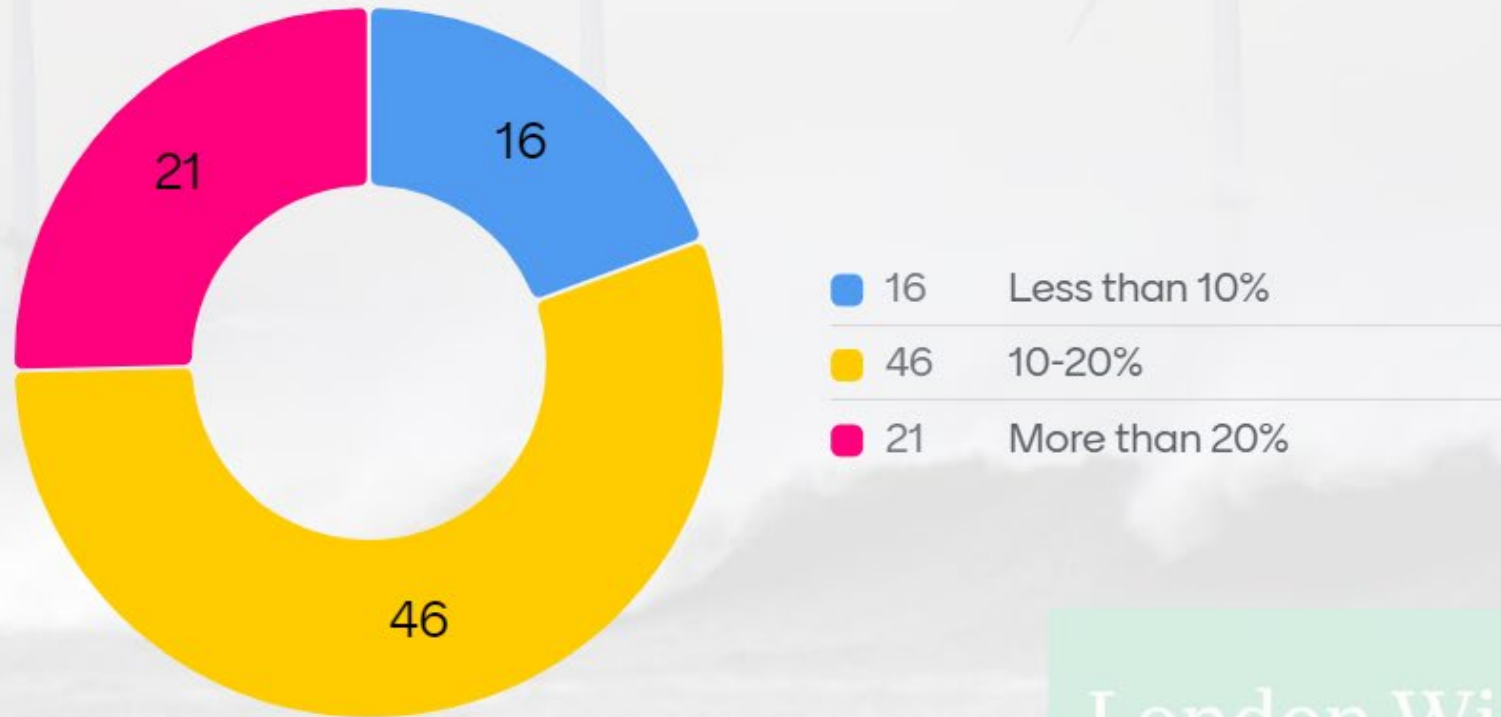


Outlook 2050: Operational Floating Offshore Wind prior to 2050



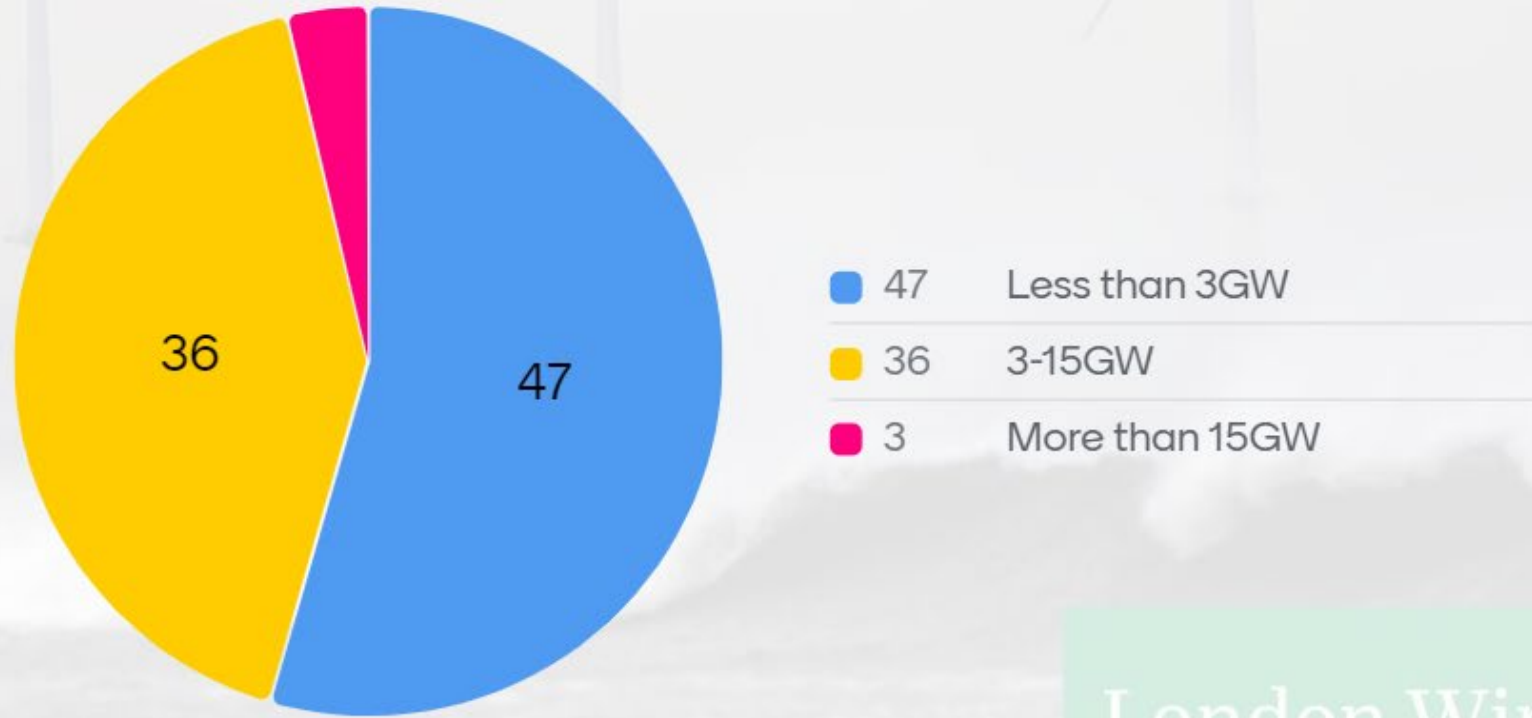
London Wind Academy

Floating wind % of total offshore wind in 2050?



London Wind Academy

Outlook 2030: Operational Floating Offshore Wind prior to 2030



London Wind Academy

Panel Discussion

Insuring ClubFloat



Towage catastrophe

If a “total loss” is suffered during tow-out, how much can ClubFloat reasonably expect to claim from insurers?

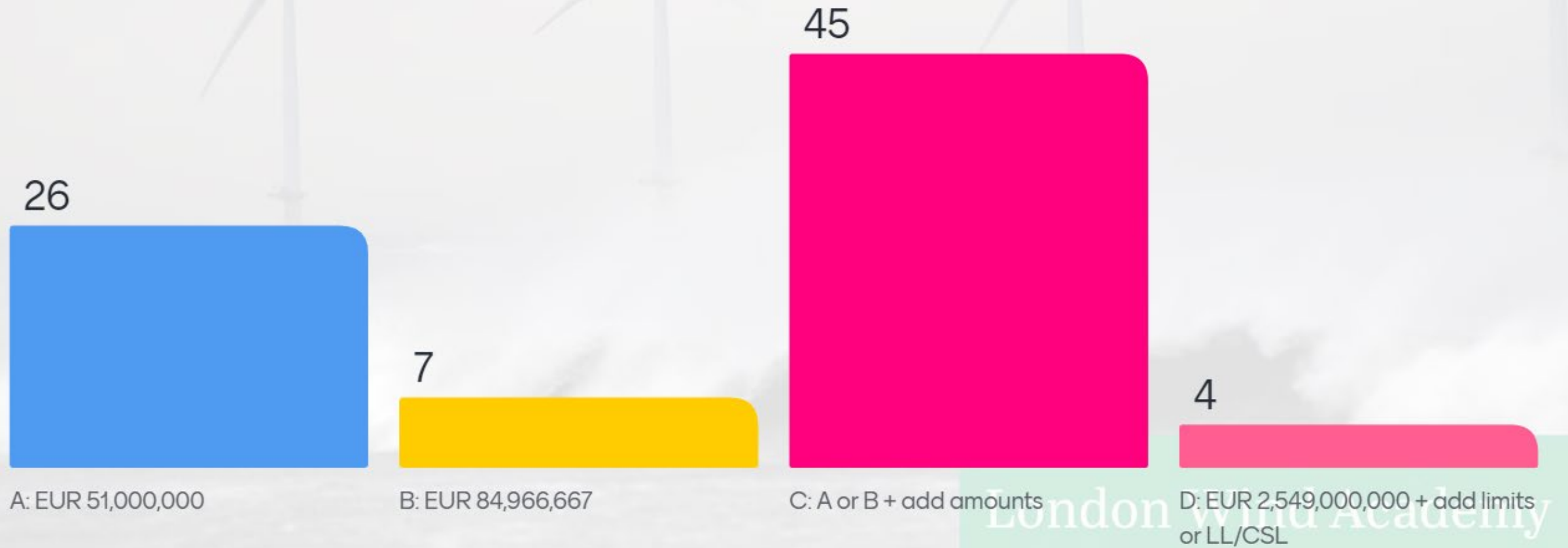
Asset	Total Supply Cost (EUR):	Quantity:	Cost/WTG # (EUR)
Wind Turbine Generator (WTG) - Turbine Supply Agreement (TSA):	600 000 000	30	20 000 000
Foundation (incl Station Keeping System (SKS))	930 000 000	30	31 000 000
Inter-Array Cables (IAC) (incl T&I)	78 000 000	65	1 200 000
Offshore Substation Incl SKS with T&I	525 000 000		
Offshore Export Cable (incl T&I): 2 x 220kV HVAC - 2x75km Incl 1x 220kv HVAC submarine cable (spare) - 2.5km (Dynamic section) Incl 1x 220kv HVAC submarine cable (spare) - 2.5km (static section)	231 000 000	150	1 540 000
Onshore Export Cable (incl installation)	10 000 000	10	1 000 000
Onshore Substation	125 000 000		
Other	50 000 000		
Total:	2 549 000 000	30	84 966 667

Towage catastrophe

- A. EUR 51 000 000, less station keeping system (SKS) value for one wind turbine generator (WTG).
- B. EUR 84 966 667.
- C. A or B, plus potential additional amounts relating to additional coverages, costs, escalation, etc.
- D. As much as EUR 2 549 000 000 plus potential additional amounts as per C above but may be limited by a Loss Limit/Combined Single Limit.

