

Insurance is Trust.



NW Assekuranz

Global Insurance Broking

Versicherungsschutz und Probleme der Größenentwicklung

Dr. Patrick Wendisch

Oldenburg, 22. August 2018

MCN / Workshop 3:

Versicherungsschutz und Probleme der Größenentwicklung

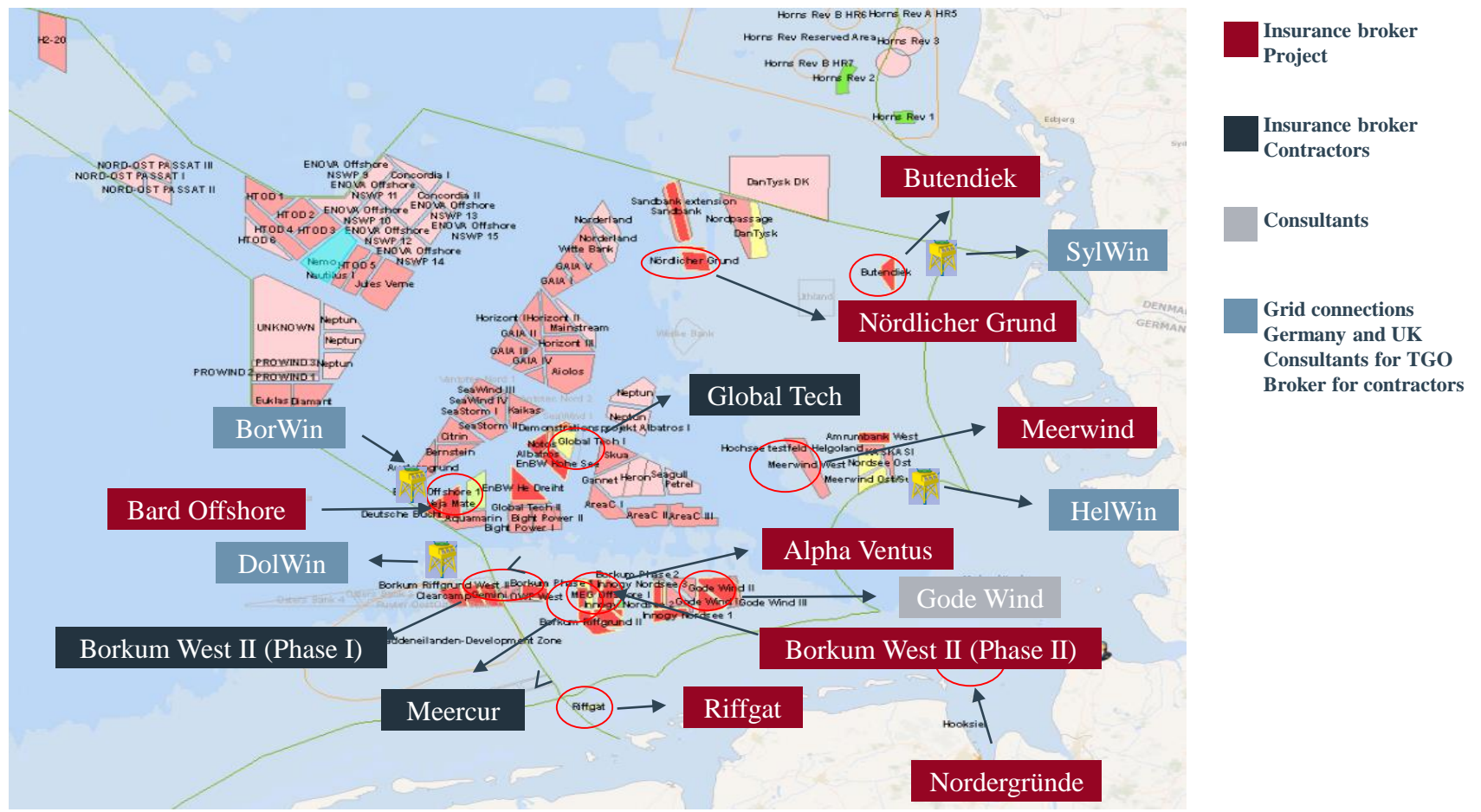


Nordwest Assekuranzmakler

Leading Broker in Offshore and Onshore Wind Insurance

- › Broker of 8.000 MW+ wind energy onshore worldwide plus 3.000 MW Offshore wind energy installed, under construction and projects realistically to come
- › Market share > 40% of all operational north sea installed wind capacity
- › Group Company Lampe & Schwartze is key market for marine hull and builders risks (international portfolio of 3,400 vessels and numerous yards) and market leader as Assekurateur in Germany in handling maritime risks
- › Many years of experience in the care of project companies and operators of power plants and renewable energies worldwide
- › Development and implementation of tailored insurance solutions hedging weather risks and serial losses
- › Involvement in obtaining the insurability of new or vulnerable technologies

Offshore References German North Sea



NWA Offshore References I

Project	Size/ No. of turbines	MW	Water Depth	Broker	Remarks
Alpha Ventus	12	60	30 m	NWA	Project and Contractor's Broker (Insurance Advisory & Broking Services)
Baltic I	21	49	16– 19m	NWA	Project Broker for project developer until project has been sold (Insurance Advisory & Broking Services)
Baltic II		Grid Connection		NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Bard Offshore*	80	400	39-41 m	NWA	Project Broker (Insurance Advisory & Broking Services)
Borkum West II	40	200	28-32 m	NWA	Contractor's Broker and Advisory Services for Investor (Phase 1)
BorWin		Grid Connection		NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Butendiek*	80	288	16-22 m	NWA	Project Broker (Insurance Advisory & Broking Services)
DolWin		Grid Connection		NWA	Contractor's Broker and Capacity Provider (Insurance Advisory & Broking Services)
Global Tech	80	400	39-41 m	NWA	Contractor's Broker

