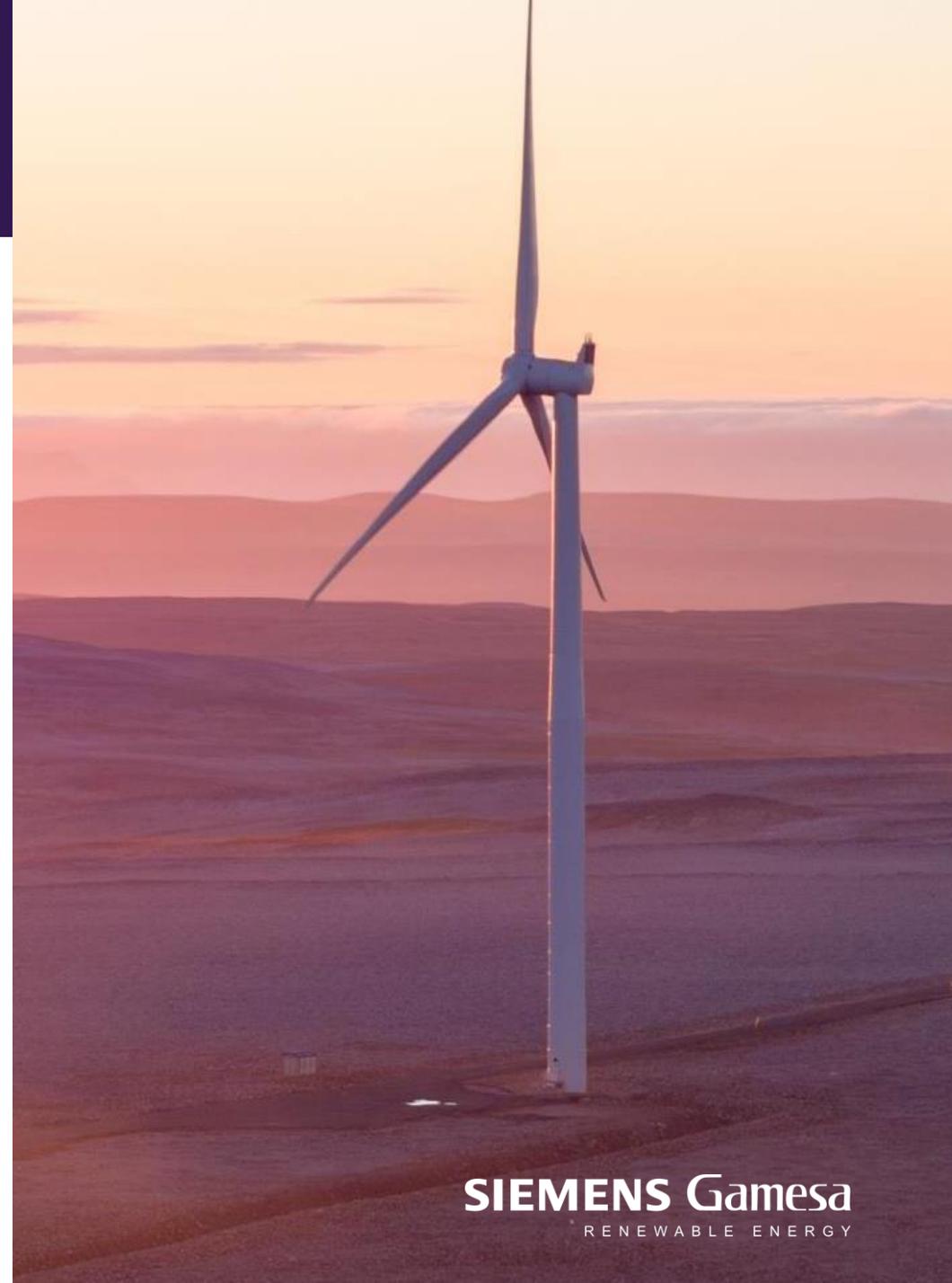
- 1 Siemens Gamesa Renewable Energy
- 2 Our offshore business
- 3 Offshore product portfolio
- 4 Procurement introduction and supply opportunities

# Siemens Gamesa Renewable Energy

Siemens Gamesa unlocks the power of wind. For more than 40 years, we have been a pioneer and leader of the wind industry, and today our team of 27,000 colleagues work at the center of the global energy revolution to tackle the most significant challenge of our generation – the climate crisis.

With a leading position in onshore, offshore, and service, we engineer, build and deliver powerful and reliable wind energy solutions in strong partnership with our customers. A global business with local impact, our solutions provide access to clean, affordable and sustainable energy that keeps the lights on across the world.

In the United States, Siemens Gamesa onshore wind turbines represent an installed capacity of over 26 GW, with domestic facilities manufacturing onshore wind turbine generators (WTG) blades in Fort Madison, Iowa and nacelles in Hutchinson, Kansas.



## Three business units strongly positioned in the market<sup>1</sup>



**106.5 GW**

installed since 1979

The **technological partner of choice** for onshore wind power project.



**21 GW**

installed since 1991

**Most experienced offshore wind company** with the most reliable product portfolio in the market.



**82 GW**

maintained

**Commitment beyond the supply** of the wind turbine **to reach the profitability goals.**

<sup>1</sup> As of Q4 FY22 (September 30, 2022)

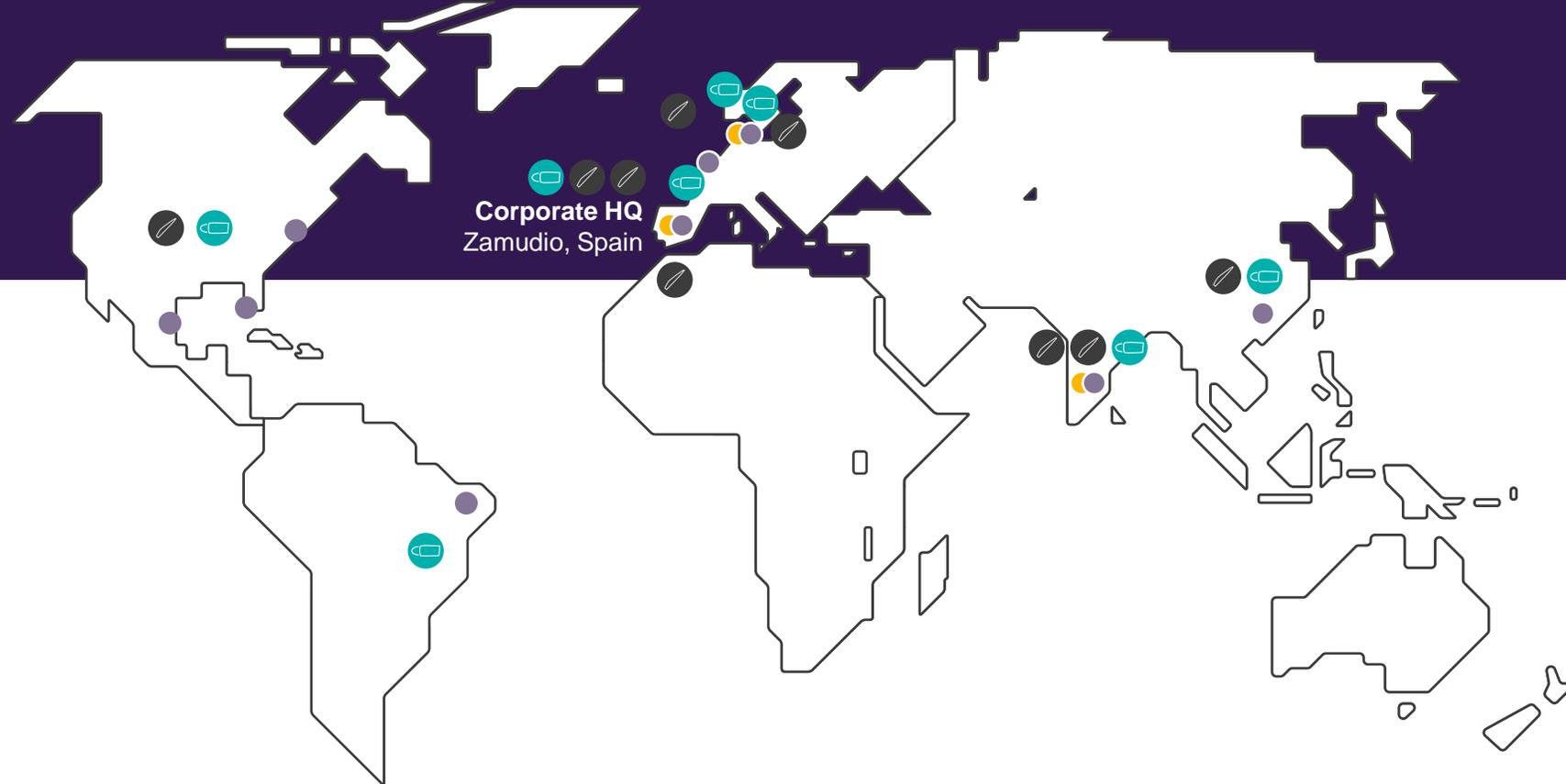
# SGRE Global presence to ensure customer proximity

>50

Sales offices  
in 39 countries

7 Service core  
competence centers  
covering all regions

27k employees  
6k in offshore



Non-exhaustive ● Main Sales Offices ● Main Engineering Centers ● Blades ● Nacelles

## Siemens Gamesa global key facts<sup>1</sup>



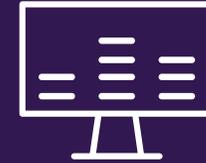
**127.5 GW**  
Globally Installed



**27,600 k**  
Employees



**€ 9.8 bn<sup>2</sup>**  
Annual Revenue



**€ 12.2 bn**  
Market Capitalization



**€ 35 bn<sup>2</sup>**  
Order Book



True **global**,  
modern and scalable  
**footprint**



Advanced **digital**  
capabilities



**Portfolio**  
covering all requirements

<sup>1</sup> As of Q4 FY22 (September 30, 2022) | <sup>2</sup> Last 12 months ending September 30, 2022

