

#### **BILFINGER Delivering a Sustainable Future**

**Dr Jane Atkinson CBE, Executive Director, Bilfinger UK.** 30<sup>th</sup> March 2022

#### Bilfinger SE Leading international service provider



Positioning	Leading service provider for the process industry
Range of services	Solutions along the entire life cycle of an industrial plant
Employees	Approximately 30,000
Revenue 2021	€3,737 million

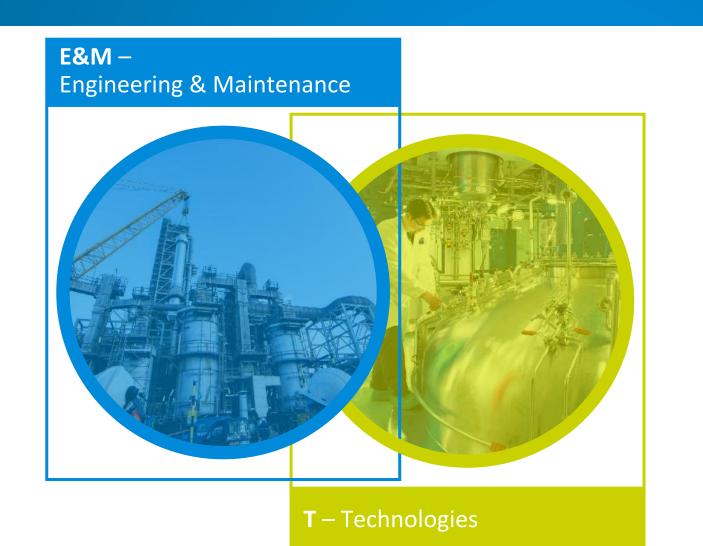


Making sure our clients can concentrate on what they do best: their core business.



## The 2-4-6 concept **2 Service Lines**







#### The 2-4-6 concept **4 Business Units**





#### The 2-4-6 concept 6 Industries





#### **Bilfinger** Products and Services Portfolio development

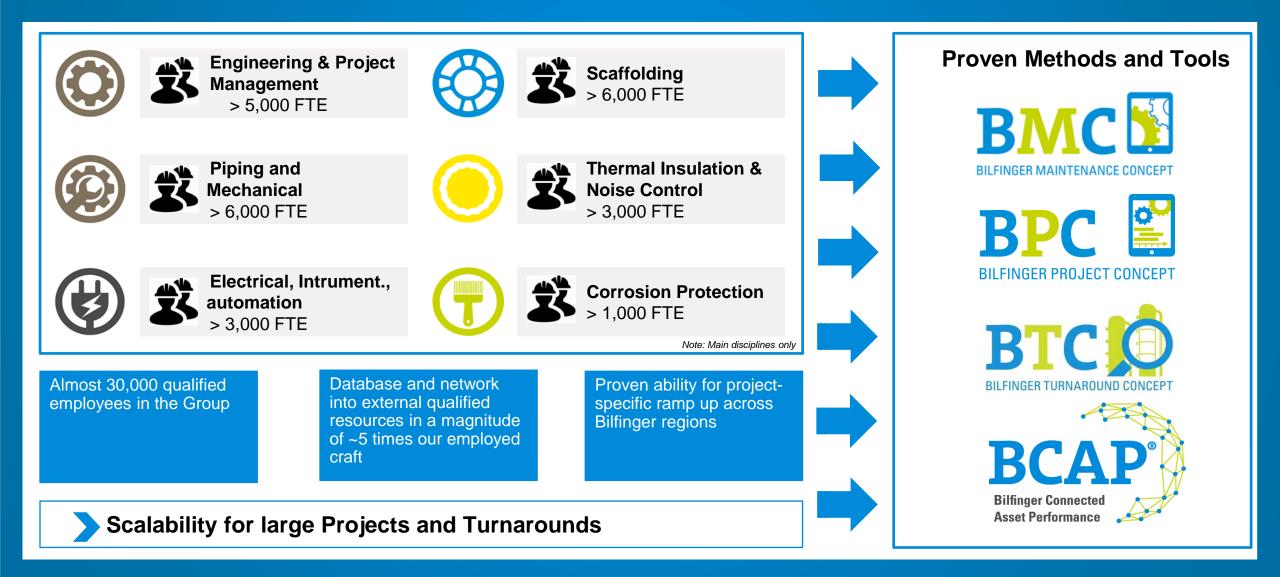


Core Portfo	lio	Strategic Ser	rvices	Energy Transition
Engineering		Inspections	BIC	Carbon Capture
Fabrication		EI&C		Hydrogen
Construction		Digitalization	BCAP Billinger Connected Asset Performance	Energy Efficiency
Maintenance		Rotating Equipment	BRE CO	Green Plastics
Turnarounds		Integrated Projects	BILFINGER PROJECT CONCEPT	<b>Battery Production</b>