Asset	Total Supply Cost (EUR):	Quantity:	Cost/WTG # (EUR)
Wind Turbine Generator (WTG) - Turbine Supply Agreement (TSA):	600 000 000	30	20 000 000
Foundation (incl Station Keeping System (SKS))	930 000 000	30	31 000 000
Inter-Array Cables (IAC) (incl T&I)	78 000 000	65	1 200 000
Offshore Substation Incl SKS with T&I	525 000 000		
Offshore Export Cable (incl T&I): 2 x 220kV HVAC - 2x75km Incl 1x 220kv HVAC submarine cable (spare) - 2.5km (Dynamic section) Incl 1x 220kv HVAC submarine cable (spare) - 2.5km (static section)	231 000 000	150	1 540 000
Onshore Export Cable (incl installation)	10 000 000	10	1 000 000
Onshore Substation	125 000 000		
Other	50 000 000		
Total:	2 549 000 000	30	84 966 667

Towage catastrophe: How much can ClubFloat reasonably expect to claim from insurers?



London Wind Academy

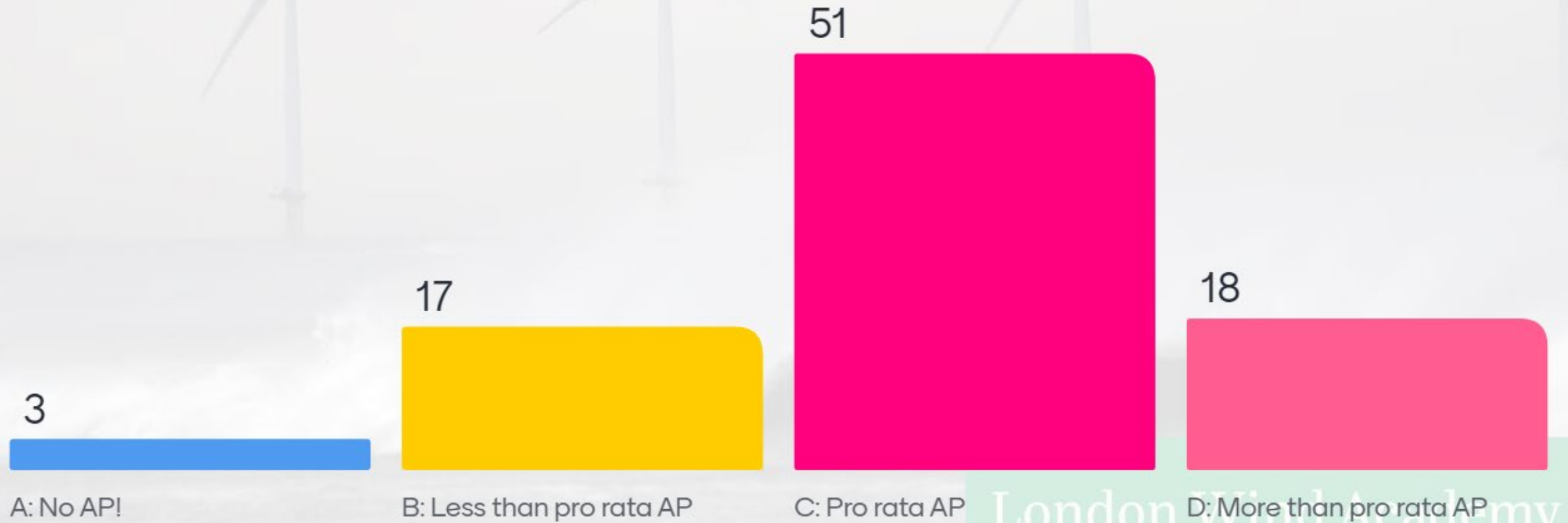
Period extension

Time is an imperfect proxy for quanta of risk. We all know that delays may occur, requiring extension of the Construction All Risk (CAR)/Delay In Start-Up (DSU) insurances. How should such extensions be priced in terms of Additional Premium (AP)?

Period extension

- A. No AP! Underwriters have already charged for the entire quanta of construction risks. The fact that the same quanta of risk now will take longer is irrelevant for premium purposes.
- B. Less than pro rata AP. Understand that there is a need for AP, but insurance costs as a % of CAPEX is getting out of hand. The AP charged should be modest at best.
- C. Pro rata AP. Additional time on risk is additional time on risk. The premium charged to date was for a stated period of coverage. Any additional time on risk should be charged at pro rata AP.
- D. More than pro rata AP. Extensions at or near construction completion means more time on risk at maximal exposures and any incidents are more likely to result in a DSU claim as well. The risk is more heightened than before which merits AP at greater than pro rata.

Period extension: How should such extensions be priced in terms of Additional Premium (AP)