# Our Offshore Business

## Siemens Gamesa Offshore key facts<sup>1</sup>



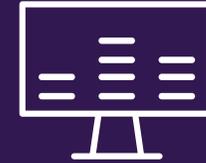
**21 GW**  
Globally Installed



**~6,700**  
Employees



**~€2.8 bn<sup>2</sup>**  
Annual Revenue



**~3.04 GW<sup>2</sup>**  
Order Entry



**~€11.3 bn**  
Order Book



True **global**,  
modern and scalable  
**footprint**



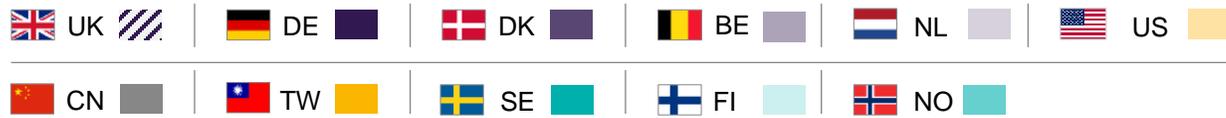
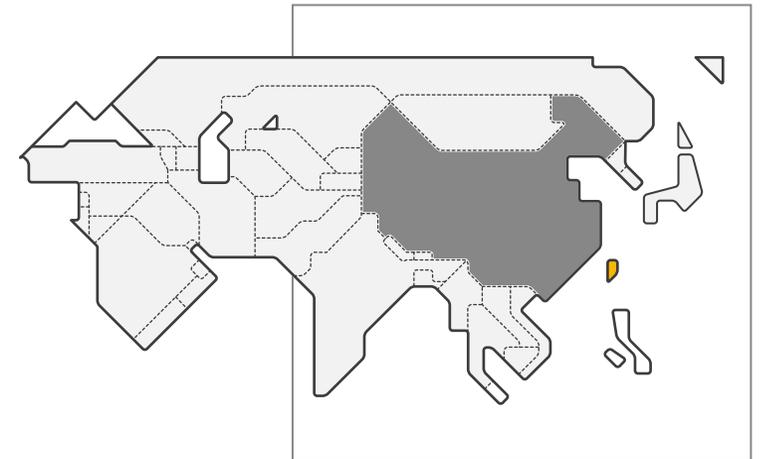
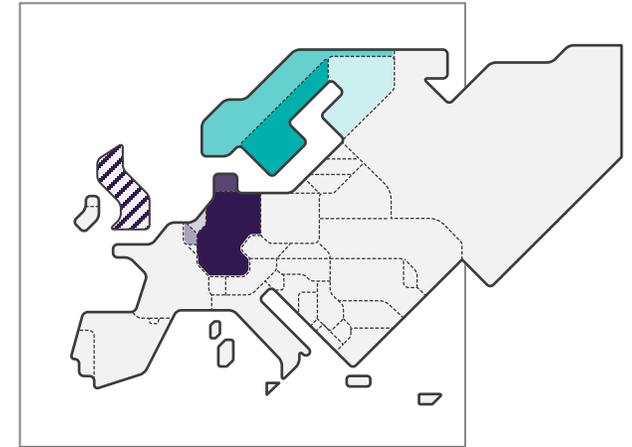
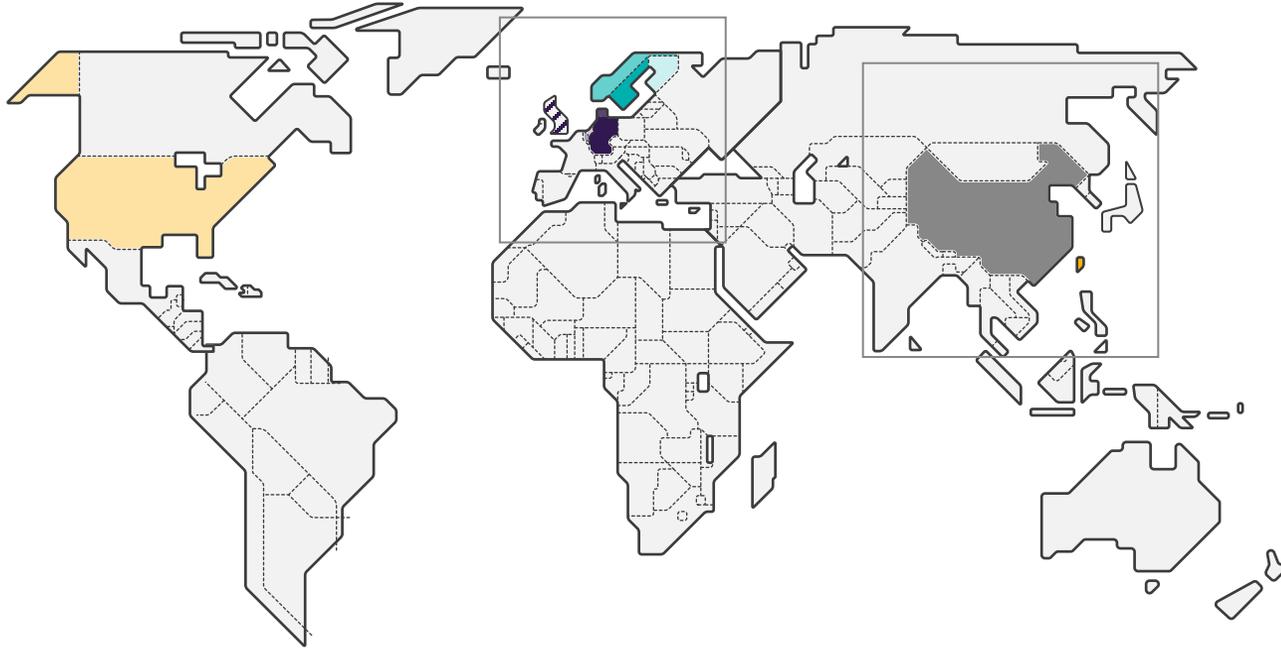
Excellence  
in project  
**execution**



**+1,500**  
Offshore Direct Drive  
turbines installed

<sup>1</sup> As of FY22 (September 30, 2022) | <sup>2</sup> Last 12 months ending September 30, 2022

# Market leader within offshore wind power – 21 GW installed<sup>1</sup>

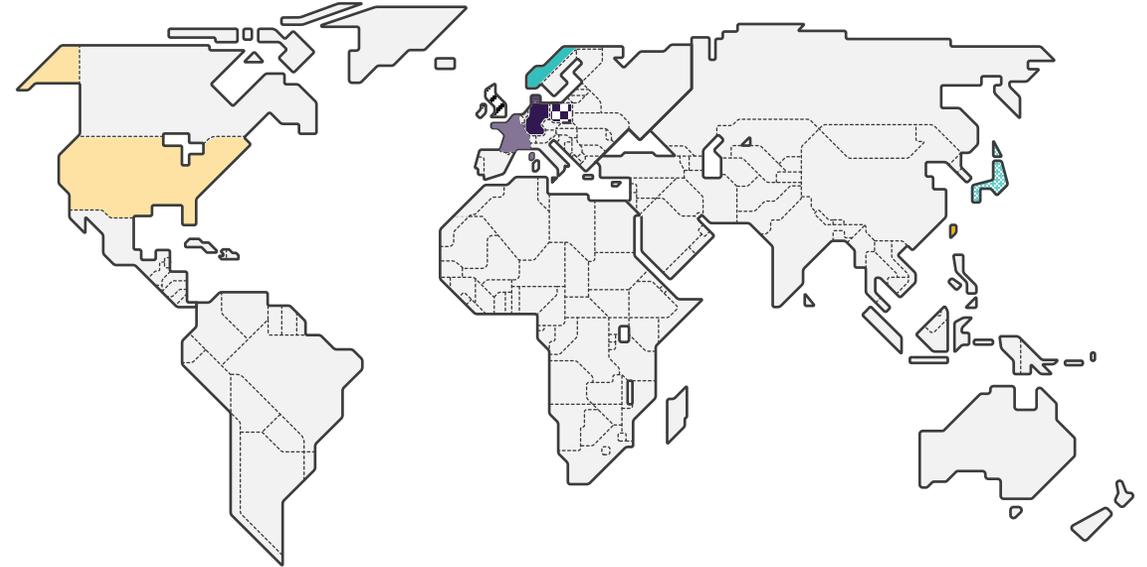


<sup>1</sup> As of November 2022

# +19.5 GW under installation or to be installed<sup>1</sup>...

<b>Hywind Tampen, NO</b> 88 MW; 11 x SG 8.0-167 DD	
<b>Neart Na Gaoithe, UK</b> 450 MW; 54 x SG 8.0-167 DD	
<b>Sofia Offshore Wind Farm, UK</b> 1,400 MW; 100 x SG 14-222 DD	
<b>Moray West, UK</b> 882 MW; 60 x SG 14-222 DD	
<b>Vesterhav Nord &amp; Syd, DK</b> 350 MW; 41 x SG 8.0-167 DD	
<b>Hollandse Kust Zuid, NL</b> 1,540 MW; 140 x SG 11.0-200 DD	
<b>Hollandse Kust Noord, NL</b> 759 MW; 69 x SG 11.0-200 DD	
<b>Gode Wind 3, DE</b> 242 MW; 23 x SG 11.0-200 DD	
<b>Borkum Riffgrund 3, DE</b> 913 MW; 83 x SG 11.0-200 DD	
<b>Kaskasi, DE</b> 342 MW; 38 x SG 8.0-167 DD	
<b>Gennaker, DE<sup>2</sup></b> 927 MW; 103 x SG 8.6-167 DD	
<b>Baltyk II &amp; III, PL<sup>2</sup></b> 1,440 MW; number of SG 14-236 DD TBD	
<b>F.E.W. Baltic II, PL<sup>2</sup></b> 350 MW; 25 x SG 14-236 DD	
<b>Ishikari, JP</b> 112 MW; 14 x SG 8.0-167 DD	