#### Portfolio

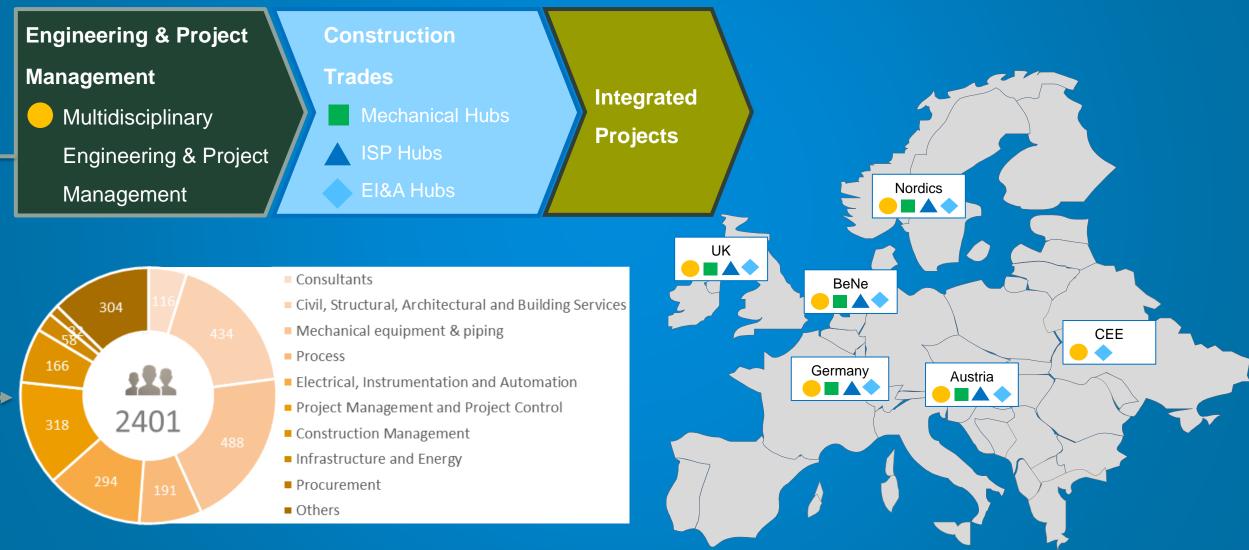
Multi discipline competences, skilled resources, methods and tools





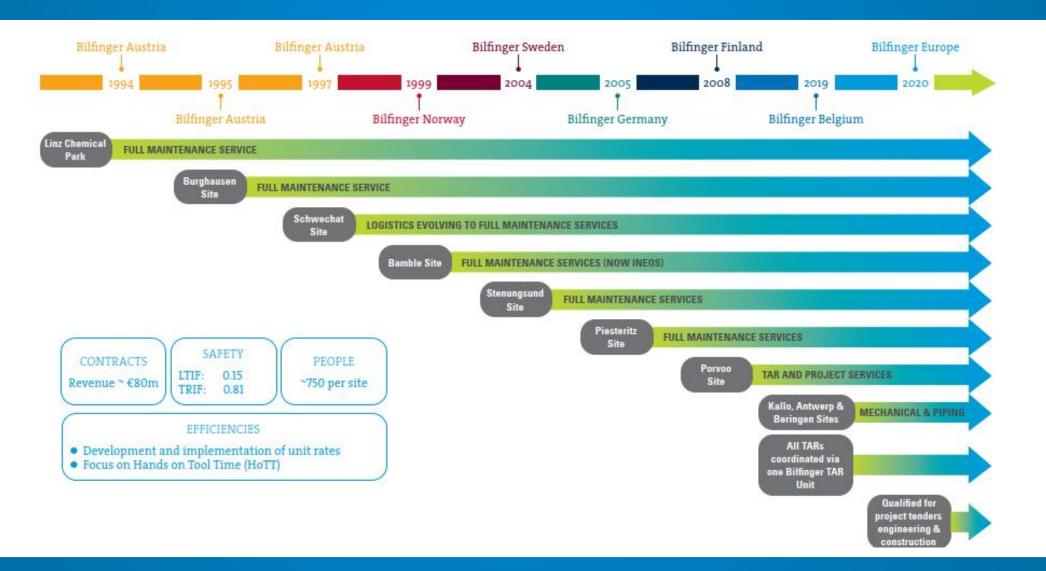
#### **Bilfinger Bundled Capabilities Concept** Project Management, Engineering, Construction





