Global Energy Policy Research | GEPR

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2030?46??????????? ?????????????????????

??????????IEEI? · Sunday, June 27th, 2021

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4?22?????????????????????2050???????????????????????????2030??????????2013????46?????????50??????????????????26???????7??8??????????????1???2??46??????????46?????????????????????

???2030?46???????????

4????????????????

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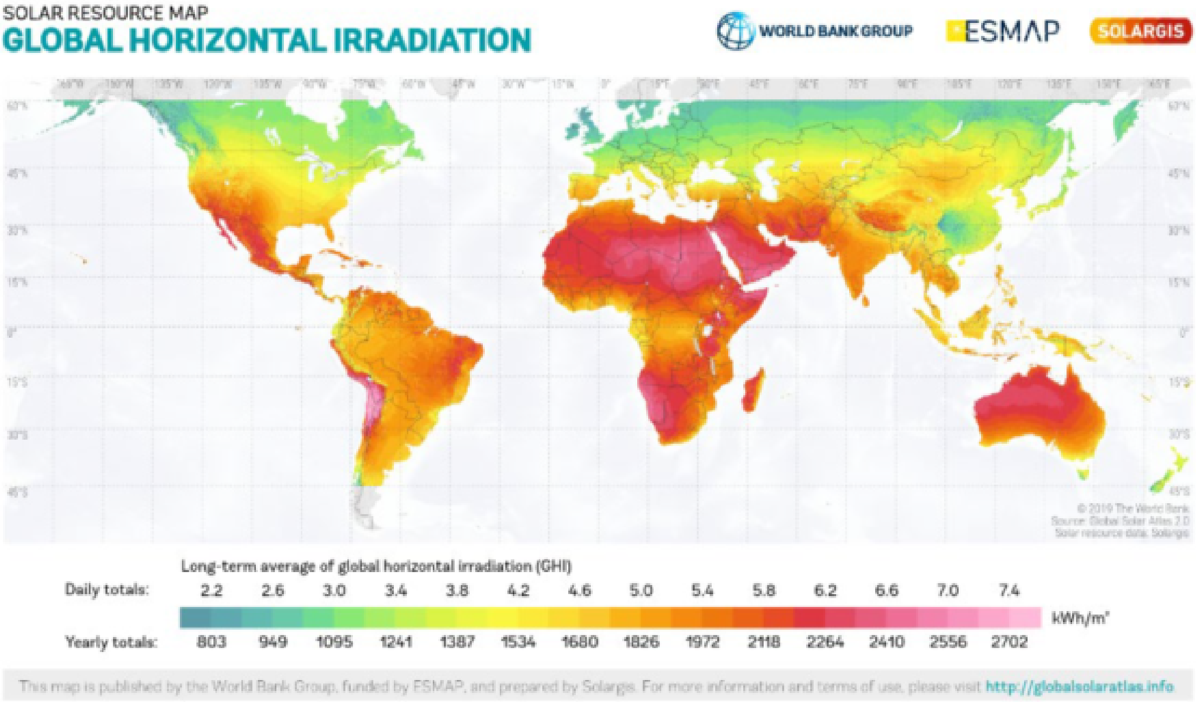
???????????????GHI: Global Horizontal Irradiation???



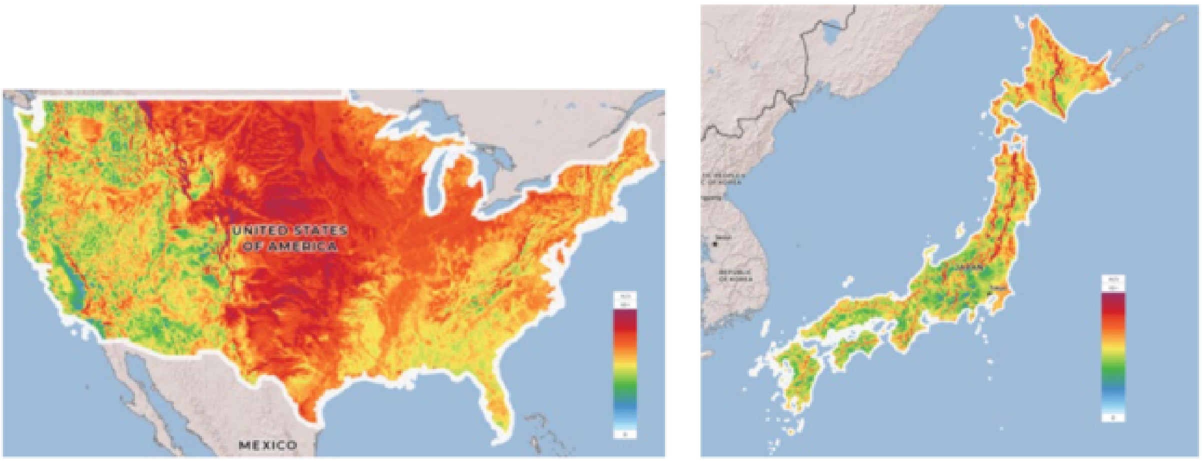
This map is published by the World Bank Group, funded by ESMAP, and prepared by Solargis. For more information and terms of use, please visit http://globalsolaratlas.info

