THE GO-TO
ENERGY SUPPLY CHAIN
TRADE ASSOCIATION,
GLOBALLY

GLOBAL ENERGY MARKET UPDATE

IRO – 6 September 2023

Neil Golding, Executive Director, Energy Industries Council

THE GO-TO
ENERGY SUPPLY CHAIN
TRADE ASSOCIATION,
GLOBALLY

We are uniquely positioned to help energy supply chain businesses to understand the opportunities and challenges and to help them grow their business.

PROPRIETARY DATA

- Market Intelligence Databases +
- Industry and Country Reports +

NETWORK & EVENTS

- UK and EIC Pavilions +
- Trade Delegations +
- In-person and online events +
- Events Solutions +

ENERGY MARKET EXPERTISE

- EIC Consult +
- EIC Media Centre for news, magazines, press releases and articles +

SUPPLY CHAIN EXPERTISE

- Survive & Thrive Insight Report +
- Energy Supply Chain Awards +
- EICSupplyMap +

DataStream

AssetMap

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EIC Inside energy

SupplyMap

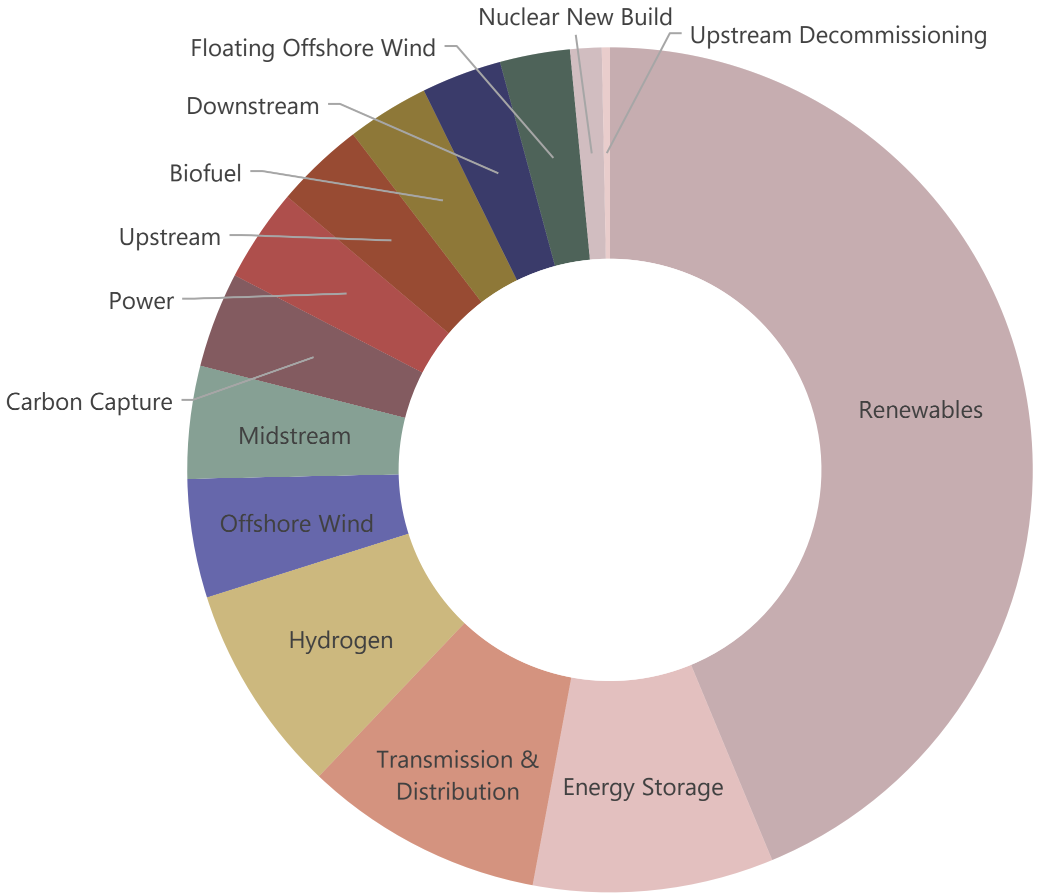
2023 WESCA
WORLD ENERGY SUPPLY CHAIN AWARDS

EIC Survive & thrive

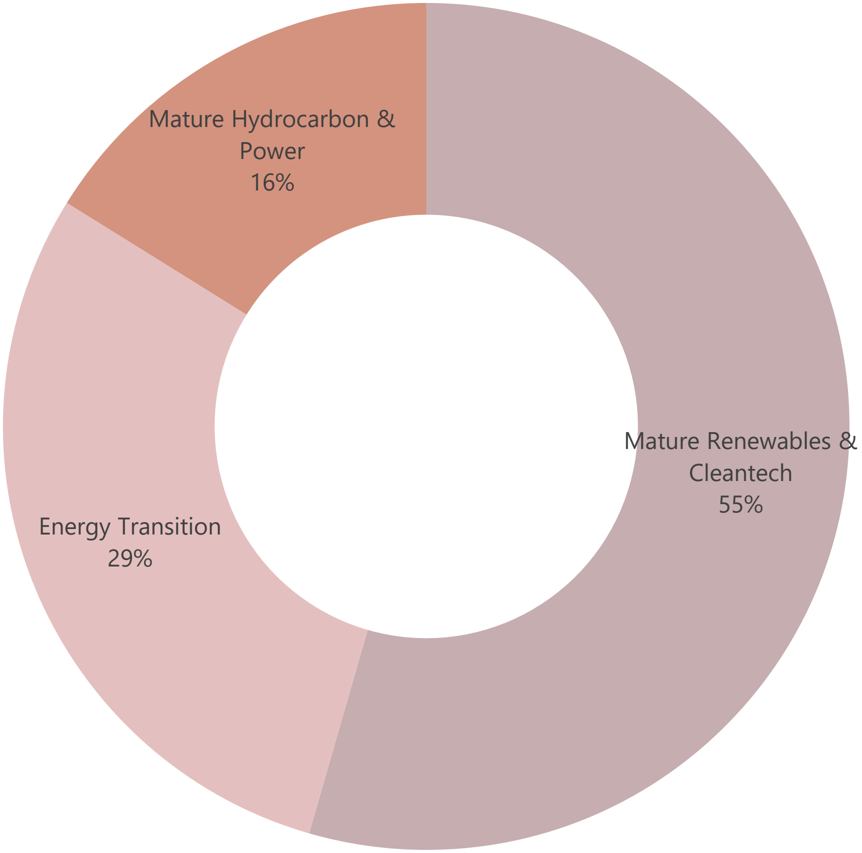
INTRODUCTION - PROJECT ANNOUNCEMENTS SINCE JANUARY 2023

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, **GLOBALLY**

Project announcements all sectors since January 2023



Quantity of projects announced in 2023 (exc. T&D)

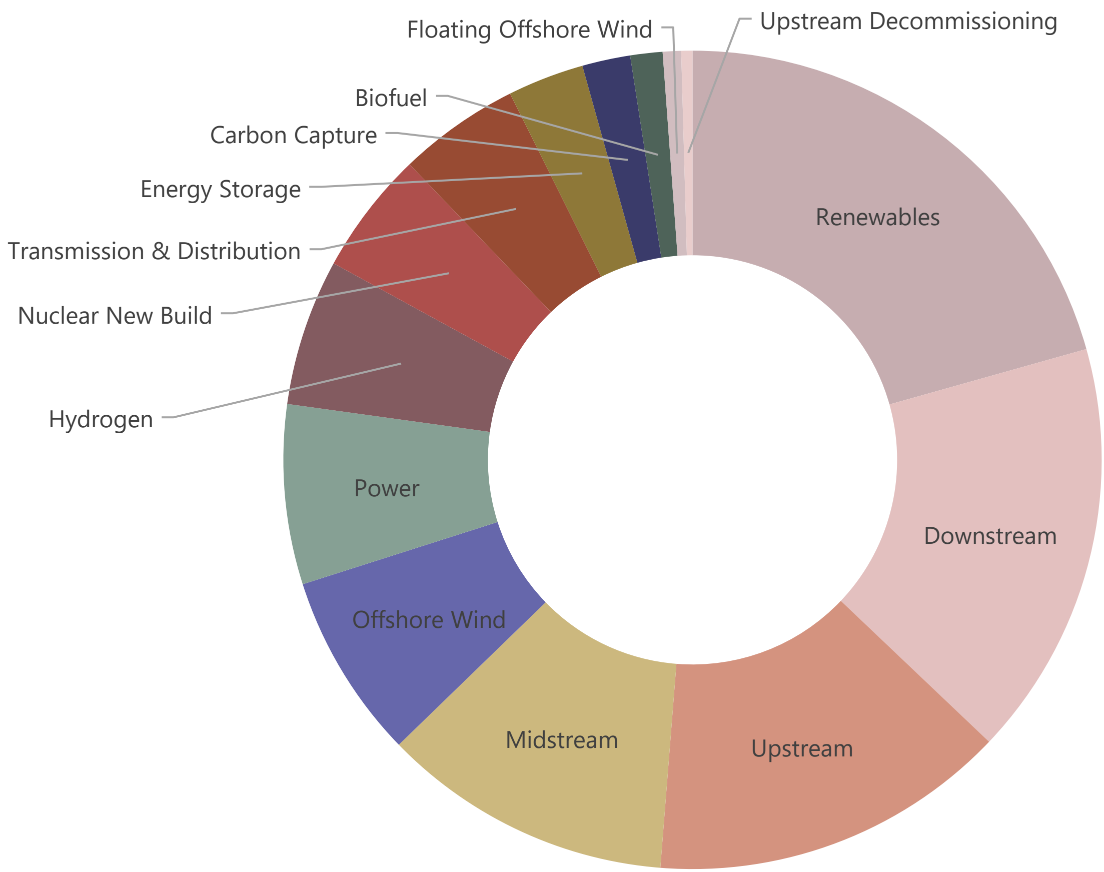


Source: EICDataStream

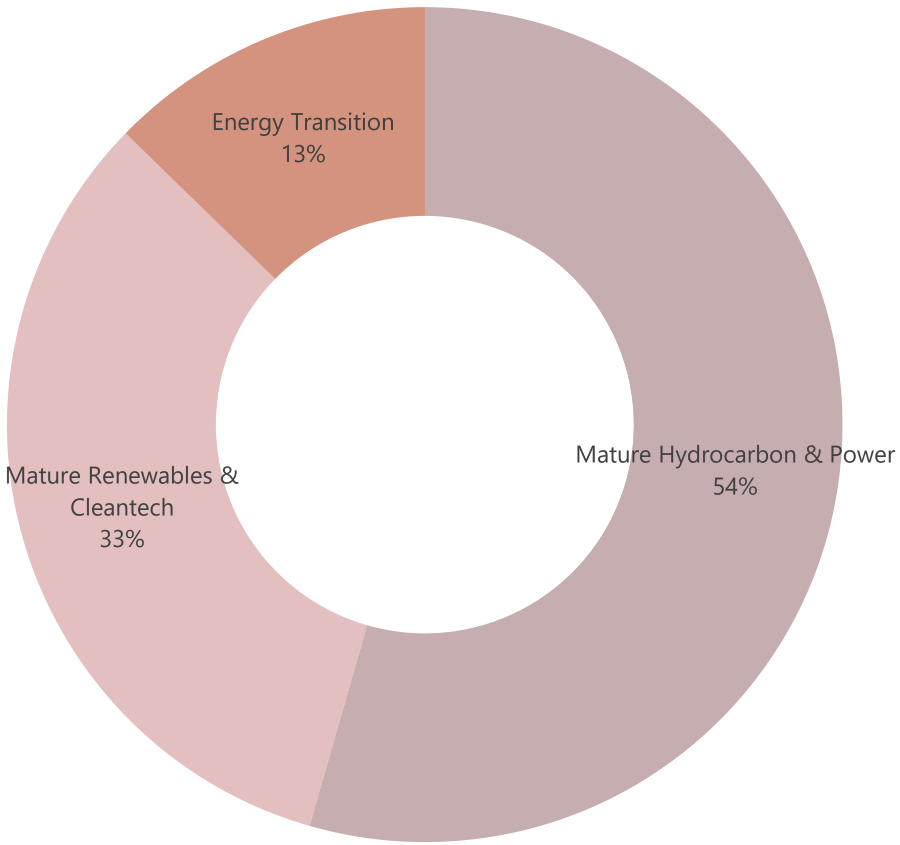
INTRODUCTION – NEAR/MEDIUM TERM INVESTMENT

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY

Value of projects based on commissioning date up to 2028



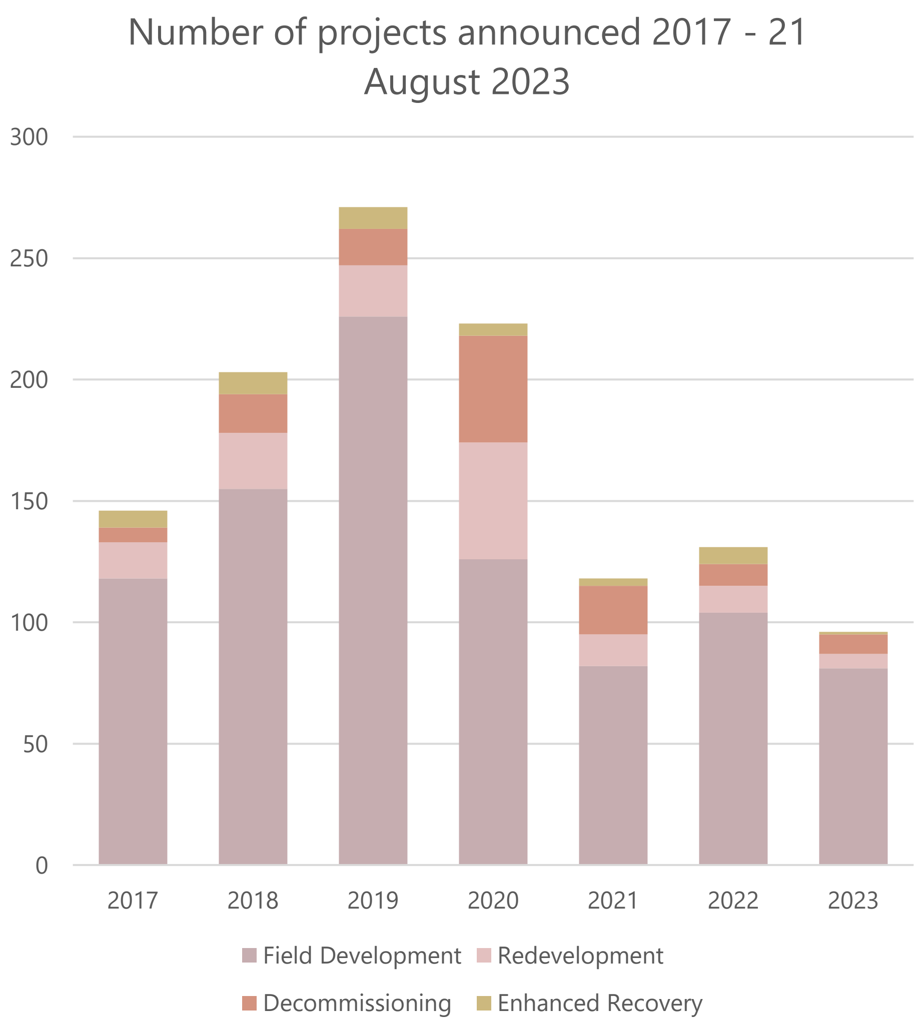
Value of projects based on commissioning date up to 2028