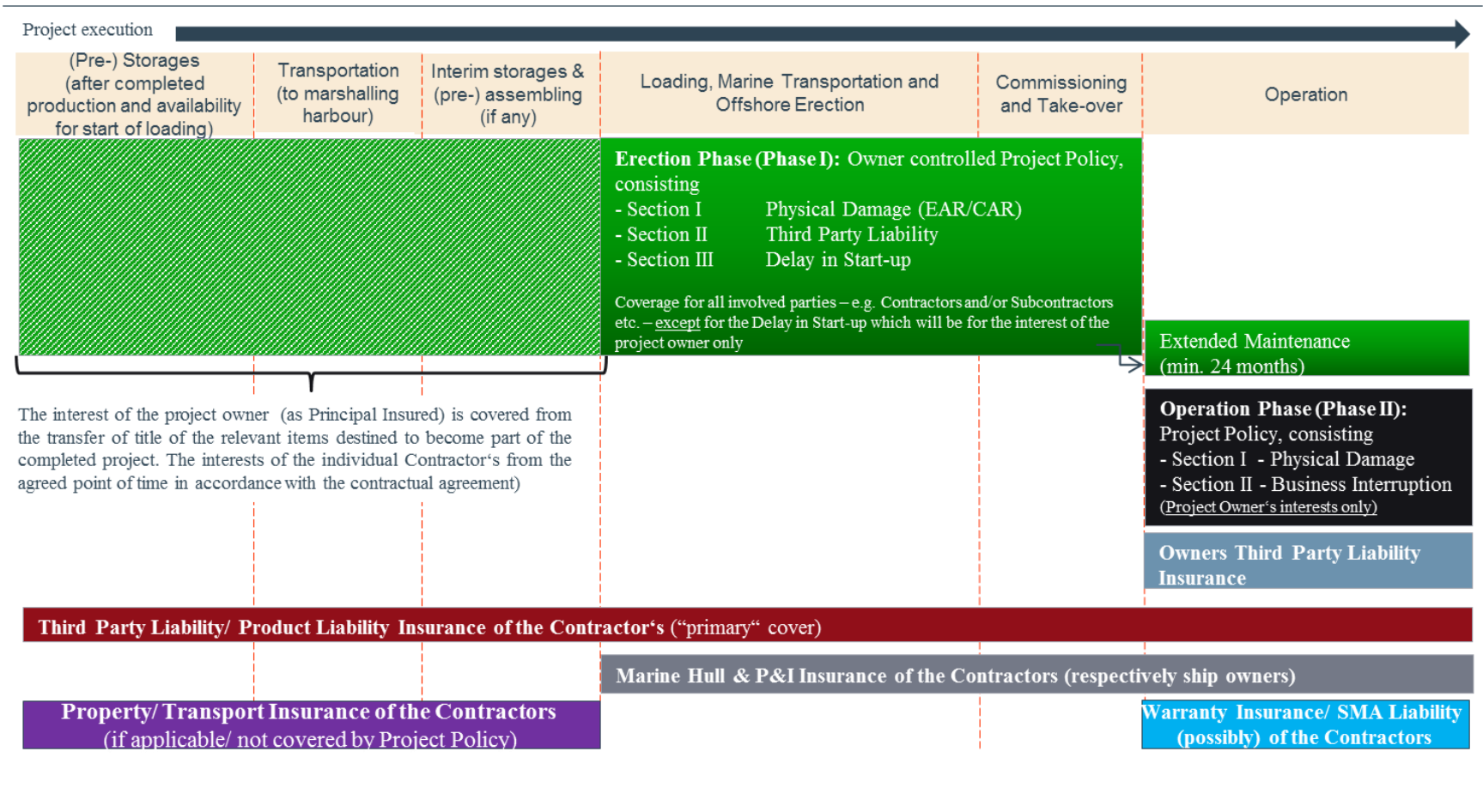
NWA Offshore References II

Project	Size/ No. of turbines	MW	Water Depth	Broker	Remarks
Gode Wind 2	42	252	28-33m	NWA	Pre-Financial close advisory services/ firm offer of insurance market achieved including as pioneer direct layer alternatives
HelWin		Grid Connection		NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Meerwind*	80	288	22-26 m	NWA	Project Broker (Insurance Advisory & Broking Services)
Merkur (formerly MEG I)	80	400	28-33 m	NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Nordergründe*	18	111	2-18 m	NWA	Project Broker (Insurance Advisory & Broking Services)
Nördlicher Grund	80	480	27-38 m	NWA	Project Broker (Project on hold)
Nordsee Ost	48	288	up to 25 m	NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Ormonde	30	152	17-30 m	NWA	Contractor's Broker (Insurance Advisory and Broking Services)
Riffgat	30	108	16-20 m	NWA	Project Broker (Insurance Advisory & Broking Services)

