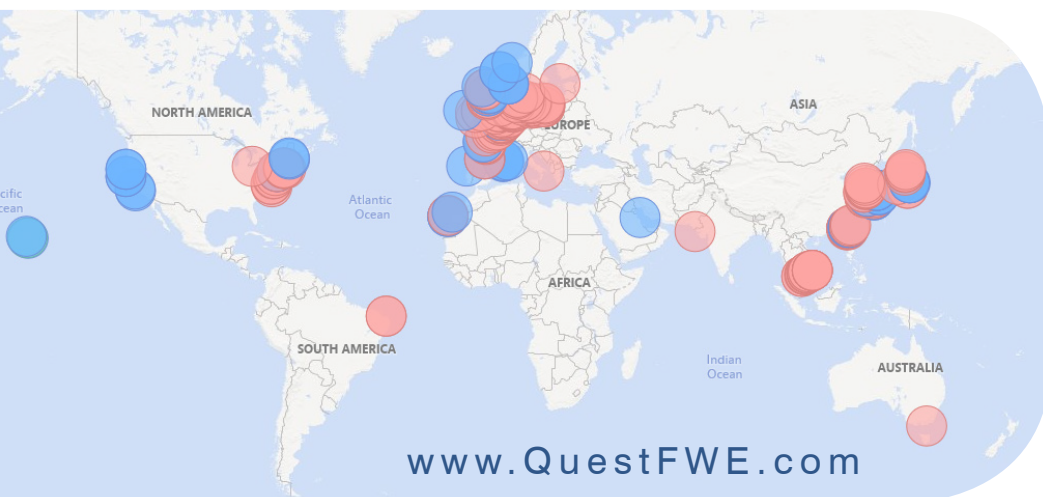




Quest Fixed & Floating Wind Energy Commercial Offering



Houston

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Quest Floating Wind Energy
a Quest Offshore Resources company

Quest Offshore Wind Turbine Index (QOWTI)



QOWTI

GLOBAL	Total No. Projects			Total No. Turbines			Total MW			CapEx			Economic Indicators			Leading Industry Indicators			Supply Chain Indicators		
	Projects			Turbines			MW			CapEx			Economic Indicators			Leading Industry Indicators			Supply Chain Indicators		
	this month			this month			this month			this month			this month			this month			this month		
	total	total	change	total	total	change	total	total	change	total	total	change	total	total	change	total	total	change	total	total	change
Global Total	209	11,624	11,087	537	101,782	96,849	4,933	\$310,830	\$296,099	\$14,732	\$26.7	\$3.3	\$74,411	\$135,972	\$6,879	\$25,387	\$38,031	\$30,151	172.4	172.4	6,328
Global Fixed	153	10,015	9,517	498	89,079	84,387	4,692	\$261,894	\$248,458	\$13,436	\$26.1	\$3.2	\$63,881	\$116,779	-	\$24,025	\$31,685	\$25,523	176.2	176.2	4,832
Global Floating	56	1,609	1,570	39	12,704	12,463	241	\$48,937	\$47,641	\$1,296	\$30.4	\$4.1	\$10,530	\$19,193	\$6,879	\$1,362	\$6,346	\$4,627	157.5	157.5	1,497



Offshore Wind Turbine Index

October 2019

GLOBAL	Total No. Projects			Total No. Turbines			Total MW			CapEx			Economic Indicators			Leading Industry Indicators			Supply Chain Indicators		
	Projects			Turbines			MW			CapEx			Economic Indicators			Leading Industry Indicators			Supply Chain Indicators		
	this month			this month			this month			this month			this month			this month			this month		
	total	total	change	total	total	change	total	total	change	total	total	change	total	total	change	total	total	change	total	total	change
Global Total	209	11,624	11,087	537	101,782	96,849	4,933	\$310,830	\$296,099	\$14,732	\$26.7	\$3.3	\$74,411	\$135,972	\$6,879	\$25,387	\$38,031	\$30,151	172.4	172.4	6,328
Global Fixed	153	10,015	9,517	498	89,079	84,387	4,692	\$261,894	\$248,458	\$13,436	\$26.1	\$3.2	\$63,881	\$116,779	-	\$24,025	\$31,685	\$25,523	176.2	176.2	4,832
Global Floating	56	1,609	1,570	39	12,704	12,463	241	\$48,937	\$47,641	\$1,296	\$30.4	\$4.1	\$10,530	\$19,193	\$6,879	\$1,362	\$6,346	\$4,627	157.5	157.5	1,497

