

LEGAL ISSUES SURROUNDING THE MARITIME TRANSPORTATION OF WIND FARM COMPONENTS

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1. Introduction

A large and growing number of wind farm projects are being developed worldwide, both onshore and offshore (fixed as well as floating).¹

For instance, in Australia, there are approximately 100 existing onshore wind farms, with many more in the pipeline.² Moreover, the feasibility licences for the first offshore wind projects have recently been granted by Australian authorities.³ In New Zealand, 21 onshore wind farms have already been built and additional onshore wind projects with a capacity of approximately 4.1 GW are being considered.⁴ New Zealand offshore wind projects are at a less advanced stage than in Australia, but several projects (Waikato and Taranaki) are in their study phases.⁵

All these projects require the main elements of the wind farms, such as offshore electrical substations ('OSSs'), subsea cables, foundations and transition pieces for offshore wind farms and the components of the wind turbine generator(s) ('WTG(s)'), namely towers, nacelles, hubs and blades, for all wind farms (all such elements and components will be referred together as the 'Main Wind Farm Component(s)' in this article) to be transported to the wind farm sites in order to be installed or exchanged with already installed components.

The factories which produce Main Wind Farm Components are located in different countries/regions worldwide, mainly in China, Europe and India, but also in North America, Brazil, Mexico, Vietnam, Singapore and Taiwan, among others. This means that Main Wind Farm Components regularly have to be carried across long distances from their places of production to the wind farm sites.

Due to these distances, but also the size and weight of the Main Wind Farm Components, their carriage is almost exclusively made on oceangoing vessels, from a port of loading located nearby their place of production to a port of discharge, in order to perform the following operations:

- for onshore wind projects: further inland transportation to the wind farm site;
- for offshore wind projects: loading onto an offshore installation vessel (fixed WTGs) or assembly at the said port before being towed offshore (floating WTGs); or
- both for offshore and onshore wind projects: other purposes as may be required (eg in order to be transferred to a temporary storage area).

The maritime transportation phase of the Main Wind Farm Components raises a range of legal issues which this article intends to discuss. Before doing so, a brief review of the background and main features of the maritime transportation of Main Wind Farm Components is warranted.

This article focuses only on the transportation of Main Wind Farm Components on board 'cargo' vessels worldwide. It does not address the transport and installation phase of Main Wind Farm Components with specialized offshore vessels (eg jack-up vessels, semi-submersible crane vessels or cable laying vessels), although some of the below considerations may be relevant to such phase and vessels.

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¹ 'Wind Energy in Europe: 2023 Statistics and the Outlook for 2024–2030', *WindEurope* (Web Page, 28 February 2024) <<https://windeurope.org/intelligence-platform/product/wind-energy-in-europe-2023-statistics-and-the-outlook-for-2024-2030/>>.

² 'Wind Energy', *Australian Renewable Energy Agency* (Web Page) <<https://arena.gov.au/renewable-energy/wind/>>.

³ Adnan Memija, 'Australia Approves Twelve Offshore Wind Projects, Set to Generate 25 GW Capacity', *OffshoreWIND.biz* (Web Page, 17 July 2024) <<https://www.offshorewind.biz/2024/07/17/australia-approves-twelve-offshore-wind-projects-set-to-generate-25-gw-capacity/>>.

⁴ 'New Zealand Onshore Wind Farms – Operating & Under Construction', *New Zealand Wind Energy Association* (Web Page) <<https://www.windenergy.org.nz/onshore-wind/>>.

⁵ 'Offshore Wind Project Tracker – Location: New Zealand', *Energise Renewables* (Web Page) <<https://energise-renewables.com/location/nz/>>.

2. Background

2.1. Party Responsible for Arranging the Maritime Transportation of Main Wind Farm Components

Main Wind Farm Components may either be manufactured directly by their seller or procured by their seller from a third-party supplier in order to be (re)sold to their end purchaser (which is usually the project developer).

Due to their complexity, technology and the confidentiality requirements around their fabrication, nacelles and hubs are generally manufactured and sold directly by the original equipment manufacturers of WTGs ('WTG Manufacturers') themselves, while towers and blades are often manufactured by third-party suppliers, even if they are designed by WTG Manufacturers and purchased by them in order to be resold to the project developer.

For offshore wind projects, it is generally the project developer's responsibility (rather than the responsibility of WTG Manufacturers) to procure and install OSSs, subsea cables, foundations and transition pieces, which are part of the balance of plant ('BoP'), in order for the offshore WTGs to be installed. Such BoP components are therefore usually manufactured by specialized suppliers and then purchased by the project developer(s) directly from those suppliers, who regularly form consortia with other contractors when transportation and installation of such BoP components is required by the project developer(s). The installation of offshore WTGs is then nearly always the responsibility of the WTG Manufacturer, while the maintenance of such WTGs is regularly performed by parties other than the WTG Manufacturer.

Regardless of the project type and/or which party has the obligation to manufacture or procure the Main Wind Farm Components, the relevant agreement (ie the project agreement or component supply agreement) should allocate responsibility for arranging the shipment of such components from their place(s) of production to their port(s) of discharge.

The main project agreements used by project developers to purchase the Main Wind Farm Components required for each project are offshore substations supply agreements or 'OSSAs', submarine cables supply agreements or 'SCSAs', foundations supply agreements or 'FSAs', transition pieces supply agreements or 'TPSAs', turbine supply agreements or 'TSAs' and service and maintenance agreements or 'SMAs' (together the 'Main Project Agreements' or 'MPAs'). The terms of the relevant MPA(s) will regulate the parties' obligations in terms of transportation and delivery of the required Main Wind Farm Component(s) and any associated services, for instance engineering, procurement, construction and installation services.

