

PLATFORM ON WIND ENERGY



Executive Committee meeting

May 2020

etipwind.eu



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Alexander Vandenberghe Advisor Research & Innovation

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TIMING	AGENDA ITEM	SCOPE		
10:00 – 10:10	Introduction, competition compliance and agenda By Aidan Cronin, Executive Committee Chair	For information		
10:10 – 10:15	ETIPWind EXCO elections: next steps By ETIPWind secretariat	For information		
10:15 – 10:30	Update on 2020 work programme (post covid19) By ETIPWind secretariat	For information		
10:30 – 11:30	 Factsheet floating offshore wind CAPEX and LCoE reduction; Socio-economic benefits; and Policy recommendations. 	For discussion		
11:30 – 11:40	AOB	For discussion		
11:40 – 11:45	Closing remarks and next steps By Aidan Cronin, Executive Committee Chair	For information		

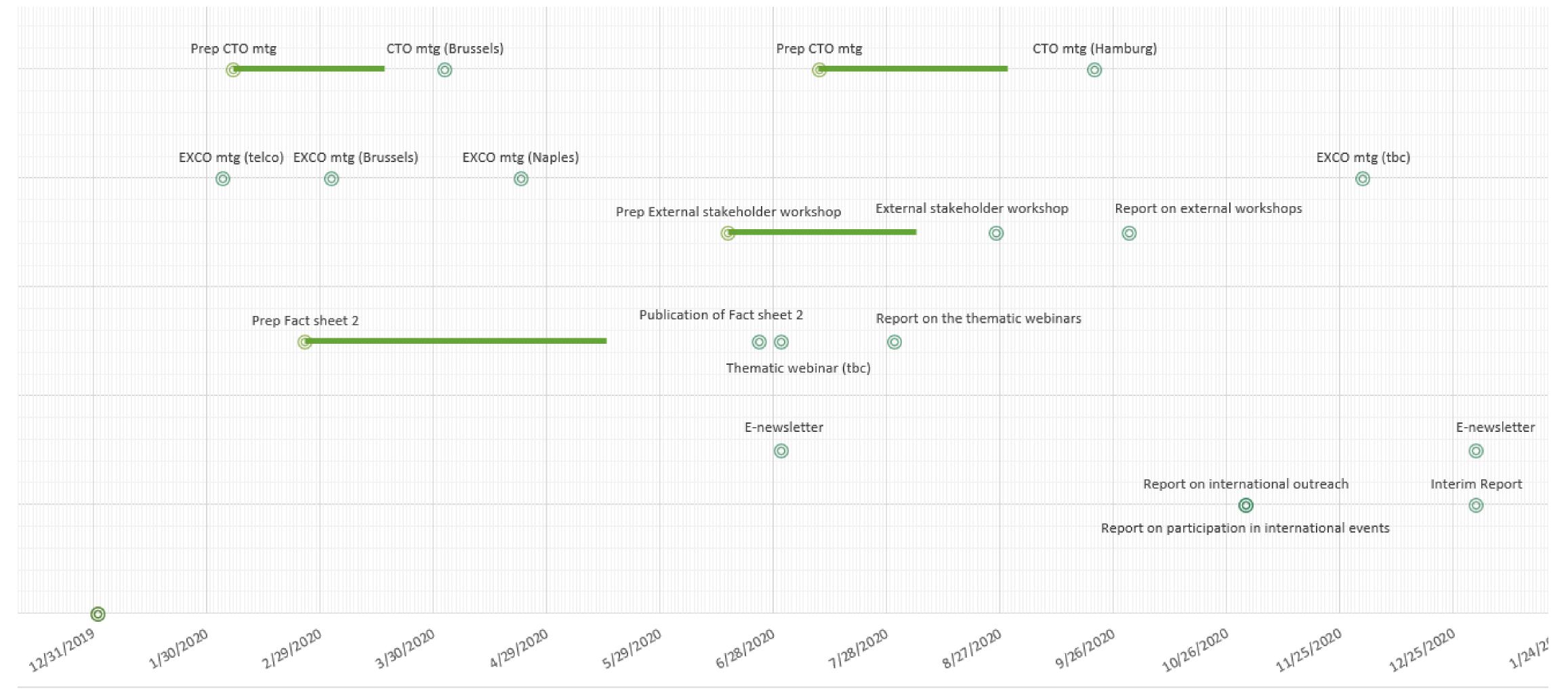


ETIPWind elections

- 38 applications received.
- All applicants will hear the formal outcome before the end of May.
- Significant interest of associations and clusters.
 - Set up a yearly coordination meeting?
- First full meeting on 23 June
- New chairperson will be officially elected on 23 June.