#### **Success Story with Borealis**







## **Bilfinger UK Ltd**

#### **Bilfinger UK** One of the UK's largest tier one contractors





Digital

- €3.7bn revenue (2021)
- 30,000 employees
- **Corporate and** technical support



Delivering over 32 services across

the UK

The trusted **Engineering and Services Partner** delivering intelligent solutions to industry:

- Oil & Gas
- Chemical & Petrochemical
- Nuclear

- Power & Energy
- Utilities
- Pharmaceutical & Biopharma

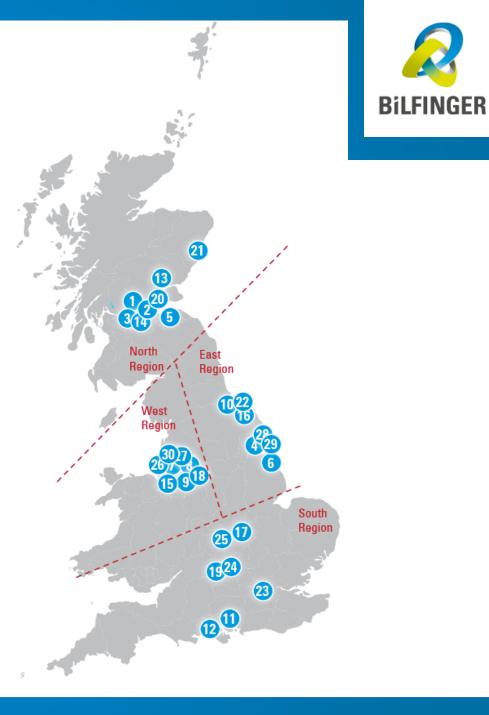


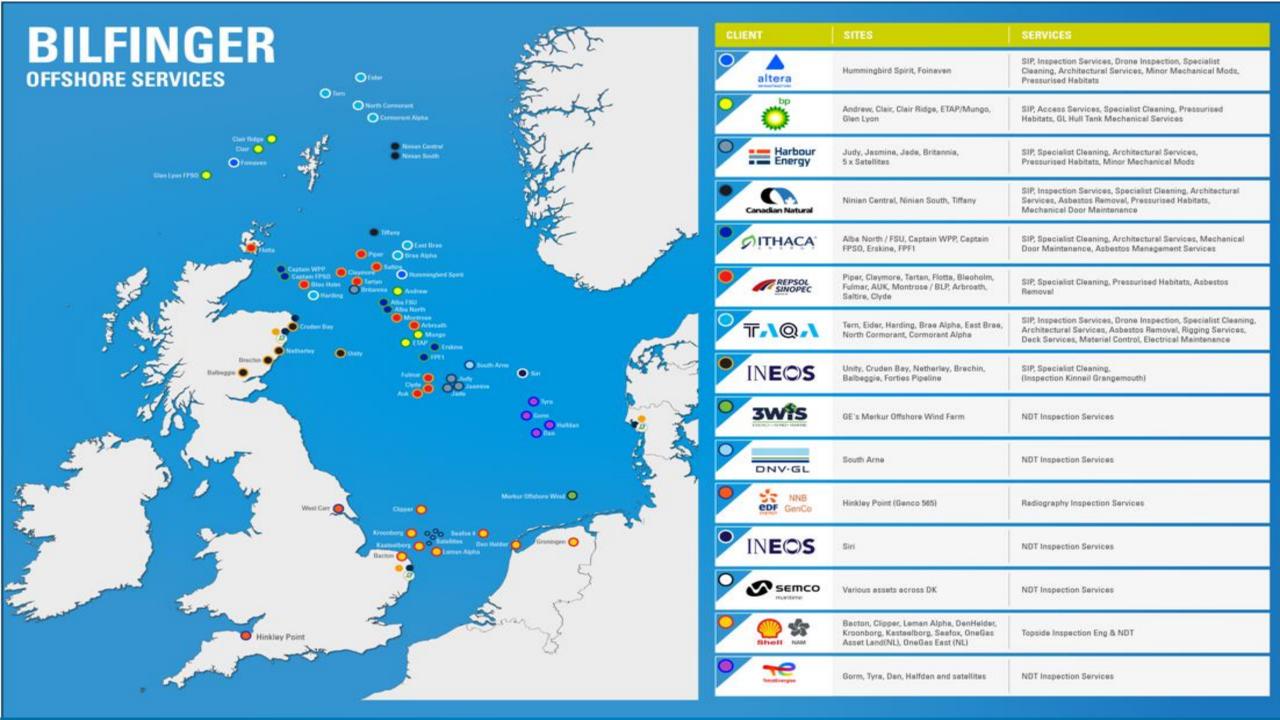
#### **Bilfinger On Shore Key Clients**



KEY:					
М	Mechanical	1.1	Insulation	D	Design
E	Electrical	P	Painting	PI	Plastics
In	Instrumentation	Α	Asbestos	Au	Automation
S	Scaffold	C	Civils		

	16	CF Fertilisers   Billingham Since 2020   M S I P
	1	EDF   Warmington Since 2017   M S I P
United Utilities	18	United Utilities   Warrington Since 2014   E In C A
AWE	19	AWE   Aldermaston Since 2017   M E In Au S I P
petroineos	20	Petroineos   Grangemouth Since 2020   M
gsk	21	GSK   Montrose Since 2021   E In S I P
ConocoPhillips	22	ConocoPhillips   Teesside Since 2021   E In
-121	23	Tate & Lyle   London Since 2021   M S I P
Thomes	24	Thames Water   Reading Since 2016   E In C A
Cadent Ref Casheren	25	Cadent   Warrington Since 2016   M E In S I P C
Elanco	26	Elanco   Speke Since 2001   E In
SOLWRY and Includes III	2	Solvay   Warrington Since 2013   E In
NIPPON GOHSEI	28	Nippon Goshei   Hull Since 2011   S I P
INEOS	29	INEOS Oxides   Hull Since 2011   S P
Cargill	30	Cargill   Liverpool Since 2019   E In S I P





#### Bilfinger UK Broad service provision



ENGINEERING & DESIGN	MANUFACTURING	MAINTENANCE, PROJECTS & TURNAROUNDS	AUTOMATION AND SYSTEM INTEGRATION	SERVICE SUPPORT