Generally, when project developers also require the installation (or maintenance) of Main Wind Farm Components from a supplier under a MPA, the carriage of such Main Wind Farm Components is the responsibility of their supplier, ie the WTG Manufacturer(s) for nacelles, hubs, towers and blades under TSAs and SMAs, and the selected supplier(s) for OSSs, subsea cables, foundations and transition pieces under the corresponding MPA. This approach is understandable as the project developers are generally reluctant to accept the risks linked to the maritime transportation of Main Wind Farm Components. The Parties are naturally at liberty to agree on a different allocation of responsibility, eg an 'Ex Works' sale of the Main Wind Farm Components to the project developer. However, if the Main Wind Farm Components transported are to be later installed by their supplier under a MPA, such an approach may be more susceptible to disagreements and disputes under the MPA as the roles and responsibilities of the parties would be interdependent and require precise coordination, which is sometimes difficult.

When the supplier of Main Wind Farm Components has to procure such components from a sub-supplier, the corresponding contracts ('Sub-supply Agreements') will also usually state which party is responsible for carrying the Main Wind Farm Components to their agreed place of delivery. For example, when a WTG Manufacturer procures blades or tower sections from a sub-supplier, the terms of the corresponding Sub-supply Agreement will regulate which party is responsible to arrange the required logistics. This is regularly dealt with by way of agreeing on the applicable Incoterm, eg FOB or CIF.

2.2. Logistics Required

Main Wind Farm Components are usually heavy, large, of high value and they require large vessels to transport them. This is all the more so due to the increase in weight, size and value of Main Wind Farm Components over the last years, in particular for offshore WTGs, which are now significantly larger than onshore WTGs.

While Main Wind Farm Components for onshore projects are often still transported by general cargo vessels, Main Wind Farm Components for offshore projects now generally require heavy lift and specialised transport vessels to carry them such as heavy load carriers, dedicated roll-on/roll-off ('Ro-Ro') vessels⁶ or semi-submersible vessels. Large barges that are towed may also be used, in particular for OSSs.

In addition, wind farms have also grown in size, with more WTGs installed per site. As an illustration, the first offshore wind project in Vindeby (Denmark) built in 1991 consisted of 11 WTGs with a production capacity of 4.95 MW.⁷ By contrast, the Dogger Bank offshore project which is being developed in the United Kingdom will comprise 277 WTGs with a capacity of 3.6 GW.⁸

The larger the wind farm project, often the more complex the logistics required. For example, the Seagreen 1 project off the coast of Scotland (114 WTGs) required the chartering of 11 heavy load carriers, 'notably for 25 trips from Asia to the UK, each lasting around two months. More than 3,100 vessel days were needed to transport foundations, the substation, and turbine components from their factory to their marshalling port.'⁹

As a result, maritime transportation of Main Wind Farm Components for new wind farm projects has not only become more complex, but also more costly due to the higher volume of cargo flows and the larger specialised equipment required, in particular when such components need to be transported over long distances. Production of Main Wind Farm Components in close proximity to the wind farm sites is, therefore, in the project stakeholders' interest, as it reduces shipping costs and the risks associated with maritime transportation. However, there are a limited number of factories due to the significant investments required, and even when a factory is built near a wind farm site, production slot(s) have to be available in such a factory. As a result, despite its obvious advantages, production of Main Wind Farm Components in close proximity to the wind farm is not always an option.

If the logistics of Main Wind Farm Components for offshore wind projects may generally be considered more complex than for onshore wind projects (due to the higher number and larger size of the Main Wind Farm Components required), the situation is usually the opposite regarding ports. Main Wind Farm Components for offshore wind projects are often discharged in larger ports that are accessible, where the required specialised offshore vessels will be able to berth in order to reload, carry and install them at the offshore wind farm site. These ports often have large storage areas in which the Main Wind Farm Components for offshore wind projects can be stored pending their being loaded on the installation vessel(s).

However, Main Wind Farm Components for onshore WTGs may sometimes have to be discharged in smaller ports that are not easily accessible and/or are congested, in particular for wind farms located in remote areas. For example, the cargo vessels carrying onshore Main Wind Farm Components may not have priority over regular traffics into these ports and may have to wait or leave berths in order to let other vessels discharge their cargoes. These ports may also have limited storage areas that require the Main Wind Farm Components to be transported promptly out of the port.

Even for offshore WTGs, while some ports are well developed, for instance the port of Esbjerg in Denmark,¹⁰ some other ports are yet in their development phase to be able to handle the required logistics of Main Wind Farm Components. This requires significant investment from the ports and civil works over large areas.

Due to the growing demand for WTGs and the limited number of ports that are able to accommodate Main Wind Farm Components, it is important to secure early the required berths, storage areas and port equipment by way of port leases or similar agreements. In principle, the MPAs between the suppliers of Main Wind Farm Components and the project developers clarify which party is responsible for providing the berth/storage area. The risks of unsuitability, non-availability, delays or congestion of such facilities area will usually fall on the party responsible for their provision, unless the parties agree otherwise.

In addition, the services associated with the maritime transportation of Main Wind Farm Components—lifting, marshalling, haulage and stevedoring—also require larger equipment and more complex operations to

⁶ 'New Ro-Ros Built in China to Transport Larger Wind Farm Components', *The Maritime Executive* (Web Page, 16 May 2023) <<https://www.maritime-executive.com/article/new-ro-ros-built-in-china-to-transport-larger-wind-farm-components>>.

⁷ 'Making Green Energy Affordable – How the Offshore Wind Energy Industry Matured – and What We Can Learn from It', *Orsted* (Web Page) <<https://orsted.com/en/insights/white-papers/making-green-energy-affordable/1991-to-2001-the-first-offshore-wind-farms>>.

⁸ 'World's Largest Offshore Wind Farm Dogger Bank Produces Power for the First Time', *Equinor* (Web Page, 10 October 2023) <<https://www.equinor.com/news/202310-dogger-bank>>.

⁹ Maélig Gaborieau and Sarah McLean, '5 Supply Chain Lessons Learned from Analysis of a North Sea Offshore Wind Farm', *spinergie* (Web Page, 9 January 2024) <<https://www.spinergie.com/blog/supply-chain-lessons-learned-north-sea-offshore-wind-farm>>.