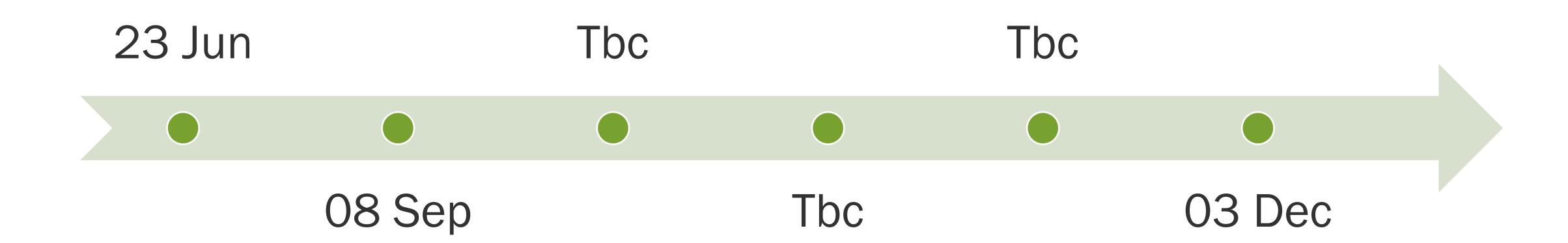
ETIPWind work programme 2020





ETIPWind work programme 2020

- All meetings to be held as 2h Telco's
- In Autumn more short telco's could be added on a piecemeal basis, following the content creation process (2021 publication).





ETIPWind work programme 2020

External engagements

- 30 June: webinar on floating wind to disseminate the fact-sheet.
- 14-18 September: joint workshop event with SETWIND and EERA JP Wind
- Tbc, roundtable with other renewables and policymakers