REGIONAL		Total No. Projects		Total No. Turbines		Total MW		CapEx		Economic Indicators		Leading Industry Indicators		Supply Chain Indicators	
		this month		this month		this month		this month		this month		this month		this month	
		total	change	total	change	total	change	total	change	total	change	total	change	total	change
Asia-Pacific Total		81	4,127	4,112	21	28,817	28,717	100	\$94,813	\$93,828	\$985	\$22.1	\$3.5	\$23,194	\$40,841
Asia-Pacific Fixed		64	3,361	3,351	11	23,094	23,094	100	\$72,440	\$71,460	\$980	\$21.7	\$3.4	\$18,386	\$31,786
Asia-Pacific Floating		17	766	761	10	5,723	5,623	10	\$22,373	\$22,368	\$5	\$22.6	\$4.0	\$4,808	\$9,055
Australia		2	200	200	2	2,000	2,000	2	\$8,500	\$8,500	\$0	\$8.5	\$1.0	\$1,400	\$2,800
Australia Fixed		2	200	200	2	2,000	2,000	2	\$8,500	\$8,500	\$0	\$8.5	\$1.0	\$1,400	\$2,800
Australia Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
India		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
India Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
India Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Japan		10	877	877	3	4,817	4,817	3	\$16,849	\$16,849	\$0	\$16.8	\$3.3	\$5,247	\$7,494
Japan Fixed		10	877	877	3	4,817	4,817	3	\$16,849	\$16,849	\$0	\$16.8	\$3.3	\$5,247	\$7,494
Japan Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Korea		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Korea Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Korea Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
South Korea		21	873	100	2	4,922	4,662	100	\$18,903	\$18,546	\$442	\$22.3	\$4.6	\$6,332	\$9,729
South Korea Fixed		21	873	100	2	4,922	4,662	100	\$18,903	\$18,546	\$442	\$22.3	\$4.6	\$6,332	\$9,729
South Korea Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Taiwan		24	1,342	1,342	10	16,524	16,524	10	\$24,678	\$24,594	\$118	\$22.9	\$3.8	\$8,388	\$14,204
Taiwan Fixed		24	1,342	1,342	10	16,524	16,524	10	\$24,678	\$24,594	\$118	\$22.9	\$3.8	\$8,388	\$14,204
Taiwan Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Vietnam		17	968	968	5	6,714	6,714	5	\$16,341	\$16,300	\$80	\$17.0	\$3.5	\$4,643	\$7,163
Vietnam Fixed		17	968	968	5	6,714	6,714	5	\$16,341	\$16,300	\$80	\$17.0	\$3.5	\$4,643	\$7,163
Vietnam Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Europe		84	6,893	4,813	100	46,840	47,346	1,000	\$114,809	\$115,163	\$1,620	\$28.4	\$3.1	\$35,260	\$64,804
Europe Fixed		64	5,893	4,813	100	46,840	47,346	1,000	\$114,809	\$115,163	\$1,620	\$28.4	\$3.1	\$35,260	\$64,804
Europe Floating		20	1,000	1,000	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0
Belgium		2	11	11	1	700	700	1	\$2,137	\$2,138	\$0	\$21.3	\$3.1	\$370	\$1,080
Belgium Fixed		2	11	11	1	700	700	1	\$2,137	\$2,138	\$0	\$21.3	\$3.1	\$370	\$1,080
Belgium Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Denmark		6	238	238	1	1,681	1,681	1	\$6,355	\$6,357	\$0	\$63.5	\$8.4	\$1,147	\$2,916
Denmark Fixed		6	238	238	1	1,681	1,681	1	\$6,355	\$6,357	\$0	\$63.5	\$8.4	\$1,147	\$2,916
Denmark Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Germany		19	109	109	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Germany Fixed		19	109	109	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Germany Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
France		14	535	535	4	4,164	4,164	4	\$17,233	\$17,233	\$0	\$172.3	\$4.5	\$1,164	\$2,916
France Fixed		14	535	535	4	4,164	4,164	4	\$17,233	\$17,233	\$0	\$172.3	\$4.5	\$1,164	\$2,916
France Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Italy		12	347	347	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Italy Fixed		12	347	347	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Italy Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
Spain		2	142	142	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Spain Fixed		2	142	142	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
Spain Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
UK		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
UK Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
UK Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Atlantic		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Atlantic Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Atlantic Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Floating		0	0	0	0	0	0	\$0	\$0	\$0	\$0.0	\$0.0	\$0	\$0	\$0
USA - Pacific		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,000
USA - Pacific Fixed		1	100	100	1	1,000	1,000	1	\$1,000	\$1,000	\$0	\$1.0	\$1.0	\$1,000	\$1,



Vision - Robust Analytics and Market Analysis

Q Vision is our proprietary **Business Analytics**’ tool delivering real-time data and analysis giving you a competitive advantage to win **Fixed** and **Floating** Offshore Wind Energy projects. This *Microsoft Power BI* tool allows for dynamic analysis of relationships across markets and technologies; robust benchmarking as well as an enhanced understanding of project economics including LCoE. Our **Subscription Products** provide timely and actionable, strategic market information.