¹⁰ 'Offshore Wind', *Port Esbjerg* (Web Page) <<https://portesbjerg.dk/en/business-areas/offshore-wind>>.

accommodate the larger size and weight of such components. Lifting/cargo operations may be performed with the vessels' cranes or shore's cranes and may require entry into contracts with crane suppliers and/or stevedores.

Lastly, transport equipment is also required to transport Main Wind Farm Components such as transport frames, cradles, tower feet, stackers, cable turntables and blade stoppers/matrices. Such equipment is generally not standardized and must be returned to its owner or the charterer of the vessel in order to be reused for the next shipments. This is another cost and logistical constraint that must be considered when planning and executing a project.

2.3. Contract Types and Forms Used

While some industry players instruct freight forwarders to handle the entire transportation scope of the Main Wind Farm Components by entering into project transport agreements (whereby the entire transportation scope or a large part thereof is entrusted to a freight forwarder), others will directly charter vessels to transport the Main Wind Farm Components. Other types of agreements may also be used, for instance multimodal transport agreements.¹¹

Freight forwarding agreements and charterparties are different in nature and have different risk profiles. The choice of transport contract and setup will often be guided by commercial, financial, legal and operational considerations, such as the availability of vessels, the risks of delay, the allocation of other risks, etc.

Under project transport agreements, the charterer will in principle be the freight forwarder in charge of the transport, while in charterparties, the charterer will usually be the party required to arrange the transport of Main Wind Farm Components under the relevant MPA or Sub-supply Agreement, for instance a freight forwarder that will charter the required vessel(s) directly from their owners.¹²

Most of the vessels used for the carriage of Main Wind Farm Components are voyage chartered for the required shipment(s). This is because WTG cargo flows are not symmetric and, in most instances, there will be a need for ballast voyages, often on long distances (eg from the Asia-Pacific region to Europe). Time charters would not, therefore, generally be cost effective, unless the charterers are able to find other cargoes for the ballast voyages, which charterers are often reluctant to do due to the associated risks involved. There may still be time-chartered vessels if the ballast voyages are short and, therefore, do not hinder the cost-effectiveness of the charterparties. For instance, the 4 Rotra vessels are Ro-Ro vessels time-chartered by Siemens Gamesa.¹³ Similarly, the vessels BoldWind and BraveWind are time-chartered by Vestas.¹⁴

Given the volume of the cargo flows it is also not uncommon to see contracts of affreightment ('COAs') and voyage charterparties with multiple consecutive voyages agreed. This is particularly relevant when several short sea voyages are required to transport serial components such as blades and towers and it is sensible to use the same vessel to perform these voyages.

A wide variety of forms are used by the industry, for instance bespoke contracts and booking notes or BIMCO forms such as Heavyliftvoy, Heavycon, Towcon and Supplytime, usually with amendments.

An important contractual aspect is cargo handling operations, during which there is an increased risk of damage or loss to the cargo. It is essential, therefore, for the parties to enter into a clear agreement detailing the allocation of responsibility, liability and associated costs for cargo loading and unloading operations, in particular for loading, stowing, trimming, lashing, welding, securing, seafastening, dunnage, unlash, discharging and tallying amongst others. The main terms regarding cargo operations are Liner (In and/or Out) terms and Free (In and/or Out) terms, as for instance in the BIMCO Heavyliftvoy, but the parties are free to agree on alternative provisions.

¹¹ For the purposes of this article, the contracts entered into for the maritime transportation of Main Wind Farm Components, including charterparties, will be collectively referred to as 'Transport Agreements'.

¹² For the purposes of this article, vessel owner(s) (or owners) refers to the owners, disponent owners and demise charterers of vessels, while charterer(s) refers to the voyage or time charterers of vessels.

¹³ Adnan Durakovic, 'Siemens Gamesa Orders Vessels for Next-Generation Offshore Wind Turbine Components', *OffshoreWIND.biz* (Web Page, 16 May 2023) <<https://www.offshorewind.biz/2023/05/16/siemens-gamesa-orders-vessels-for-next-generation-offshore-wind-turbine-components/>>.

¹⁴ Adnan Durakovic, 'Second MHI Vestas Deck Carrier en Route to Europe', *OffshoreWIND.biz* (Web Page, 30 October 2020) <<https://www.offshorewind.biz/2020/10/30/second-mhi-vestas-deck-carrier-en-route-to-europe/>>.

2.4. Costs and Budget Issues

Profitability of wind farm projects will depend on a number of factors, such as the agreed prices in the power purchase agreements, capital costs, operations and maintenance costs as well as other commercial and operational factors or circumstances.

Any non-conformance costs ('NCCs'), ie costs incurred when the project (or part(s) thereof) does not proceed as planned, will impact on the profitability or viability of the project.

The maritime transportation costs of Main Wind Farm Components are an essential item of the agreed budget. Shipping costs in excess of the agreed budget or additional shipping costs that are not recoverable from another party are frequent NCCs.

This is all the more relevant as costs of transportation can be subject to sharp fluctuations due to a number of factors, such as market rates, availability of vessels on specific routes/in the desired region, inflation, delays, the cost of bunkers, changes in the applicable laws and regulations, the cost of insurance, war risks, deviations, weather, etc. As a result, careful planning and contracting of the transportation of Main Wind Farm Components is essential in wind farm projects, in particular in light of the supply chain constraints and tensions that the wind industry is currently facing. This article will explore below the main legal issues raised by the transportation of Main Wind Farm Components and propose various mitigations.

The supply chain challenges cannot, however, always be addressed practically, as MPAs may be concluded several years in advance (in particular TSAs and SMAs) and be subject to later decisions or steps, such as the final investment decision. It may not be possible or practical to fix the shipping costs, charter vessels or enter into the required Transport Agreements at the time a MPA is entered into (except for time-chartered vessels, as the hire payable by the time charterer will be agreed in advance for the duration of the charter period).