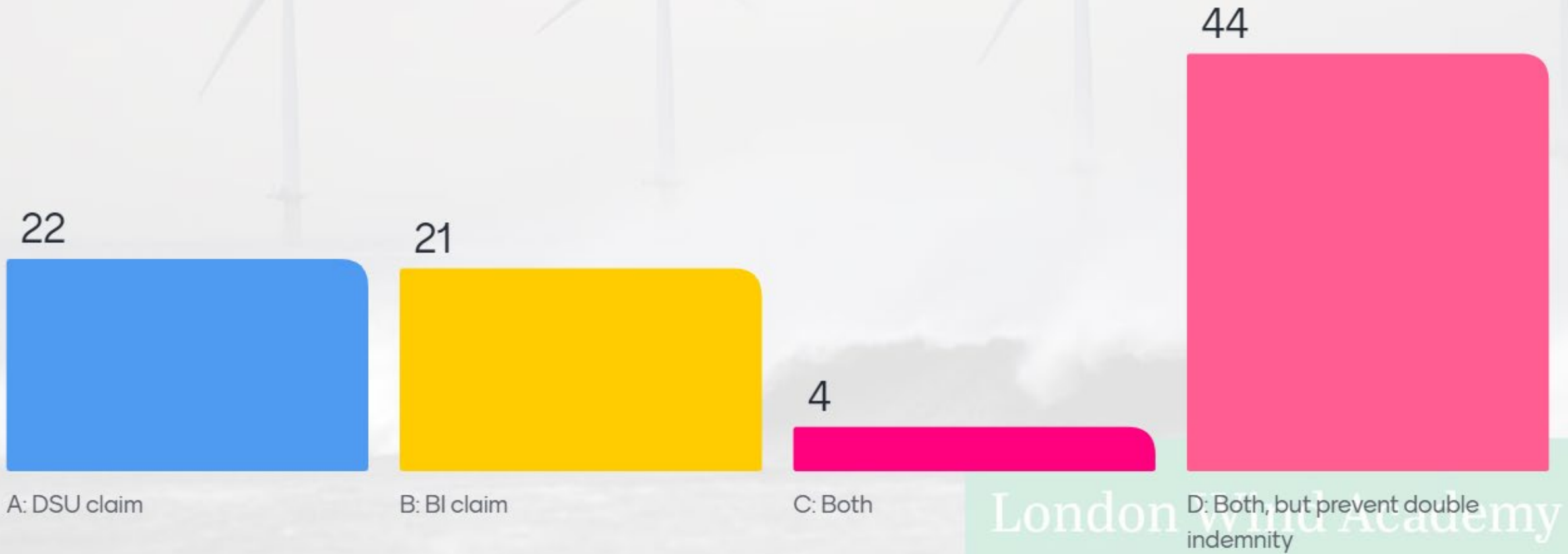
Phased handover

How does phased handover work? If a working WTG takes severe damage just as other WTGs are completing construction, such that the completion of repairs on the damaged WTG becomes the last item preventing overall farm completion, is it a Delay In Start-Up (DSU) or a Business Interruption (BI) claim?

Phased handover

- A. DSU claim. Assess date of farm completion but for the damage (a) and compare eventual actual date of farm completion (b) . Count off deductible days from (a) and assess the claim.
- B. BI claim. Count off deductible days from date of incident and assess the claim.
- C. Both. Pay both claims as both the WTG's production is interrupted, and the farm's overall completion date is delayed by this single event.
- D. Both. However, arrangements must be made to prevent double indemnity.

Phased handover: Is it a Delay in Start-up (DSU) or a Business Interruption (BI) claim?



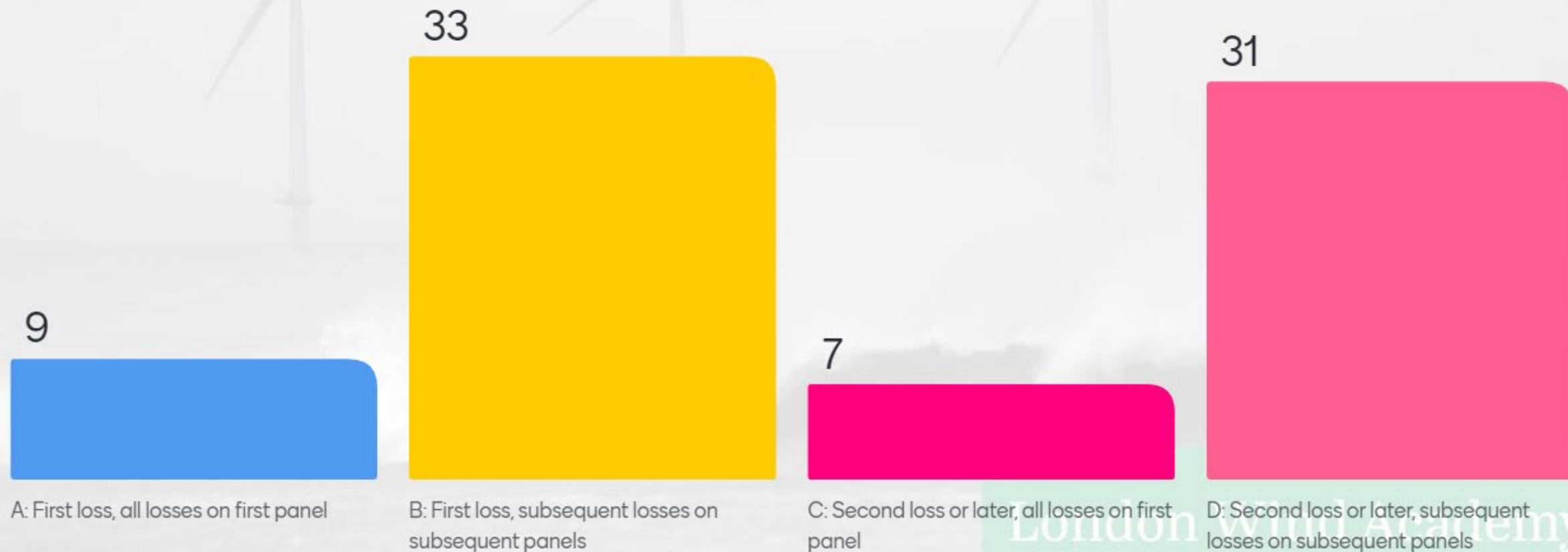
Serial issues

What are my obligations to investigate a loss as to whether it could be a potential serial issue? How does the time and expense it takes to make such investigations interact with a Serial Loss Clause (SLC) across several renewing policies?

Serial issues

	Panel of first loss covers all losses of the same root cause, whenever eventually discovered, subject to SLC protections	Subsequent discovered serial losses of the same root cause shall fall on the corresponding subsequent insurance panels, subject to the protections of a reset SLC
Obligations attach from the first loss	A	B
Obligations attach from the second loss or later	C	D

Serial issues: What are my obligations to investigate a loss as to whether it could be a potential serial issue?