The Q Vision database subscription includes an Excel data download containing over 120 attributes.

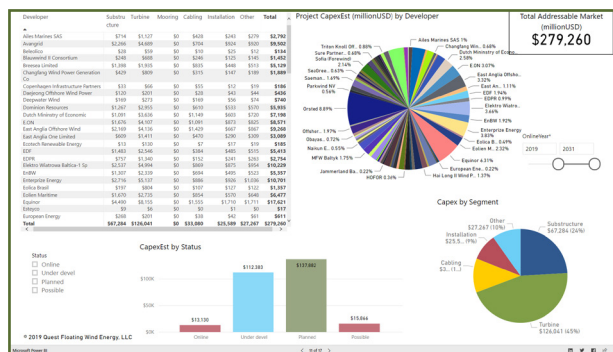
CapEx / LCoE

Analyze the Total Addressable Market in CapEx by segment including LCoE across projects.

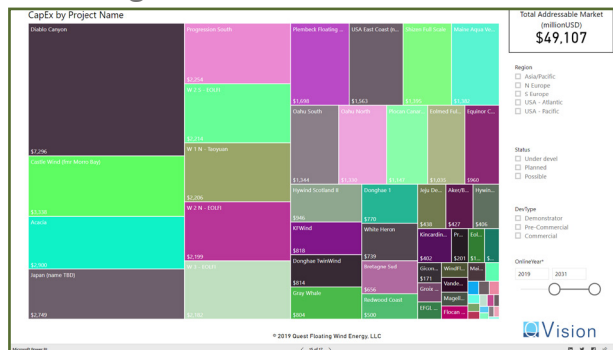


Project Economics

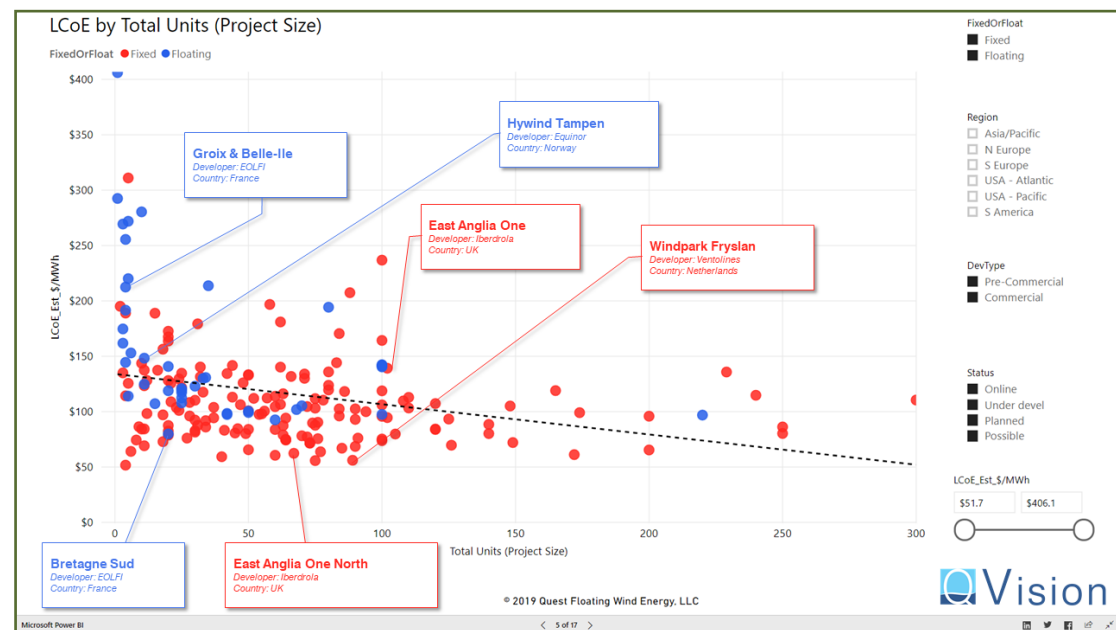
Fixed



Floating



LCoE



An example of Quest's *LCoE Modeling* capabilities are illustrated in this scatter plot chart for 160 Fixed and 43 Floating Wind Projects.

This Power BI scatter plot chart and regression analysis demonstrate modeled LCoE values allowing comparisons between projects already built and those planned in the future.

Also shown are the relationships between select pre-commercial and commercial projects.

Please call +1 (832) 862-3390 for subscription licensing options.

\$4,995
yearly subscription

Promotional Price!

Project Data

Q FWE's proprietary Fixed and Floating Offshore Wind Database tracks the global universe of wind energy projects. Available as an Excel subscription delivered monthly.

To start your annual subscription please contact David Southerland at david.southerland@questfwe.com or +1 (832) 862-3390.

Please call +1 (832) 862-3390 for multi-user or enterprise-wide licensing.