The monitoring, management and mitigation of the risks of non-compliance with the agreed budget is, therefore, essential. Binding offers/prices, cost reopeners, flexible price mechanisms (eg cost plus), indexation clauses, extension of time ('EoT') and claim for costs, change-in-law clauses, warranties and indemnities are among the common mechanisms used to ensure the protection of a party against NCCs.

3. Legal Issues Raised by the Maritime Transportation of Main Wind Farm Components

3.1. Time and Flexibility Aspects

In wind farm projects time is of the essence, as delays can jeopardize the project completion or result in significant consequences for the project stakeholders. This is especially so as wind farms projects consist of a number of interdependent and consecutive operations (of which maritime transportation of Main Wind Farm Components is one) and any delay in one activity may have a knock-on effect on later phases, in particular installation.

For instance, any delay in the production of Main Wind Farm Components may not only require a cancellation or postponement of the shipment of such components but may also result in postponement of parallel or later phases. The assets and/or personnel contracted, rented or chartered for such parallel or later phases, for instance offshore vessels, cranes or other transportation equipment will also need to be cancelled or postponed, as there will no longer be a need for them for the period during which these assets and/or personnel were initially contracted. The party effecting such cancellation or postponement will generally incur termination costs, for instance a termination fee to be paid to the other party.

Delays may also have collateral effects, such as longer storage periods or volumes, which may result in storage capacity issues, for example if the maximum storage capacity is reached at the place of production of Main Wind Farm Components or the port. In addition, this could lead to transport equipment being idle or not available when required.

It is therefore good practice whenever possible for the relevant project stakeholders to allow some flexibility to the charterers of the vessels used for the maritime transportation of Main Wind Farm Components (or the shippers of such components if they are not the charterers of the vessel). This is because contractual flexibility may be an

effective mitigation of the consequences of project delays, and, conversely, a lack of flexibility may result in NCCs.

Such flexibility may be achieved by way of various mechanisms, such as the maritime transportation being subject to condition precedents, for instance a notification from the charterers or the shippers (sometimes referred to as ‘notice to proceed’), for the Transport Agreement to come into existence. Simpler mechanisms may also have relevance, for example when the parties agree that the nomination (or narrowing) of the vessel’s laycan being in the charterer’s or shipper’s control or that charterers or shippers have the right to postpone such laycan.

Another pertinent mechanism is to provide termination for convenience clauses that will allow the charterers or shippers to terminate the Transport Agreement. The main advantages of such clauses are that the terminating party does not need to establish that the other party is in default in order to terminate the Transport Agreement and the consequences of termination are pre-agreed (and are usually less onerous than if the charterers or shippers are in breach of contract). A right to terminate the Transport Agreement for convenience is of particular relevance when a project is cancelled and there is no longer a need to transport the Main Wind Farm Components.

While charterers or shippers have a significant need for flexibility to accommodate the project changes and delays, such flexibility is more difficult for the vessel owners or freight forwarders to grant. This is because vessel owners need to secure fixtures and earnings for their vessels, and, therefore, vessel owners are unlikely to accept terms that may affect these, eg by granting to a charterer a right to postpone or cancel voyage(s).

3.2. Legal Alignment with Underlying Contracts

Maritime transportation of Main Wind Farm components is almost always arranged as part of a contract of sale of such components (eg a Sub-supply Agreement) or as a result of a party’s obligations under another contract, for instance a MPA.

Alignment of the Transport Agreement with the terms of the underlying contract is essential. Terms in such an underlying contract should, to the fullest extent possible, be replicated in the corresponding Transport Agreement. If the contracts cannot be aligned in a satisfactory way, the party privy to the two misaligned contracts may find itself in a difficult position, for example by having no remedy against the vessel owners or freight forwarder under the Transport Agreement while being liable for potential breaches or failures of the vessel owners or freight forwarder under the MPA. Conversely, risks that the charterers or shippers have agreed to bear under a Transport Agreement may not be compensable by the project developer under the MPA in case of misalignment between the two contracts.

However, contractual alignment sometimes proves to be a difficult exercise due to the differences in scopes and values between MPAs and Transport Agreements and the fact that vessel owners or freight forwarders generally do not accept certain responsibilities (or are reluctant to do so).

In general, this alignment requirement applies to non-legal issues, for instance commercial/budget issues, project timelines or any other requirements, such as insurance or transport standards. Alignment is also essential for legal issues. It is good practice to have back-to-back agreements, whether it is a MPA and a Transport Agreement made under this MPA (for instance, a TPSA and a COA to transport the transition pieces sold) or a Sub-supply Agreement for a Party to a MPA (eg a contract for the supply of towers to a WTG Manufacturer) and the corresponding Transport Agreement.

One of the main issues requiring alignment is the governing law and jurisdiction clauses. While MPAs are often governed by the law of the country where the project is located and subject to a dispute resolution clause in favour of the jurisdiction of that country (or arbitration in that country), English law is generally the governing law of choice for parties entering into charterparties and England and Wales remain a key jurisdiction—and the London Maritime Arbitrators Association (‘LMAA’) a key arbitration forum—for maritime disputes.

Misalignment of the governing law and jurisdiction or arbitration clauses is a source of uncertainty as the legal concepts not only vary from jurisdiction to jurisdiction, but their interpretation may also differ. Parties may, therefore, have to make a difficult choice between:

- on the one hand, having a contractual gap between two contracts misaligned due to different governing laws/dispute resolution forums; or

- on the other hand, having the Transport Agreements and the MPA governed by the same law that may, however, not have a longstanding tradition and experience in handling maritime or transport disputes and the well-established associated services, eg experts, arbitrators and law firms (that are, for instance, more likely to be available for matters governed by English law).