Feasibility Studies Concept Design Basic Design FEED Detailed Design Execution Design Commissioning CDM Asset Management Consultancy HAZOP/HAZID/HAZCOM/SIL Industrial 360-Laser Scanning Civil, Structural, Process & MEC&I Design Stress Analysis	<ul> <li>Pipework Fabrication (Steel &amp; Exotics)</li> <li>GRE &amp; GRP Pipework</li> <li>GRE &amp; GRP Vessels</li> <li>Preassembled Units (PAU)</li> <li>Preassembled Racks (PAR)</li> <li>Process Skids</li> <li>LV/MV Switchgear</li> <li>Motor Control Centres</li> <li>Control Cabinets</li> <li>Instrumentation Cabinets</li> <li>Containerised Solutions</li> <li>VSD / UPS Systems</li> <li>Vinyl label and Sign Printing</li> </ul>	<ul> <li>Managed Maintenance</li> <li>Preventative Maintenance</li> <li>Plant Shutdowns</li> <li>Turnarounds</li> <li>Brownfield &amp; Capital Projects</li> <li>Mechanical</li> <li>Electrical and Instrumentation</li> <li>Control Systems</li> <li>Access Solutions</li> <li>Insulation</li> <li>Specialist Coatings</li> <li>ATEX, NDT &amp; UAV Inspection</li> <li>Carbon Capture Solutions</li> <li>Hydrogen Solutions</li> <li>EPC / EPCm</li> </ul>	<ul> <li>PLC/SCADA Systems</li> <li>DCS</li> <li>ESD Systems</li> <li>F&amp;G Systems</li> <li>MES</li> <li>Plant Historians</li> <li>Batch &amp; Recipe Solutions</li> <li>Data &amp; Networks</li> <li>Industrial IT</li> <li>IT/OT Convergence</li> <li>Telemetry</li> <li>VR applications</li> <li>Mobile applications</li> </ul>	<ul> <li>24/7 Call Centre</li> <li>Managed Services</li> <li>Obsolescence</li> <li>Consigned Stock</li> <li>Service Level Agreements</li> <li>Energy Efficiency Solutions</li> <li>Condition Monitoring</li> <li>Oil Management</li> </ul>