???????????????????????Global Solar Atlas

Global Solar Atlas?10) ??Solargis?? ??1??????????????5.00kWh/kWp??????????3.39kWh/kWp???1.5???????????????????LCOE: Levelised Cost of Electricity??11) ??????

???O&M?? ??? ????????????

??Ḳ?12) ?

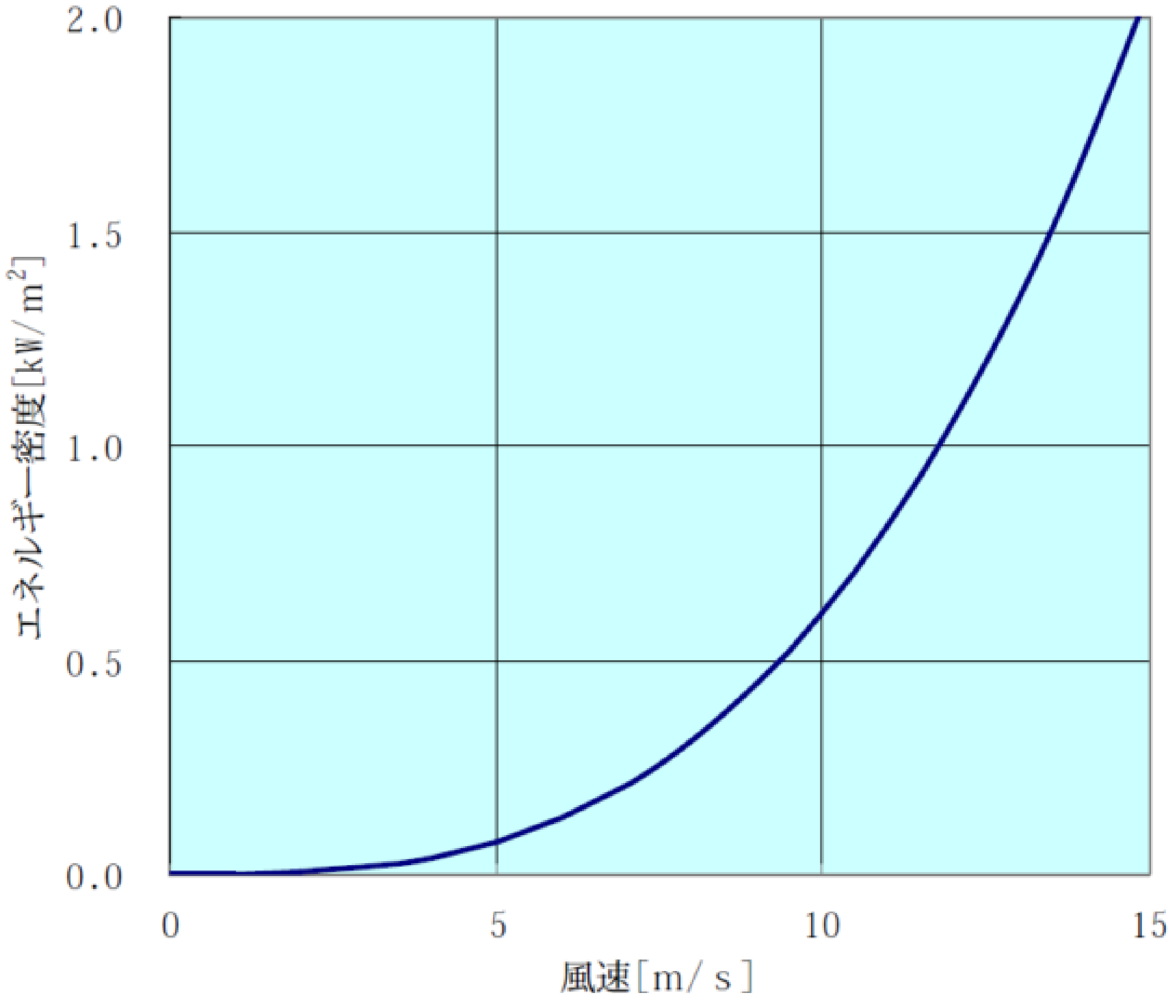


?????????????????Global Wind Atlas

???7m/s??????????????????7m/s????????????
????????????3?????????????????????2??????????????8???????? ???????????????????

$$P = \frac{1}{2}mV^2 = \frac{1}{2}(\rho AV)V^2 = \frac{1}{2}\rho AV^3$$

P: 風力エネルギー(W)、m: 質量、V: 風速、ρ: 空気密度(kg/m^3)、A: 受風面積(m^2)、



?????????????NEDO

????OECD/NEA?IEA[?13)] ???????????LCOE???