Another important concept which in principle requires alignment is force majeure. Force majeure is usually defined in contracts (in particular in jurisdictions where force majeure is not a statutory concept but only a matter of contract) and may be different in a MPA or Sub-supply Agreement and a Transport Agreement. For instance, force majeure may be restricted to geographical areas or types of events and, therefore, what qualifies as force majeure under a MPA may not qualify as force majeure under a Transport Agreement.

If such a gap exists, a party may be precluded from relying on force majeure under a contract, while the subcontractor of such a party may be entitled to advance a force majeure argument under the relevant subcontract. For example, while an OSS supplier may not be entitled to rely on a force majeure defence under an OSSA, the owners of the vessel chartered by that OSS supplier to transport the OSS may have a contractual right to rely on force majeure under a Transport Agreement. This may place the OSS supplier in a difficult position vis-à-vis its counterpart under the OSSA.

In addition to being a potential excuse for a party's failure to perform its obligations, force majeure may also entitle a party to terminate an agreement or to request an EoT to perform an obligation and/or to claim an additional compensation in specific circumstances beyond a party's control. Such remedies are, for instance, expressly provided for in the FIDIC Plant and Design-Build Conditions of Contract (Yellow Book), which is reportedly the FIDIC form of contract most commonly used for offshore wind projects (see clauses 18.4 and 18.5 of the 2017 Edition).¹⁵ Here again, a contractual misalignment can result in NCCs and impact the profitability of a wind project.

The same reasoning applies to change-in-law provisions. If the base date to assess changes-in-law or the remedies for such changes-in-law are different between contracts, a party may have to absorb costs resulting from a change in applicable laws and regulations under a contract without having the right to claim compensation for such costs in the other contract. For instance, if the transport of subsea cables may be more expensive than anticipated due to changes in transport or port regulations which entitles the vessel owner or freight forwarder to increase the freight under the Transport Agreement, but the cable supplier cannot pass the corresponding cost onto the project developer under the corresponding SCSA, this will result in NCCs for the supplier.

The extension of the EU-ETS to the shipping industry in 2023¹⁶ is a recent illustration of the issues linked to changes-in-law. Such extension resulted in extra-costs for a number of projects after 1 January 2024, when the emissions of some vessels required to carry Main Wind Farm Components became subject to compensation under the EU-ETS scheme. A number of claims were made under MPAs in order for the affected parties to try and recover the costs incurred under the EU-ETS scheme from the other party.

Finally, MPAs often contain a no lien requirement over Main Wind Farm Components, failing which the supplier of the Main Wind Farm Components may be in breach of the MPAs. While in traditional shipping, this is usually unacceptable for vessel owners (as they want to secure payment of the freight or hire by way of a lien over the cargoes carried), this seems more acceptable in the wind industry, due to the nature of business, with well-established project developers or suppliers of Main Wind Farm Components.

3.3. Allocation of Risks During Shipments

3.3.1. Risks of Loss/Damage

Every cargo carried on vessels (such as Main Wind Farm Components) is susceptible to being damaged or lost during the maritime transportation phase. As a result, Transport Agreements require a suitable allocation of the risks of damage and loss.¹⁷

¹⁵ Gry Bratvold 'Using FIDIC Yellow Book for Offshore Wind Projects', *Kvale* (Web Page, 11 February 2021) <<https://www.kvale.no/en/articles/using-fidic-yellow-book-for-offshore-wind-projects-en/>>

¹⁶ *Regulation (EU) 2023/957 of the European Parliament and of the Council of 10 May 2023 Amending Regulation (EU) 2015/757 in Order to Provide for the Inclusion of Maritime Transport Activities in the EU Emissions Trading System and for the Monitoring, Reporting and Verification of Emissions of Additional Greenhouse Gases and Emissions from Additional Ship Types* [2023] OJ L 130/105.

¹⁷ Thomas Zhang, 'Heavy Lift Items and Project Cargoes', *Skuld* (Web Page, 9 May 2014) <<https://www.skuld.com/topics/cargo/project-cargo/heavy-lift-items-and-project-cargoes/>>.

Due to their dimensions, some Main Wind Farm Components for instance blades or OSSs, generally need to be carried on the vessel's deck. Carriage on deck is generally considered inherently risky as the cargo is exposed to greater dangers. In addition to being exposed to the elements (sea, spray and wind), cargo on deck may also be subject to the effects of higher forces (when the vessel rolls, pitches or heaves) than cargo below deck, which could result in the cargo falling overboard if the cargo has not been properly secured or if the acceleration applied to the cargo exceeds the strength of the lashing.

It is a common industry practice for owners or freight forwarders to require that cargo on deck is carried at the charterer's or shipper's sole risk and that owners or freight forwarders are contractually exempt from liability for any damage or loss to cargo carried on deck. A number of charterparty templates are drafted accordingly, for instance the BIMCO Heavyliftvoy (see clause 26(a)). Charterers or shippers generally disagree, however, with such a position and seek to draft or amend the Transport Agreements so that the vessel owners or freight forwarders are liable for the loss of, or damage to, cargo on deck, at least in some circumstances (for instance, if the damage or loss was caused by gross negligence or wilful misconduct). Whether or not vessel owners should be liable for cargo on deck is a recurrent topic in Transport Agreement negotiations.

For cargo below deck (and cargo on deck, if agreed), it is frequent for the parties to incorporate the *Hague-Visby Rules* into the Transport Agreements. It is equally common to incorporate the Inter-Club Agreement ('ICA'). The parties also regularly agree on a knock for knock regime, which is the baseline position in clause 22 of the Heavycon 2007. It is for the parties to agree on a suitable liability regime for incidents that may arise during the transport operation, having due consideration for the risks identified, their potential consequences, the insurance cover(s) available to the parties and any mandatory statutory legislation regulating the parties' liability, such as the Australian *Carriage of Goods by Sea Act 1991* (Cth) ('COGSA'), if applicable.

Particular attention should be paid to part cargoes due to the risks that can be created by other cargoes stowed in close proximity with Main Wind Farm Components. The parties should properly cater for such risks, and it is advisable for the charterers or shippers to add clear requirements to that effect in the relevant Transport Agreement(s).