<b>Formosa 2, TW</b> 376 MW; 47 x SG 8.0-167 DD	
<b>Yunlin, TW</b> 640 MW; 80 x SG 8.0-167 DD	
<b>Greater Changhua, TW</b> 900 MW; 112 x SG 8.0-167 DD	
<b>Hai Long, TW<sup>3</sup></b> 1,044 MW; 73 x SG 14-222 DD	
<b>South Fork, US</b> 132 MW; 12 x SG 11.0-200 DD	
<b>Revolution Wind, US</b> 715 MW; 65 x SG 11.0-200 DD	
<b>Sunrise Wind, US</b> 924 MW; 84 x SG 11.0-200 DD	
<b>Coastal Virginia Offshore Wind, US<sup>2</sup></b> 2,640 MW; 176 x SG 14-222 DD	
<b>Noirmoutier, FR<sup>2</sup></b> 496 MW; number of SG 8.0-167 DD TBD	
<b>Courseulles, FR</b> 448 MW; 64 x SWT-7.0-154	
<b>Fécamp, FR</b> 497 MW; 71x SWT-7.0-154	
<b>Le Tréport, FR<sup>2</sup></b> 496 MW; number of SG 8.0-167 DD TBD	
<b>Provence Grand Large, FR</b> 24 MW; 3 x SWT-8.0-154	
<b>Saint Briec, FR</b> 496 MW; 62 x SG 8.0-167 DD	



# The offshore wind turbine manufacturer with the longest, most extensive history in the industry



**World's first offshore project**  
4.95 MW  
Vindeby, DK



**First power plant-sized project**  
630 MW  
London Array, UK



**First large-scale offshore DD project**  
574 MW  
Race Bank, UK



**First subsidy-free offshore project**  
1.54 GW  
Hollandse Kust Zuid, NL



# Global manufacturing footprint



- Nacelle backends, generators, and hub assembly
- Allows loading via Ro-Ro ramp directly onto a transport vessel
- Production began: CY2017



- Diagnostics center
- Nacelle assembly and warehouse facility
- R&D test center
- Training center
- Production began: CY1979



- Full nacelle assembly
- First SGRE Offshore nacelle assembly outside of Europe
- Production began: CY2021; next generation turbines as of CY2024



- Blade manufacturing, nacelle assembly, and pre-assembly
- Will allow manufacturing and installing from the same place
- Production began: CY2022

## Global manufacturing footprint



Aalborg  
Denmark

- Siemens Gamesa Integral Blade manufacturing
- Part of world's largest wind turbine test facility
- Advanced blade testing
- Production began: CY2002



Hull  
England

- Siemens Gamesa Integral Blade manufacturing
- Pre-assembly of offshore wind power plant components
- Production began: CY2016



Lingang  
China

- Siemens Gamesa Integral Blade manufacturing
- Production began: CY2009

## Key Facts



Blades casted in EU and finished in VA



259 factory jobs



120K + square feet of production area



80 acres of storage capacity



Ground break Q2 2023

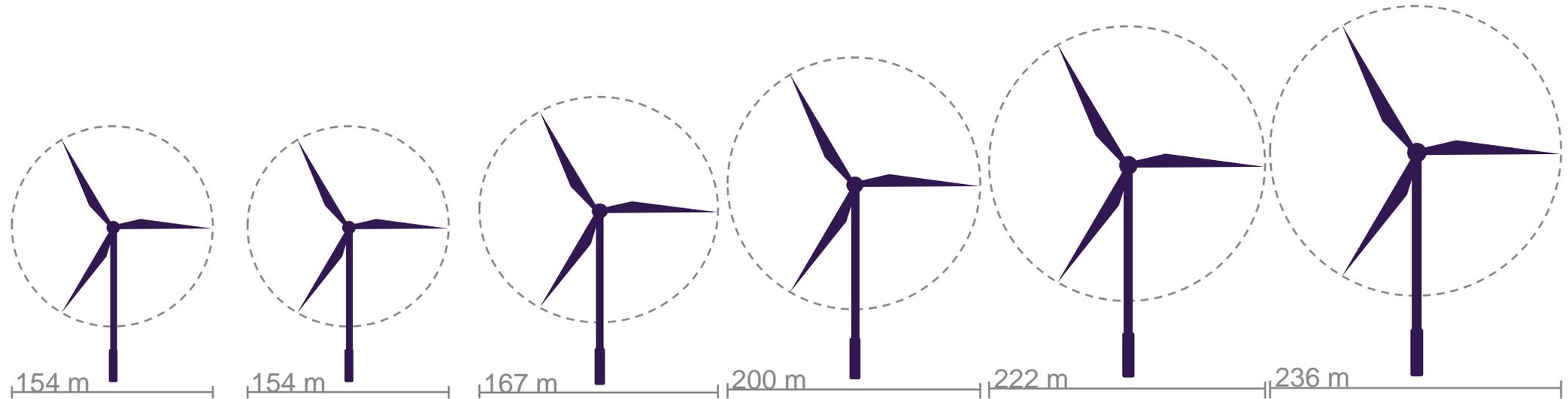


Start of production Q1 2025



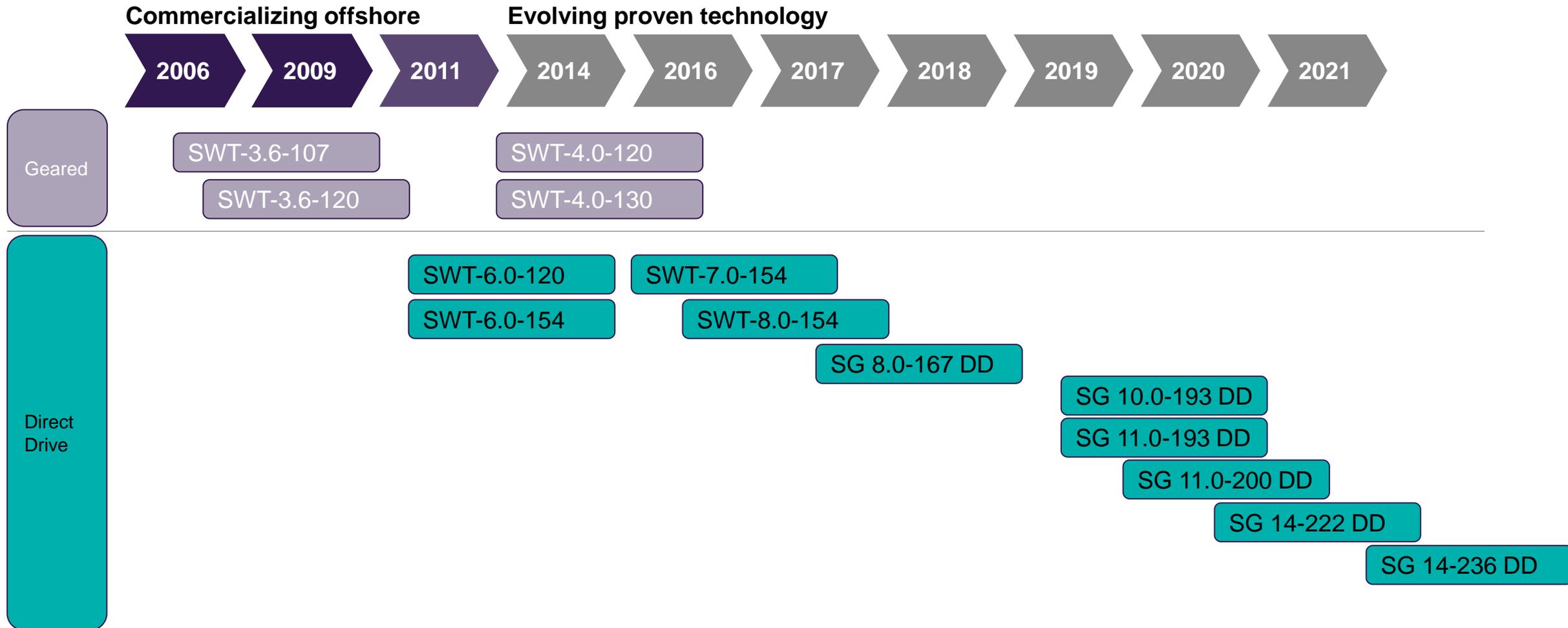
# Offshore product portfolio

## Generations of Offshore Direct Drive



	SWT-6.0-154	SWT-7.0-154	SG 8.0-167 DD	SG 11.0-200 DD	SG 14-222 DD	SG 14-236 DD
IEC Class	I, S	I, S	I, S	I, S	I, S	I, S
Nominal Power	6 MW	7 MW	8 MW	11 MW	14 MW	14 MW
Blade length	75 m	75 m	81.4 m	97 m	108 m	115 m

# Historical development of Product Portfolio to match market and customer needs



# Procurement introduction and supply opportunities

- 1 Offshore supply scope
- 2 How to become an SGRE supplier
- 3 Supplier localization strategy
- 4 Sustainability and innovation in procurement

# 1. Offshore supply scope

# SGRE's planned Offshore activities in NY provide opportunities for local suppliers throughout the lifetime of the turbines