	容量(AC) (MW)	設備稼働率 (%)	資本費 (USD/MWh)	撤去費 (USD/MWh)	O&M費 (USD/MWh)	LCOE (USD/MWh)
日本	20	20	111.76	0.93	27.48	140.17
米国	100	53	26.26	0.13	8.71	35.10
	100	49	27.00	0.12	9.57	36.70
	100	47	27.66	0.12	9.92	37.71
	100	45	28.52	0.12	10.26	38.90
	100	43	30.23	0.13	10.69	41.05
	100	41	36.46	0.17	11.36	47.99
	100	37	42.62	0.20	12.53	55.35
	100	33	58.66	0.31	14.15	73.11
	100	28	75.76	0.42	16.49	92.66
	100	18	127.99	0.72	26.07	154.78
Ave.	100	39	48.12	0.24	12.98	61.34

??????????????????????LCOE?????OECD/NEA?IEA??????

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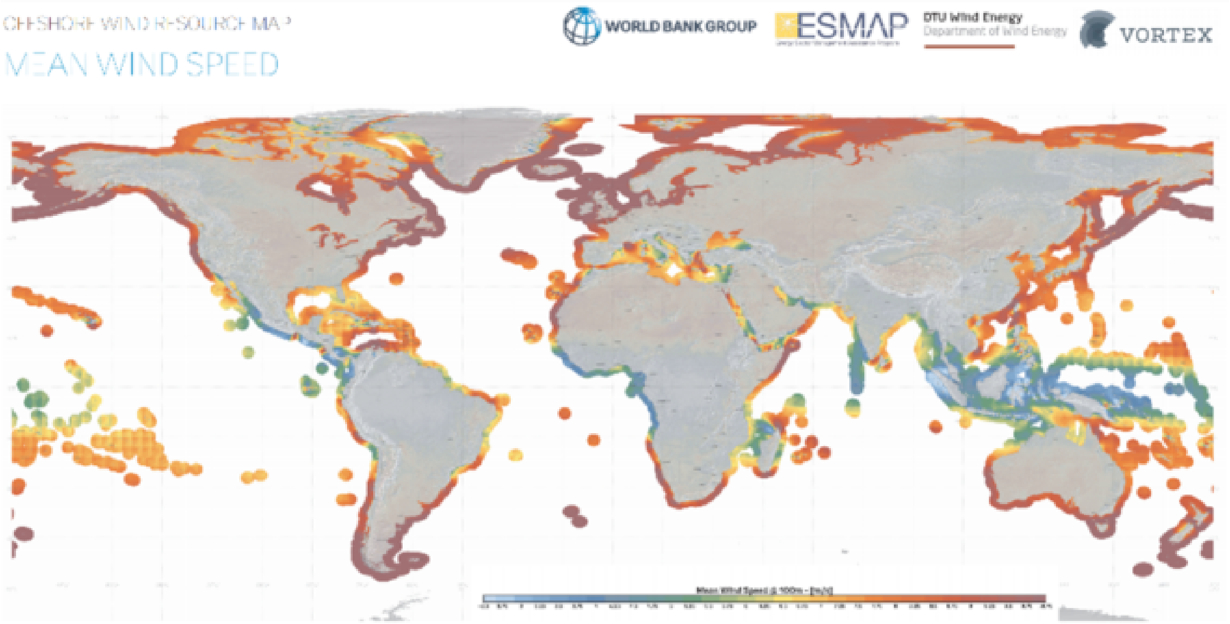
??????????2??3????????????????????????????????2?????????????????????4??9??