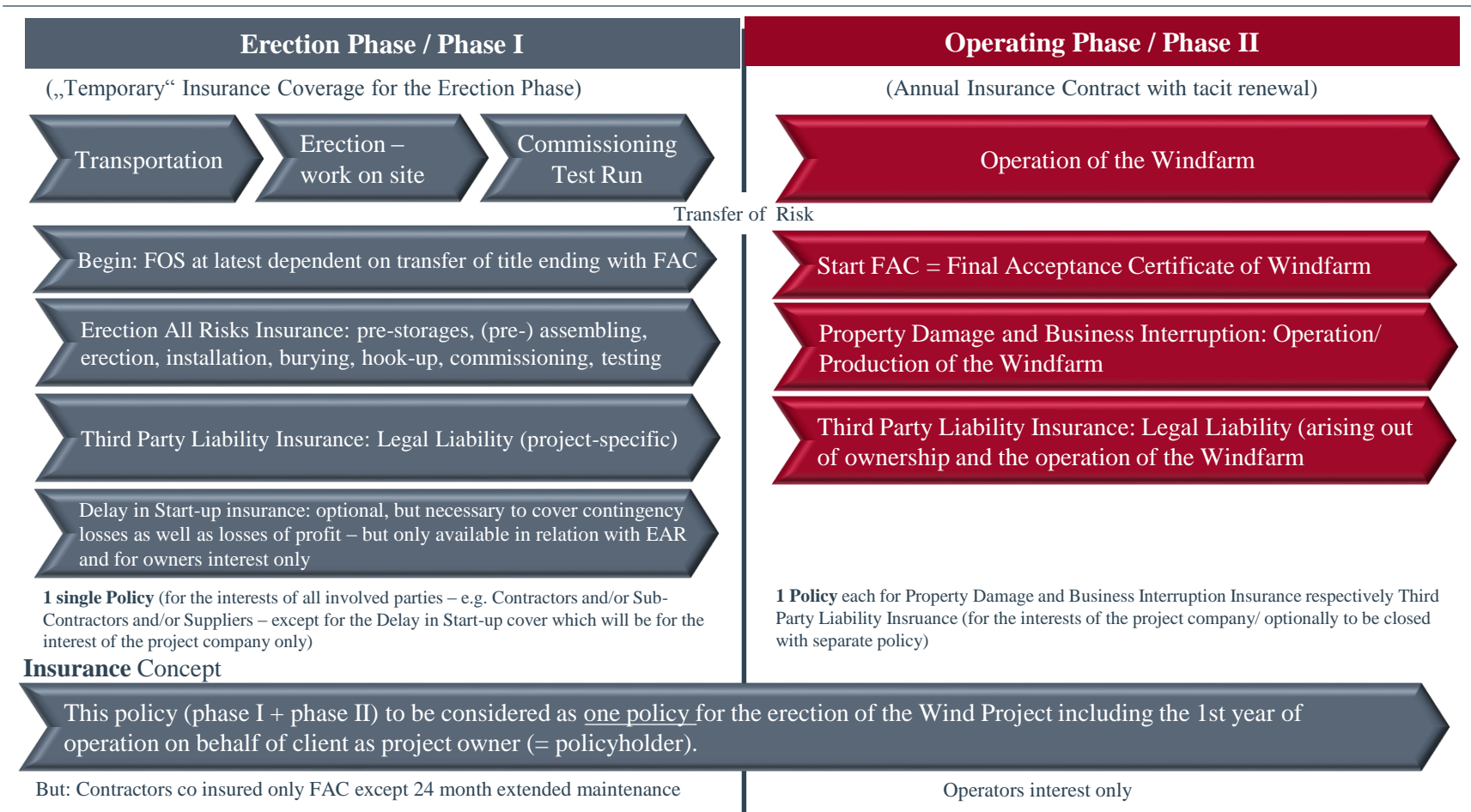
NWA Offshore References III

Project	Size/ No. of turbines	MW	Water Depth	Broker	Remarks
SylWin		Grid Connection		NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Thornton Bank I	6	30	up to 27,5m	NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Thornton Bank II + III	48	288	up to 27,5m	NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Veja Mate	67	400	39-41 m	NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Trianel Windpark Borkum (Phase 2)*	25 - 34	200	25-35m	NWA	Project Broker (Insurance Advisory & Broking Services)
Gemini		Grid Connection		NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Kentish Flats (Extension)		Grid Connection		NWA	Contractor's Broker (Insurance Advisory & Broking Services)
Gemini	75	350	25-45 m	NWA	Contractor's Broker and Advisory Services for Investor (Insurance Advisory & Broking Services)
Wikinger	75	350	25-45 m	NWA	Contractor's Broker (Insurance Advisory & Broking Services)

Offshore – Insurance structure in general (rough)