It is not uncommon for damage to be sustained or for rectification costs to be incurred due to the lack of cleanliness of the vessel or fumes from the vessel's exhaust systems. Here again, the stipulation of clear procedures and obligations in the relevant Transport Agreement(s) may prevent later issues or disputes.

Lastly, given the value of Main Wind Farm Components, cargo claims, general average or salvage matters are likely to give rise to high value claims and/or calls for significant contributions from the charterers or cargo interests which, in turn, may increase the prospect of disputes. For instance, in June 2017, the vessel *BBC Ontario* suffered a fire and lost blades,¹⁸ which led its owners to declare general average and later gave rise to various claims.¹⁹ The risk of high value claims and disputes is another reason why an in-depth legal review of the agreements is good practice, to ensure that such risk is adequately mitigated.

All the above scenarios of damage to or loss of Main Wind Farm Components (as cargo) may also result in delays and consequences that could be severe, in particular if repair works are required or new components to be manufactured to replace the components lost or damaged.

3.3.2. Risks of Delay in Delivering the Main Wind Farm Components (other than Due to Cargo Handling)

Delays are one of the main hazards of maritime transportation.

Frequently, the remedies available to the aggrieved party are limited and/or their exercise would have significant consequences for the aggrieved party.

For instance, one common contractual remedy in shipping contracts is the cancellation of the charterparty, which is usually agreed to be without liability for either party. However, while such a remedy allows a charterer to walk away from a charterparty at no cost if the cancelling date has passed, it is likely that the charterer may have issues

¹⁸ JCP, 'Las 22 Aspas que Gamesa Mandó a Egipto y Acabaron 'Ahogadas' en la Costa Gallega' *El Confidencial* (Web Page, 4 August 2017) <https://www.elconfidencial.com/empresas/2017-08-04/gamesa-pierde-22-aspas-eolicas-de-40-metros-en-el-cantabrico_1424686/>.

¹⁹ *The BBC Ontario* (SD NY, No 1:18-cv-05364, 8 September 2022).

in finding a substitute vessel for the same (or at a lower) cost, especially in an owner-friendly market. This means that the charterer cancelling the charterparty may have to incur additional costs to charter a substitute vessel (eg additional freight) while being exposed to the consequences of the Main Wind Farm Components being delivered with delay if the substitute vessel can only arrive at the loading port later than the original vessel (which is often the case).

As a result, the charterer cancelling the charterparty may have to incur NCCs without recourse against the owner of the vessel which charterparty was cancelled.

Sometimes, the parties to a Transport Agreement will agree that liquidated damages apply to delay in delivery of the Main Wind Farm Components at the port of delivery, as is, for instance, provided in clauses 1(d) and 1(e) of the BIMCO Heavyliftvoy. However, the amount of and caps (if any) of liquidated damages are usually low, as maritime transportation is subject to a number of hazards and uncertainties. Also, liquidated damages (and caps, if any) in Transport Agreements are generally much lower than liquidated damages under the underlying MPAs or the actual loss flowing from the delay(s) under the underlying contract. This is because it is standard practice for parties to ensure that liabilities such as liquidated damages and the agreed caps for such liabilities are commercially reasonable and proportionate to the contract value. Since the value of Transport Agreements is usually much lower than the value of the underlying MPA (transportation is only a small part of the entire project), it would be unusual and burdensome for a vessel owner or freight forwarder to accept to cover the losses suffered by its client under the underlying MPA. This means that the shippers or charterers will usually only be able to recover a small portion of their losses by way of the agreed liquidated damages.

Lastly, MPAs and Transport Agreements almost always include clauses seeking to exclude claims for indirect and consequential losses. Since a significant part of the shipper's or charterer's losses flowing from delays usually are of consequential nature (for instance, standby costs of personnel and equipment, liquidated damages payable to the customer of the shippers or charterers, loss of production, etc), such losses should be irrecoverable from the defaulting party.

On this topic as well, a close alignment between MPAs, Sub-supply Agreements and Transport Agreements (as relevant) is required in order to mitigate the consequence of delays, in particular NCCs.

3.3.3. Other Risks

In every Transport Agreement there are commercial risks in respect of time lost, incidents or costs incurred during the transport operation. The parties to Transport Agreements may or may not have anticipated and catered for such delays, incidents or costs, in particular regarding which party will ultimately bear such costs.

The parties will usually agree on the apportionment of obvious or well-known risks, for instance cargo handling operations, mainly by way of laytime, demurrage/detention or off-hire provisions. This is all the more important as the usual port-related issues arise, including during loading and discharge of cargoes caused, for instance, by the working hours of ports (some ports only work during limited periods of time), the need to require additional personnel shifts (and the associated extra-costs), determining which party is responsible for providing the berth and port delays (eg due to the unavailability of berth, port congestions, swell and other conditions preventing access to the port).

Similarly, it is common industry practice to provide freight adjustment mechanisms, such as bunker clauses (eg the Bunker Price Adjustment stated in clause 25 of the BIMCO Heavyliftvoy) and, more recently, clauses regulating the parties' obligations in respect of the EU-ETS scheme, which have prompted vessel owners to claim compensation from the charterers or shippers for the costs arising from such scheme.²⁰

There may also be other circumstances or events resulting in delays, change in shipment configurations, extra-costs and NCCs or disputes. For instance, the recent events in the Red Sea have triggered war risks and force majeure clauses and/or cancellation of insurance cover in the area.²¹ A few years ago, the outbreak of the COVID-19 pandemic gave rise to disputes, which also affected the Transport Agreements used in the wind industry.²² Such circumstances or events can be dealt with by way of appropriate contractual risk allocation clauses.

²⁰ See, eg, BIMCO, *BIMCO ETS – Emission Trading Scheme Allowances Clause for Time Charter Parties 2022*.