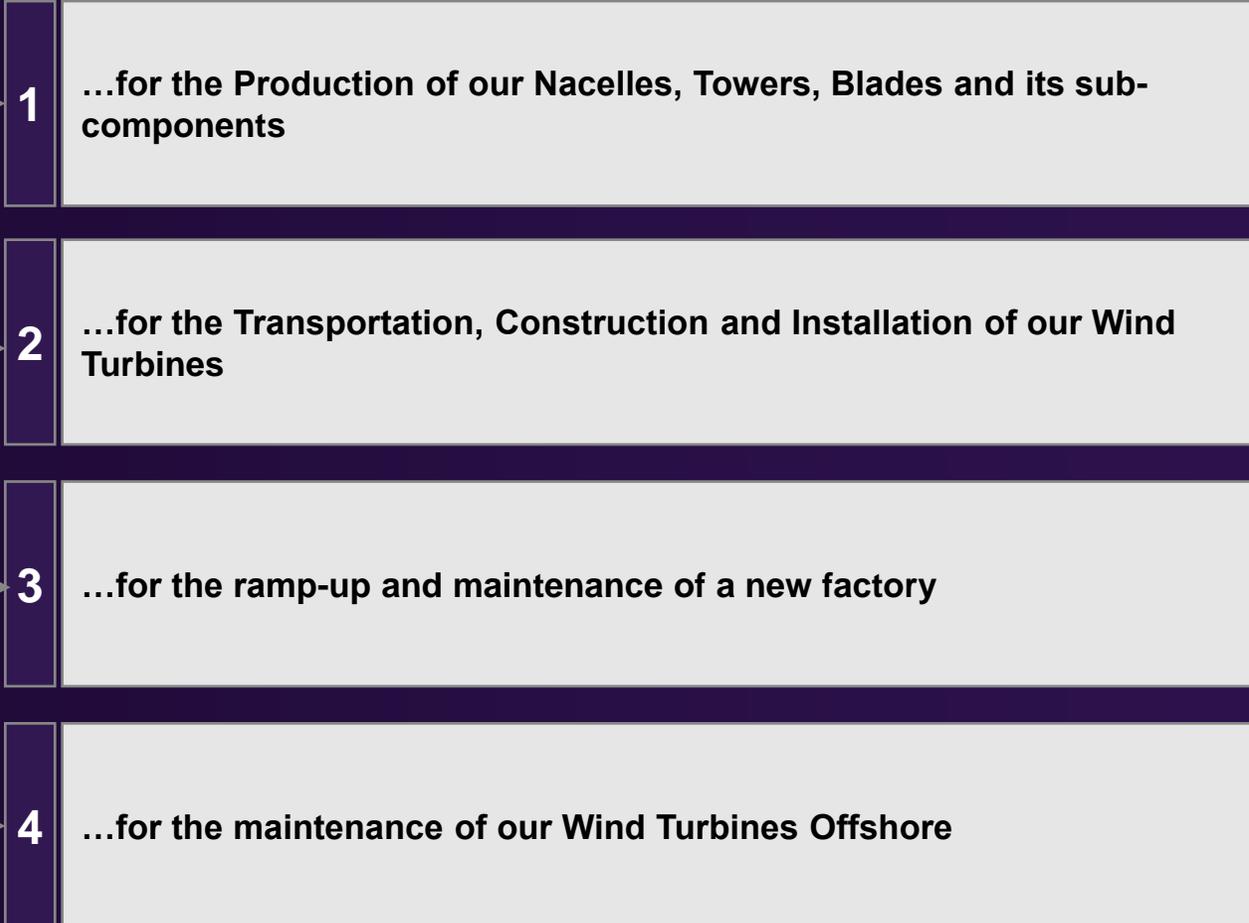
We are looking for Suppliers:

## Basic requirements to start business with SGRE:

- Pass the preliminary technical and financial capability assessment
- Successful Supplier and/or Contractor Qualification
- Successful Product and Process or Service Approval

## Beneficial add-ons for sustainable NY business :

- Diversification: you sell to other industries than just OF Wind
- Export potential!: you get close to global competitive price level after investments are depreciated
- Customers: you supply the same or a similar technology to our competitors



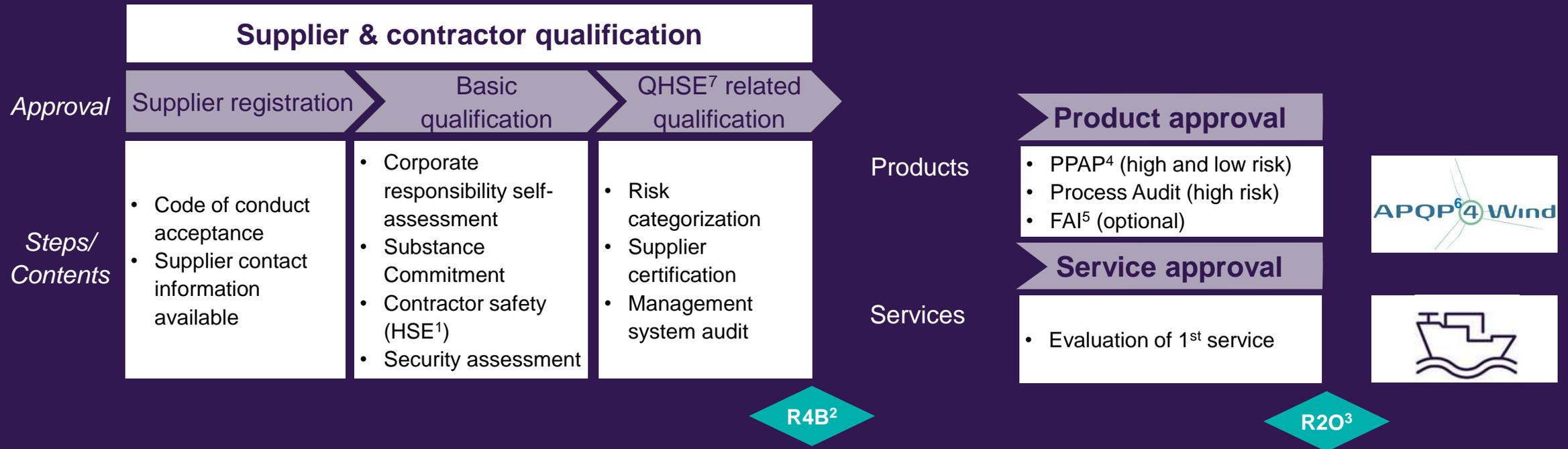
## Focus areas (not necessarily limited to those)

- Castings
- Cooling system
- Composites
- Small Steel parts/tower internals
- Cables
- Seafreight & resp. equipment
- Cranes
- OF and ON labor
- Site Setup
- CTVs & helicopters
- Equipment & tools
- Cafeteria, cleaning, waste svc.
- Factory supplies
- Training providers
- MRO related service providers
- OF and ON Labor
- Cranes
- Spare parts
- SOV, CTVs & helicopters

<sup>1</sup>most suitable components are the ones where the transport costs and/ or import tariffs makes a big portion within the total cost

## 2. How to become a Siemens Gamesa supplier?

# As Quality & HSE<sup>1</sup> are key elements for our success, becoming an qualified supplier or contractor follows a 2-step process



1) HSE = Health, safety & environment | 2) R4B = Ready for business | 3) R2O = Ready to order | 4) PPAP = Production part approval process | 5) FAI = First article inspection | 6) APQP = Advanced product quality planning | 7) QHSE = HSE = Quality, health, safety & environment

# Key criteria to become a Siemens Gamesa supplier or contractor



Siemens Gamesa global business language

Siemens Gamesa is committed to using local suppliers wherever possible on a regional level & where viable for the business

ISO 9001/ ISO 14001 and OHSAS 18001 / ISO 45001 or equivalent management system approved by Siemens Gamesa supplier audit mandatory for critical services, for non-critical strongly recommended

**Mandatory**

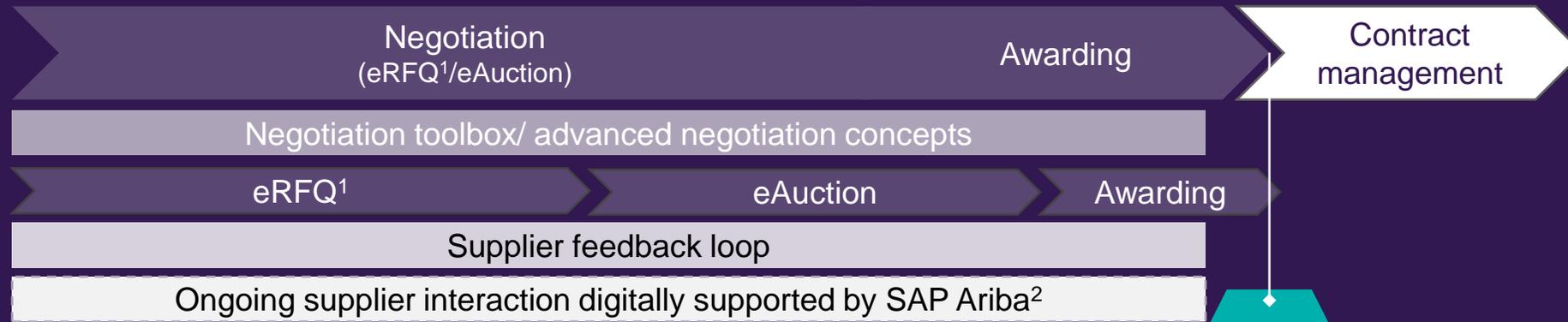
Human rights, fair operating practices, labor practices, environmental protection

**Mandatory**

1) Environment, health und safety

# Sourcing & supplier awarding process follows a structured and transparent process resulting in highly competitive and compliant awarding decisions

The implementation of RfQ<sup>1</sup> needs to allow the **same general opportunities to all competing suppliers**



## Defined set of awarding criteria

*The Supplier Comparison Factor (SCF) is the price transformation factor as a result of a list of inputs that are evaluated for each supplier. Each factor provides a “bonus” or a “malus” to the overall SCF of the supplier. The SCF bonus-malus is applied during the evaluation phase to the price proposal of each vendor to obtain the total costs, which is used later for evaluating the quotes based on the total cost aspect*



**= Baseline for annual supplier evaluation**

1) Request for quotation

2) All Siemens Gamesa suppliers are expected to be connected to SAP Ariba platform

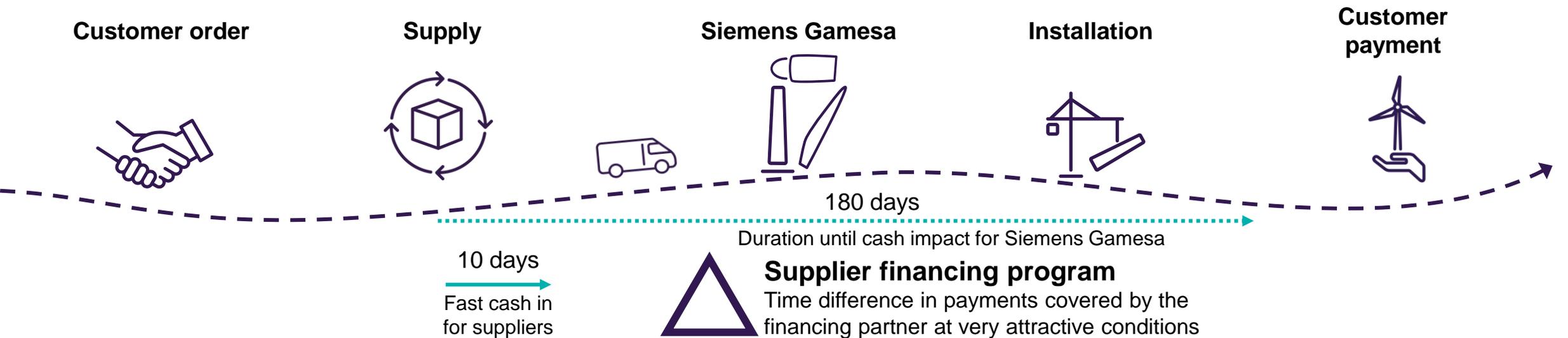
3) Health, safety & environment

# Our supply chain finance program support our suppliers to enter into business with Siemens Gamesa

Our industry is characterized by **long investment and payment cycles** reaching from 12-18 months in Onshore and >36 months in Offshore