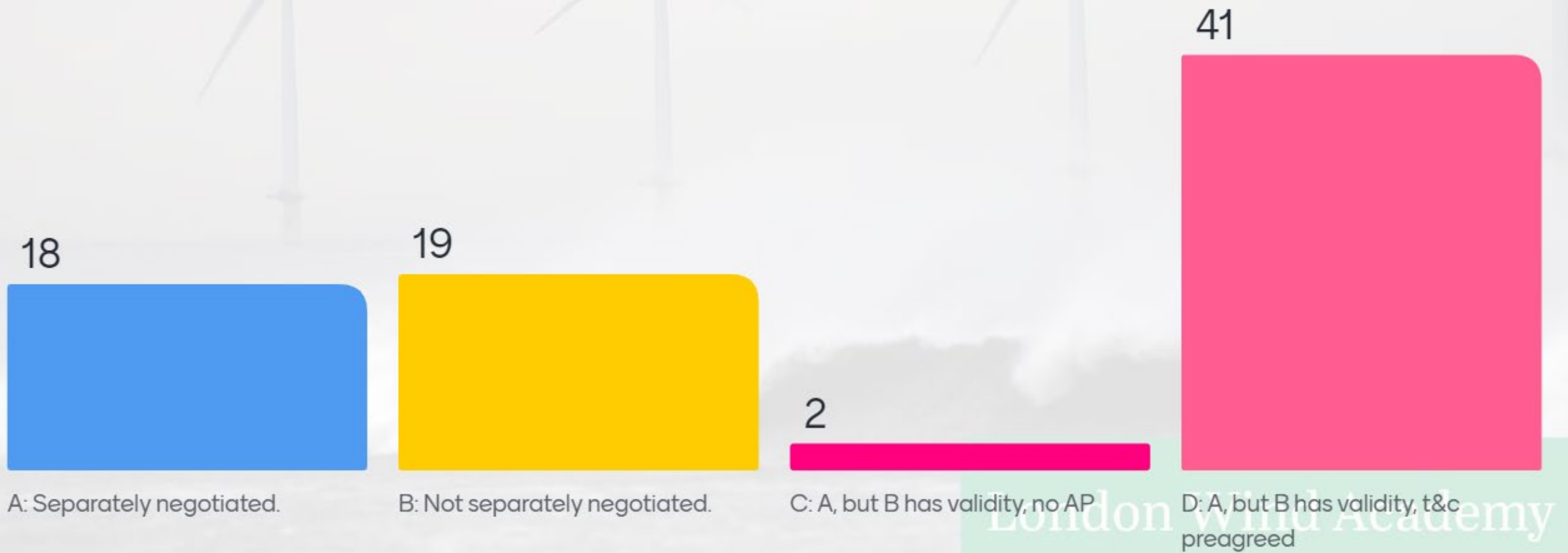
Post-claim repairs

Today's insurances seem to draw a line between “minor” and “non-minor” (major?) works. Works which (1) are pursuant to a new contract, and/or (2) are in excess of a certain value threshold, and/or (3) require the hiring of a vessel are typically subject to separate negotiations. What happens if I have a major claim which requires “non-minor” repair works?

Post-claim repairs

- A. This must be separately negotiated. It is the substantiality of the works in question which controls, not whether they need to be carried out due to a covered incident. Operational All Risk (OAR) underwriters do not intend to insure substantial Construction All Risk (CAR) exposures as a matter of course.
- B. This should not have to be separately negotiated. Coverage and repair of damages relating to covered events is why insurance exists. The OAR panel at the time of the occurrence should also be required to insure the subsequent repairs, however extensive.
- C. Currently A, but B has validity. No AP should be charged.
- D. Currently A, but B has validity. Coverage terms and conditions should be pre-agreed by the OAR panel.

Post-claim repairs: What happens if I have a major claim which requires "non-minor" repair works?





Transmission

The Main Arteries of Offshore Wind



Q1 – Anchor Drag

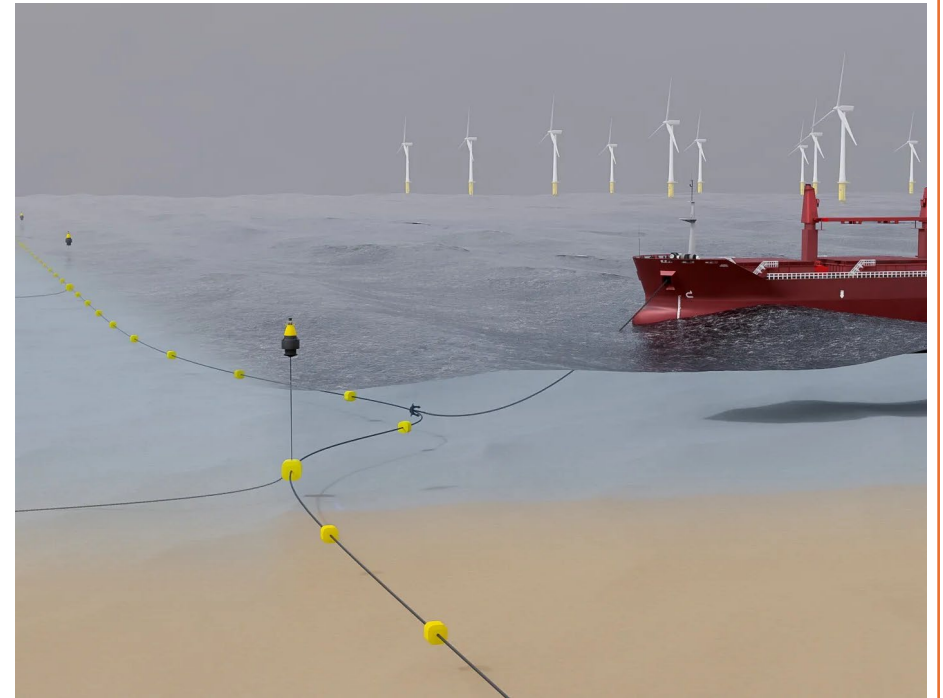
A drifting vessel drops emergency anchor in the area where the Export Cables are exposed. One cable is damaged and out of operation for 5 months. This results in a CBI claim under the ClubFloat OAR.