??????????????????7.0m/s?????????????????????????????????????



?????????????????Global Wind Atlas

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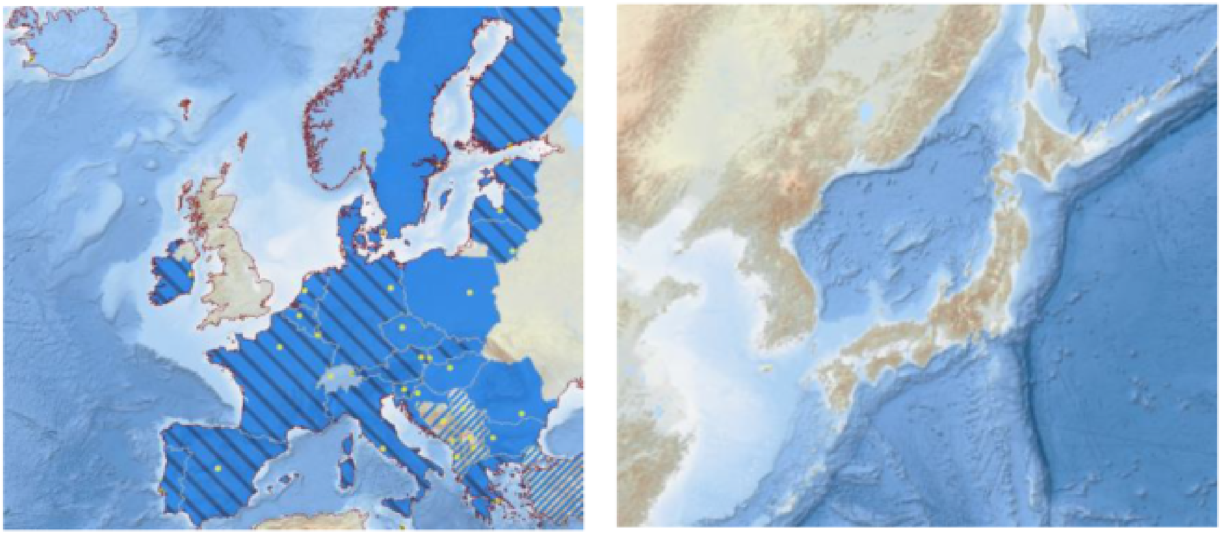

??????????????European Atlas of the Seas

??10?20m??
??????????????????????60m?????????????????????????????????????

???2021??14)
??7.7m/????????10m/?????????????????????35??????????
??????????55???????????????????????20???????????????????????????????????7?8?/kWh??????????
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???1???15)
??????????????2030????10GW?2040????30?45GW?????????????????????????2030?2035????8?9
?/kWh????????2040????60??????????????

??Siemens Gamesa??????Vestas????????16) ????Envision????3???85??????17) ?