Through our financing program our supplier can gain:

- + Cash flow improvements
- + Working capital optimization
- + Cash flows transparency

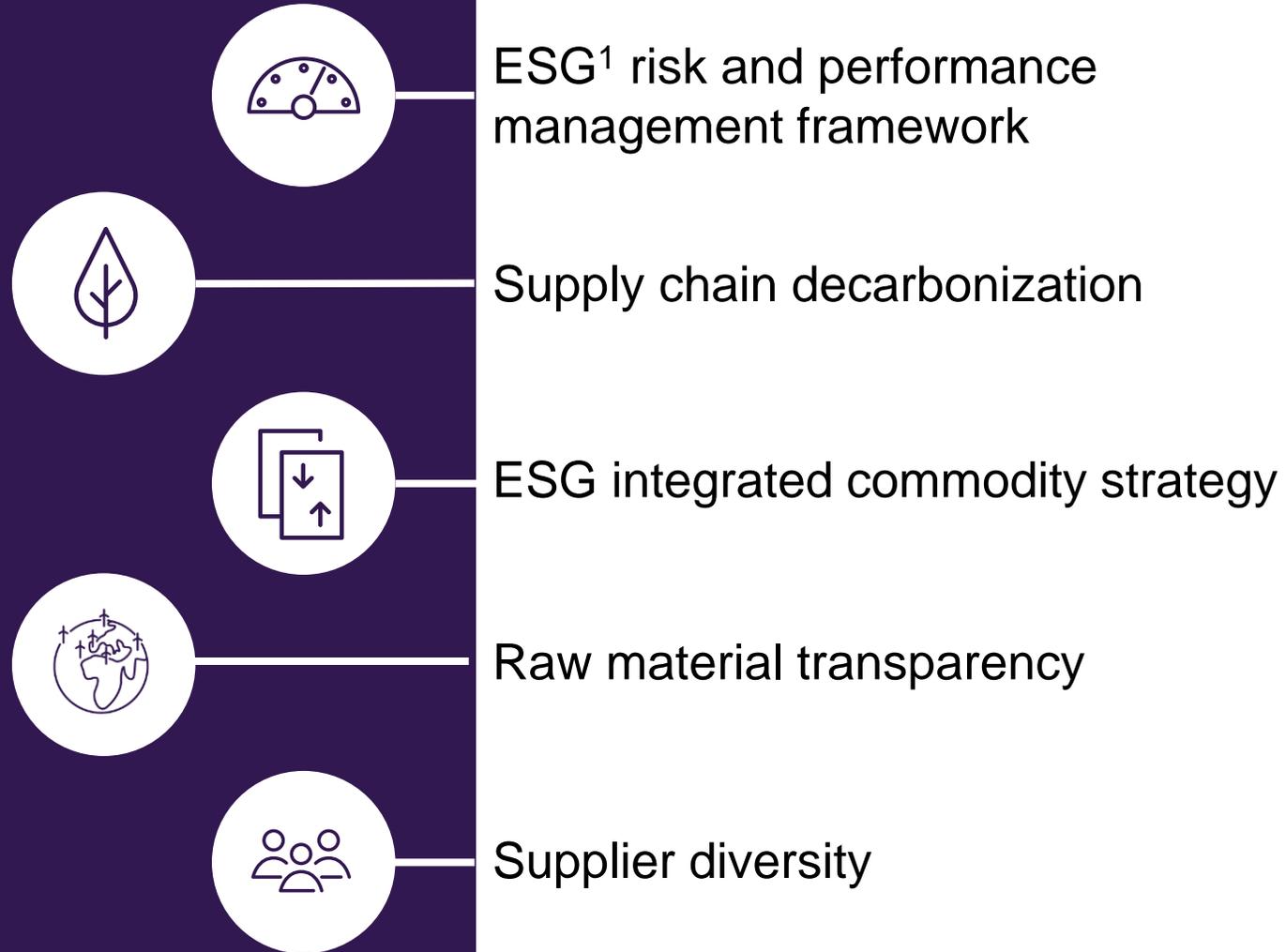


# 3. Sustainability & innovation in procurement

# Greening green energy by minimizing environmental and social footprints along our supply chain



## Sustainability @Procurement: our key priorities



1) Environment, Social, Governance

# Jointly with our suppliers Siemens Gamesa procurement is a key driver for sustainability and innovation power



Siemens Gamesa is a member of DJSI World and Europe ranking in the top 1% in the sector in 2021.



30% of Siemens Gamesa's suppliers are committed to Science Based Target Initiative (SBTi) by 2025.

*Examples:*

**GREEN STEEL**



**RESPONSIBLE MINERALS SOURCING**



**TRANSPORTATION**



**GREEN MAGNETS**



**RECYCLEABLE BLADES**

# Supplier workshops & ideation sessions leverage innovations - Outstanding performance is honored in annual procurement awards

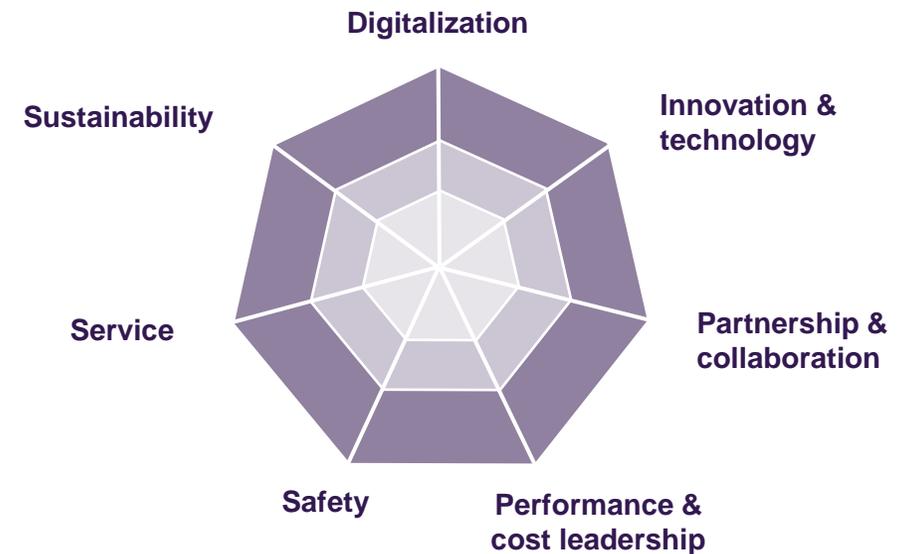
## Supplier workshops & ideation sessions



### Jointly identify improvement measures for products / systems and processes

- Implementation of cost and time potentials with involvement of supplier know-how
- Meeting in which groups apply methods for problem analysis, creative problem solving or decision making in order to cooperatively identify measures to optimize products and processes
- Create win-win opportunities through increased cooperation
- Implement the newest technologies in our products through design competition

## Siemens Gamesa annual supplier award







# Thank you!

Contact: [procurement@siemensgamesa.com](mailto:procurement@siemensgamesa.com)



**GE VERNOVA**

Our portfolio of energy businesses

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# Leading a New Era of Energy



If we act now, we can both help address the climate crisis and provide more sustainable, affordable, and reliable electricity for more people. *Let's get started.*