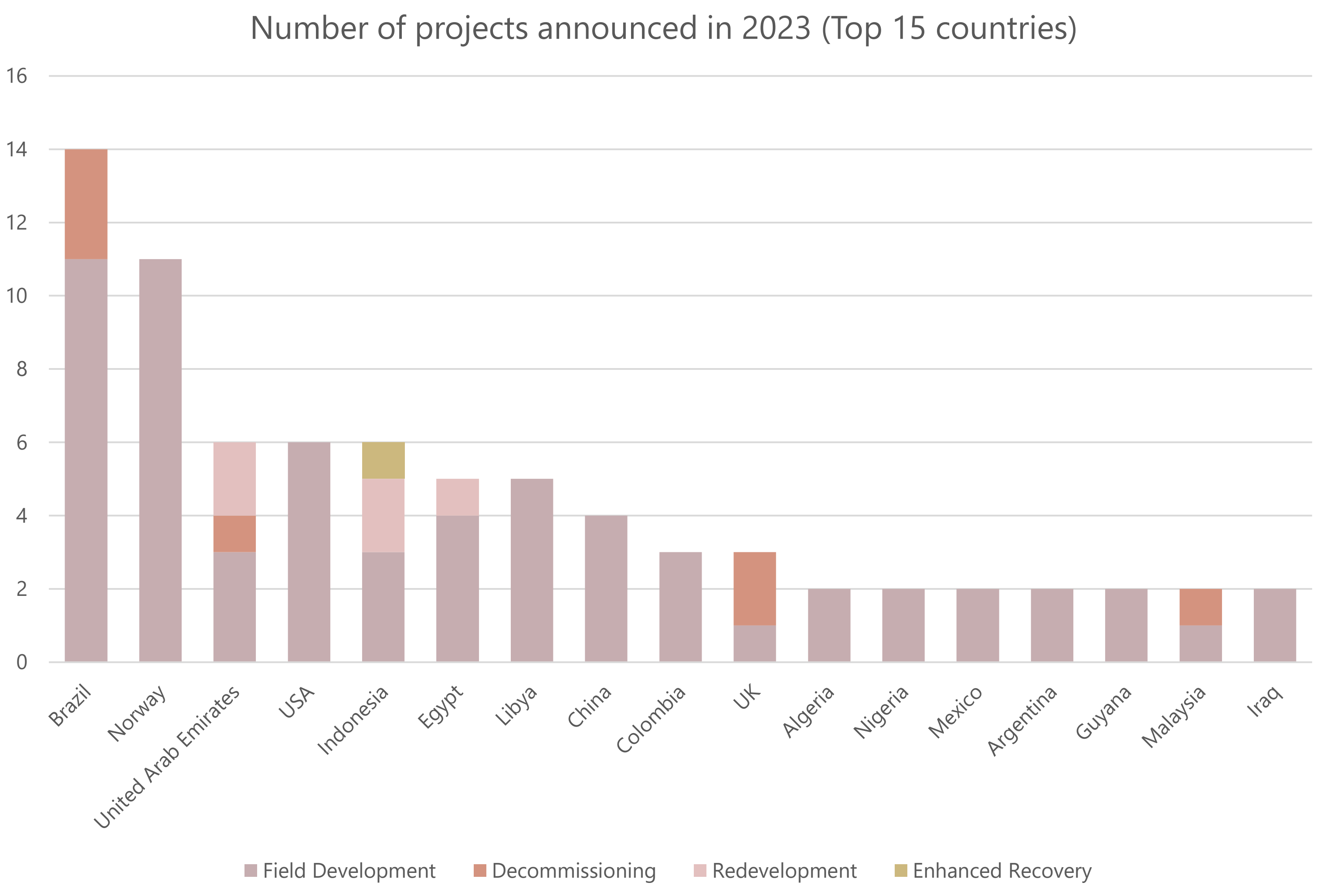


Source: EICDataStream

UPSTREAM OIL & GAS – PROJECT ANNOUNCEMENTS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY

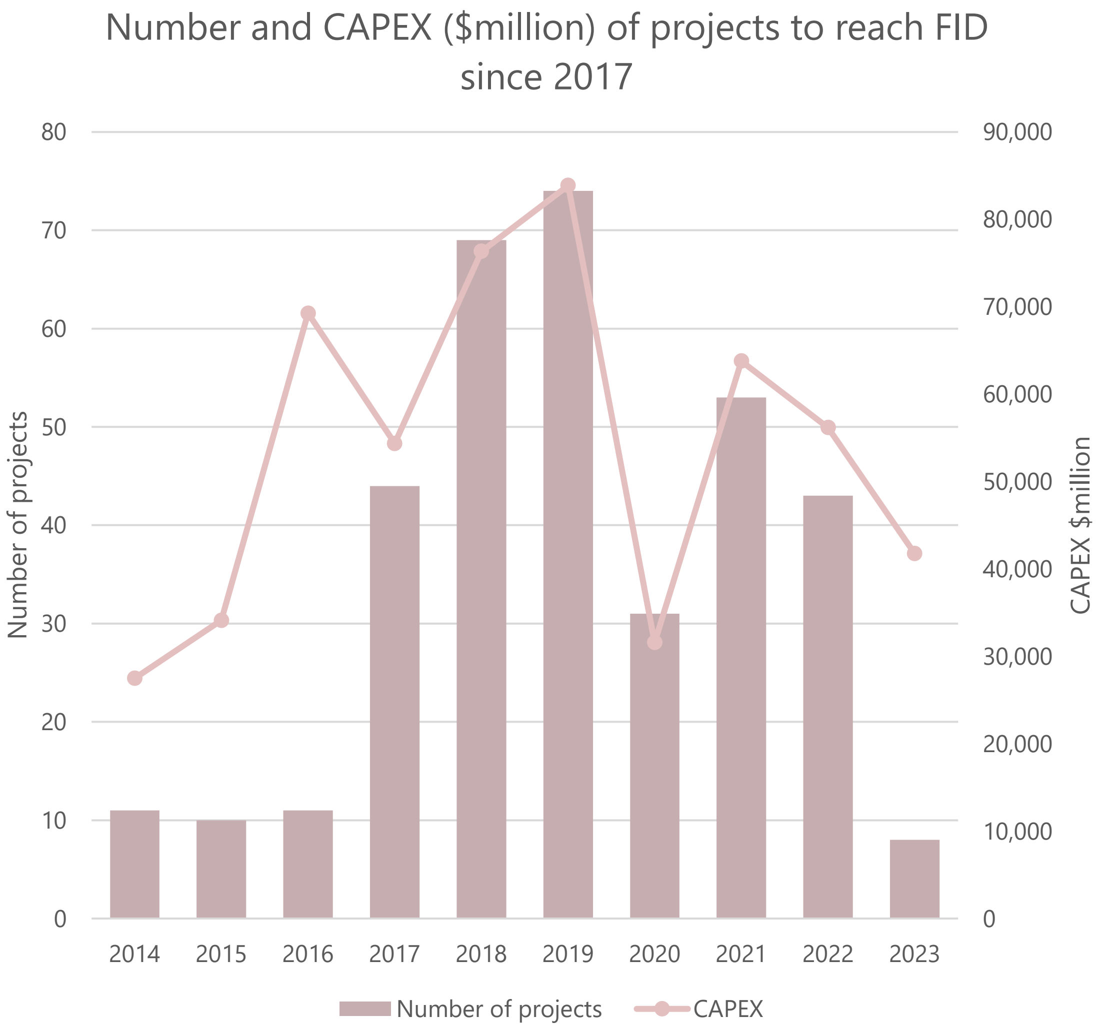




Source: EICDataStream

UPSTREAM OIL & GAS – PROJECT FINAL INVESTMENT DECISIONS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY



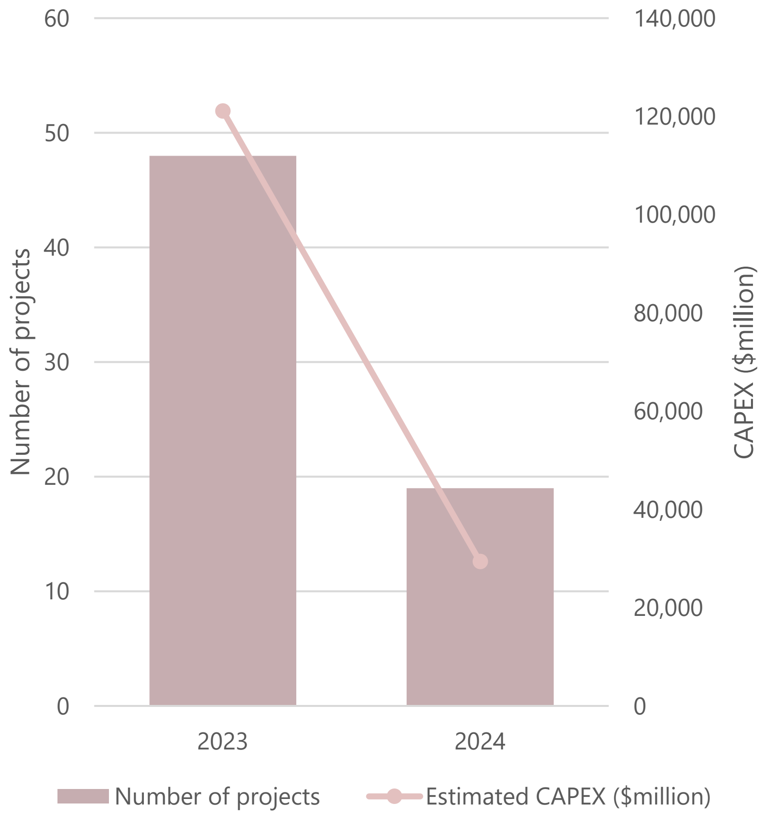
Project Name	Location	Operator	CAPEX ($million)	Start-up Year	Water Depth (metres)
Leviathan Gas Field - Phase 1B	Israel	Noble Energy	1500	2025	1600
Neptun Block Exploration (Domino-1 Gas Discovery)	Romania	OMV	4400	2027	930
Block BM-C-33 - Pão de Açucar Gas Field	Brazil	Equinor	9000	2028	2900
Uaru Oil Field (Errea Wittu FPSO)	Guyana	ExxonMobil	12700	2026	1690
Dover Subsea Tie-Back	USA	Shell	350	2025	2280
Block 15/06: Agogo Full Field Development	Angola	Azule Energy	10000	2026	1700
Blackrod SAGD Oil Sands Project	Canada	International Petroleum Corporation	2800	2026	N/A
Lapa South-West Field Development Project	Brazil	TotalEnergies	1000	2025	2140

Source: EICDataStream

UPSTREAM OIL & GAS – PROJECTS PENDING FINAL INVESTMENT DECISIONS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, **GLOBALLY**