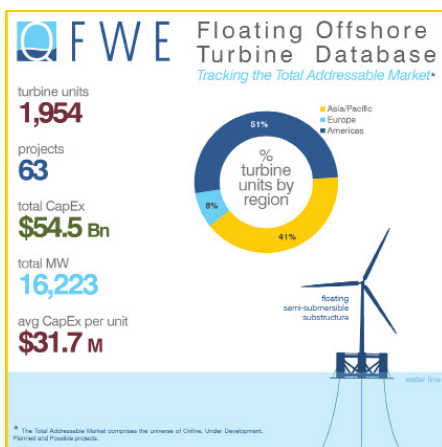
What are my opportunities?

- 11,462 turbines to be selected
- 6.6 million meters of mooring cable to be awarded
- 1,328 floaters without a firm design type selected
- 8,081 anchor types to design & manufacture
- 19,548 km array cables
- 6,328 km export cables

Entry-Level Package

Q FWE's Floating Offshore Turbine Database presents nearly **50 data fields** for all floating wind energy projects.

Available as an annual subscription delivered monthly for **\$595 (single-user)**



Sample Floating Project

Name	Groix & Belle-Ile
Country	France
Region	N Europe
DevType	Pre-Commercial
OnlineYear	2021
Lifetime	20
DecomYear	2041
Status	Under devel
Phase	Design
FirstContractAwarded	Y
StatusNotesExternal	Online and 20, early 21 EOLFI
Developer	Bureau Veritas
Class	Atlantic Ocean
LocAvgWD	62
DistanceToShore	24
ProjectWebsite	http://ecoliennes-groix-belle-ile.com/
ProjectWebsite2	https://www.ecoliennes-groix-belle-ile.com/
TotalMW	24
TotalUnits	4
TurbineMfr	GF
TurbineModel	Halieade 150-6MW
MW	6
FloaterWeightEst	3000
FTUHeight	100
HubHeight	150
RotorDia	Naval Energies
DesignName	Sea Reed
HullShape	Semisub
SteelOrConcrete	Concrete
FloaterLrg	80
FloaterWidth	80
FloaterHeight	35
Draft	10
Engr Contractor	Naval Energies
MooringSystem	Catenary
MooringLinePerUnit	6
MooringTotalLrg	24
MooringDesign	Naval Energies
AnchorMfr	Section
Mooring Contractor	Section
ExportLrg	28
ArrayTotalLrg	N
SubstYesNo	N
Export_Mfr	RTE
Array_Mfr	FFOB

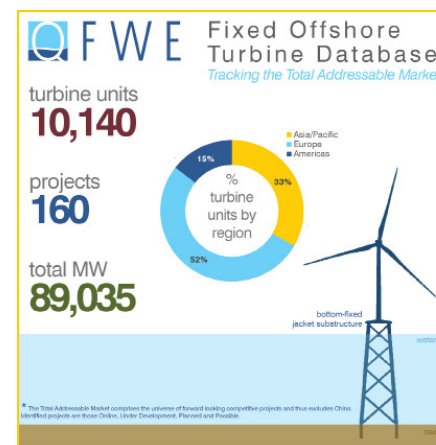
Fixed / Floating Offshore Turbine Database

Name	Country	Region	DevType	OnlineYear	Lifetime	DecomYear	Status	Phase	FirstContractAwarded	StatusNotesExternal
1. Offshore Turbine Database © 2019 Quest Floating Wind Energy, LLC										
2. Name	Country	Region	DevType	OnlineYear	Lifetime	DecomYear	Status	Phase	FirstContractAwarded	StatusNotesExternal
3. Acacia	Japan	Asia/Pacific	Commercial	2025	20	2045	Possible			Multi hundred MW project

Entry-Level Package

Q FWE's Fixed Offshore Turbine Database presents nearly **40 data fields** for all possible, planned and under development bottom-fixed offshore wind energy projects.

Available as an annual subscription delivered monthly for **\$795 (single-user)**



Sample Fixed Project

Country	Belgium
Region	N Europe
DevType	Commercial
OnlineYear	2020
Lifetime	25
DecomYear	2045
Status	Under devel
Phase	Construction
FirstContractAwarded	Y
StatusNotesExternal	First monopile installed
Developer	Northwest
Class	
Location	North Sea
LocAvgWD	30
DistanceToShore	49
ProjectWebsite	
ProjectWebsite2	
TotalMW	218.5
TotalUnits	23
TurbineMfr	MHI Vestas
TurbineModel	V164-9.5
MW	9.5
FTUHeight	187
HubHeight	135
RotorDia	184
DesignName	Monopile
SteelOrConcrete	Steel
SubstructureWeight	030
PilesWeight	
Engr Contractor	
ExportLrg	34
ArrayTotalLrg	25
SubstYesNo	Y
Export_Mfr	
Array_Mfr	