**SCOTT STRAZIK**

CEO, GE Vernova

# GE Vernova Portfolio of Businesses

**11** businesses

- **Conventional Power**

- Gas Power
- Hydro Solutions
- GE Hitachi Nuclear Energy
- Steam Power

- **Wind**

- Onshore Wind Power
- Offshore Wind Power
- LM Wind Power

- **Electrification**

- Grid Solutions
- Hybrids
- Power Conversion

- **Digital**

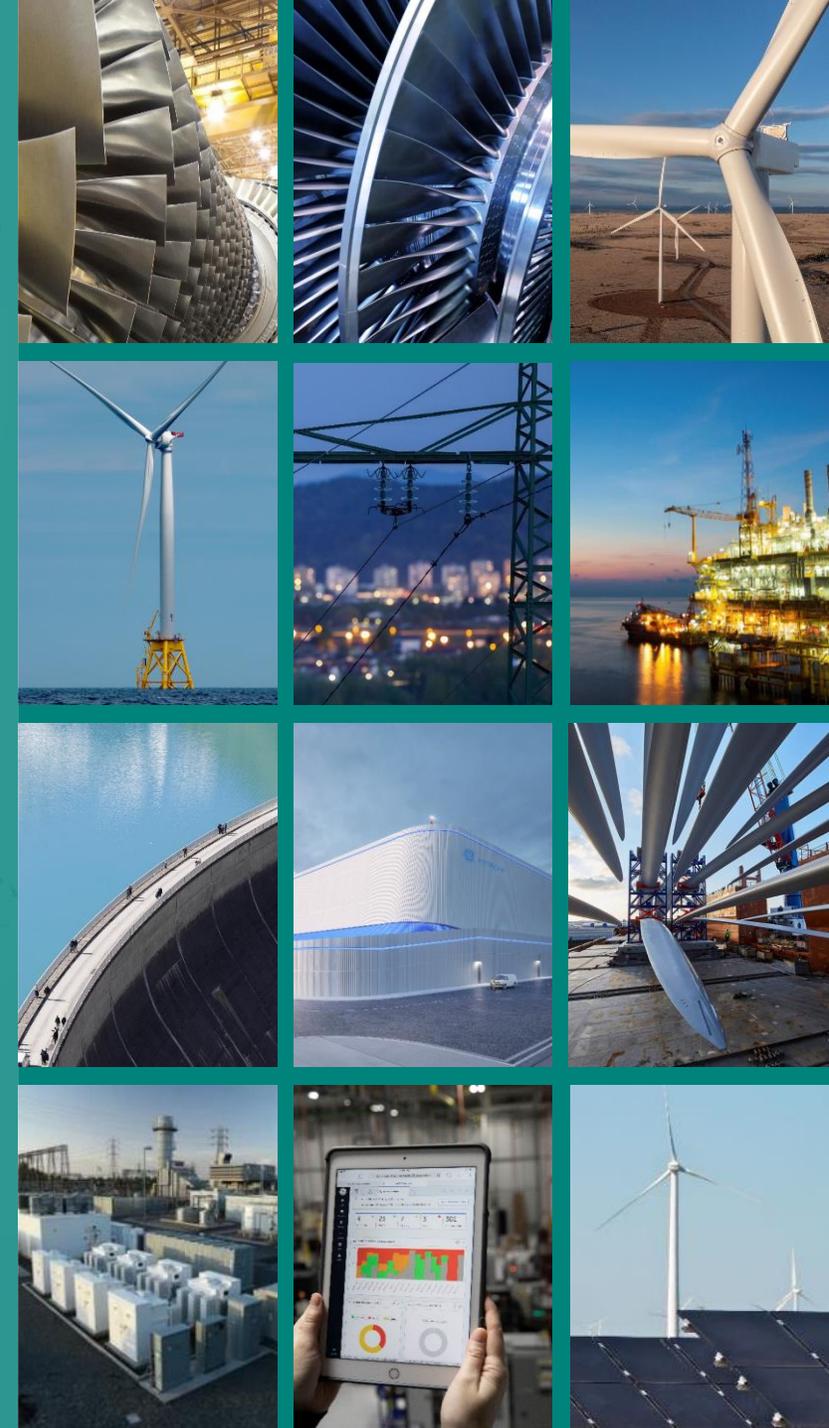
- GE Digital

**7,000** gas  
turbines installed

**180** countries

**52,000** wind  
turbines installed

**70,000**  
employees worldwide



# GE Vernova

## Offshore & Onshore Wind

### US Market & Products

Building a world that works.



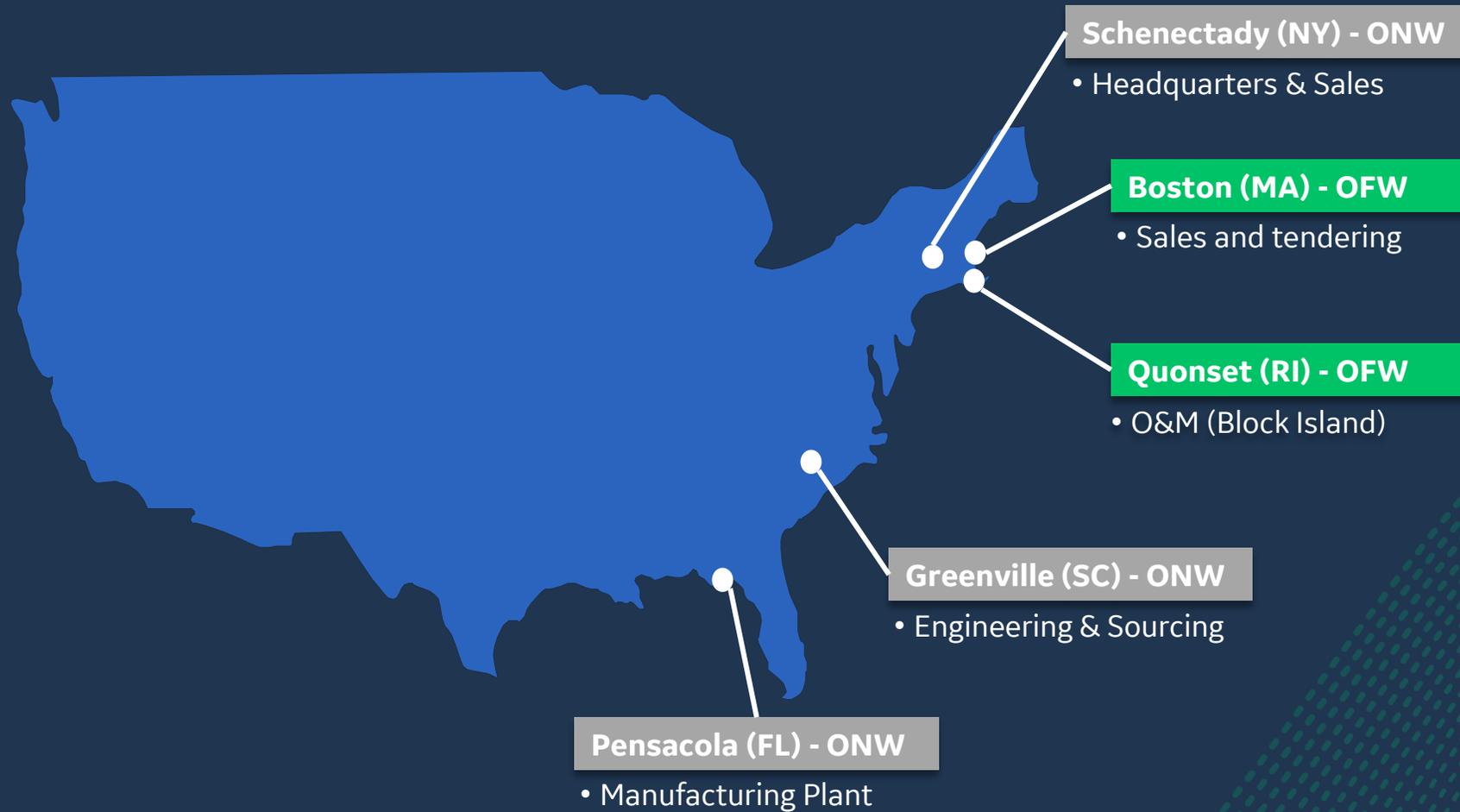
GE Renewable Energy

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*Haliade 150-6MW installation at First US Offshore Wind Farm; picture courtesy Deepwater Wind*



# Our US Footprint and manufacturing sites



# Haliade-X 13 MW, the world's most powerful turbine in operations

Up to **14 MW** capacity

**74 GWh** gross AEP

**63%** capacity factor

**220-meter** rotor

**107-meter** long blades

**248** meters high

**38,000 m<sup>2</sup>** swept area

**6 GW** backlog of orders

## One GE Haliade-X 13 MW...



... can generate enough clean power to supply the equivalent of **17,000** homes.\*



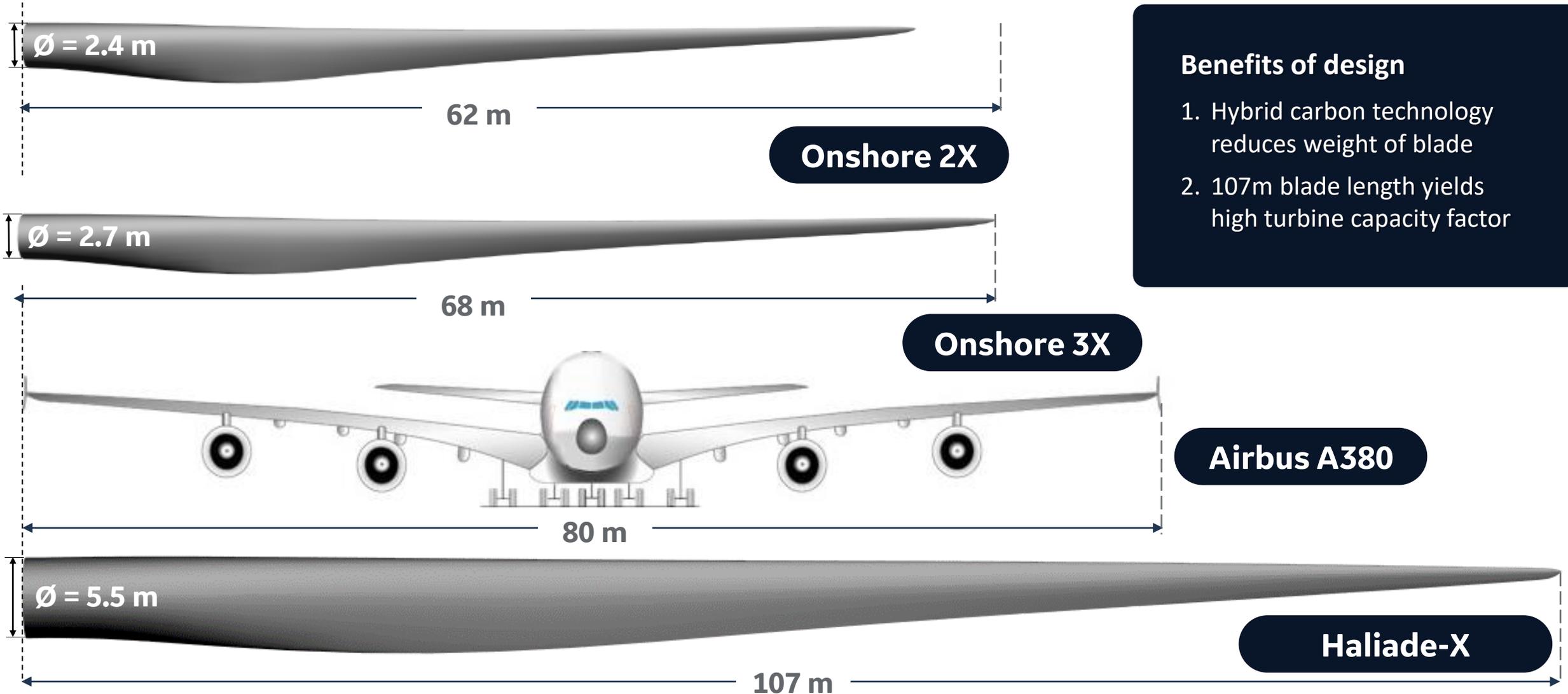
... **one spin** could power the equivalent of one UK household for more than two days.