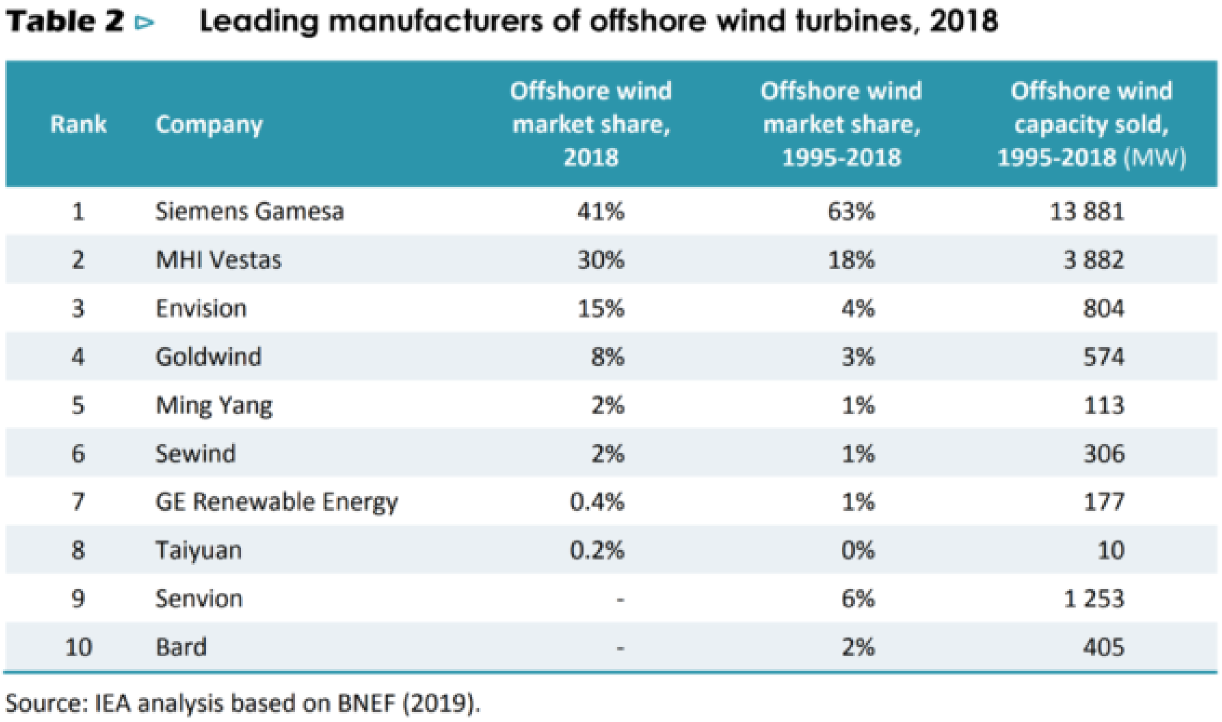

Table 2 ▻ Leading manufacturers of offshore wind turbines, 2018

Rank	Company	Offshore wind market share, 2018	Offshore wind market share, 1995-2018	Offshore wind capacity sold, 1995-2018 (MW)
1	Siemens Gamesa	41%	63%	13 881
2	MHI Vestas	30%	18%	3 882
3	Envision	15%	4%	804
4	Goldwind	8%	3%	574
5	Ming Yang	2%	1%	113
6	Sewind	2%	1%	306
7	GE Renewable Energy	0.4%	1%	177
8	Taiyuan	0.2%	0%	10
9	Senvion	-	6%	1 253
10	Bard	-	2%	405

Source: IEA analysis based on BNEF (2019).

?????????????????????2018?????IEA

???1991????????????????????????????
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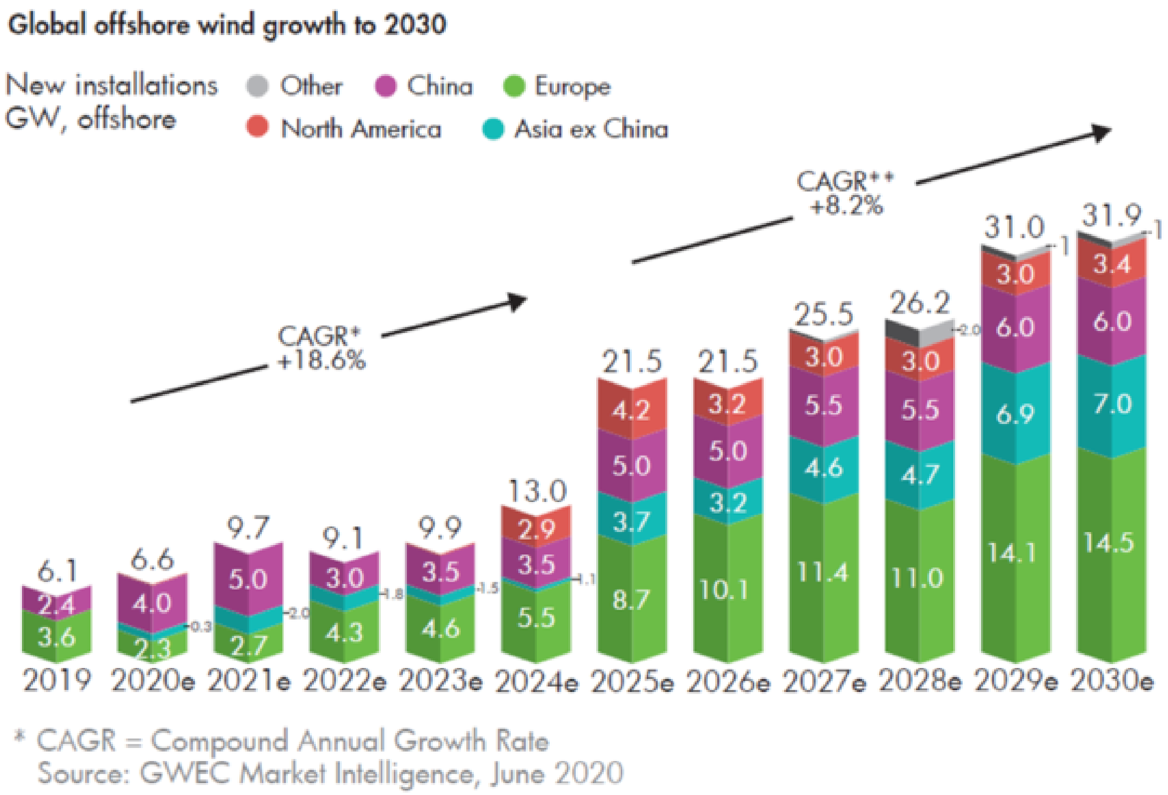