#### DIGITAL TRANSFORMATION TOOLS - INDUSTRIAL 360 / MOBILE PLATFORMS / PIDGRAPH / REMOTE EXPERT













### **Bilfinger New Energy Solutions**

#### BILFINGER Energy Transition Our Portfolio





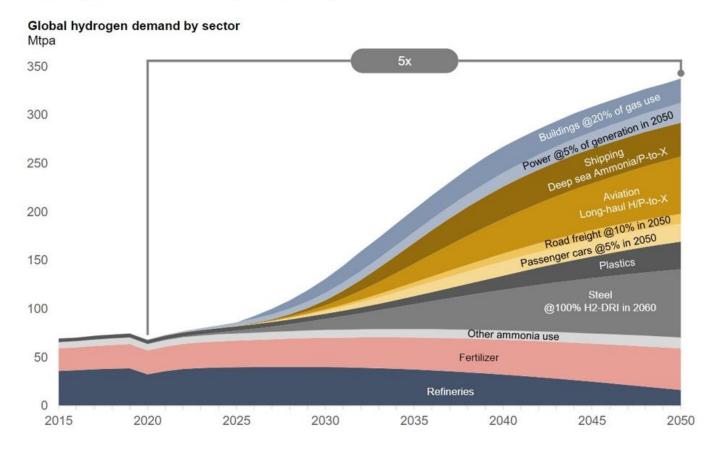


### BILFINGER Delivering a Sustainable Future WE MAKE HYDROGEN WORK

#### Is there a global demand for Hydrogen?



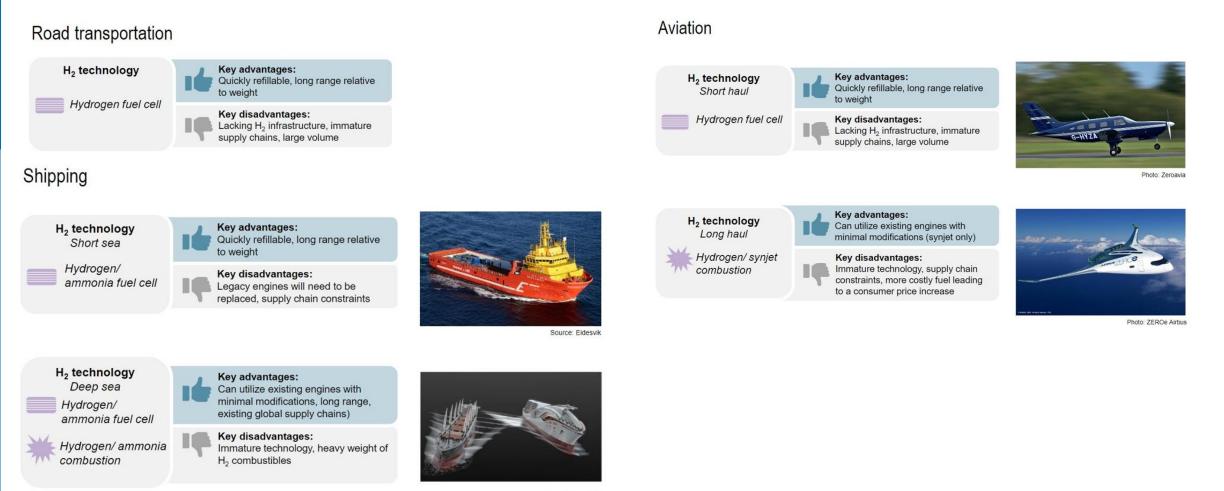
#### Hydrogen demand to quintuple by 2050



- "Global demand for hydrogen would need to more than double from its existing level (87 mt) of consumption to 212 million mt by 2030 if the world is attain climate-change goals" says the International Energy Agency.
- The initial focus for hydrogen use in the netzero economy is the conversion of existing uses of fossil energy to low-carbon hydrogen in ways that do not immediately require new transmission and distribution infrastructure
- In Germany the "Summer Package will update the national hydrogen strategy that would see Germany's electrolyser target doubled to 10 GW by 2030.