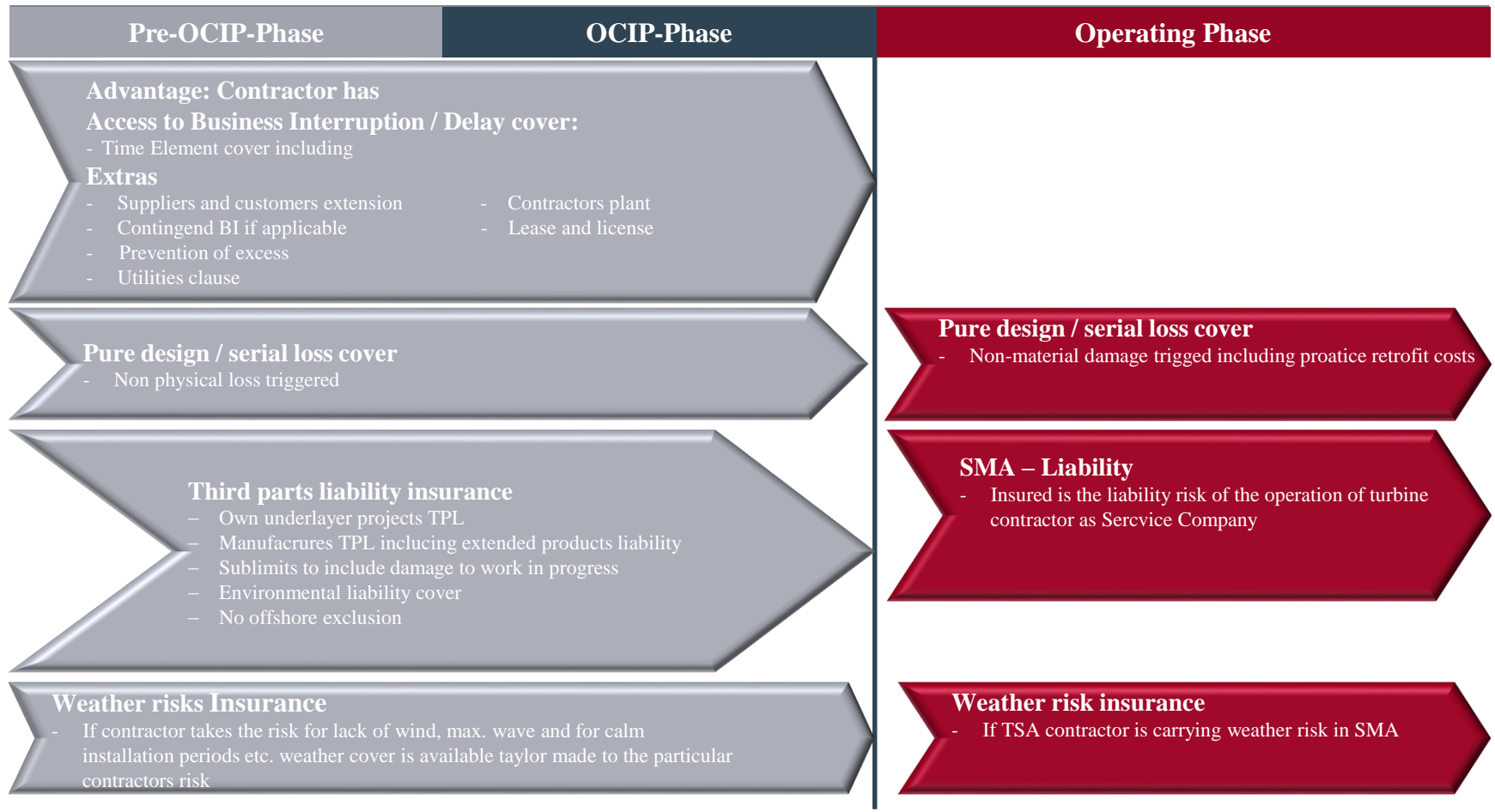


Owners Controlled Insurance Policy (OCIP) Project-Policy-Structure



Comprehensive Insurance Concept

Contractors Protection Insurance Concept (CPIC)



Substation Contractor

Scope of Contract to be delivered defects free

To deliver fully operational commissioned tested and defects substation. After commissioning contractors owes a defects rectification warranty within the warranty period (5 years).

„All works to correct any defect or deficiency“.

Burden of proof for defects free works rests with contractor after commissioning.

The obligation to rectify is normally unlimited. Any limitation in amount to say 100% of contract value does not apply to rectify any defects or deficiencies. Further the contractor is liable for liquidated damages.