Global offshore wind growth to 2030

* CAGR = Compound Annual Growth Rate
Source: GWEC Market Intelligence, June 2020

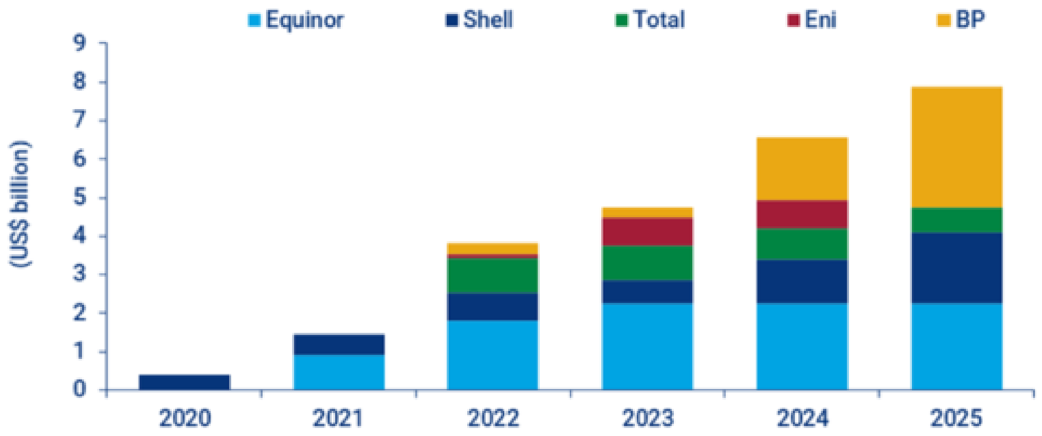
???????????????????Global Wind Energy Council

??60m??

??Wood Mackenzie????[?18)] ?????????2020?????????????????????FIDs: Final Investment Decisions???3??1???2025??????80?????2020????????18??????????????

Big Oil's offshore wind spend is ramping up

Gross (pre-project finance) capex projection based on current project pipelines



Note: Company share of aggregate project-by-project gross capex before the impact of assumed offshore wind project financing. Includes all assets in each company's current offshore wind development with a known commencement of operations date, excluding offshore transmission costs in the UK. Excludes any future expenditure on yet-to-be accessed leases and acquisitions.

Source Wood Mackenzie

????????????????????????????Wood Mackenzie

???M&A ????????????????????Equinor???2???19?? Equinor?2009??????????????????????????????????

??????????????????????11?????????????????600??2020?12????????????????????????19) ???????????????????47.8?57.3?/kWh???????28.3?35.4?/kWh??? ???

?10?https://globalsolaratlas.info/map

?11???kWh????????????

?12?NEDO?2008????????????????

?13?OECD/NEA?IEA, 2020, “Projected Costs of Generating Elevtricity 2020 Edition”

?14????????????2021???

?15?https://www.meti.go.jp/shingikai/energy_environment/yojo_furyoku/pdf/002_02_01_01.pdf

?16?MHI?2020?12??Vestas????????????????????????????????????https://www.mhi.com/jp/notice/notice_201214.html

?17?https://iea.blob.core.windows.net/assets/495ab264-4ddf-4b68-b9c0-514295ff40a7/Offshore_Wind_Outlook_2019.pdf

?18?https://www.woodmac.com/news/opinion/how-big-oil-is-set-to-transform-the-offshore-wind-sector/

?19?http://www.fukushima-forward.jp/reference/pdf/study016.pdf

????2030?46????????????????

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