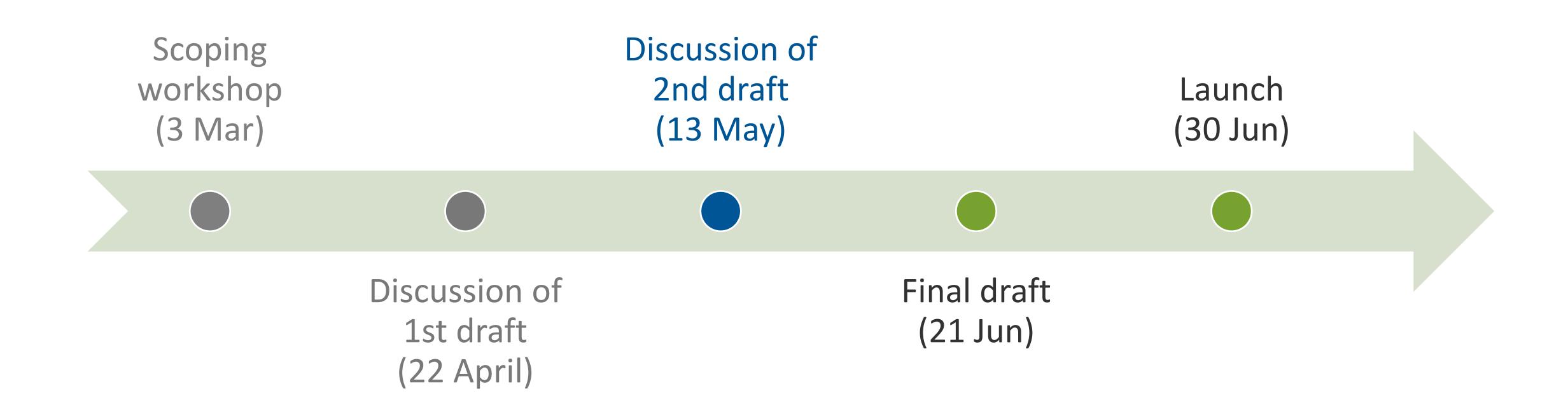






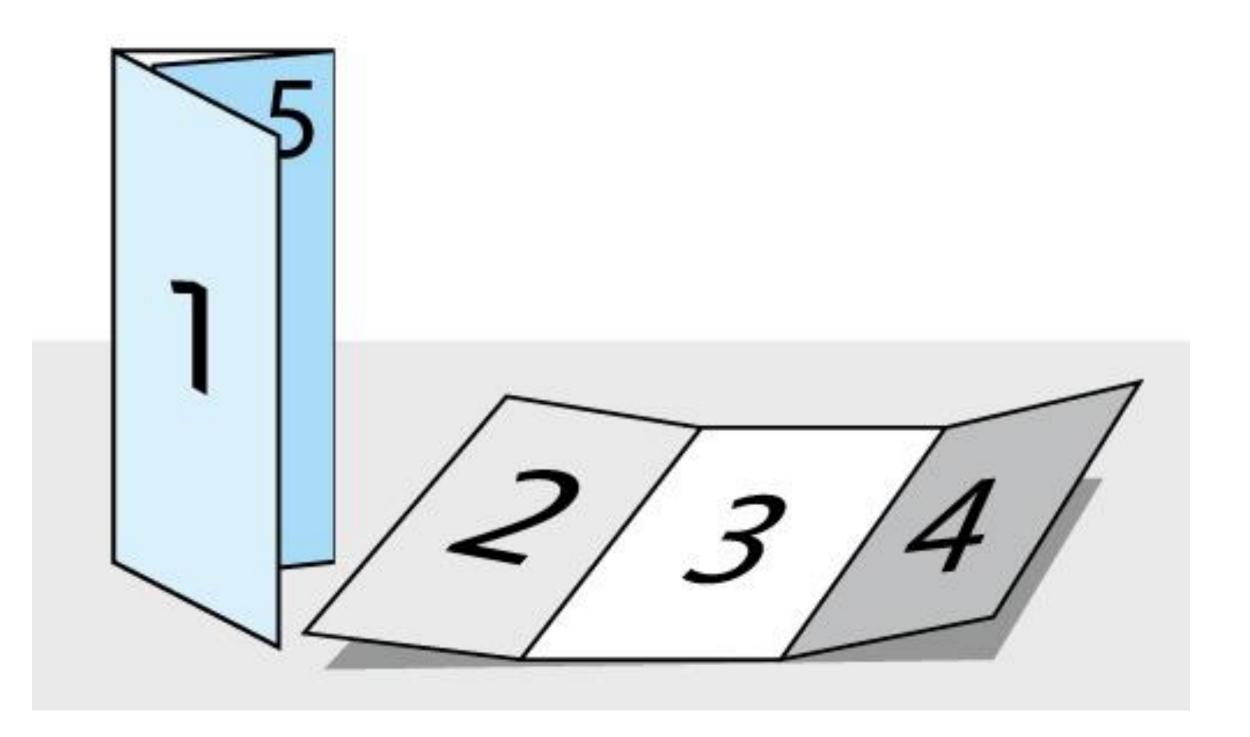


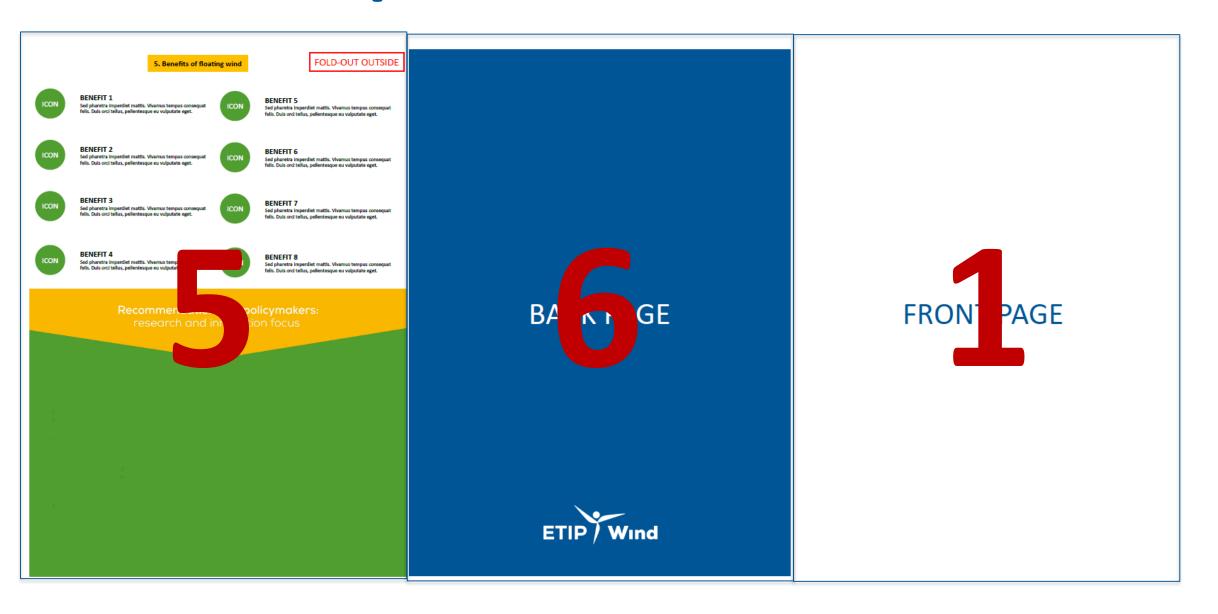
Factsheet 2020 – timeline

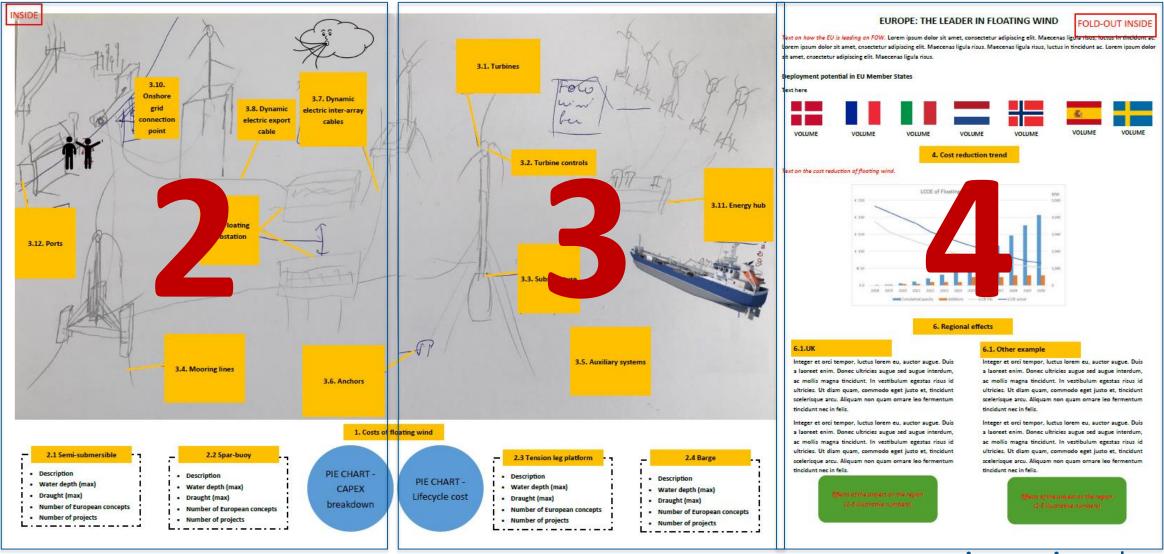