What is your view on this claim?

A: The claim should not be covered as the cable is clearly not sufficiently protected.

B: The claim should not be covered as it should be the responsibility of the Norwegian authorities to indemnify ClubFloat for the loss of revenue resulting from the anchor drag.

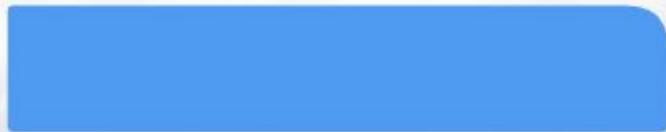
C: The claim shall be paid in full. Technical integrity of scheduled assets and exclusions on other policies are irrelevant to ClubFloat OAR.



Source: maritime-professionals.com

Q1 - Anchor drag. What is your view on the claim?

8



A: Covered. Not protected

2



B: Not covered. Government will fix

43



C: Covered!

London Wind Academy

Q2 – Defects Exclusions

The ClubFloat OAR policy has a full defects exclusion for the interfaces between dynamic cables and floaters.

Halfway into year two of operations one Export Cable suffers damage in the interface between EC and FOSS. The damage was discovered during inspection after a severe windstorm. The storm was within the design parameters of the FOSS. It is unclear if the damage is a result of a defect in design or a fortuitous event. The transmission assets operator refuses to provide a root cause analysis. The damage prevents ClubFloat from producing at full capacity and results in a CBI claim.

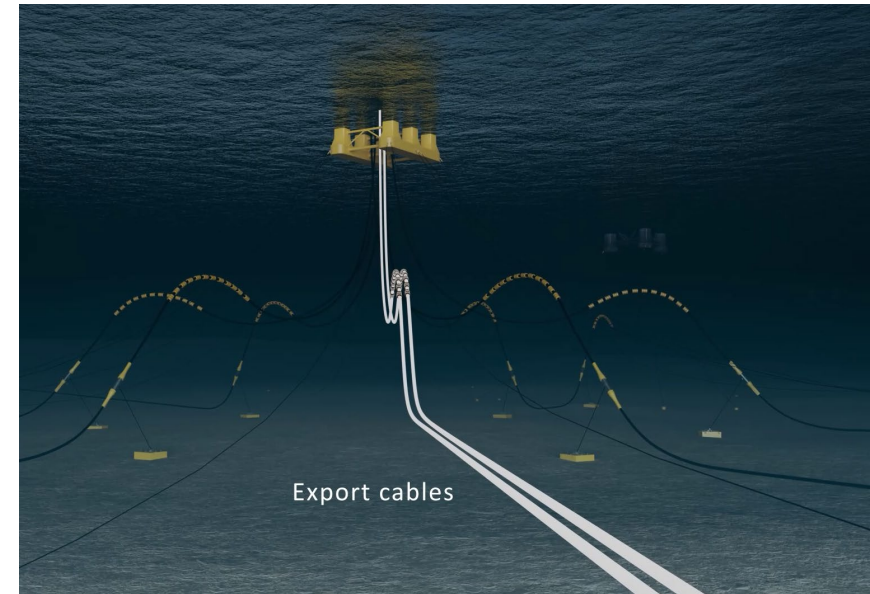
What is your view on the claim?

A: The claim should not be covered. ClubFloat has a full defects exclusion for interfaces between dynamic cables and floaters.

B: The claim should be covered in full. The defects exclusion in ClubFloat OAR policy is clearly intended for the interface between the farms Inter Array Cables and Wind Turbine Floating Foundations. This is not relevant to the damage in question.

C: The claim should be covered in full. LEG-clauses and defects exclusions belong in CAR policies and has nothing to do in an OAR policy.

D: The response will depend on findings of a root cause analysis, which will be critical for deciding on whether there is any coverage under CBI.



Q2 - Defects Exclusions. What is your view on the claim?

2

A: Not covered. Defects excluded!

12

B: Covered in full. Exclusion not relevant

0

C: Covered in full. No LEG in OAR!

53

D: It depends, Need root cause analysis

London Wind Academy

Q3 – Terrorism

The ClubFloat windfarm has full terrorism cover in the OAR policy. The terror buy-back clause provides terrorism coverage for both onshore and offshore assets.

At the end of the policy period, the OSS suffers severe damage from a terrorist attack. The substation is out for 24 months with no alternative routes for ClubFloat to deliver power to shore. Full CBI blowout!

What is your view on the claim?

A: The claim should not be covered. The terror attack on the OSS should clearly not be covered given the poor defense system around it.

B: The claim should be covered in full. ClubFloat has terror cover for CBI claims, both for onshore and offshore assets.

C: The claim should not be covered. It should be the Norwegian Authorities bearing the costs.



Q3 - Terrorism. What is your view on the claim?