... can save up to **52,000 metric tons of CO<sub>2</sub>**, the equivalent of emissions generated by **11,000** vehicles in one year.\*\*

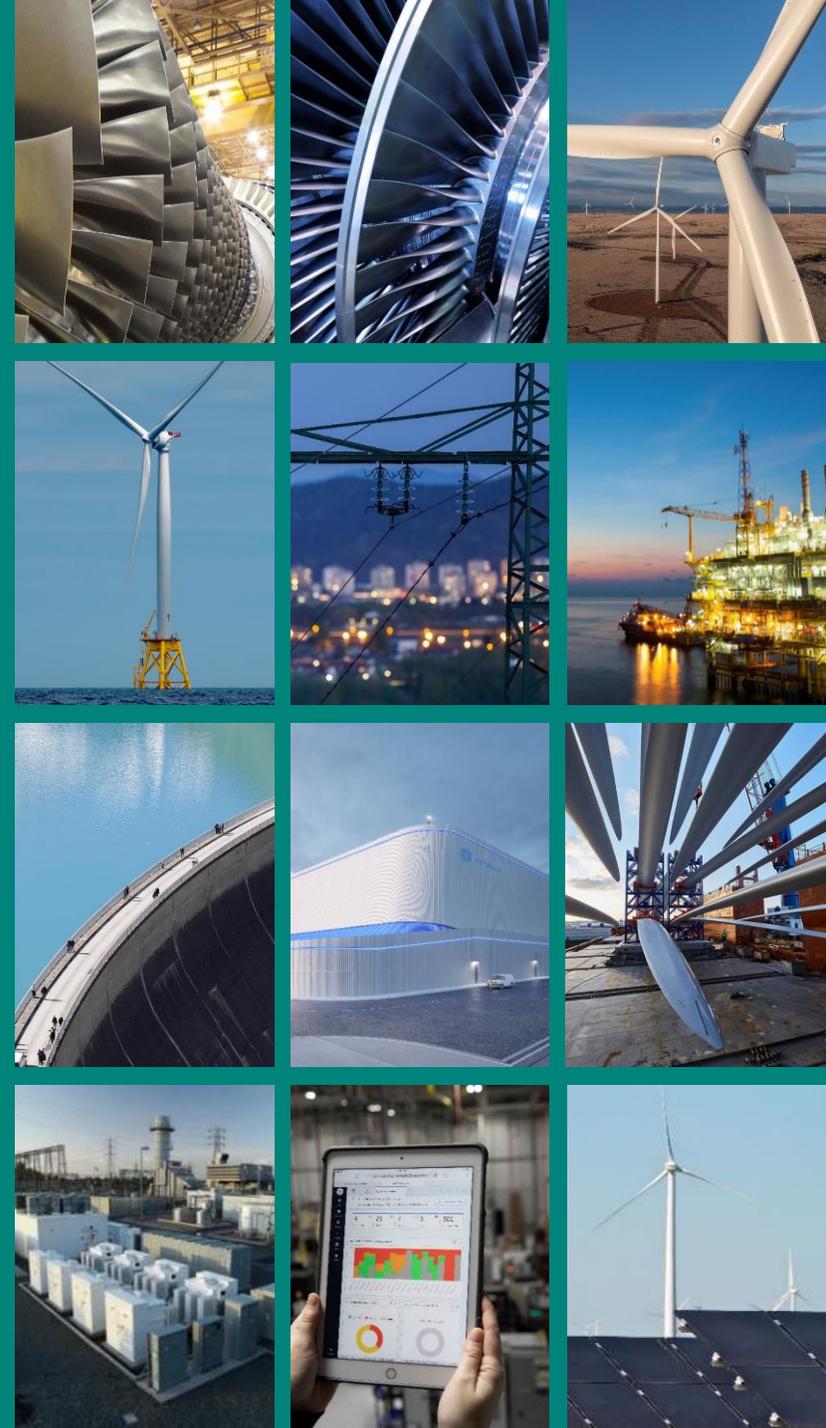


# 2.8 to 14 MW : Blade comparison



# Becoming a Supplier to GE VERNOVA

Building a world that works.



# Powerful Relationships



**GE VERNOVA**  
Our portfolio of energy businesses

At GE Renewable Energy, we recognize that our suppliers are critical partners, and play a vital role in the creation of our world-class solutions. We're happy to provide all our suppliers with tools and services to make you more efficient, knowledgeable, and above all, help to sustain a close, productive relationship with GE.



# Act with Humility

We believe we are **one team** in Renewable Energy and act in ways to help us win.

We embrace a culture of **respect** which values inclusive teams and diverse perspectives.

We actively **listen** to internal and external sources.

We **learn** from our shortcomings as much as we celebrate our wins.

# Lead with Transparency

We embrace **candor**, saying what we think, not what people want to hear.

We share information so we can **solve problems**.

We **contribute** to each other's development in a constructive way.

# Deliver with Focus

We put **safety** first.

We **prioritize** our work, maximizing our impact.

We measure performance through the lens of our **customers**.

We are committed to **continuous improvement** always in search of a better way.

We hold ourselves and each other **accountable** for our outcomes.



...always with unyielding integrity.

# Supplier Expectations

## What we need from you

- **Safety**... Safety FIRST in all we do
- **Quality**... our customers demand that GE meets its commitments, must design for reliability. APQP ensures your success
- **Delivery** ... 100% On-time delivery imperative and predictable lead times below the delivered target
- **Cost** ... Partner to drive the lowest total landed cost. Need to bring technology and scale to continue to lower costs per unit of energy delivered
- **Lean & Transformation**... supplier partnership with transparency critical. We have supplier lean leaders willing to support YOU reduce cycle and improve delivery
- **Integrity & Culture** ... Diversity & Inclusion, Compliance and Sustainability

**We win as one team, together.**



# The market demands sustainability across the supply chain

## Drivers

### Customers

Committed to include supply chain in their sustainability strategy, e.g., driven by changing auction requirements

### Legislators

Wave of new legislation passed / drafted, focused on mandatory supply chain sustainability reporting

### Investors

Significant growth of sustainable investors that assess supply chains to avoid reputation and financial risks

## Examples & Trends

### Sustainable procurement activities @ wind farm developers / utilities



"[...] everyone in the industry must play their part to reduce their emissions across scope 1-3" (Sustainability Report 2021)



"[...] commitment from our suppliers to maintain a strict forced labor compliance [...] raw materials to finished products." (2022 ESG Report)

### Mandatory sustainability reporting as part of legislation



2023/24

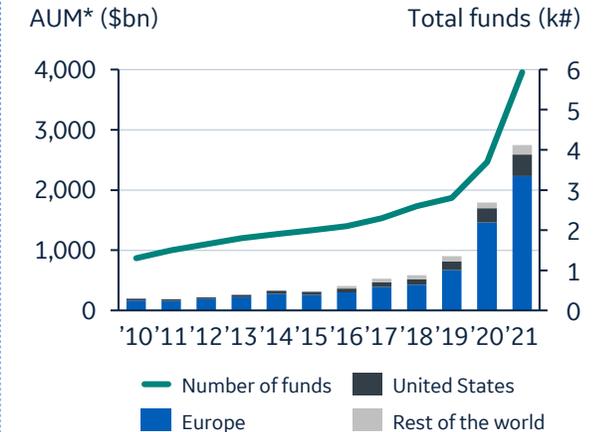
EU Directive on corporate sustainability due diligence aims to foster sustainable and responsible corporate behavior throughout value chains.



2023/24

Climate risk disclosure rule by SEC will significantly increase reporting requirements along the entire value chain

### Sustainable funds and assets as an investing trend (UNCTAD 2022)



Interconnected global trends that go beyond carbon reduction and shape future requirements

Suppliers need to help GE & its customers to assure compliance and meet the market demand

\* Assets under management

# Sustainability requirements shared with WIND Suppliers (ONW+OFW+LM)

## Current Sustainability Focus

 Scope 1 & 2 GHG Reporting	 Scope 3 GHG Reporting	 Science based targets		
 Actions on reducing GHG emissions	 Renewable Energy usage	 Carbon Disclosure Project		
 Waste management	 Sustainable Procurement	 Life Cycle Assessment		
	 Environment	 Labour & Human rights	 Ethics	 Sustainable Procurement

## Requirements overview

- Register and complete the EcoVadis Questionnaire
- Submit data for your Scope 1+2 emissions as of 2022, and report fully on Scope 1+2 emissions as of 2023.
- Report Scope 3 emissions if available. If not, indicate when you plan to include Scope 3 emissions reporting and/or set Science Based Targets. We expect SBTs to become a requirement by 2025
- Document 100% renewable electricity use for your operations by 2025 and start reporting on plans to achieve this on an annual basis as of 2022.
- To support GE REN's Product Sustainability strategy, deliver LCAs and if possible EPDs on all products delivered to GE by 2025
- Logistics Decarbonization is an important topics to address too but no firm requirements for first phase program launch