#### H2 Uses in Transportation

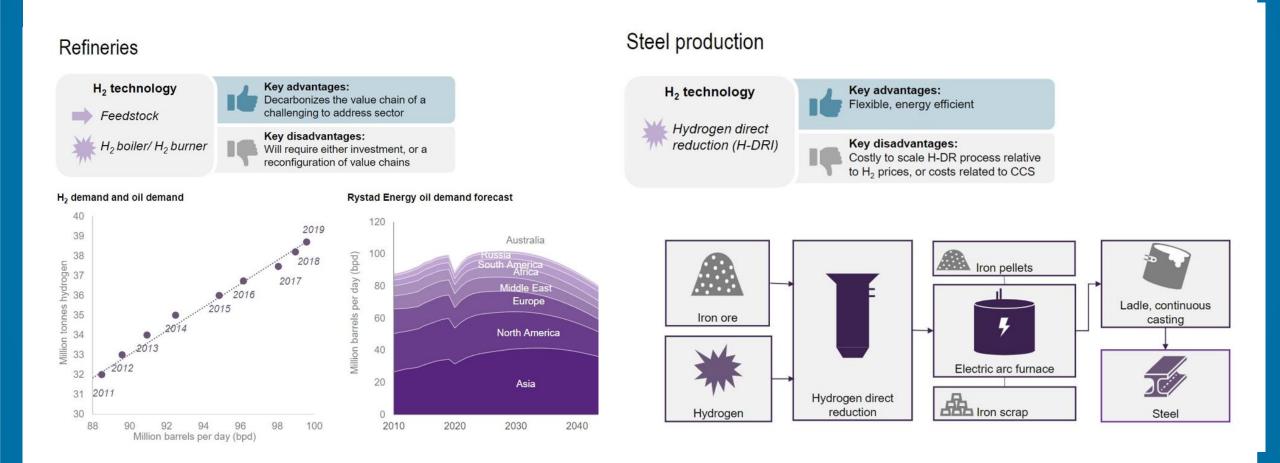




Source: Wartsila

#### H2 Uses in Industry





#### Our expertise in Hydrogen



#### Hydrogen Color Scheme by NACFE

<b>GREEN</b> Hydrogen produced by electrolysis of water, using electricity from renewable sources like hydropower, wind, and solar. Zero carbon emissions are produced.	<b>TURQUOISE</b> Hydrogen produced by the thermal splitting of methane (methane pyrolysis). Instead of CO <sub>2</sub> , solid carbon is produced.	<b>YELLOW</b> Hydrogen produced by electrolysis using grid electricity.	<b>BLUE</b> Grey or brown hydrogen with its CO <sub>2</sub> sequestered or repurposed.
<b>PINK/PURPLE/RED</b>	<b>BLACK/GRAY</b>	<b>WHITE</b>	<b>BROWN</b>
Hydrogen produced by electrolysis	Hydrogen extracted from natural gas	Hydrogen produced as a byproduct of	Hydrogen extracted from fossil fuels,
using nuclear power.	using steam-methane reforming.	industrial processes.	usually coal, using gasification.

No Matter which Colour, Bilfinger can support you!

#### Selection of our clients in the Hydrogen market





#### **Project References for H<sub>2</sub>**

	Hydrogen/CCS	Hydrogen	Hydrogen	Ender The second
Scope	<ul> <li>Client: North Sea Energy 4 (NSE4)</li> <li>Exploring the potential of the North Sea</li> </ul>	<ul> <li>Customer : ArcelorMittal</li> <li>Hamburg H2H project phase 1</li> <li>H2 in steel production process</li> <li>Total Capex ~65M€.</li> </ul>	<ul> <li>Customer: Confidential</li> <li>H2 production from Recycled Plastic</li> </ul>	<ul> <li>Customer: HyStock/Gasunie</li> <li>Power to Hydrogen Pilot Plant</li> </ul>
Bilfinger Scope	<ul> <li>Design of all CCS and H<sub>2</sub> Offshore Installations</li> <li>Capex and OPEX cost review</li> <li>Determine size of electrolyser</li> </ul>	<ul> <li>Consulting services contract</li> <li>Opportunity for Bilfinger to capture part of the execution scope in phase 2.</li> </ul>	<ul> <li>Engineering Consultancy</li> <li>Safety studies</li> <li>O&amp;M strategy</li> </ul>	<ul> <li>System Integration</li> <li>HV power supply integration</li> <li>Pipeline layout</li> <li>Hydrogen Piping and tube trailers</li> </ul>
Timeline	2020 – to date	2019 – 2020	2020 – to date	2018 – to date
Location	Netherlands	Germany	UK	Netherlands
Key aspects / USP	<ul> <li>Proven onshore and offshore expertise</li> <li>Design expertise</li> <li>Independent process engineering for key assets</li> </ul>	<ul> <li>Extensive experience in gas sector and gas processes.</li> <li>Capacity to build multi-disciplinary teams and combine its capabilities to offer comprehensive project delivery</li> </ul>	<ul> <li>Strong engineering capability with O&amp;M experience.</li> <li>HAZOP, HAZID, SIL and ATEX</li> <li>Proven experience in Plastic to gas technology</li> </ul>	<ul> <li>Strong system integrator and FDS knowledge</li> <li>Power harmonics competence</li> <li>In house fabrication capability</li> </ul>

