

What is special about energy transition projects?

Industrial decarbonisation is a multistage transition from CO₂ emissions reduction to zero carbon production. Innovative nature and technological complexity of energy transition projects require thoughtful approach to project planning, funding and execution.

Bilfinger Tebodin helps industrial players on their decarbonisation pathway providing support along the entire project's lifecycle, serving investors at every project stage.



Green hydrogen from the North Sea

The North Sea Energy Program was established in 2017 to determine the potential of the North Sea as an integrated energy system. Bilfinger Tebodin is one of the more than 30 organizations that are collaborating on this program to research a possible location for offshore wind farms, underground CO₂ storage sites, and hydrogen production. As part of the program, Bilfinger Tebodin has designed six hydrogen production plants of different sizes for a total of three "energy islands" that produce 2, 5, and 20 GW respectively.

CO₂ separation at AVR waste-to-energy plant

AVR operates a waste-to-energy plant in the Netherlands. Bilfinger Tebodin developed a system that separates the CO₂ emissions produced by waste incineration. The CO₂ is purified, liquefied and stored in large tanks before it is transported to greenhouses where it is used for the cultivation of crops. Bilfinger Tebodin conducted the feasibility study for AVR and provided the conceptual, basic and detail engineering in addition to supporting the client with project and construction management.

Bilfinger Tebodin delivers services that allow its customers to benefit from hydrogen and carbon capture technologies across the entire value chain from hydrogen production or CO₂ capture, to their treatment, storage, transportation and utilization.

Our dedicated energy transition taskforce has a strong expertise in developing innovative projects at both local and international levels.

Bilfinger Tebodin

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We created this project matrix to guide you through your energy transition journey with all the benefits it may bring to your business.

Please note:

*Market investigation may include, but is not limited to:

- 1) Assessment of demand and supply availability
- 2) Pricing overview and projections
- 3) Regulatory framework overview
- 4) Competitive landscape overview

**Process integration may include but is not limited to:

- 1) H₂/ CO₂ treatment, storage, transportation
- 2) Concept plot plan
- 3) Plant block diagram
- 4) Main plant specifications

Contact us to know more:

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BILFINGER TEBODIN



**YOUR PROJECT MATRIX
FOR INVESTMENTS
IN CARBON CAPTURE,
UTILIZATION AND
STORAGE AND HYDROGEN
TECHNOLOGIES**

Project phases	PROJECT PLANNING AND FUNDING				PROJECT EXECUTION					PROJECT MONITORING
	Project Planning / Preparation	Site search and Due Diligence	(Pre-) Feasibility / Feasibility	Project Funding	FEED	Design for permitting	Detail Engineering	Procurement	Construction & Commissioning	
Business part	Market investigation*	Site search	Market investigation*	Project adaptation for funding requirements						<p>We help you choose the most suitable technology solutions, incorporate innovative technologies to your business and deliver your project in the most efficient way.</p> <p>■ Bilfinger Tebodin scope</p>
	Business case development / verification									
	Feasibility study for management approval									
	Organizational structure									
Financial part	Project management strategy									
	Financial modelling		CAPEX & OPEX	Financial engineering	CAPEX & OPEX				Project monitoring for investor/ lender	Project monitoring for investor/ lender
	Investment planning		Bankable feasibility study	Application for funding					Estimating and cost control	
	Funding options search								Cash-flow management	
Engineering & Construction part	Financing and project partner search									
	Technology scouting	Technical due diligence	Selection of technology and technology providers		Licensed technology supplier contracting	Permitting applications	Process integration	Selection of General contractor	Construction management	
	Technological concept development with options	Environmental and social impact assessment	Licensed technology supplier data		Licensed technology supplier inputs	Licensed technology supplier inputs	Licensed technology supplier inputs	Tendering for auxiliary equipment supply	HSE management	
	Permitting consulting		Process technology concept, incl. ISBL & OSBL		Process integration** for ISBL & OSBL	Environmental Impact Assessment with public hearings	Issue for construction drawings		Document control	
	Procurement strategy		Process integration		Surveys	Process integration			Quality & Author supervision	
			Preliminary heat and material balance calculation		Detail heat and material balance calculation	Design for permitting			Technical supervision	
			Preliminary hydraulic studies		Detail hydraulic studies	Construction permit obtaining			Scheduling and progress control	
			Concept 3D modelling		Detail 3D modelling (AVEVA, COMOS, Plant 3D)				Permitting support & Commissioning	
			Safety study (HAZID, LOPA, SWIFT, SIL, ATEX)		HAZOP study				As-built 3D-model	
			Procurement strategy		RAM study				Contract/Claim management	
		Project schedule		Bid package preparation				Construction execution		
Risk assessment										