²¹ James Petri, 'Circular 04/24: Notice of Cancellation in Respect of War Risks', *UKP&I* (Web Page, 13 February 2024) <<https://www.ukpandi.com/news-and-resources/club-circulars/2024/circular-04-24-notice-of-cancellation-in-respect-of-war-risks/>>.

²² Claire Waller, 'COVID-19: Charterparty Matters for Shipowners', *Skuld* (Web Page, 16 April 2020) <<https://www.skuld.com/topics/people/diseases/coronavirus/covid-19-charterparty-matters-for-shipowners/>>.

It is advisable for the parties to have regard for allocation of responsibility and liability regarding local requirements, such as biosecurity regulations in Australia,²³ to avoid customs or ports delays.

However, it is not always possible to cater for all risks or situations, in particular if they are unforeseeable, difficult to mitigate or their likelihood is remote.

A recent example is the line-of-sight limitations and the carriage of wind turbine blades.²⁴ Charterers and shippers seek to optimize logistics and mitigate their costs by loading as many blades as technically feasible on each vessel. However, this may not be acceptable in some ports, as carrying blades on deck can reduce the visibility from the ship's bridge and may be considered an infringement of the *International Convention for the Safety of Life at Sea (SOLAS)*.²⁵ Even though flag States may grant *SOLAS* dispensations to vessels to load multiple tiers of blades (perhaps by instating conditions, eg that the limited visibility is compensated by CCTV), this may not be acceptable to other stakeholders such as pilots or local authorities on safety grounds, in particular if the vessel has to manoeuvre in close areas. As a result, the concerned vessels may be denied entry into the intended port of discharge, detained²⁶ or have to leave cargo ashore upon loading which may result in significant additional costs for the parties (or one of them) to the Transport Agreement. Clear and coherent drafting may prevent such issues, for example by agreeing that the vessel to be provided will have a fore navigation bridge.

In addition, as set out above, the liability caps in Transport Agreements are generally much lower than those of the underlying MPA(s) or Sub-supply Agreement(s). As a result, in the event of a breach of a Transport Agreement, it may be difficult for the shippers or charterers to recover their losses from the vessel owners or freight forwarders. Shippers or charterers may, therefore, be exposed to risks due to the mere fact that a gap exist between the liability caps of these contracts, although this topic warrants further in-depth discussion.

3.4. Risk Mitigation

3.4.1. Safe Practices

Main Wind Farm Components carried on a vessel require plans and documents for the maritime transportation to be prepared in advance. Such documents will take into account structural strength and stability calculations. This requirement is no different for Main Wind Farm Components.

Also, the specific transport manuals made by the manufacturer of the Main Wind Farm Components which are transported should be shared with all relevant stakeholders. Such manuals should specify the required transport conditions, for instance the maximum allowable cargo accelerations. Any other relevant documents, such as the Risk Assessment and Method Statement ('RAMS'), Manual of standards ('MOS') or the applicable working instructions should also be provided to the freight forwarder(s) or vessel owner(s) in charge of the maritime transportation of Main Wind Farm Components.

In addition to being communicated, such documents must form part of the Transport Agreement in order to bind the contracted freight forwarder(s) or vessel owner(s), and clear language should be used to that effect in order to avoid uncertainty or ambiguity as to the applicable transport requirements.

In addition, Chapters VI and VII of *SOLAS* require a cargo security manual ('CSM') for all types of ships carrying goods other than solid and liquid bulk cargoes. The Main Wind Farm Components carried need to be stowed in accordance with the requirements of the CSM and those of the Code of Safe Practice for Cargo Stowage and Securing ('CSS'). The CSM should include all information necessary to calculate the lashing forces and what lashing equipment is required.

It is also good practice to provide an order of priority between all these documents so that the parties know how to resolve any conflict or discrepancy. For instance, it is common to provide that the stricter of two requirements shall apply (if relevant) in such circumstance.

²³ Lauren Romano, 'What Does It Take to Transport Giant Wind Turbines from Europe to Australia?', *Wallenius Wilhelmsen* (Web Page, 29 October 2021) <<https://www.walleniuswilhelmsen.com/insights/what-does-it-take-to-transport-giant-windmills-from-europe-to-australia>>.

²⁴ US Coast Guard, *Marine Safety Information Bulletin no 04-23* (4 April 2023).

²⁵ *International Convention for the Safety of Life at Sea (SOLAS)*, 1974, 1184 UNTS 2, ch V (Safety of Navigation), regulation 22 – Navigational Bridge Visibility

²⁶ 'The Importance of Ensuring Navigation Bridge Visibility', *Gard* (Web Page, 24 November 2022) <<https://gard.no/insights/importance-ensuring-navigation-bridge-visibility/>>

Robust cargo inspection processes should be agreed to in the Transport Agreements and implemented before and after loading and discharge in order to identify any damage and its cause as soon as possible.²⁷

Access to the vessels for such inspections is sometimes an issue as the vessel owners are not always willing to grant access to the vessel during cargo operations, while charterers want to ensure that every step of the loading or discharging operations is made in accordance with the agreed procedures or requirements. The Transport Agreements need to clearly state any requirement to that effect from the parties, for instance that a cargo superintendent instructed by the shippers or charterers is entitled to be on board the vessel during the voyage and that the vessel owner has to install accelerometers prior to sailing from the port of loading to ensure that the accelerations remain below the acceleration limits stated in the manufacturer's procedures.

3.4.2. Insurance

An integral part of an effective risk mitigation and management strategy is for the parties to procure and maintain appropriate insurance coverage for the Main Wind Farm Components. The main insurance cover for Main Wind Farm Components is marine cargo insurance. Depending on the applicable terms of sale/Incoterms, such insurance may have to be taken out by the supplier of the Main Wind Farm Component(s) or the project developer.

Usually, marine cargo insurance programs apply. Such programs of cover provide a maximum value covered per shipment, and any shipments exceeding such value will require a prior declaration to the insurers in order to be covered. Due to the increase in value of shipments of Main Wind Farm Components, the value of all shipments has to be monitored so that no shipment remains uncovered (which would likely amount to a breach of the relevant MPA or Sub-supply Agreement).