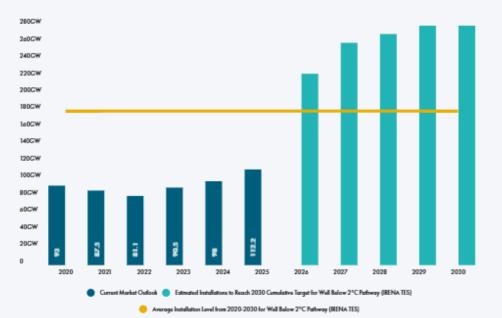


BILFINGER Delivering a Sustainable Future WE MAKE WIND FARMS WORK

#### Wind Market



#### Annual wind installations must ramp up in this decade to keep global warming well below 2°C\*



\* To knop global warning will below 2°C, annual wind installations must awing a 180 GW over this decade. Sharifalli in the first half of the decade will need to be compensated with a diamatic rise in wind growth in the second half of the discust to stray on strayst.

NOTE: 180 GW is GWTC's calculation for the average annual wind installations required from 2020-2030 under RENA's ITS scenario, which targets 2,526 GW cannot after which capacity by 2030 to here gelobal warming well below 2°C above pro-industrial levels by end of cantury. See: IRENA (2020), Global Renewables Outlook: Integy transformation 2050.

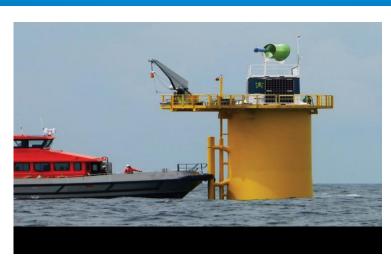


- Electricity generation from wind power in the UK has increased by 715% from 2009 to 2020.
- Turnover from UK wind energy was nearly £6 billion in 2019.
- Employment in offshore wind in the UK has increased significantly since 2015, with 7,200 full-time equivalent (FTE) employees in 2019.
- Germany aims to install as much as 10 GW of new onshore wind per year between now and the end of the decade.
- Already as part of the Coalition Agreement the German Government has said it would increase Germany's offshore wind target to 30 GW by 2030. For the end of the decade that means annual combined wind energy installations of up to 15 GW.

#### **Bilfinger Wind Energy Service Portfolio**











- Structural Inspection
- Specialist Cleaning
- Power Systems
- LV, Fire, UPS & Utility Systems
- Life Saving Safety Equipment
- Installation Systems
- Composite Repairs
- Inspection Services
- Structural Fabric Maintenance
- Crane Maintenance
- Helideck Services and Personnel
- Blade Inspection & Repair
- WTG Electro-magnetic Maintenance
- Nav-Aid Repair & Replacement
- Planning and Logistics