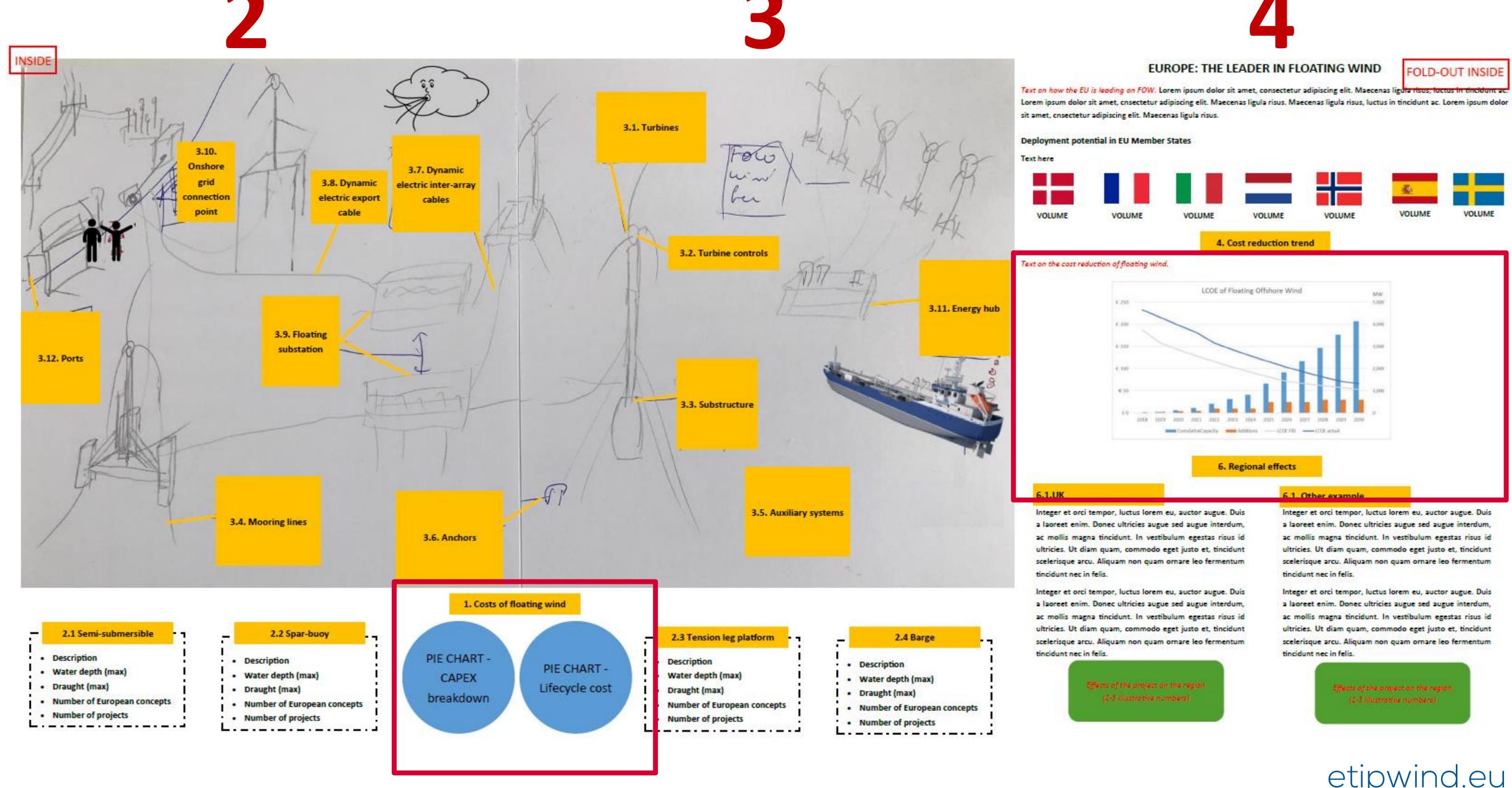
Factsheet 2020 – concept











Objective

provide a ballpark capex for floating offshore wind today.

Challenges

- Lots of data, but varying assumptions
- Large differences between types and concepts (of the same type)
- Factual data only for demonstrator/pre-commercial projects

Questions

- What do we want to show? And where?
- Do we want absolute or relative values?
- What would our sources be?