Installation Contractors

Foundations, Towers, Nacelle & Blades, Cable

- › Supply contracts are similar with warranties, but manufacturers of cables, of monopiles are often different to the logistics and installation contractors.
- › Burden of proof for defects free works rest with contractor.
- › Warranty claims have to be clearly allocated due to defects in installation or defects in material, design, specification or manufacturing.
- › Is manufacturer of cables and monopile subcontractor of installation contractors?
- › Is the installation contractor able to mirror his liability back to his subcontractors?
- › SMA only in few cases required (Foundation Service & Maintenance Contract)

NWA „stand-by“ Competence Transfer

We ensure the competence transfer through dedicated responsible contact persons at all levels and a partner-based cooperation with proactive communication.

- › Analysing the risk situation for the construction phase.
- › Supporting to draft the insurance clauses and schedules to be included within the contract agreements with the qualified Contractor's.
- › Evaluating insurance-related clauses in contract.
- › Identifying uninsured risks.
- › Identifying weak spots in intended or existing contracts.
- › Review risks arising from contracts (e. g. tax risk, ongoing legal disputes, environmental risks).
- › Identifying possible “no-go's” in insurance demands for contractors.
- › NWA can be contacted 24/7

1. Größenentwicklung und Zertifizierung

Beispiel: 6 MW ———> 8 MW Upgrade

6 MW IEC-Typen Zertifizierung 6/2014

- Design Basis Evaluation
- Design Evaluation
- Manufacturing Evaluation
- Type Testing
- Final Evaluations

8 MW Upgrade:

- Magnetaufrüstung
- Stromstärkenerhöhung
- Transformer & Converter
- Generatorkühlung
- Blattwurzel Sensoren
- Nacelle Kühlung upgrade
- Hubhöhe
- Rotordurchmesser
- Aerodynamic upgrade der Blätter
- Bessere Glasfaser Technologie

- Prototype Certification 10/2018
- Finale Typenzertifikate Dec. 2019

2. Probleme aus versicherungstechnischer Sicht

- Größenskalierung, Gewicht, Wirkung auf Fundamente, Getriebe, getriebelos, Blattgrößen mit Tip-Speed und Lärm, Kräne und Schiffe
- Betriebserfahrung über Zeit und Anzahl
- Dauerbetriebseinflüsse, Turbine, aber auch Fundamente, Floating-Foundations
- Windlastendesign Anwendungsbereiche
Cut-in Speed Cut-out Speed Neue Berechnung und Konfiguration der Anlage

und immer wieder: Dauerbetriebs- und Stillstandsprobleme

bei Lägern, Lägern, Lägern. ➡ Die Kraft muss ja irgendwo hin.

3. Die Versicherungsmärkte differenzieren:

- Prototypes – New Technology – Proven Technologie
- Defects and Design Deckung
(Mangelfolgeschaden Deckung)

Schäden infolge Mängeln in Design, Material, Herstellung und Spezifikation.

- 1) LEG 2: 1 Sek. vor 12 - Kosten sind ausgeschlossen.
- 2) Defective Parts Clause. Defective Part ist ausgeschlossen wie LEG 2 aber die Aufdeckkosten sind teilweise eingeschlossen.
- 3) LEG 3: Nur die Konstruktionsverbesserungen nach einem Schaden sind ausgeschlossen.
- 4) Guarantee Maintenance

Alle Klauseln sind Schaden getriggert, d. h. es muss etwas kaputt sein, was vorher intakt war.

4. Neuere Design Deckungen

- Schadentrigger nur für die erste Anlage, bei restlichen mangelbehafteten WTG's reicht der identische Mangel
- Reine Mangel- / Serienschadendeckung, auch ohne einen Initialschaden

Insurance is Trust.



NW Assekuranz
Global Insurance Broking

Your questions / Stay in contact!

Dr. Patrick Wendisch
Managing Partner

Nordwest Assekuranzmakler GmbH & Co. KG
Herrlichkeit 5-6, 28199 Bremen, Germany

T +49 (0) 421 989607-300
F +49 (0) 421 989607-4300

p.wendisch@nw-assekuranz.de
www.nw-assekuranz.de