#### **Bilfinger clients in the Wind market**





#### **Bilfinger Group Has Strong Reputation in Offshore Wind**



Reference Projects	Country	Year	JV Partner	FOU Number	FOU Type	m Enaineering	A Procurement	<ul> <li>Installation FOU Installation WTG</li> </ul>	Scour Protection Noise Mitigation	Soil Investigation Manpower supply	A BUTT	C.	1 Dela
OWF Nordergründe	DE	2016 <sup>e</sup>	-	19	Monopile			• •	•	•			Gothenburg
OWF Sandbank	DE	2015	-	72	Monopile		•	•	•	•			0
OWF Wikinger Pile Testing Campaign	DE	2015	-	9	Anchor pile	•	•	•	•	•	A BELLEVILLE		No X all
Pilot Project Vibro*	DE	2014	-	6	Test pile	•	•	•		•			MAY STA
OWF DanTysk	DE	2013	Aarsleff	80	Monopile	•	•	•	•	•	North Sea		an Ca
OWF London Array	UK	2012	Aarsleff	177	Monopile	•	•	•	•	•	Glasgow		+ to state
OWF Thanet	UK	2010	Aarsleff	100	Monopile					•		A1	Denmark Copenhagen
OWF Rødsand 2	DK	2010	Aarsleff	90	Gravity	•	•	•	•	•	United		
OWF Sprogø	DK	2009	Aarsleff	7	Gravity		•	•		•			
OSS Rødsand B	DK	2009	Aarsleff	1	Gravity		•	•	•	•	Kingdom	0	
RWE Innogy	DE	2009	-	-	-					• •	Isle of Man Leeds	× O	Y. Lake
OWF Horns Rev 2	DK	2008	Aarsleff	91	Monopile		•	•		•	Dublin	2	Clamburg
OSS Alpha Ventus	DE	2008	Hochtief	1	Jacket		•	•		•	0 0 0	and s	OHamburg
Research Platform Fino 2	DE	2007	Aarsleff	1	Monopile		•	•		•	Liverpool Sheffield	XIII	o Bremen Berlin
Anemometer mast at Lillgrund	SE	2006	Aarsleff	1	Monopile	•		•		•	Birminghamo	dam g	Definit
OWF Lynn + Inner Dowsing	UK	2005	Aarsleff	-	-					•••	Net	herlands	TYTYTY
Research Platform Fino 1	DE	2003	-	1	Jacket	•	•	•		•	Bristol London	AUGUN	T WARDER
OWF North Hoyle	UK	2003	-	-	-					•		Cologne	Germany
Met Mast Sky 2000	DE	2002	-	1	Monopile			•		•	Belgiu	mago	Germany
Borkum Reef	DE	2001	-	-	-					.   .		1200	Prague

\*Research project sponsors: RWE, DONG, EnBW, E.ON, Vattenfall, Carbon Trust

#### Further Selected Project References for both Onshore and Offshore Wind



	Wind	Wind	Wind	Wind
Scope	<ul> <li>Equinor</li> <li>Sheringham Shoal Offshore wind farm</li> </ul>	<ul> <li>Client: Areva T&amp;D</li> <li>Barrow offshore windfarm project</li> </ul>	<ul><li>Client: Siemens for Fluor</li><li>Greater Gabbard</li></ul>	<ul> <li>Siemens for SSE</li> <li>Balmurrie and Calliachar Windfarms</li> </ul>
Bilfinger Scope	Supply of Operation & Maintenance services	Control system, cabling, installation and engineering support services	Manufacture, installation and testing of 36 NXPlus Switchgear	<ul> <li>Supply of scaffolding &amp; access</li> <li>Unloading &amp; testing of Containerised equipment</li> <li>Remedial works</li> </ul>
Timeline	2017 - 2021	2019	2018 - 2019	2013
Location	UK North Sea, coast of Norfolk	υκ	UK North Sea, coast of Yarmouth	UK, Onshore Scotland
Key aspects / USP	Boat landing, corrosion & substation repairs – multi-skilled teams and excellent safety record. Ability to offer local, long term personnel.	<ul> <li>Strong engineering credibility</li> <li>Proven track record with Control Systems platform and application</li> </ul>	Meeting the fixed deadline in the project timelines	Engineering Services support partner to Siemens for the duration of the project

## Bilfinger

#### Further Selected Project References for both Onshore and Offshore Wind

Customer	Wind • Iberdrola • Wikinger	Wind • Global Tech One	Wind         • Nordsee One
Bilfinger Scope	Inventory and repair of extensive paint damage to 70 jacket towers, using rope access technicians. Performed periodic structural inspection on 16 TP's by NDT.	Inventory of paint damages and carry out repair and inspection in the damaged areas, many of which required the use of rope access	The scope in 2018 was initially inventory and repair of paint damages to 30 towers in the N1 wind farm, using rope access, followed by detailed
Timeline	2019-2021	2018 -2019	2018-2021
Location	Baltic Sea – German Sector	North Sea – German Sector	North Sea – German Sector
Key aspects / USP	<ul> <li>Close collaboration with client to improve service compared to competitors</li> <li>Multi-skilled rope access team</li> <li>High-quality reporting</li> </ul>	<ul> <li>Multi-skilled rope access teams</li> <li>Self-contained paint workshop delivered to site</li> <li>Stringent HSE rules for the German sector</li> </ul>	<ul> <li>Close collaboration with client to improve service compared to previous suppliers</li> <li>Multi-skilled rope access teams</li> <li>Use of Sika SW1000 one-coat system</li> </ul>



# WE CREATE. WE CARE. WE CAN. WE MAKE IT WORK.