**Suppliers will Receive Support and Guidance on Reporting and Decarbonization Best Practice**

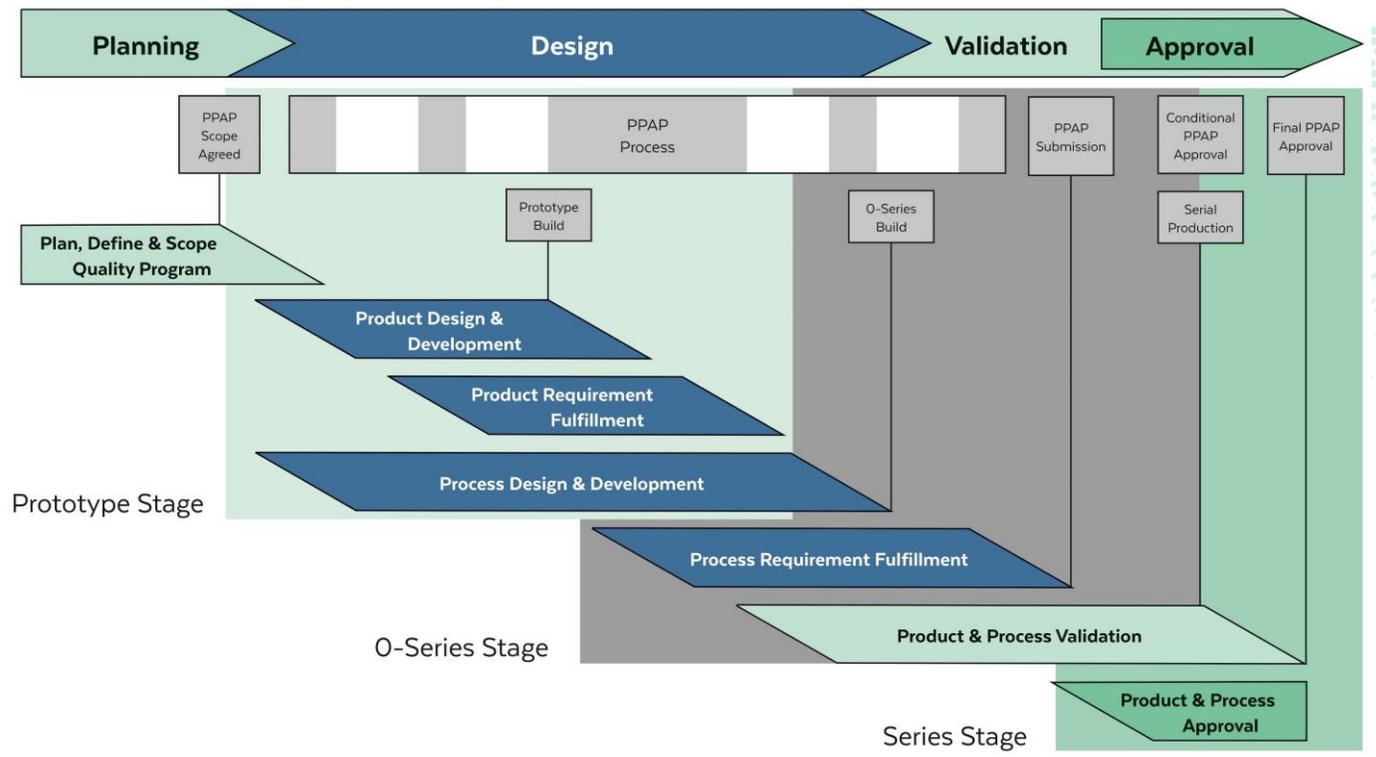
# APQP4WIND at GE Renewable Energy

Quality is a critical market requirement... under  
GE's requirements



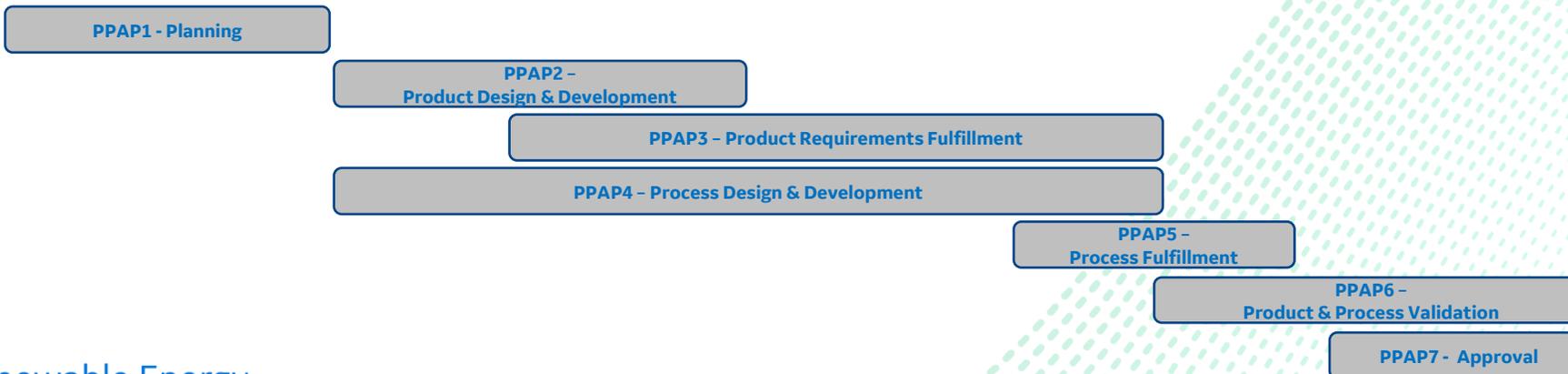
# APQP4Wind at GE Renewable Energy

- ❖ Wind Industry 7 Phase Approach to Planning, Design, Validation and Approval
- ❖ Cross-Functional concept to concurrently design process and product to ensure robust quality
- ❖ Drives process standardization across wind industry



# 7 Phase Summary

- Phase 1 - Start of PPAP process. Communicate **REQUIREMENTS** and risk assessments to Supplier.
- Phase 2 - Review of technical requirements, define the validation plan and supplier commits to a buildable design. **COMPONENT PROTO DESIGN RELEASE.**
- Phase 3 - Demonstrate that the product requirements are fulfilled in the form of a thoroughly tested component prototype. **COMPONENT 0-SERIES RELEASE.**
- Phase 4 - **PROCESS DESIGN**, risk assessment and development of process risk mitigation/controls. Ensure that components packaging/transportation.
- Phase 5 - Demonstrate and **FREEZE PROCESS DESIGN.**
- Phase 6 - **PRODUCTION PROCESS VALIDATION** (component 0-series unit production). Stable and capable for Serial production.
- Phase 7 - Full Approval of Qualified Supplier, and **RELEASE FOR COMPONENT SERIES PRODUCTION.**



# APQP4Wind Resources

- Information regarding Training, Certification, Manuals, and Templates can be found at [www.apqp4wind.org](http://www.apqp4wind.org)
- Training and Certification provided by:





**GE VERNOVA**

Our portfolio of energy businesses

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# Supplier Partnering & Onboarding

# Why Partner with GE Renewables – Wind

## Wind ... a growth Industry

- 93 GW new capacity installed in 2020 ... up 53% YoY
- 180 GW/y installs to counter worst climate change
- 160 GW in 2025 ... 260 GW in 2030 – global projections
- US & China 75% of '20 installs – top 6 countries dominant
- Further LCOE decrease is projected
- OEM's latest platforms ramp-up, slow down NPI
- Dynamic macro environment, Covid, PTC, FIT, PPA, Customs
- Top 3 + Chinese OEMs driving ONW/OFW supply

## GE ... top comprehensive global OEM

- In 2020 GE was number 1 Onshore Wind OEM globally
- More than 62 GW of Installed capacity ... lead in Repower
- 35+ countries globally & growing ... ONW, OFW, Service
- \$ 5 Bn direct sourcing spend a year ... \$ 19 MM/day
- Strong momentum with Cypress, Sierra & Haliade X
- Technology leader (2pblade, 3dtower, recycling)
- Growth biz for GE – full customer solution in GE REN
- Best in class in fulfillment in '20 – delivered despite Covid
- GE delivered a record number of wind turbines in 2021



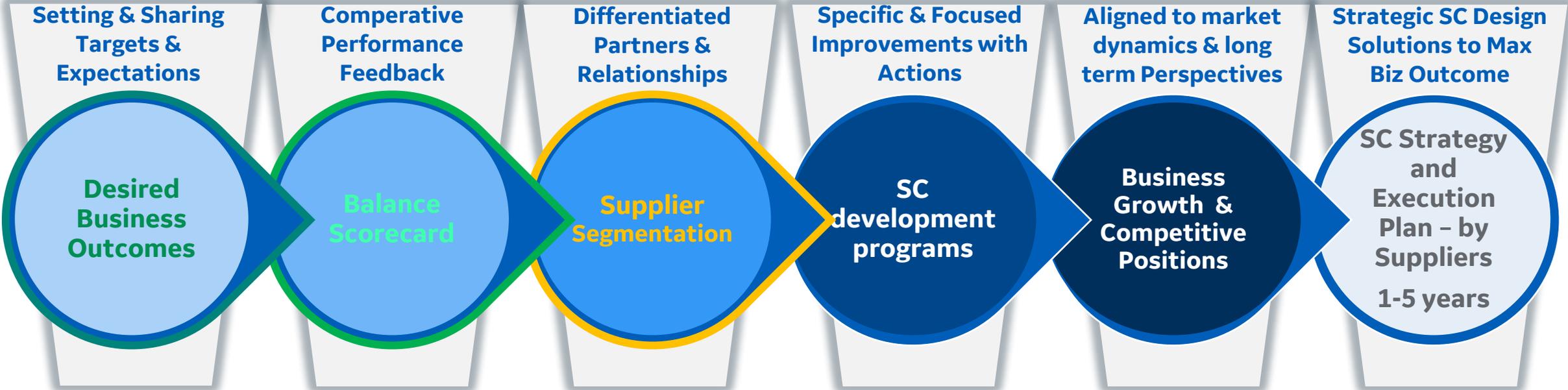
**Unleashing Limitless Energy ... in volatile & competitive global environment ...  
partnerships are key to mutual success**



# GE Sourcing | Strategic Sourcing & Partnerships

## Building a SC that maximizes the business value

- ✓ Delivers on multiple priorities – safety/ quality / delivery / cash (SQDC) – short & long-term **sustainable**
- ✓ Creates & operates demand & customer driven value networks – **ecosystems design**
- ✓ Agile to manage fast NPI, NTI and support new market commercial strategies – **dynamic & inventive**
- ✓ Delivers a SC advantage versus other OEMs - **competitive through differentiation**



**Focused on total cost of ownership by getting the best product/service at the best value driven by a rigorous & collaborative approach as a continuous process**

# Join via the GE Supplier Portal

Using our range of robust tools, suppliers can access all relevant areas of GE Renewable Energy including sourcing, purchasing, finance, engineering, production control and logistics. Using our tools, suppliers can:

- Reduce cycle time by accessing timely information
- Create and review invoices and purchase orders easily
- Conduct business 24x7 at your convenience
- Reduce operational costs by streamlining processes
- Access information about our sourcing requirements

## Additional GE Contacts

- New supplier to GE: contact Paola Jugele (paola.jugele@ge.com)
- Supplier portal questions: Alicia Venneman (alicia.venneman@ge.com)

**<http://supplierportal.re.apps.ge.com> or <https://www.ge.com/renewableenergy/suppliers>**



# UNLEASHING LIMITLESS ENERGY

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Nobody should ever have to choose between  
*affordable, reliable, and sustainable energy.*





# GE VERNOVA

Our portfolio of energy businesses