Number and CAPEX ($million) of projects that could reach FID in 2023 and 2024

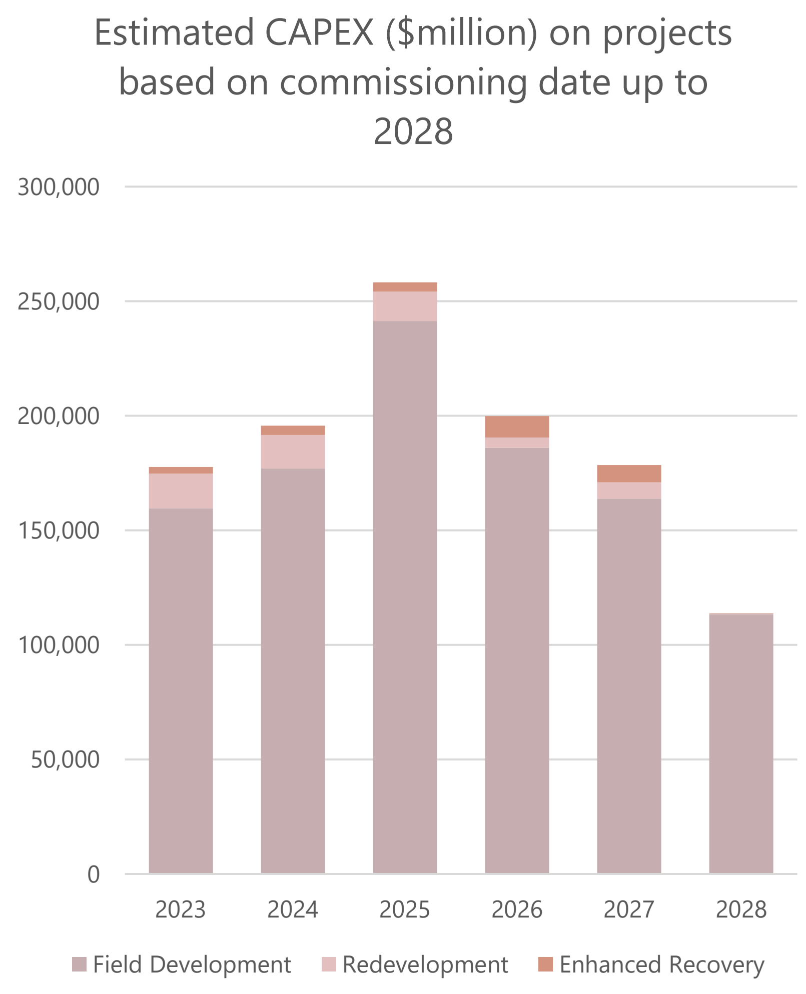


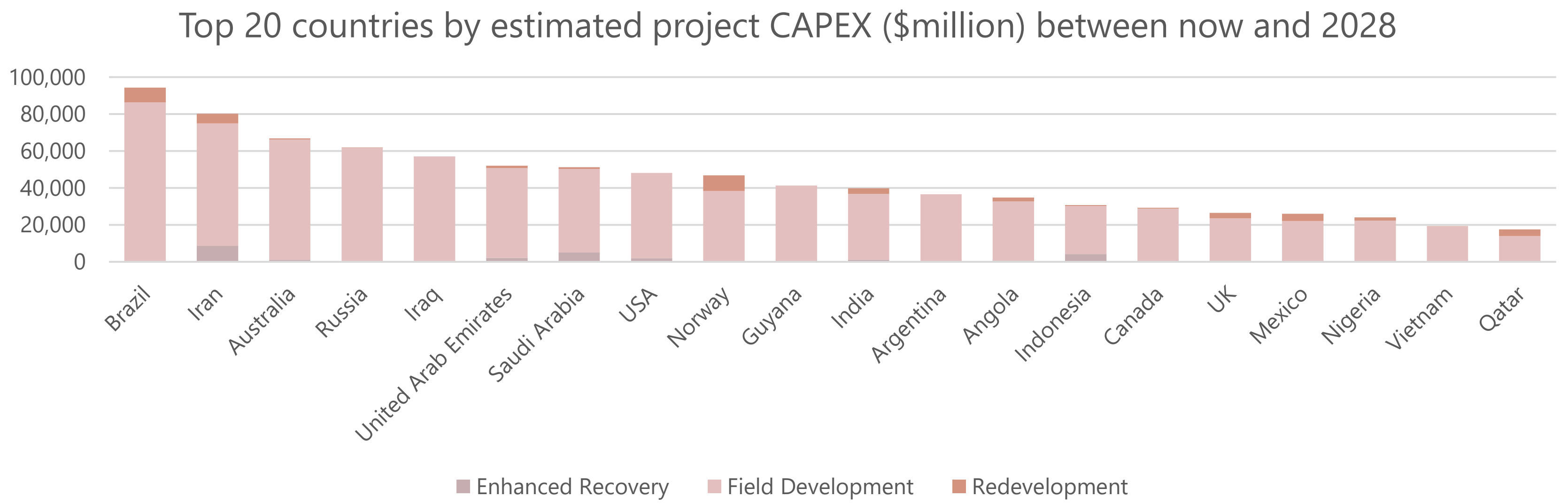
Project Name	Country	Operator	CAPEX (Million $)	Start Up Year	Water Depth
Block 58 Field Development Project	Suriname	TotalEnergies	10000	2027	1000
Bonga Southwest & Aparo Oil Fields - OML 118, OML 132 & OML 140	Nigeria	Shell	10000	2027	1400
Block 118- Ca Voi Xanh (Blue Whale) Field	Vietnam	ExxonMobil	10000	2027	300
Whiptail Oil Field	Guyana	ExxonMobil	9000	2028	1800
Block NC-41 - Sabratha Gas Project - A and E Structures Integrated Field Development	Libya	Eni	8000	2026	235
Trion Offshore Oil Field	Mexico	Woodside	7200	2028	2540
Vietnam Gas Project - Kim Long, Ac Quy and Ca Voi Gas Fields (Block B, 52/97 & 48/95 South West Vietnam)	Vietnam	PetroVietnam	6800	2026	500
Sépia Oil Field (Phase 2 - P-85 FPSO)	Brazil	Petrobras	6000	2028	2131
Atapu Oil Field (Phase 2 - P-84 FPSO)	Brazil	Petrobras	6000	2028	2230
Rosebank & Lochnagar Oil & Gas Fields	UK	Equinor	6000	2026	1110
Cameia-Golfinho Field Development Project	Angola	TotalEnergies	6000	2026	1800
Sparta Offshore Oil Field	USA	Shell	5500	2027	1340
Bonga North Tranche 1- OML 118	Nigeria	Shell	3900	2025	1000
Agulhinha-Cavala Oil Fields (SEAP I)	Brazil	Petrobras	3500	2027	2431
Budião-Palombeta Oil Fields (SEAP II)	Brazil	Petrobras	3500	2027	2775
Deepwater Tano/Cape Three Points Licence - Greater Pecan Area - Phase 1	Ghana	Pecan Energies	3500	2026	2513
Kayab-Pit Offshore Oil Field	Mexico	Pemex	3500	2025	200
Offshore Area 4 Mamba Complex	Mozambique	MRV	3500	2028	2600
Aphrodite Gas Field (Block 12)	Cyprus	Chevron	3000	2027	1700
Block 29 - Polok and Chinwol Oil Discoveries	Mexico	Repsol	2500	2026	600
Block 31: South East Development Area (SEDA) Phase 1	Angola	Azule Energy	2500	2025	1600

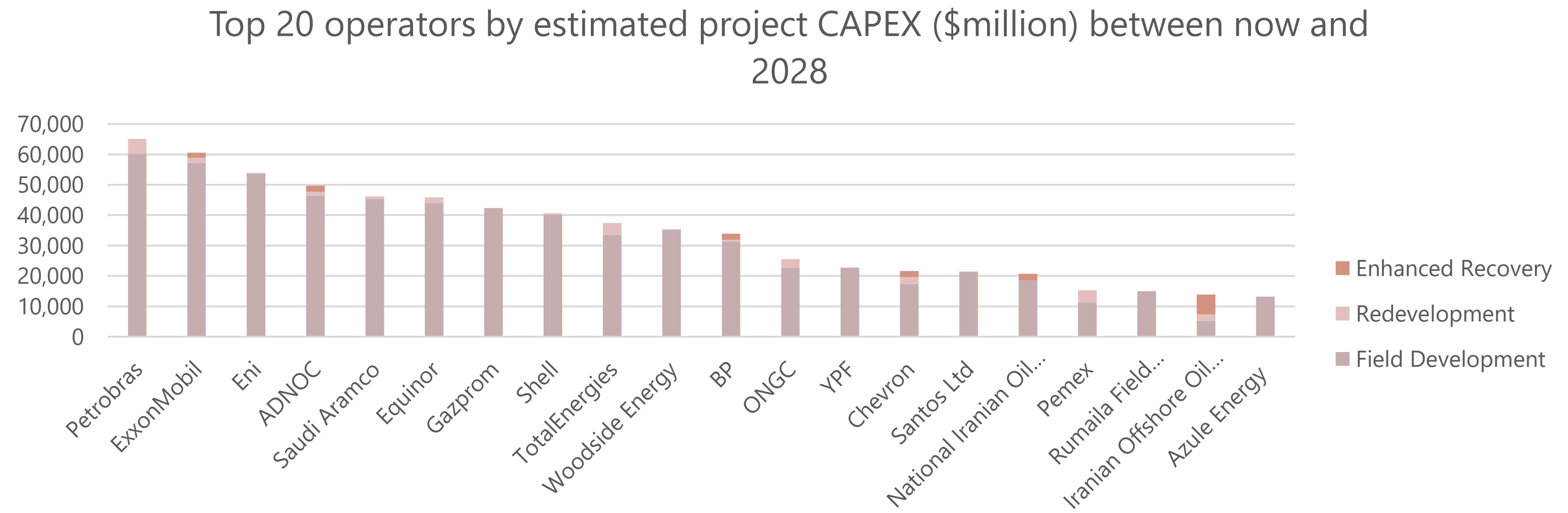
Source: EICDataStream

UPSTREAM OIL & GAS – NEAR/MID TERM CAPEX ON ANNOUNCED PROJECTS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY

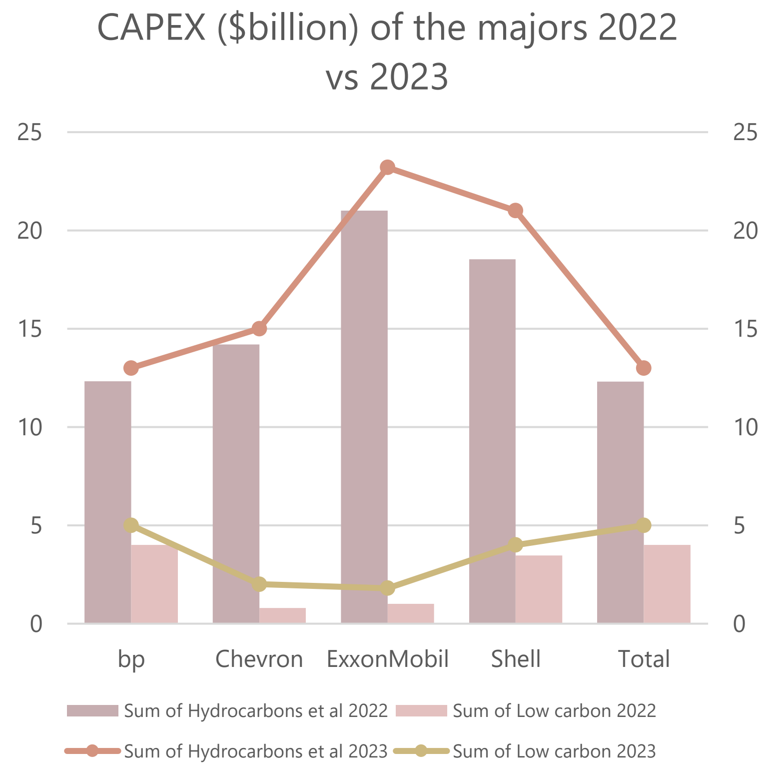






Source: EICDataStream

2023 - WHAT ARE THE MAJORS DOING?



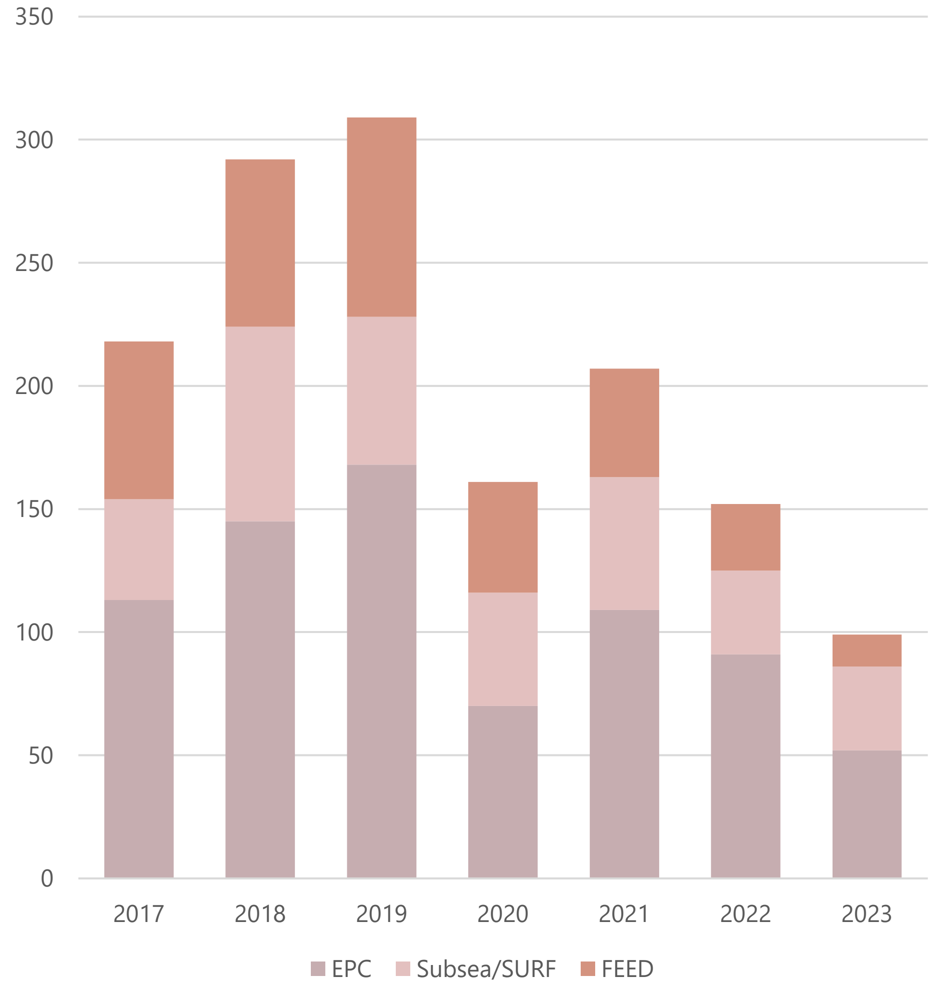
Operator	% of CAPEX on cleantech 2022	% of CAPEX on cleantech 2023
Shell	15.70	16
bp	24.50	27.78
Total	24.54	27.78
Chevron	5.33	11.76
ExxonMobil	4.55	7.2

Source: EICDataStream

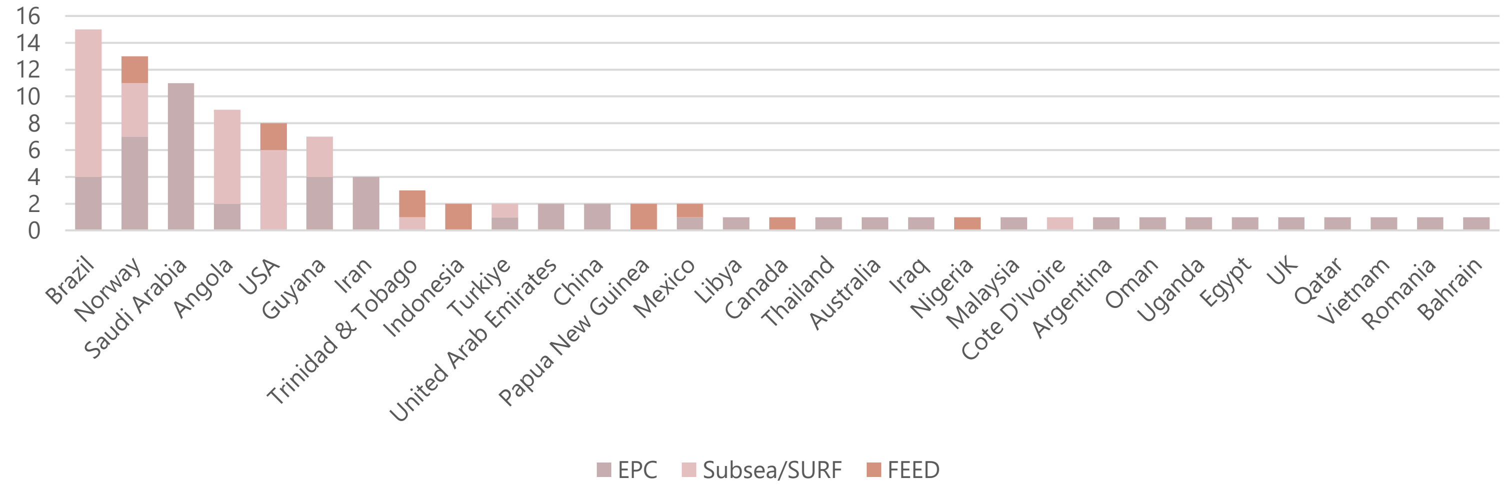
UPSTREAM OIL & GAS – MAJOR CONTRACT AWARDS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY

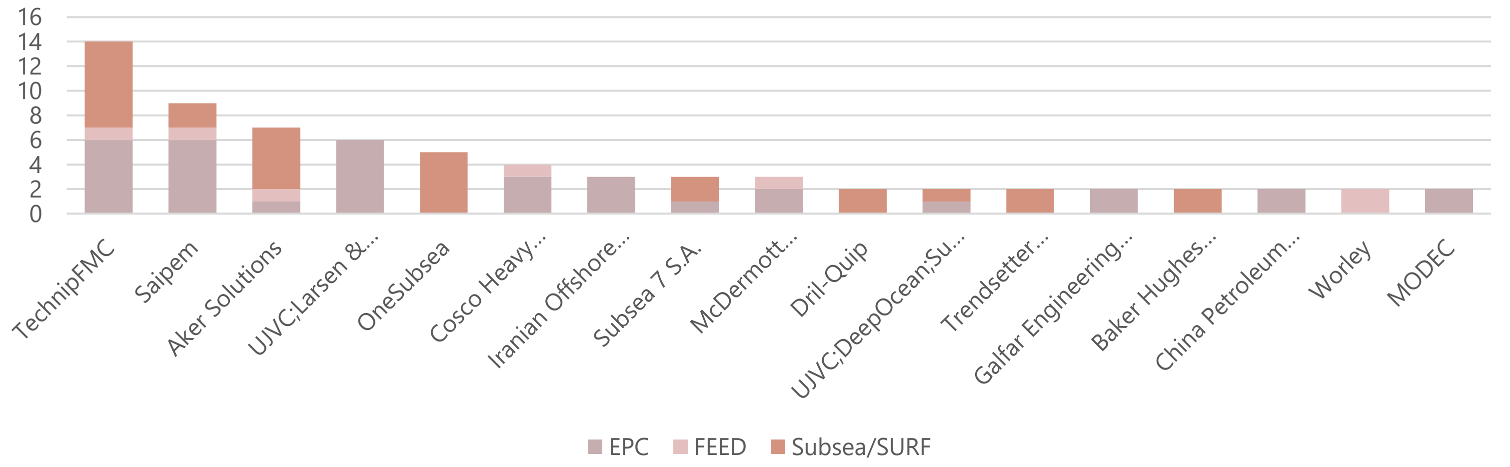
Major contract awards since 2017



Number of major contract awards in 2023



Number of major contract awards in 2023 (Top 15 contractors)



Source: EICDataStream

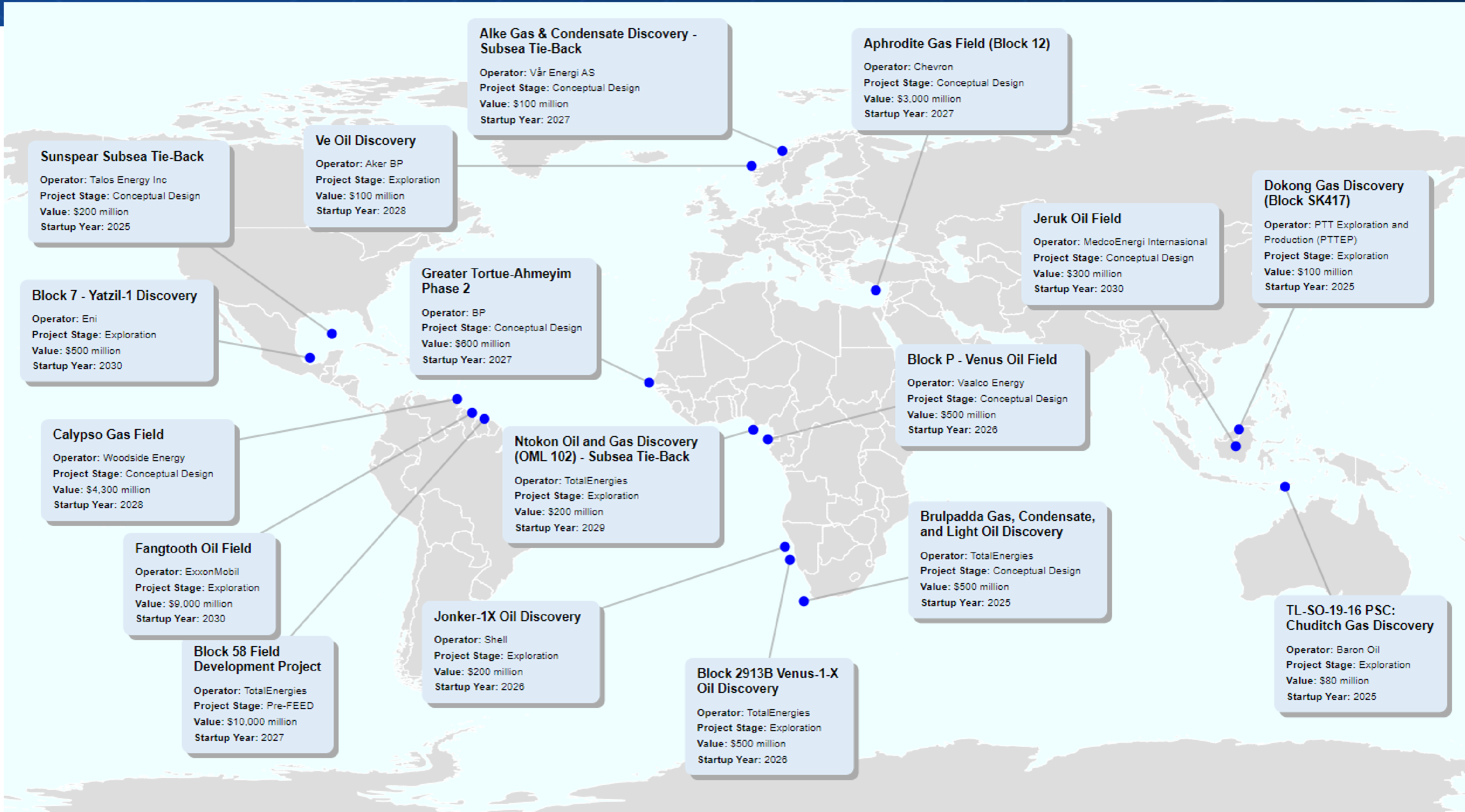
UPSTREAM OIL & GAS – MAJOR CONTRACT AWARDS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY

Contract Type	Description	Contractor Name	Project Name	Operator Name	Country
EPC	iEPCI for the SPS, controls, pipelines and umbilicals.	TechnipFMC	Berling Gas Field	OMV	Norway
Subsea/SURF	Subsea umbilicals	Aker Solutions	Block 15/06: Ndungu Oil Field - FPSO	Eni	Angola
Subsea/SURF	Supply flexible pipe	TechnipFMC	Block 15/06: Ndungu Oil Field - FPSO	Eni	Angola
Subsea/SURF		TechnipFMC	Block 18 Infill Development	Azule Energy	Angola
Subsea/SURF		Baker Hughes Company	Block CI-101: Baleine Oil & Gas Field - Phase 2	Eni	Cote D'Ivoire
EPC	EPCIC of 5,000 tonnes Gas Recovery Module (GRM), and laying of pipelines	Saipem	Block NC-41 - Bouri Offshore Field - Bouri Gas Utilization Project (BGUP)	Mellitah Oil & Gas	Libya
Subsea/SURF	To supply 15 wet christmas trees (WCTs)	OneSubsea	Búzios Oil Field (Phase 11 - P-83 FPSO)	Petrobras	Brazil
Subsea/SURF	Supply of 21 subsea trees and seven distribution units (Package B)	OneSubsea	Búzios Oil Field (Phase 7 - Almirante Tamandaré FPSO)	Petrobras	Brazil
EPC	Construction of two 35km pipelines	Saipem	Fenix Offshore Gas Field	TotalEnergies	Argentina
EPC	Construction of FPSO topsides modules, integration and commissioning	Cosco Heavy Industries	Mero Oil & Gas Field (Phase 4 - Alexandre de Gusmão FPSO)	Petrobras	Brazil
EPC	EPCIC	Saipem	Neptun Block Exploration (Domino-1 Gas Discovery)	OMV	Romania
EPC	Package 1 - COMP1 - 190km 32-inch subsea pipelines, 17 km subsea cables, 186 km fibreoptic cables & 10 km onshore pipeline	McDermott International Inc	North Field Production Sustainability (NFPS) Compression Project - Phase 1 & 2	Qatargas	Qatar
EPC	LTA Programme (CPRO 125) - 2 new offshore jackets & 2 production deck modules for Abu Safah field	Lamprell	Safaniya, Zuluf, Berri, Marjan, Hasbah, Ribyan, Qatif and Abu Safah Fields - Brownfield Development - Long Term Agreement (LTA) Programme	Saudi Aramco	Saudi Arabia
EPC	EPCI for 5 offshore platforms, associated subsea pipelines, cables & flowlines for Marjan field	Saipem	Safaniya, Zuluf, Berri, Marjan, Hasbah, Ribyan, Qatif and Abu Safah Fields - Brownfield Development - Long Term Agreement (LTA) Programme	Saudi Aramco	Saudi Arabia
FEED	FSO	Cosco Heavy Industries	Trion Offshore Oil Field	Woodside Energy	Mexico
EPC	Semi-submersible production unit (FPU)	Hyundai Heavy Industries (HHI)	Trion Offshore Oil Field	Woodside Energy	Mexico

GLOBAL OIL & GAS OPPORTUNITIES – EARLY DEVELOPMENT STAGE PROJECTS

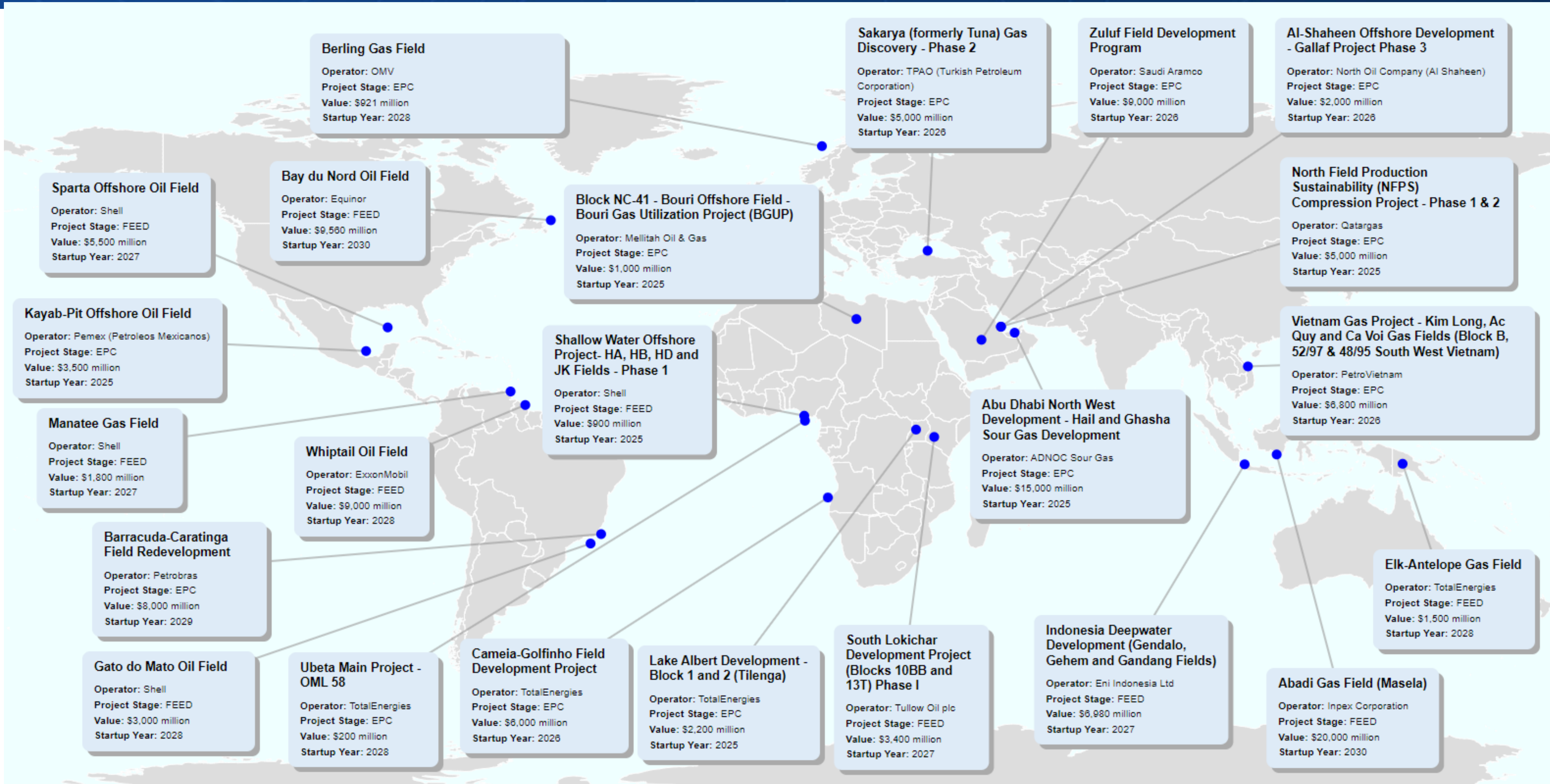
THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY



Source: EICDataStream

GLOBAL OIL & GAS OPPORTUNITIES – UNDER DEVELOPMENT PROJECTS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY



Source: EICDataStream

UPSTREAM OIL & GAS – SUMMARY REMARKS

- Strong industry rebound seen with contractors retrenching into O&G due to higher profit margins; In the main a positive short-term outlook for the sector, however some delay being seen in placing EPC work due in part to cost increases

- Continued move towards cross-sector coupling and opportunities for the decarbonisation and optimisation of the industry
  - → Offshore electrification
  - → Re-use of offshore structures
  - → CCUS and blue hydrogen

- Operators are continuing to re-strategise towards renewables and clean tech; but are now openly coming out in support of spend on their oil and gas assets