Averaged LCA CAPEX breakdown				
Cost type	Absolute (avg). in Euro per MW	Relative (avg)		
Substructure	1,180,000	31%		
Grid connection (& BOP)	1,000,000	26%		
Turbine	750,000	20%		
Mooring & anchoring	350,000	9%		
Installation turbine	250,000	7%		
Project development	250,000	7%		
Total	3,780,000	100%		

Reference scenario: 500 MW wind farm, 5 MW turbines, 20 years

A. Myhr et al. / Renewable Energy 66 (2014) 714-728

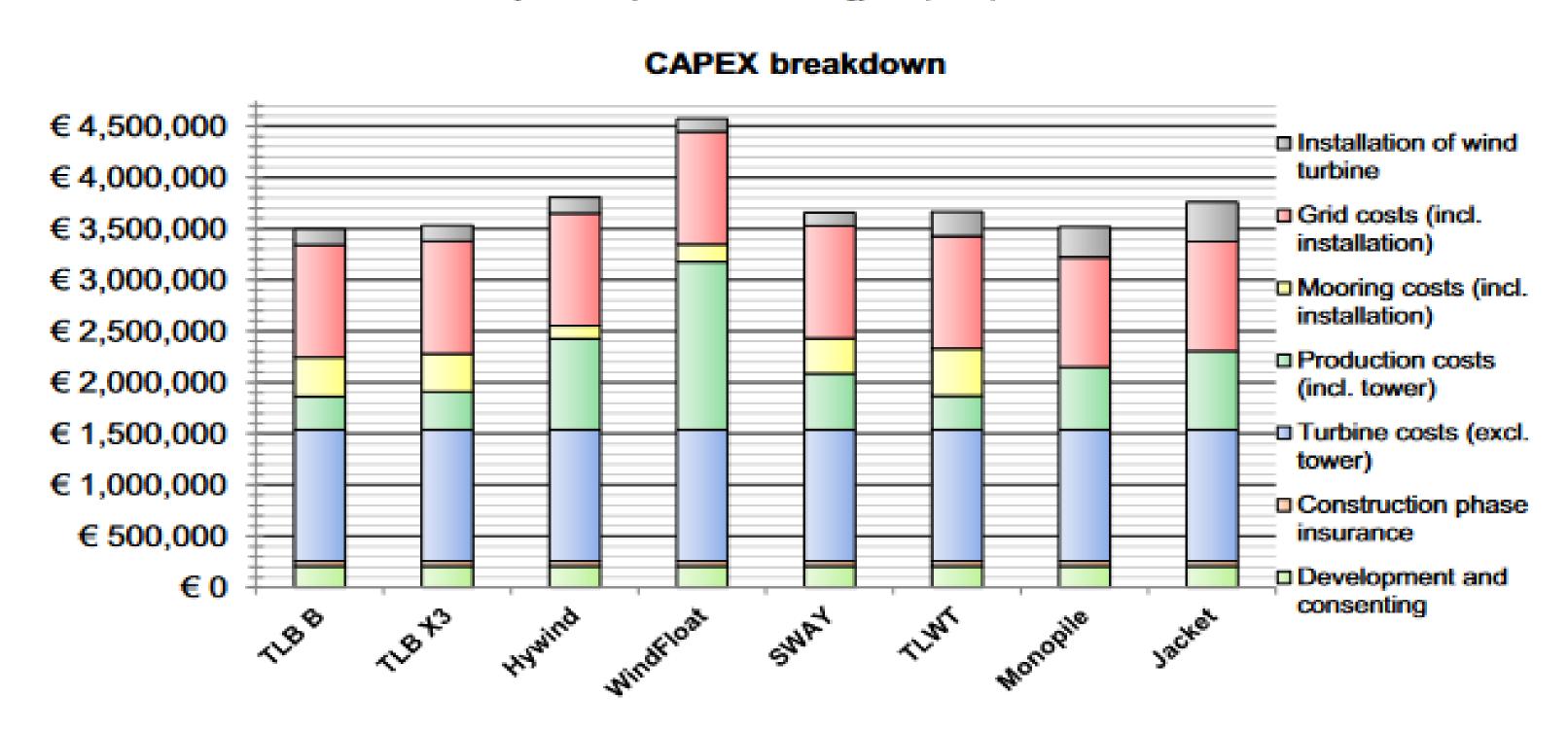


Fig. 4. Base case CAPEX quantification per MW for each concept in the reference scenario.

Reference scenario: 500 MW wind farm, 5 MW turbines, 20 years

6 MW demonstrator

CAPEX breakdown DEMONSTRATOR					
Cost type	Absolute (avg). in pound 2015 per MW	Relative (avg)			
Turbine	1,700,000	32,7%			
Foundation	1,400,000	26,9%			
Mooring & anchoring	500,000	9,6%			
Installation	600,000	11,5%			
Balance of plant	800,000	15,4%			
Decommissioning	200,000	3,8%			
Total	5,200,000	100%			

XX MW commercial project

CAPEX breakdown COMMERCIAL					
Cost type	Absolute (avg). in pound 2015 per MW	Relative (avg)			
Turbine	1,100,000	41%			
Foundation	600,000	22%			
Mooring & anchoring	220,000	8%			
Installation	350,000	13%			
Balance of plant	350,000	13%			
Decommissioning	80,000	3%			
Total	2,700,000	100%			

Source: Carbon Trust



Figure 0.1.1. Reduction in capital expenditure from prototype to commercial deployments