4



A: Not covered. Poor defense system

65



B: Covered in full. Terror included

0



C: Not Covered. Government fix

London Wind Academy

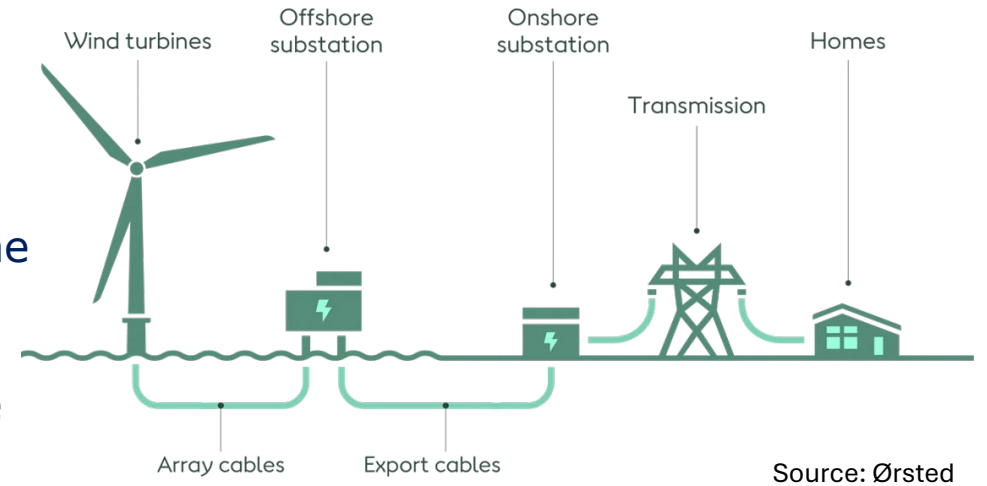
Q4 – Scheduled Assets Information

When considering ClubFloat CBI, to what extent should you as an Underwriter be informed about technical integrity of the scheduled transmission assets connecting the farm to shore?

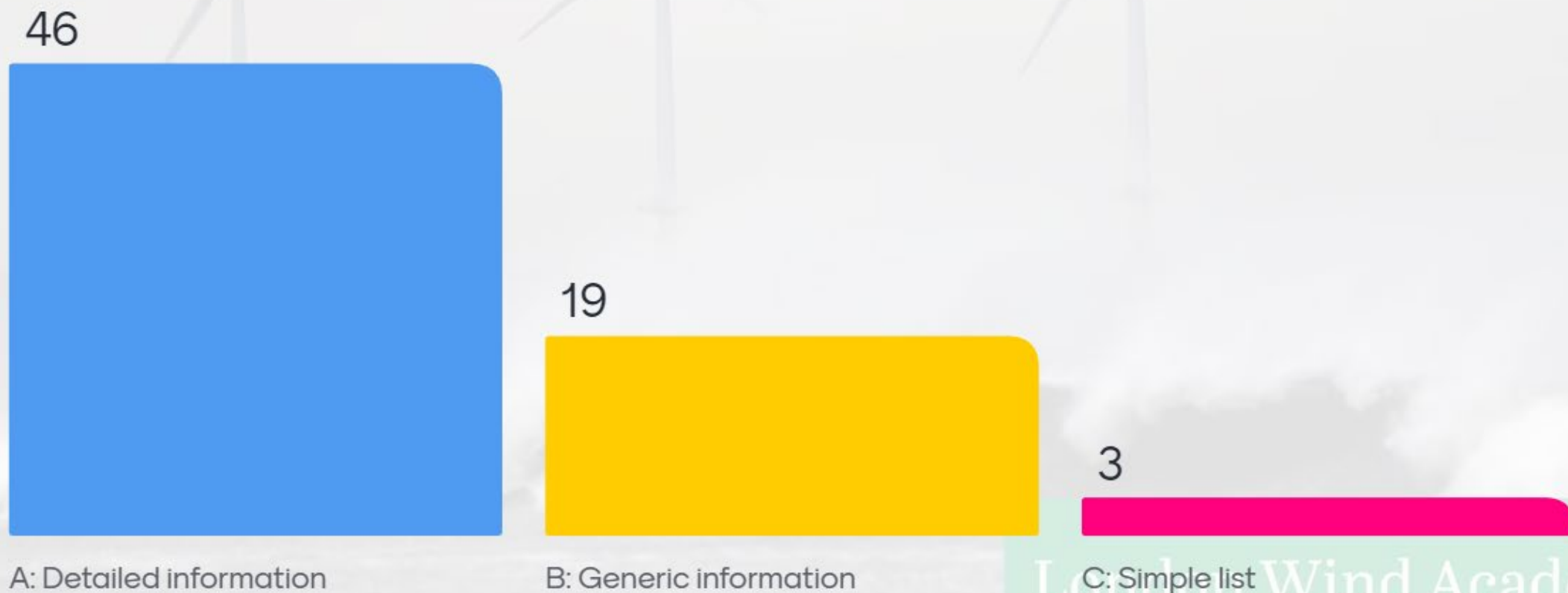
A: Same level of information as if you were underwriting the transmission assets should be made available.

B: Generic high level of information. ClubFloat relies on the transmission assets made available and so should you do.

C: A list of scheduled assets will do. No time to go into the details!



Q4 – Scheduled Assets Information.



London Wind Academy



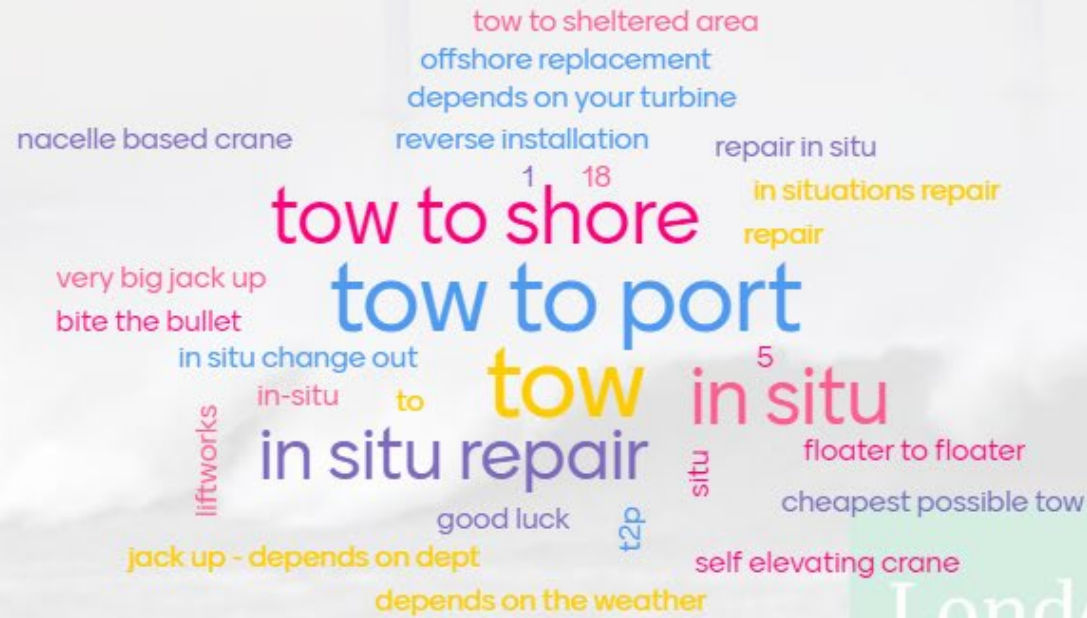
club float[®] needs repairs!