Marine cargo cover may also be available for wind projects under the applicable construction (or erection) all risks (CAR or EAR) policy, such as LEG or WINDCAR. Any requirements under the insurance policies, such as regarding the marine warranty surveyor, should be made binding in the Transport Agreements in order not to prejudice cover.

Given the impacts of delays as stated above, it may be sensible to have a delay in start-up insurance ('DSU') in place, but it does not seem to be the norm in the wind industry.

Lastly, it is highly recommended that any party chartering a vessel takes out a charterer's liability cover for damage/loss to the vessel caused during the charter period or the voyage (as applicable), in particular if a knock for knock regime has not been agreed by the parties.

3.4.3. Extension of Time/Claim for Costs

If a risk of delay or extra cost lies with the charterers or cargo interests under a Transport Agreement, the charterers or cargo interests may seek to pass such risk on to another party under an underlying MPA or Sub-supply Agreement.

It is normal that MPAs include EoT and claims for costs mechanisms benefiting the supplier of Main Wind Farm Components. Such provisions usually have strict requirements, for instance notification periods and an obligation for the claiming party to provide supporting evidence.

The claiming supplier of Main Wind Farm Components will benefit from robust claims management processes to ensure that no claims are overlooked and that the claims succeed as much as possible. In particular, the claiming party should ensure that claims are not time-barred.

Whether or not EoT or claims for costs provision are engaged is a matter of contract and fact. Whenever an EoT and/or additional compensation cannot be claimed, the agreed budget may not be complied with and the profitability of the project may be affected.

In a similar vein, the supplier of Main Wind Farm Components should make sure that any claims are not hindered by other terms of the relevant agreement, eg confidentiality provisions preventing the claiming supplier of Main

²⁷ Jacob Damgaard, 'Wind Turbine Blade Transport. Cargo Care, Cargo Operations and Stowage Plans', *Britannia P&I* (Web Page, 3 March 2023) <<https://britanniapandi.com/2023/03/carriage-of-windmill-turbine-blades/>>.

Wind Farm Components from disclosing certain documents when such disclosure is required under another contract.

4. Future Key Legal Issues?

The wind industry is currently struggling to find the right balance as WTG Manufacturers and some of their subcontractors have financial issues,²⁸ wind project auctions fail²⁹ and supply chain costs have significantly increased.³⁰ It is likely that there will be changes in the industry as the challenges are multifarious. This is no different for legal clauses and contractual mechanisms, which will also likely need to evolve and adapt to meet these current challenges and upcoming challenges.

One of the main challenges ahead is decarbonisation. Although WTGs are a source of renewable energy, the maritime transportation of Main Wind Farm Components is subject to the same regulations as other cargoes, such as the EU-ETS scheme and the FuelEU Maritime Regulation.³¹ Although the offshore wind segment has been partially protected from such regulations,³² such relief and exemptions do not apply to the cargo vessels used by the wind industry.³³ In addition, the scope and contents of decarbonisation regulations are likely to evolve over time. For instance, it is possible that the Australian Carbon Credit Unit ('ACCU') scheme becomes 'mandatory for all ships visiting Australia, extending its coverage to include shipping emissions'.³⁴

Contractual provisions will need to be drafted and agreed to cater for such additional costs, constraints, risks of changes-in-laws and the parties' agreement on potential mitigation measures. Also, costs incurred under Transport Agreements will likely need to be passed on to parties to other agreements, such as MPAs or Sub-supply Agreements, and, therefore, alignment with such underlying contracts will be essential.

In addition, larger WTGs and projects are now developed which should increase the projects' values and costs, including the costs of the maritime transportation of Main Wind Farm Components. The associated risks, which may result in significant NCCs, will also increase. Again, careful and well-thought-out drafting, contractual alignment and de-risking strategies will play a key role.

Lastly, it is expected that, in order to stabilize the industry, improvement measures, such as the standardization of transport equipment, will be implemented in order to limit costs and ease logistics.³⁵ However, such measures may raise competition law, intellectual property law and/or contractual issues and will, therefore, require prior detailed legal consideration.

²⁸ Victor Emil Kristensen, 'The Crisis in the Danish Wind Industry: "A Crappy Year"', *Energy Watch* (Web Page, 26 July 2024) <<https://energywatch.com/EnergyNews/Renewables/article17306243.ece>>.

²⁹ Sophie Metcalfe, 'Failed Wind Auction Takes the Shine Off a Big UK Success', *Institute for Government* (Web Page, 14 September 2023) <<https://www.instituteforgovernment.org.uk/comment/failed-wind-auction>>.

³⁰ 'Europe must boost the competitiveness of its wind supply chain', *WindEurope* (Web Page, 23 February 2023) <<https://windeurope.org/newsroom/news/europe-must-boost-the-competitiveness-of-its-wind-supply-chain/>>.

³¹ *Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the Use of Renewable and Low-Carbon Fuels in Maritime Transport* [2023] OJ L 234/48.

³² The EU-ETS scheme will only apply to offshore vessels as from 1st January 2027, and the FuelEU Maritime Regulation is, to date, not applicable to offshore vessels.

³³ Nonetheless, heavy load carriers (that are regularly used by the wind industry) are, to date, exempt from IMO regulations (EEXI and CII).

³⁴ 'Navigating the Seas of Carbon Taxing: Balancing the Scales in Global Shipping', *University of Sydney* (Web Page, 1 July 2024) <<https://www.sydney.edu.au/business/news-and-events/news/2024/07/01/navigating-the-seas-of-carbon-taxing.html>>.

³⁵ 'New Partnership on Standard Solutions for the Wind Industry', *Energy Cluster Denmark* (Web Page, 13 December 2023) <<https://www.energycluster.dk/en/new-partnership-on-standard-solutions-for-the-wind-industry/>>.