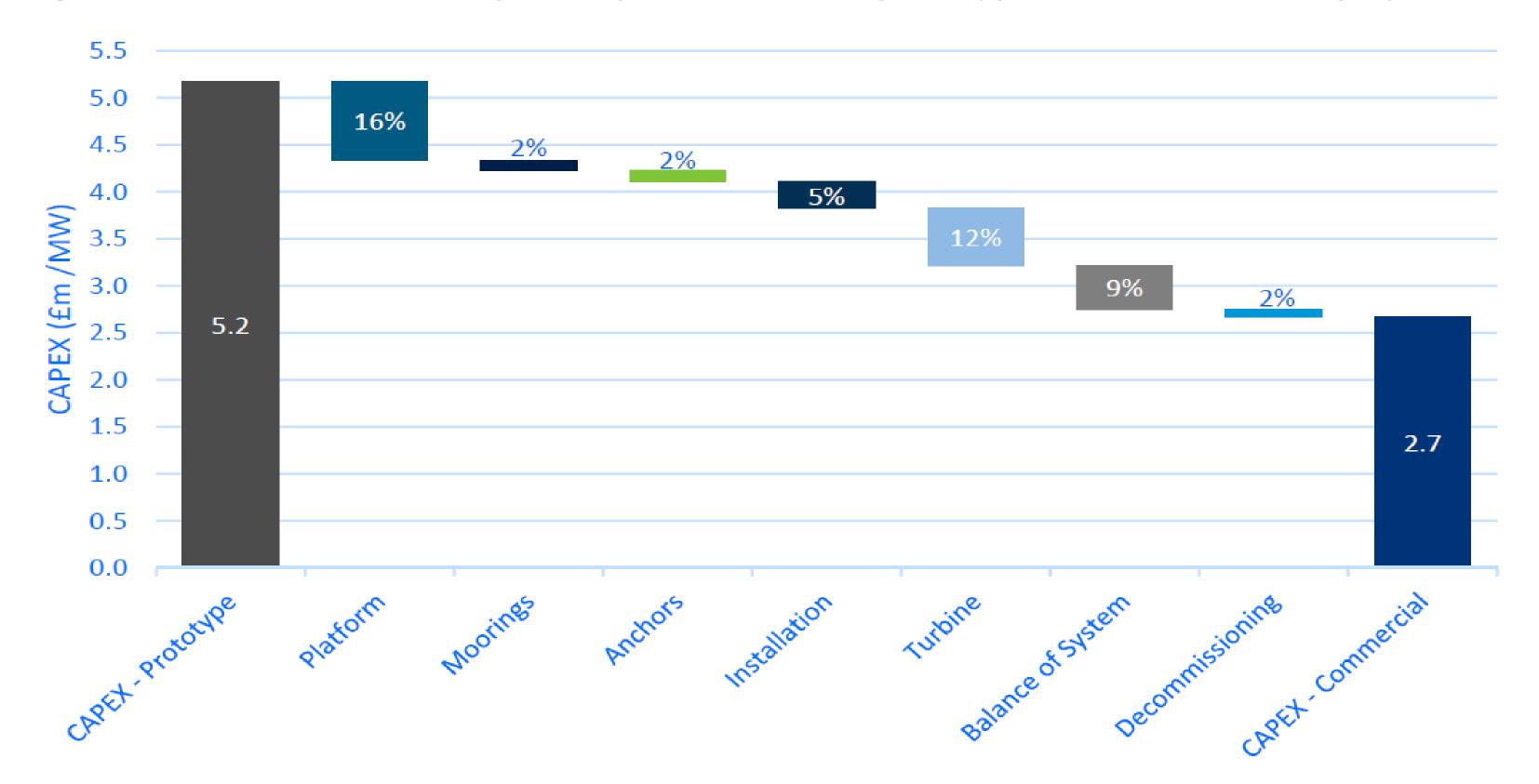






Figure 3.5.5. CAPEX breakdown by component for different deployment scales

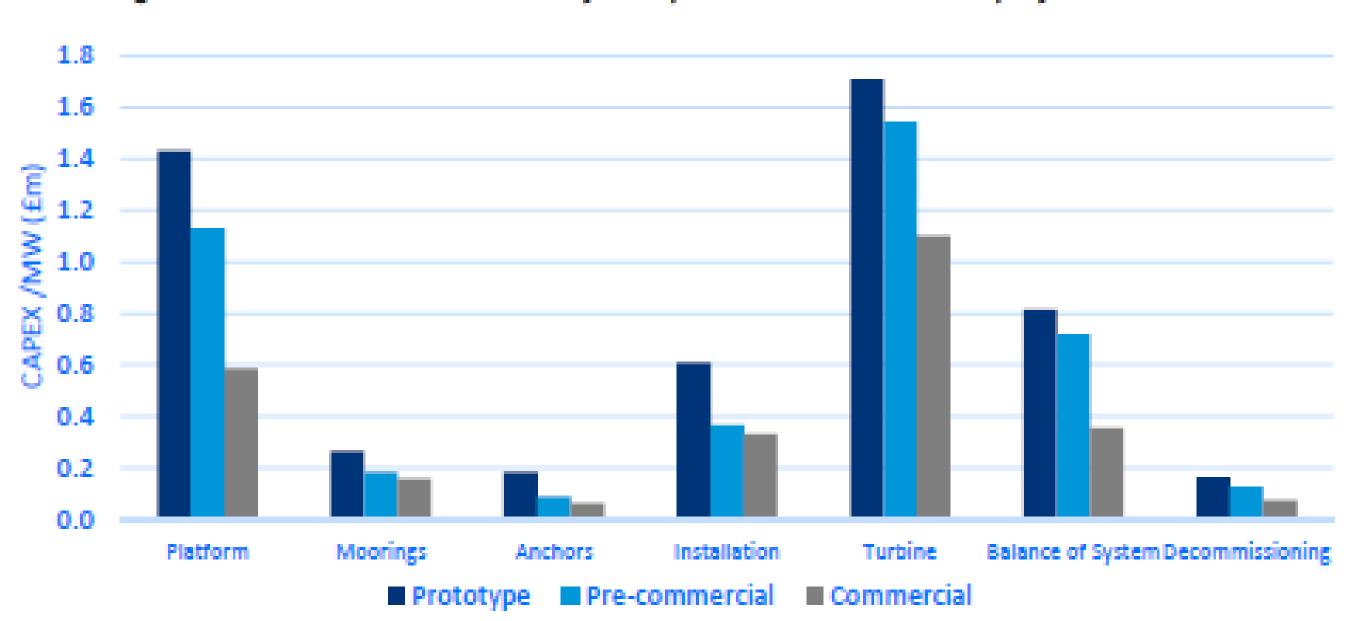
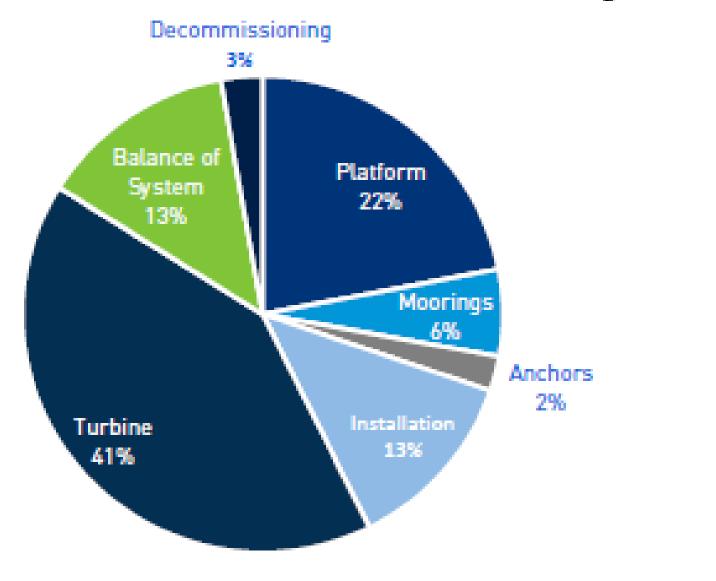