Major Component Exchange within Floating Wind



What repair alternatives does ClubFloat have?

57 responses



Estimate the cost of repairs in million \$



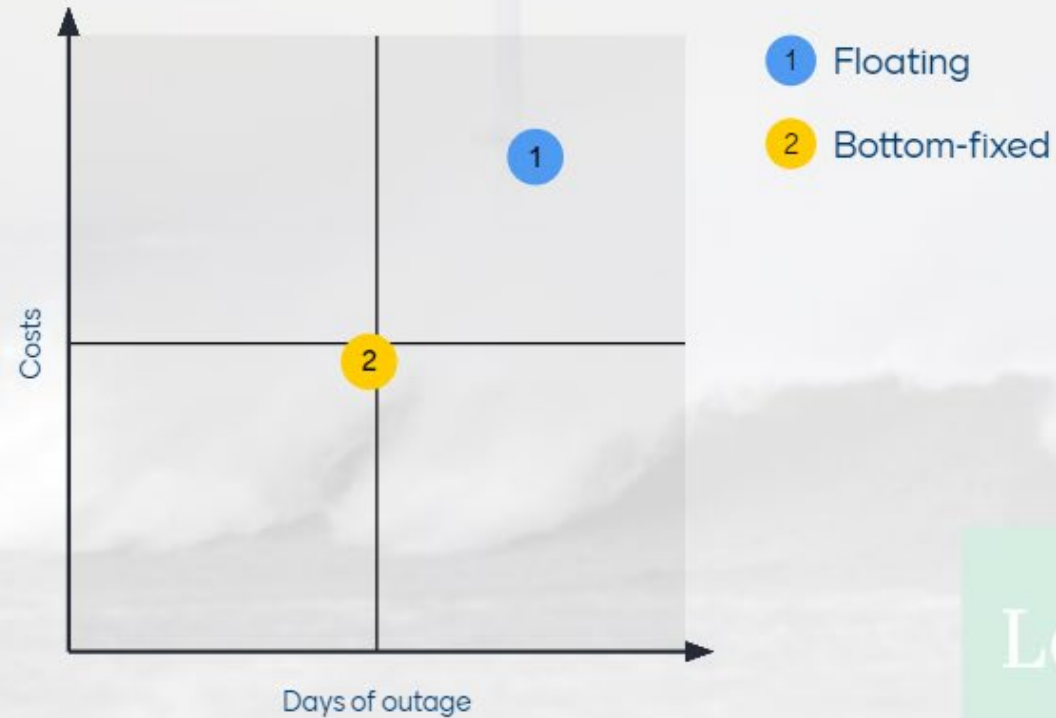
London Wind Academy

Estimate of the length of outage in months



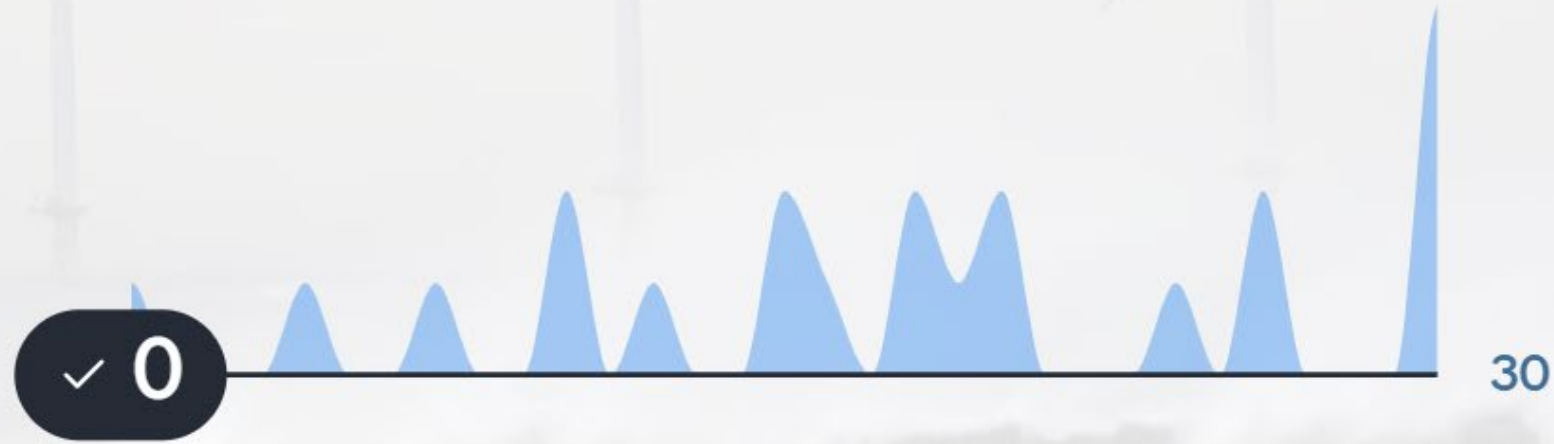
London Wind Academy

Compare bottom-fixed and floating, costs and outage wise



London Wind Academy

Estimate the cost of repairs in million \$



London Wind Academy