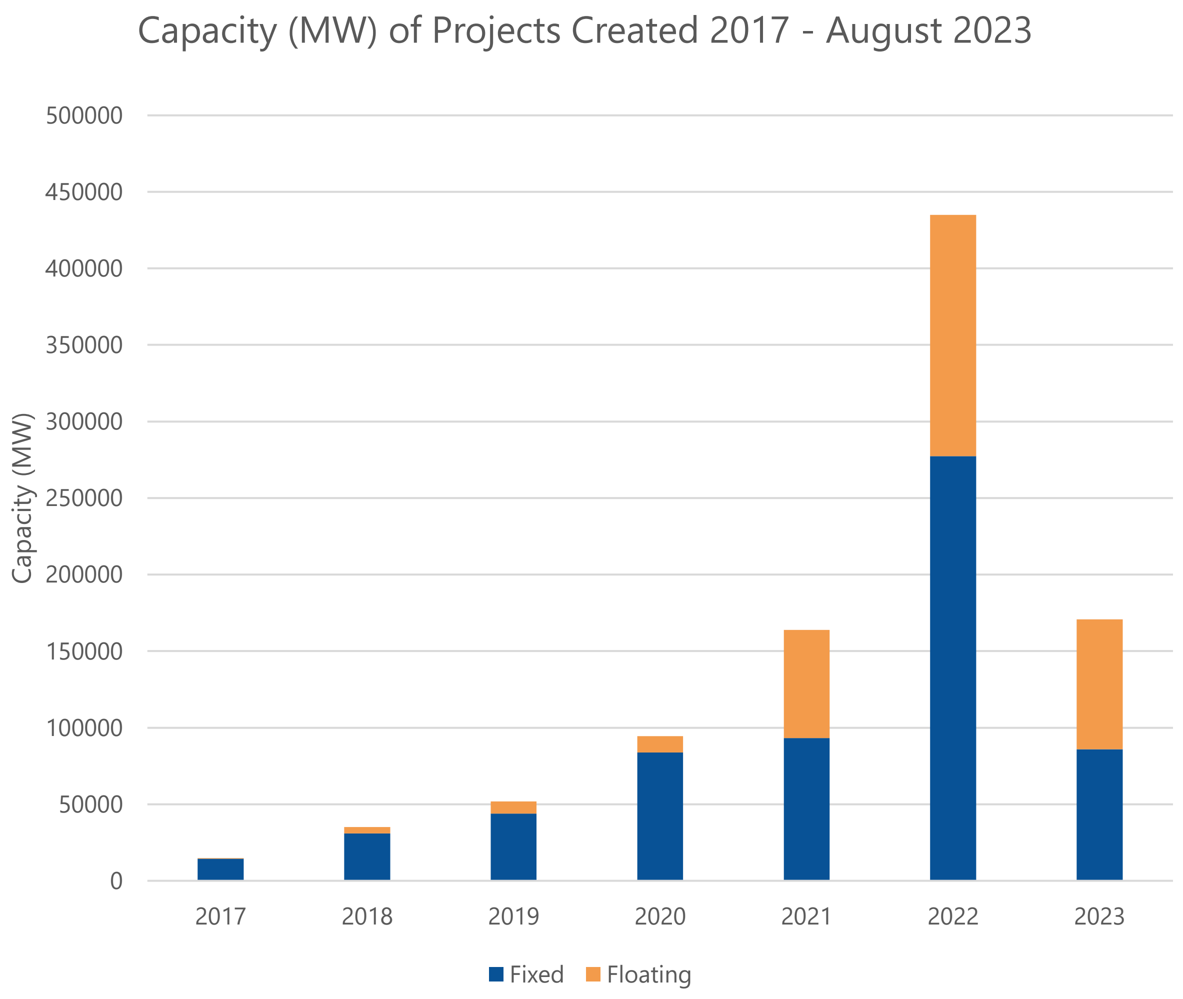
- Helped by record profits e.g. Saudi Aramco $161 billion for 2022, operators will continue to invest in hydrocarbons, following years of under investment

- Supply chain constraints/bottlenecks – e.g. FPSO new build

Source: EICDataStream

OFFSHORE WIND

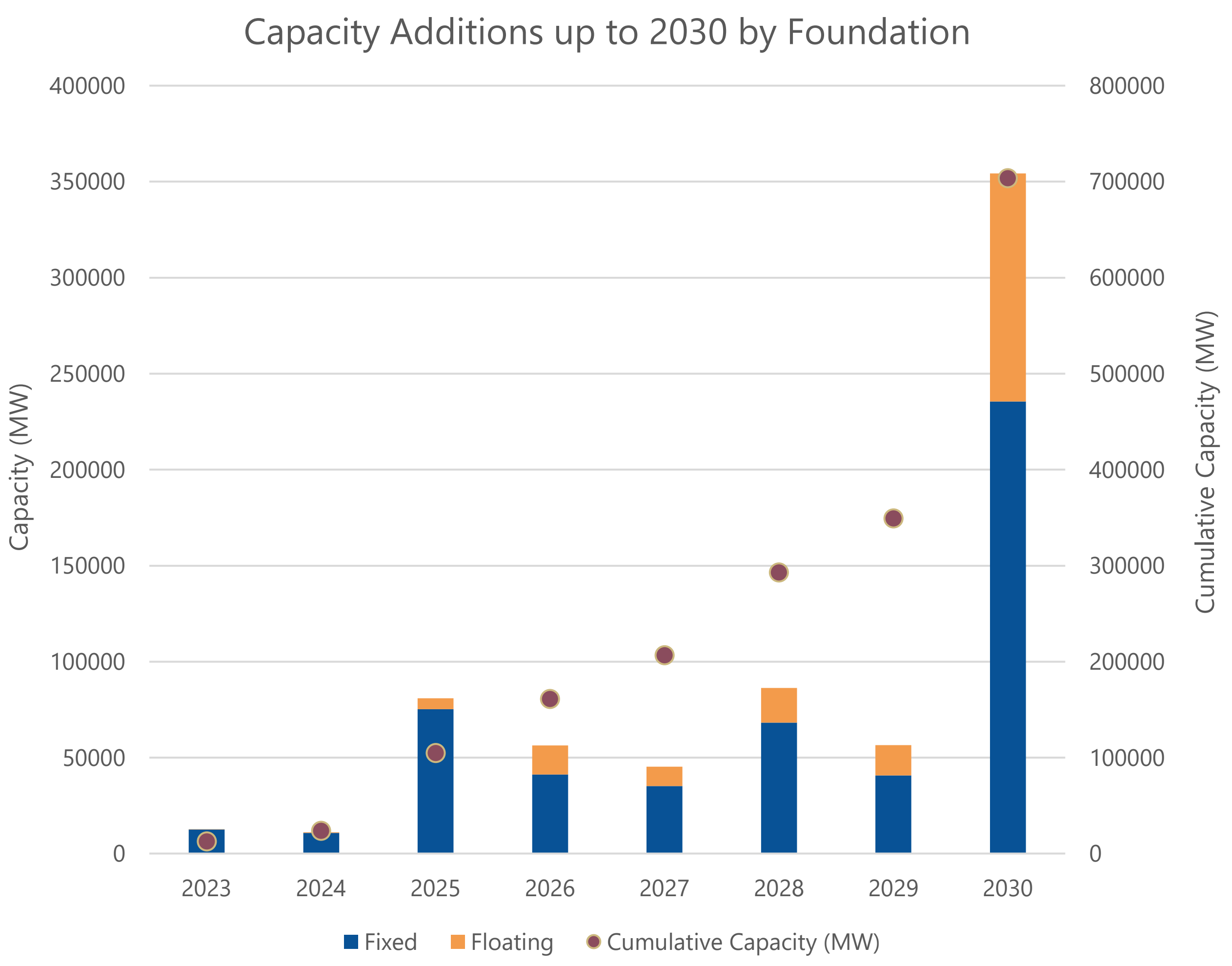
THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, **GLOBALLY**