Figure 3.5.4. CAPEX breakdown for a commercial scale floating wind farm



Source: Carbon Trust

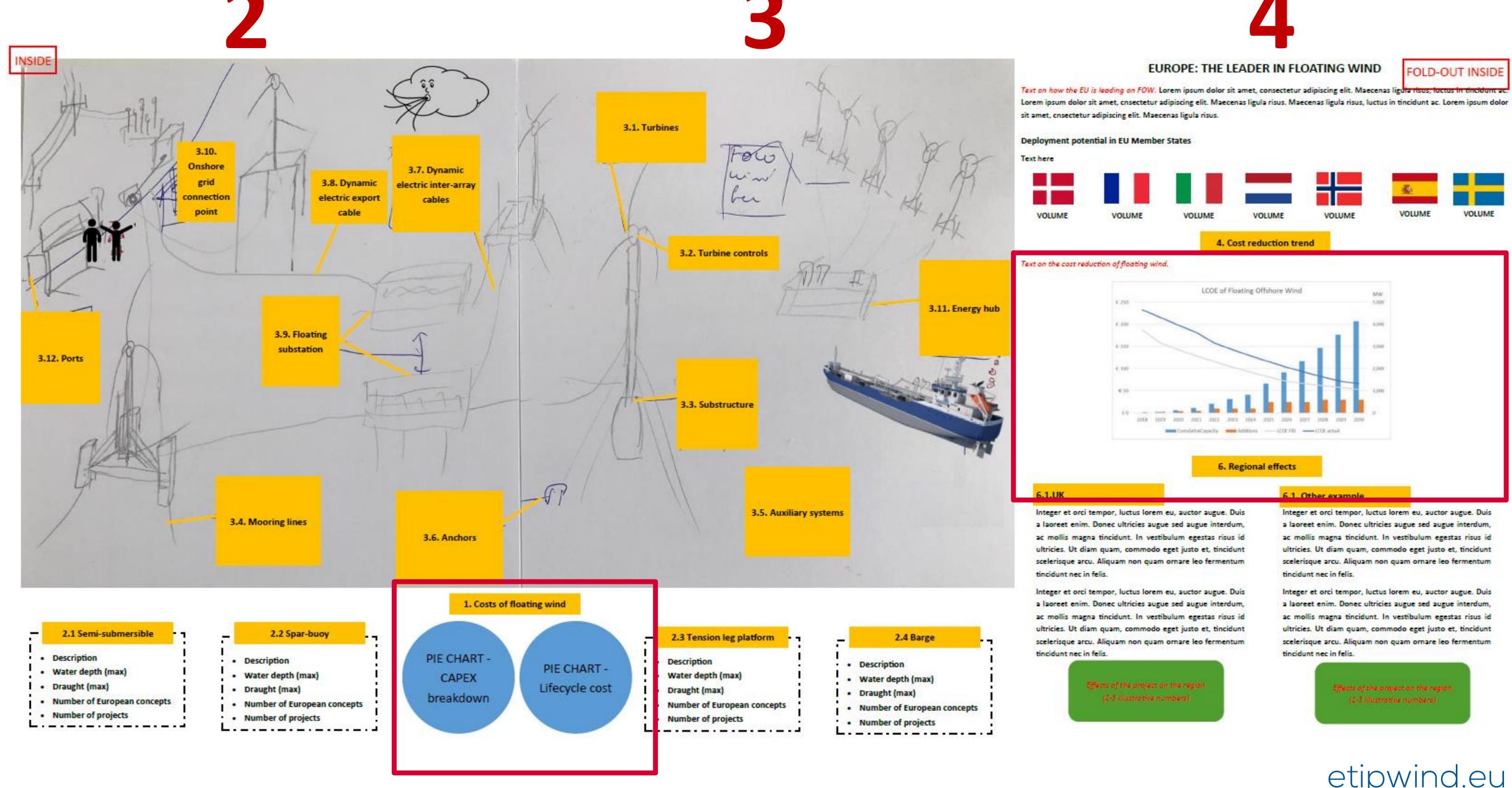


In order to assess the potential economic impact three scenarios are considered: a pilot array project (30MW), a pre-commercial array (96MW) and a commercial array project (750MW). Initially the Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) for the projects were broken down to the relevant categories of work involved in developing, constructing and operating an offshore wind farm.

						Pi	re Commercial		
					Pilot Array		Array	Co	mmercial Array
			CAPEX	£	200,000,000	£	540,000,000	£	2,207,000,000
			OPEX total	£	65,000,000	£	198,000,000	£	1,039,000,000
			% of CAPEX / OPE	x		Spend Breakdown			
	ŧ	Applications and Consenting	0.5%	£	1,000,000	£	2,700,000	£	11,035,000
	홑	MetOcean Data and Monitoring	0.5%	£	1,000,000	£	2,700,000	£	11,035,000
	8	Environmental Surveys	1.0%	£	2,000,000	£	5,400,000	£	22,070,000
	Development	Physical Surveys	1.0%	£	2,000,000	£	5,400,000	£	22,070,000
	ă	Design and Feasibility	1.0%	£	2,000,000	£	5,400,000	£	22,070,000
	_	Platform Manufacture	35.0%	£	70,000,000	£	189,000,000	£	772,450,000
	<u> </u>	Control System	3.0%	£	6,000,000	£	16,200,000	£	66,210,000
	System and BOP	WTG	15.0%	£	30,000,000	£	81,000,000	£	331,050,000
- S	<u> </u>	Moorings	5.0%	£	10,000,000	£	27,000,000	£	110,350,000
- 6	틀	Onshore Infrastructure	3.0%	£	6,000,000	£	16,200,000	£	66,210,000
Breakdown	is.	Electrical Equipment	4.0%	£	8,000,000	£	21,600,000	£	88,280,000
		Cabling	10.0%	£	20,000,000	£	54,000,000	£	220,700,000
Spend	8	Installation of Moorings	5.0%	£	10,000,000	£	27,000,000	£	110,350,000
Š	1	Installation of Platform	5.0%	£	10,000,000	£	27,000,000	£	110,350,000
	Installation	Installation of Cables	7.0%	£	14,000,000	£	37,800,000	£	154,490,000
	<u> </u>	Port Services	4.0%	£	8,000,000	£	21,600,000	£	88,280,000
		Land Related	10.0%	£	6,500,000	£	19,800,000	£	103,900,000
	08M	Insurance	20.0%	£	13,000,000	£	39,600,000	£	207,800,000
		Grid Charges	20.0%	£	13,000,000	£	39,600,000	£	207,800,000
		Maintenance	35.0%	£	22,750,000	£	69,300,000	£	363,650,000
		Operation	15.0%	£	9,750,000	£	29,700,000	£	155,850,000
			100% 100	096 £	265,000,000	£	738,000,000	£	3,246,000,000



Source: Friends of Floating



5. Benefits of floating wind

FOLD-OUT OUTSIDE



Recommendations for policymakers: research and innovation focus

BACK PAGE



FRONT PAGE

Benefits of floating offshore wind

Societal benefits

- Maximising clean energy.
- Limited social impact.
- Lower environmental footprint.

Economic benefits

- Local and regional development.
- Export technology with global potential.
- Re-orienting Europe's offshore expertise.



Recommendations to policymakers

Bring technology to maturity

- Provide public grants to start industrialisation.
- Build up a floating offshore wind portfolio.
- Start up an IPCEI on floating wind.
- Invest in infrastructure.
- Set up strategic R&I partnerships.

Accelerate large-scale deployment

- Offer visibility for investments.
- Hold technology specific auctions.
- Coordinate auctions timeline.
- Create regional cooperation fora.
- Facilitate access to finance.