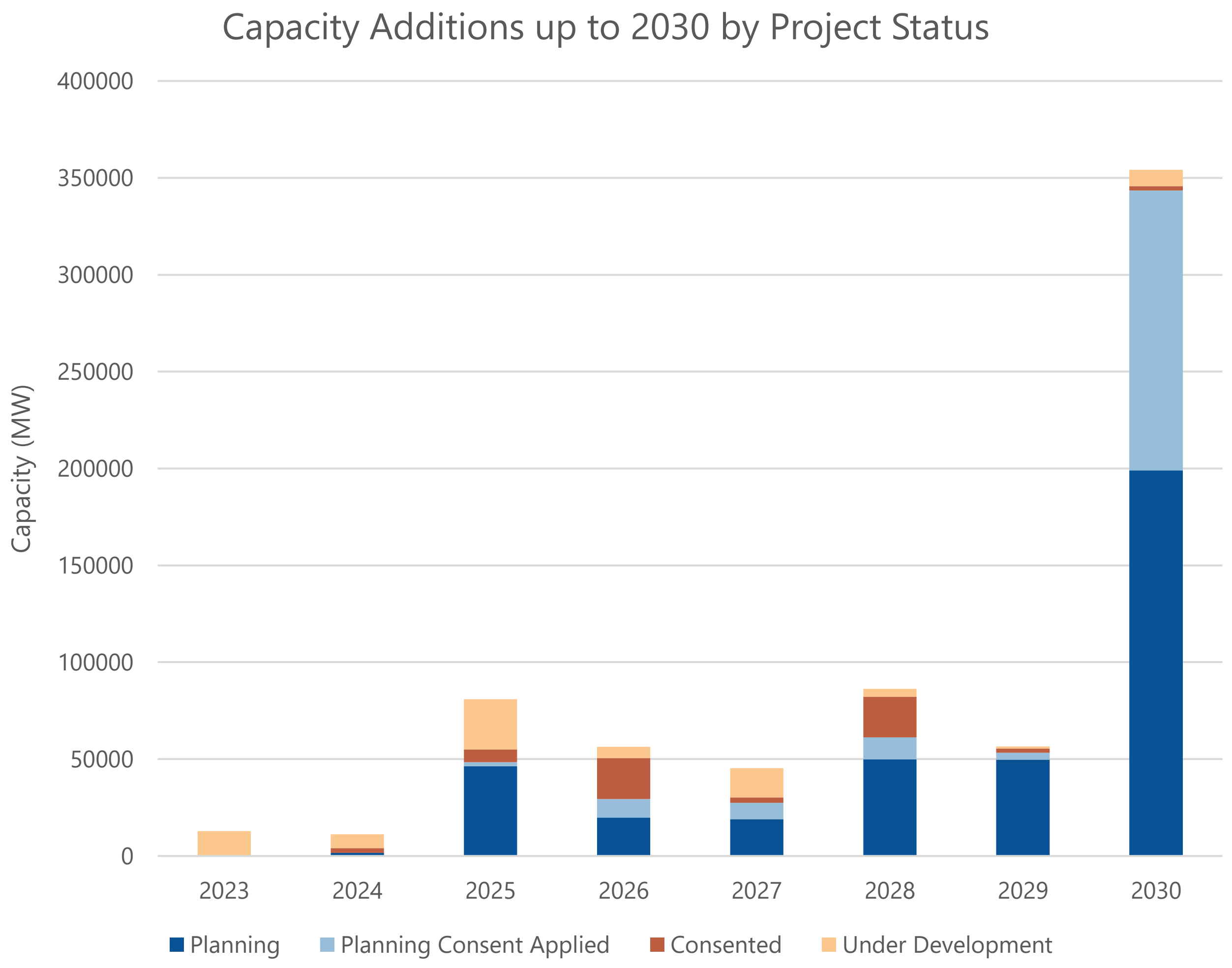


Source: EICDataStream

OFFSHORE WIND CAPACITY PIPELINE

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, **GLOBALLY**

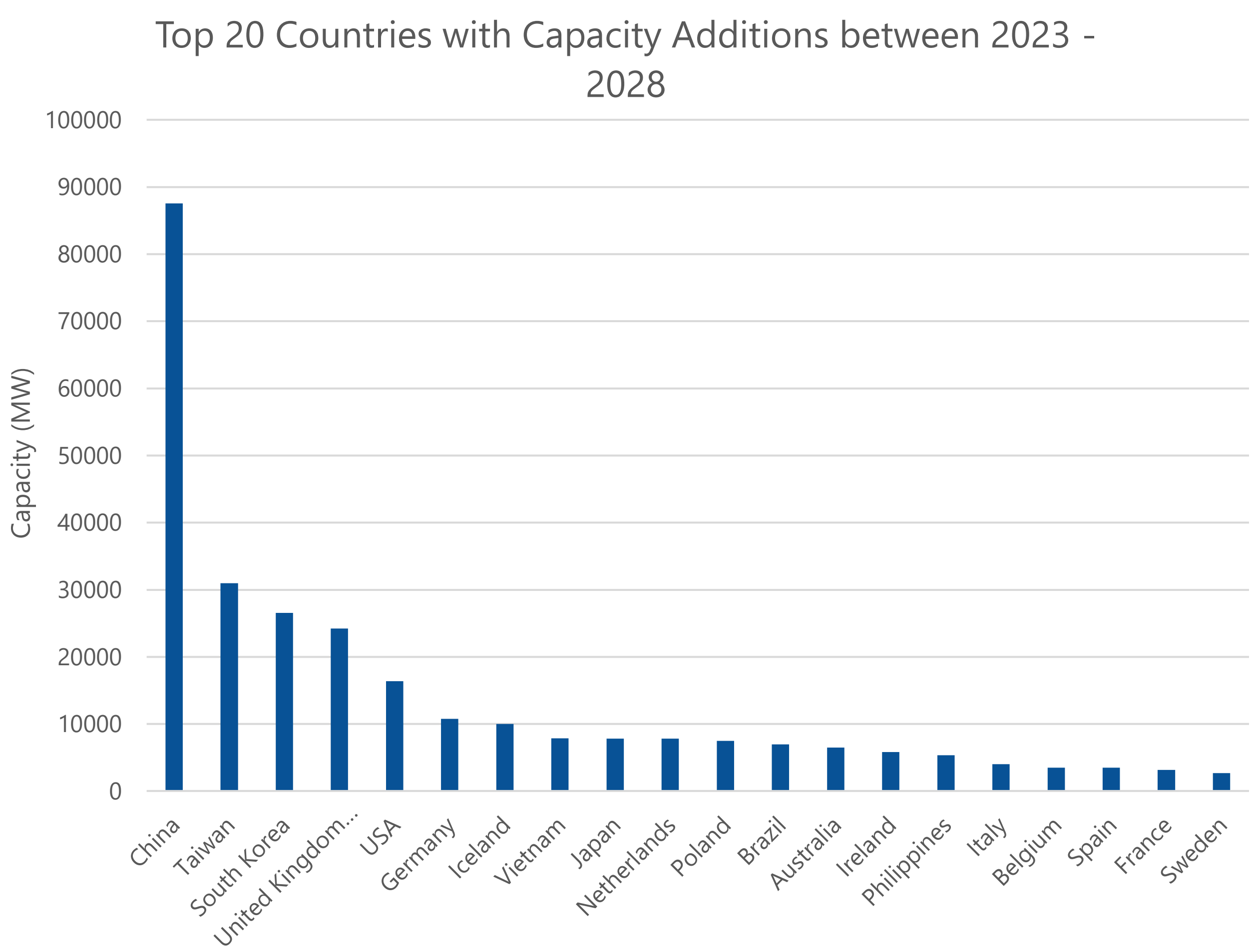


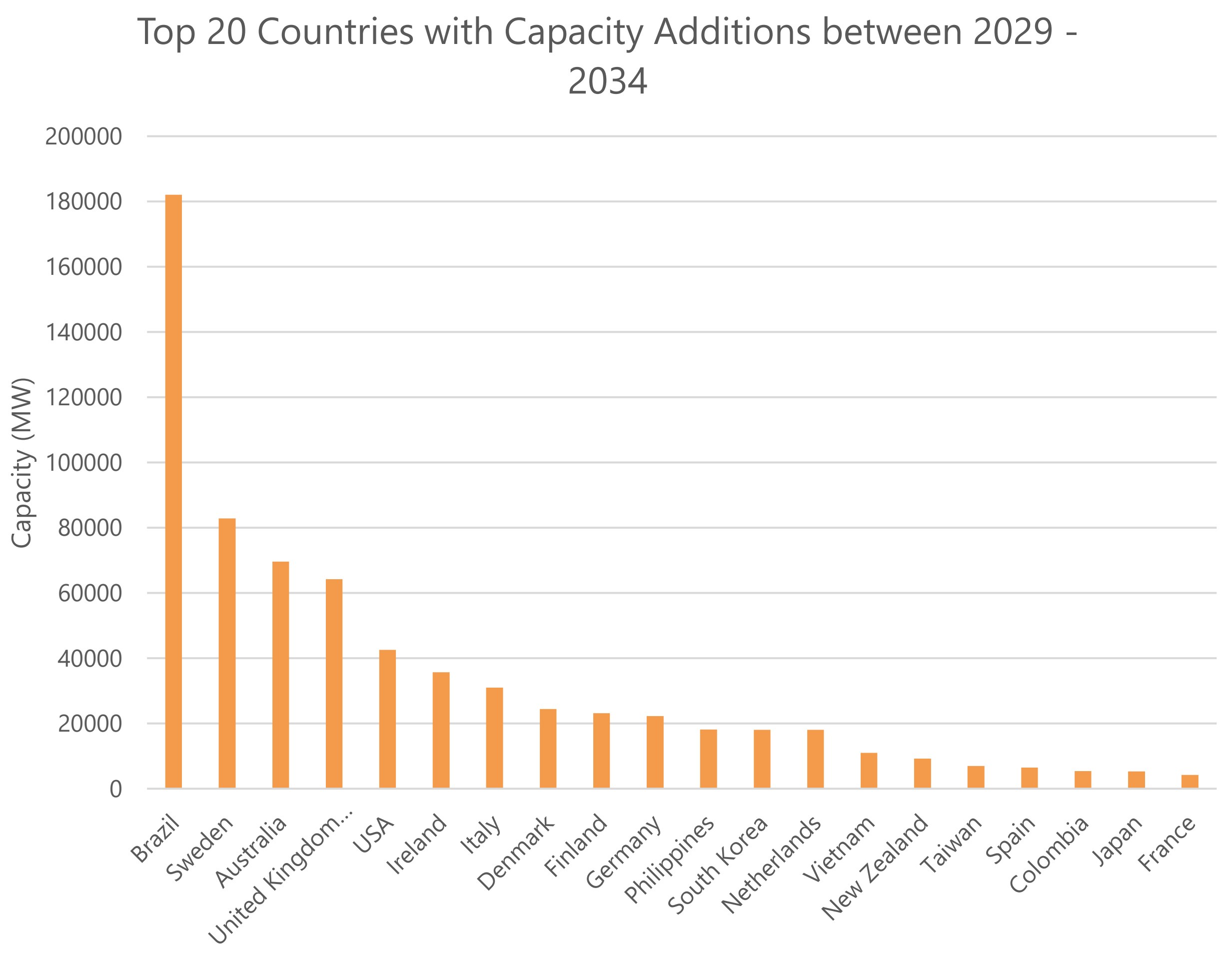


Source: EICDataStream

OFFSHORE WIND FUTURE OUTLOOK

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, **GLOBALLY**

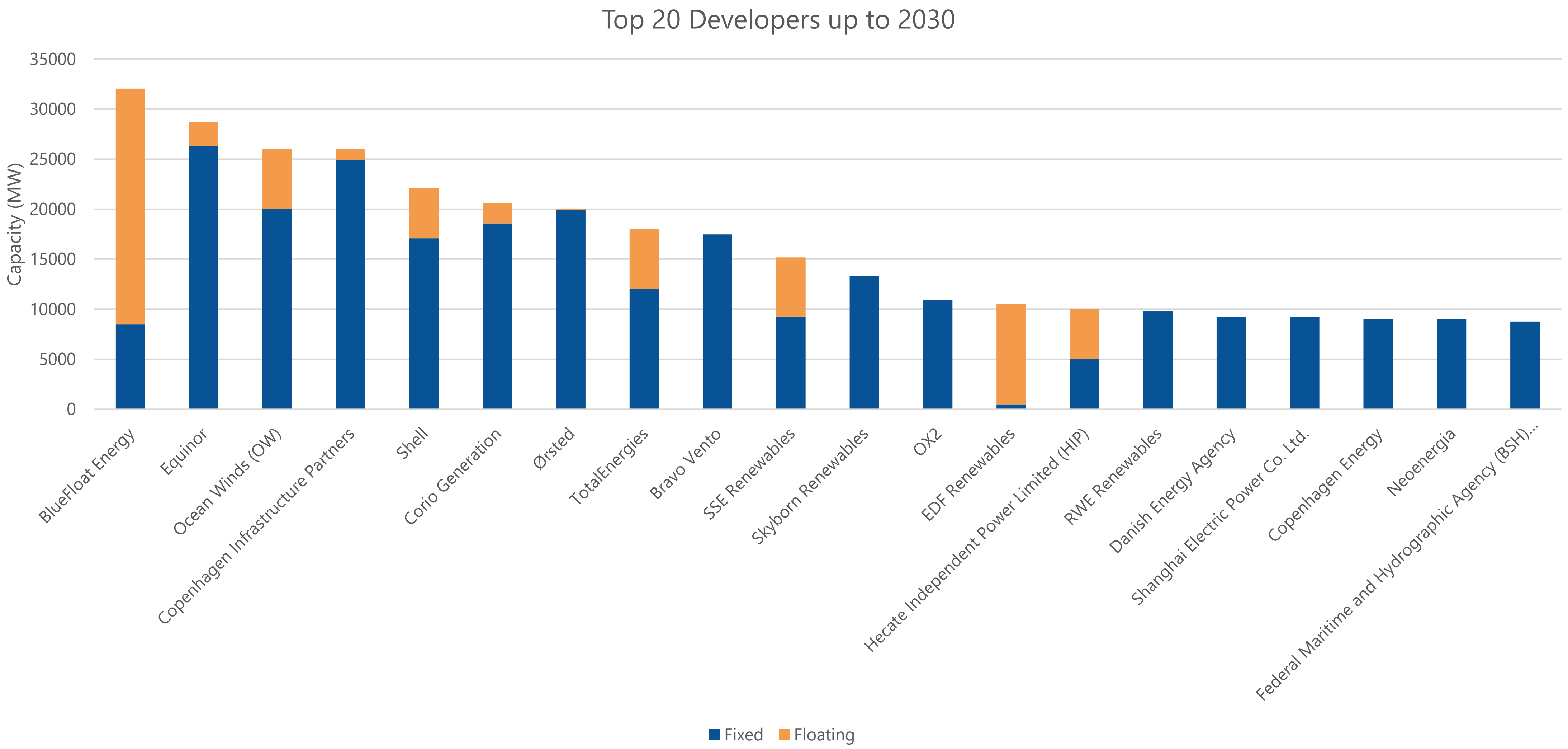




Source: EICDataStream

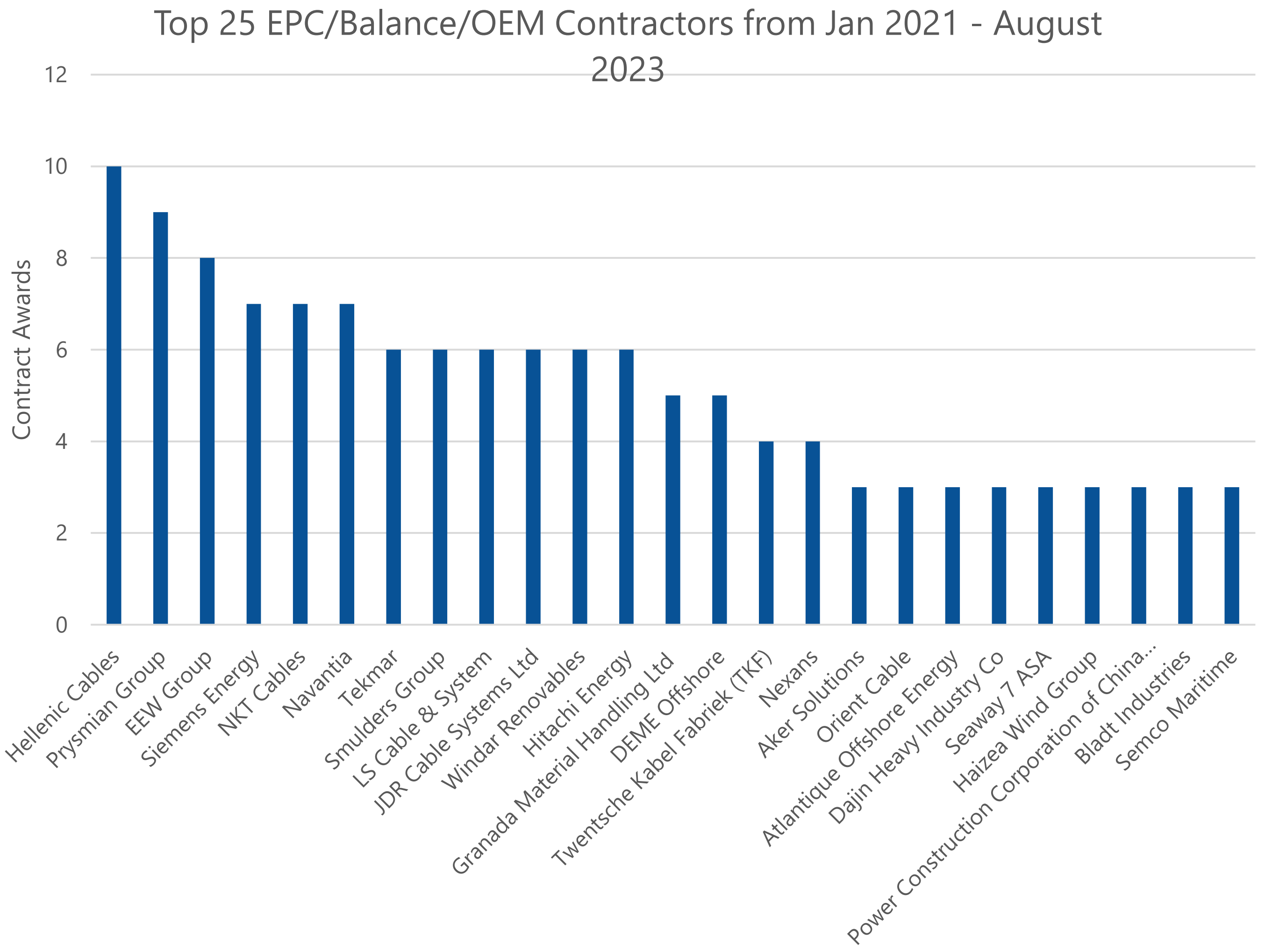
OFFSHORE WIND - DEVELOPERS

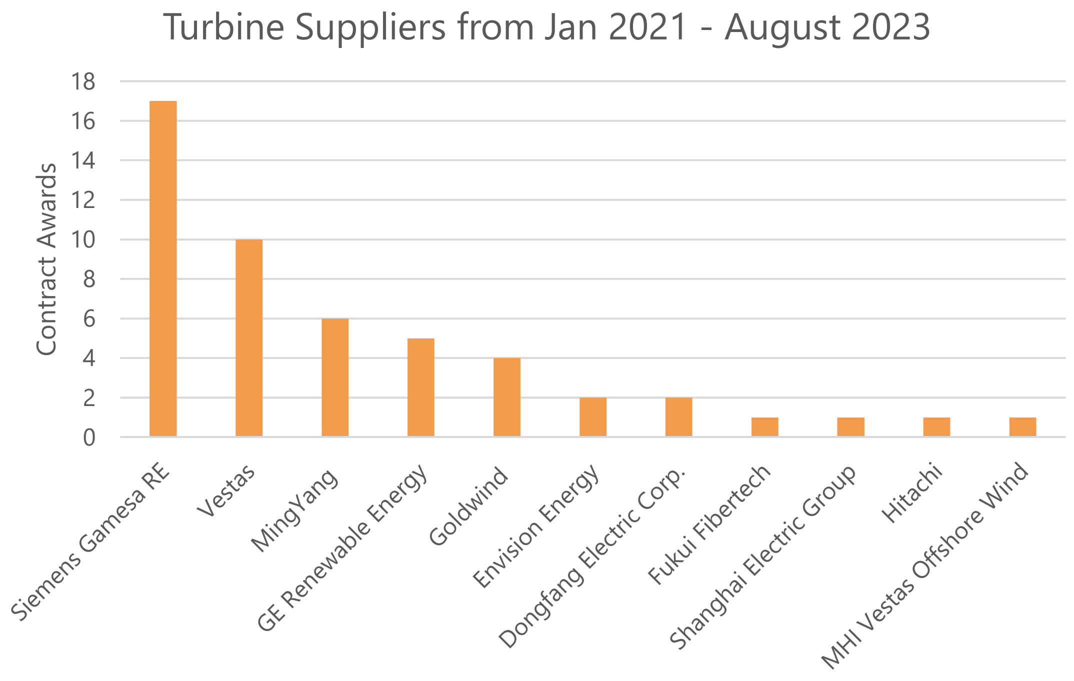
THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY



Source: EICDataStream

OFFSHORE WIND - CONTRACTORS





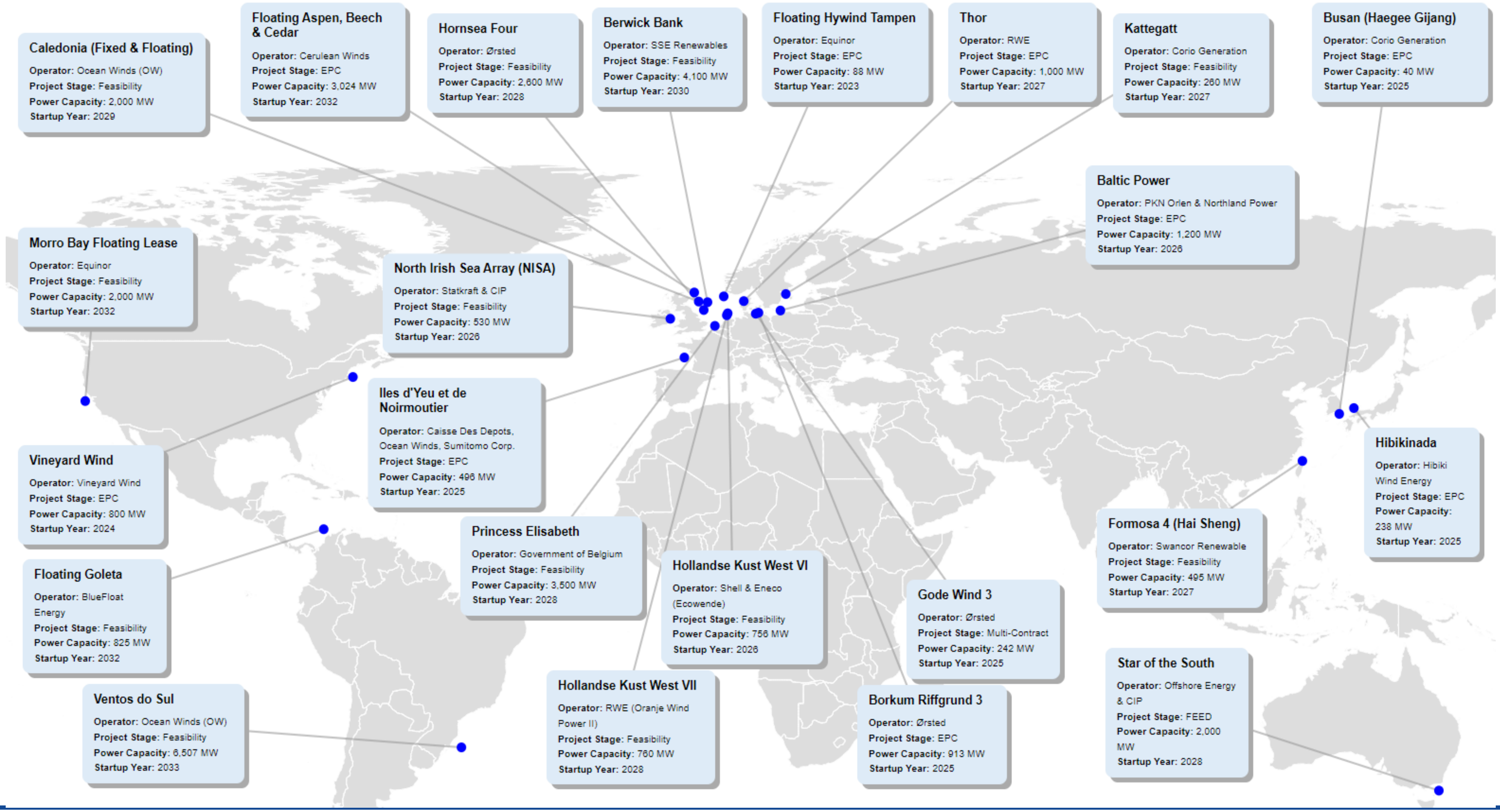
Global challenge for manufacturing and supply chain to keep up with growing scale and speed of industry

- Contractors not completing work scope due to lack of financing & scale too big
- Turbine suppliers at a loss – constraints on supply meeting demand, and operational failures due the speed of delivery needed
- Developers pulling out of projects – further lack of hope for contractors
- Lack of support & financial constraints trickling down supply chain tiers
  - move back to O&G?

Source: EICDataStream

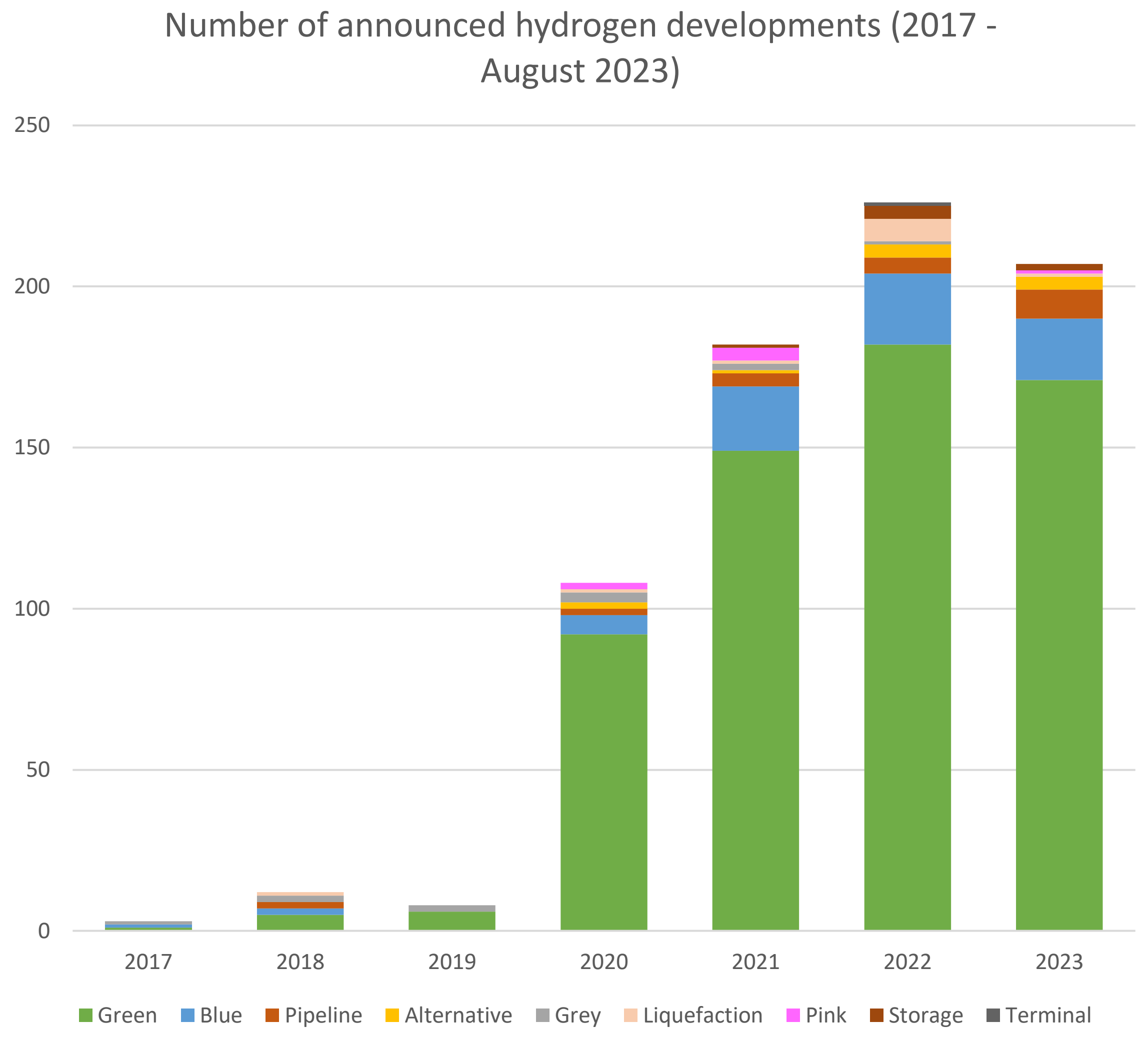
OFFSHORE WIND - MAJOR PROJECTS

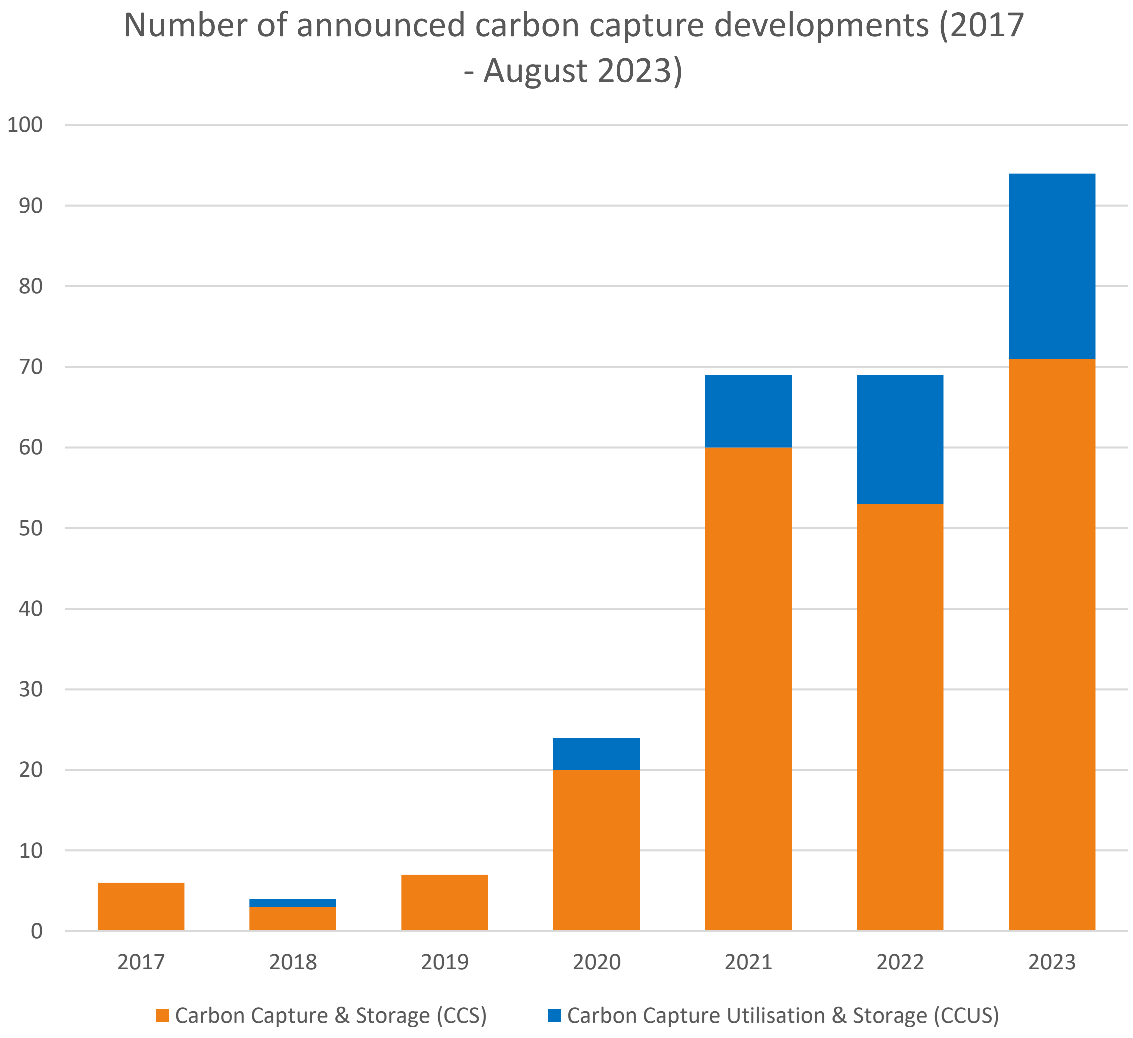
THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY



Source: EICDataStream

ENERGY TRANSITION OVERVIEW – CARBON CAPTURE AND HYDROGEN





Source: EICDataStream

ENERGY TRANSITION OVERVIEW – CARBON CAPTURE AND HYDROGEN

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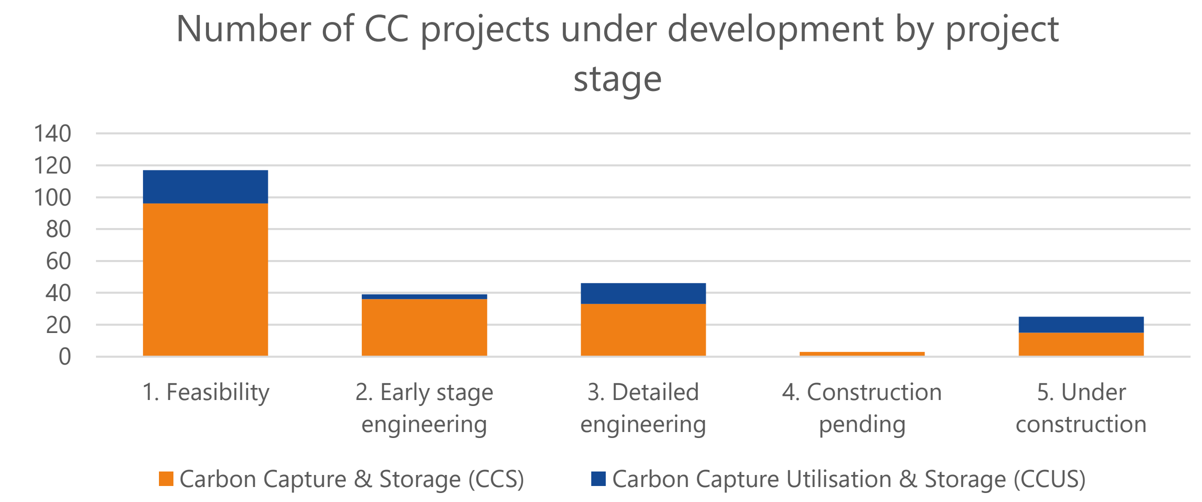

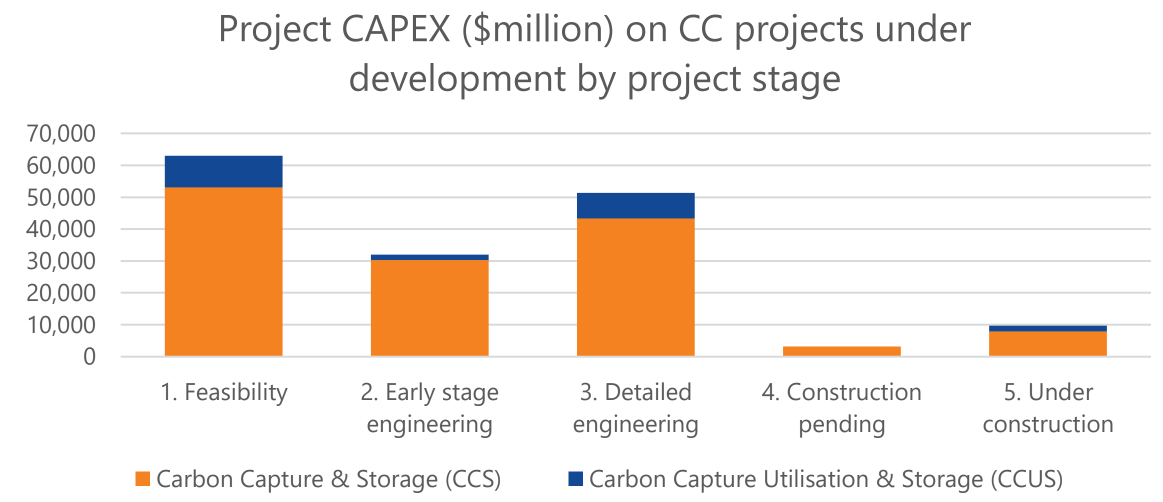

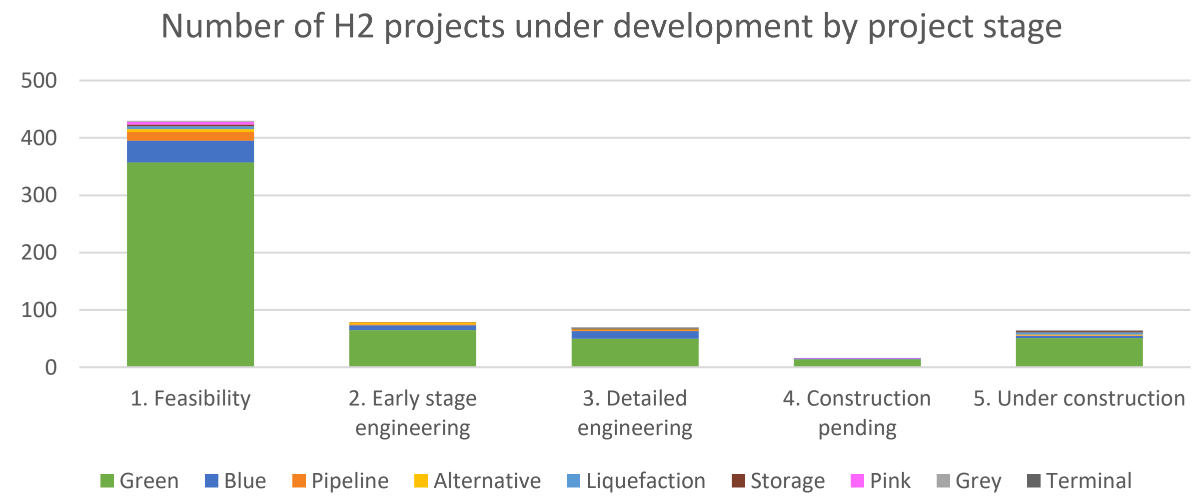

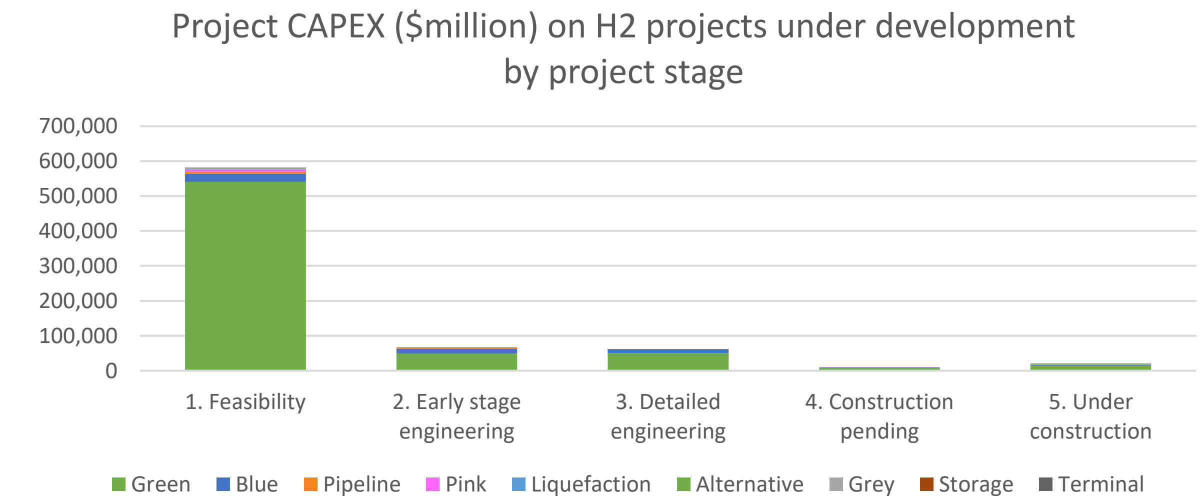

Source: EICDataStream (30 June 2023)

ENERGY TRANSITION OVERVIEW – CARBON CAPTURE AND HYDROGEN

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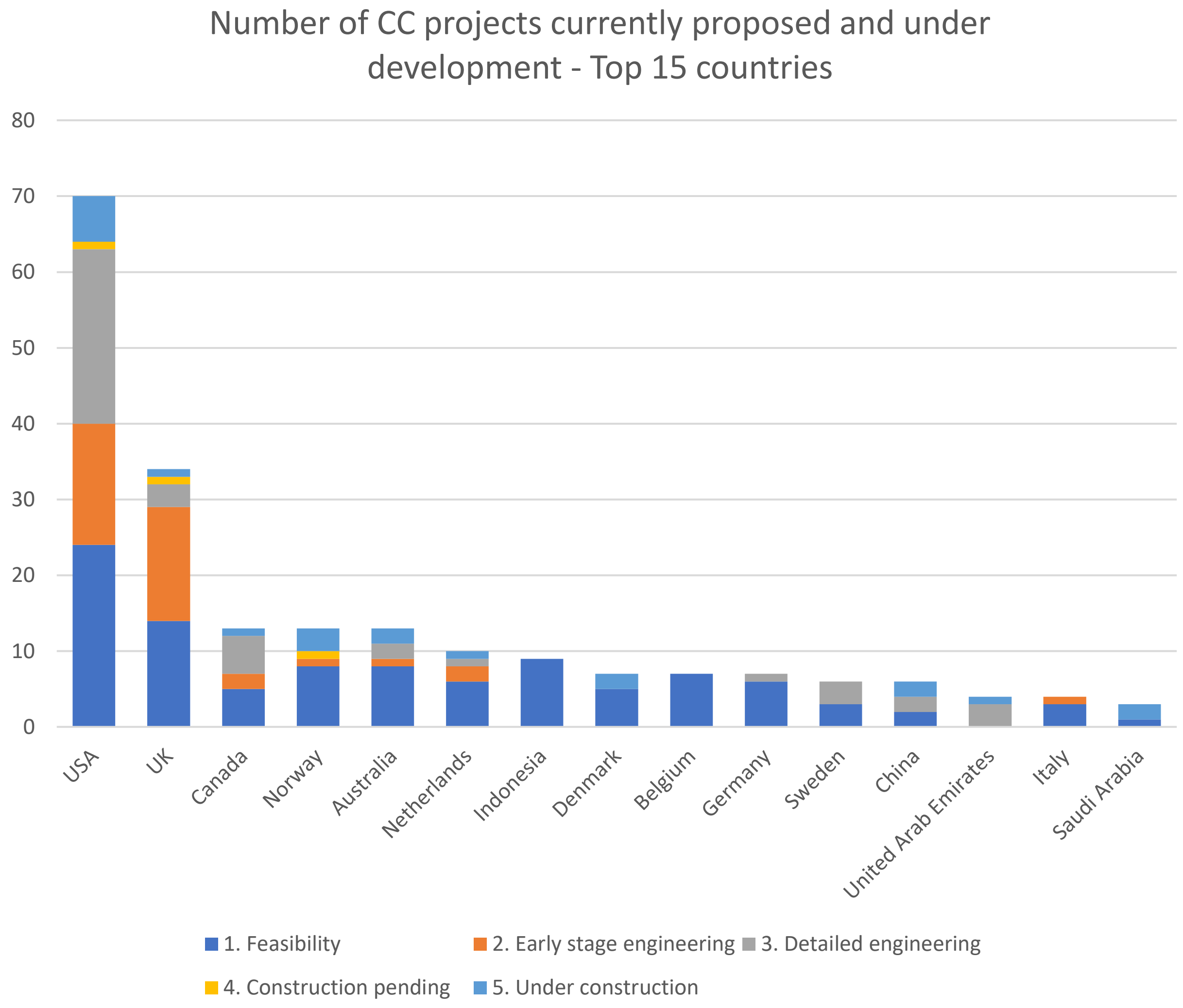

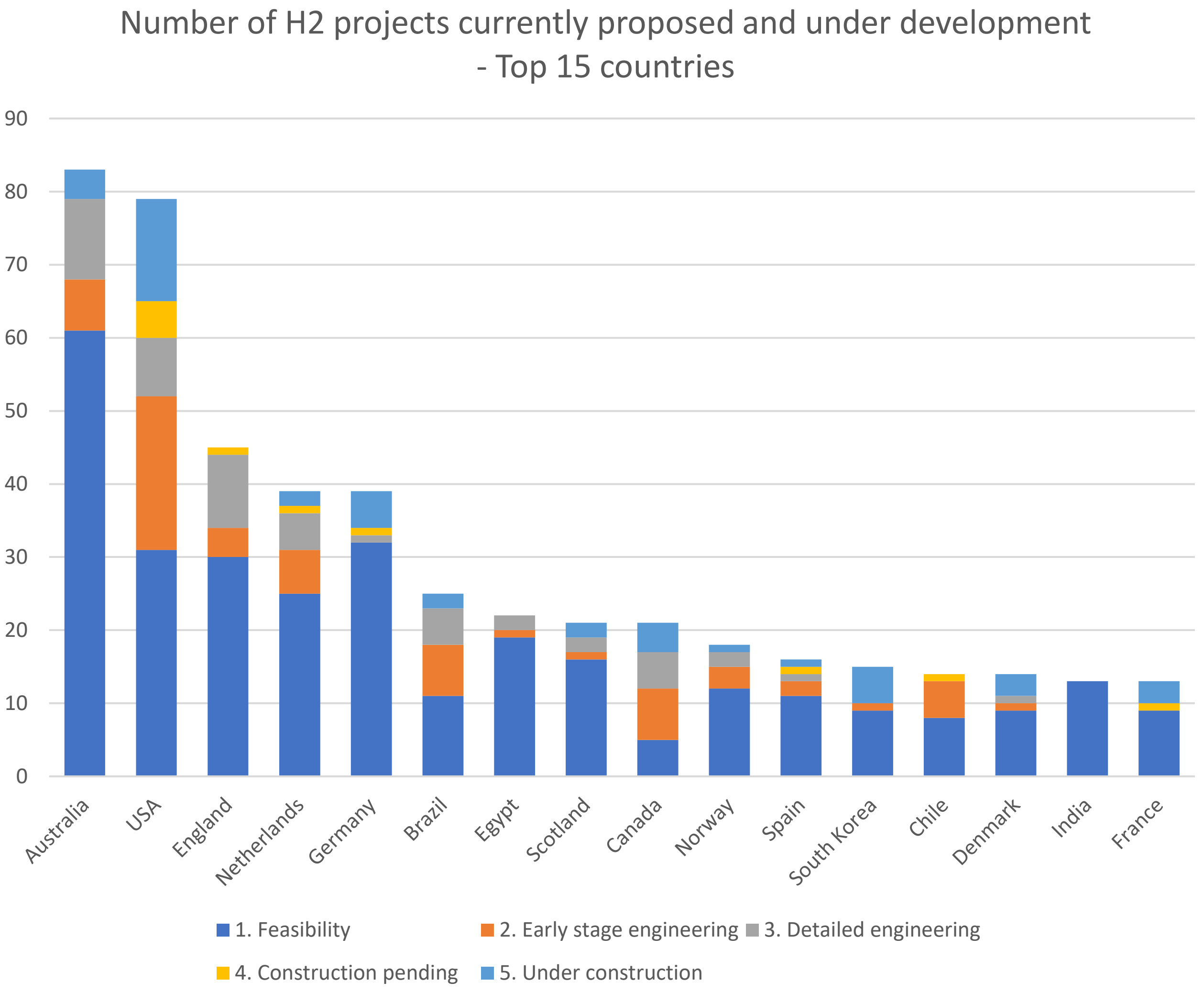

Source: EICDataStream (30 June 2023)

SUMMARY REMARKS

THE GO-TO ENERGY SUPPLY CHAIN TRADE ASSOCIATION, GLOBALLY

- **Are <u>Energy Transition</u> projects reaching the <u>Energy Supply Chain</u> yet?**

- Table below outlines the projects that are due to start-up between now and 2028.

Sector	Number of projects	Estimated CAPEX of projects under development ($million)	Number of projects to reach FID	CAPEX on projects to reach FID ($million)	% of projects to reach FID	% of overall value to reach FID
Upstream	1073	1,127,461	144	284,880	13.42	25.27
Midstream	679	914,984	63	230,356	9.28	25.18
Downstream	698	1,310,978	80	202,333	11.46	15.43
Offshore Wind	300	584,722	23	43,696	7.67	7.47
Biofuel	218	101,370	14	6,637	6.42	6.55
Hydrogen	617	461,074	37	13,770	6.00	2.99
Carbon Capture	239	151,344	6	3,470	2.51	2.29
Floating Offshore Wind	57	57,558	3	719	5.26	1.25

Source: EICDataStream

Thank you!

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Executive Director
Energy Industries Council (EIC)

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