Norsk Industri

DELIVERY MODELS FOR OFFSHORE WIND

Delrapport – Contracting in the offshore wind industry
A Guide to Norwegian Suppliers

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1 Executive Summary

This guide provides an overview of the contractual challenges, opportunities and typical risk distribution in the offshore wind industry.

The Norwegian offshore industry has over the last decades had a focus on oil and gas exploration activities. National, as well as international common contractual principles have been adapted and the offshore supplier industry has established systems and arrangements to adhere to those principles and the risk profiles these represent. Many of those suppliers are now transitioning into the offshore wind market and facing different requirements and contractual regimes as to what they are accustomed to in the oil and gas industry. Some of the companies in the offshore wind market have no history in the oil and gas business. Such companies may be established for the sole purpose of executing one or several specific projects and may have a different approach to the allocation of risk between the developer and the suppliers – they may expect suppliers to accept an increased level of risk compared to that which suppliers may be used to from acting in the oil & gas industry. Lenders and sponsors of such special purpose vehicles often have a direct influence in how contracts are established and insist on a certain risk allocation which may follow throughout the supply chain. Often the obligations and liabilities of the supplier are required to be guaranteed by extensive financial securities. In addition to facing strict requirements, suppliers may also be facing a client who's financial solidity is based on limited loans or sponsoring. Supplier's will benefit from understanding how this environment and background framework impacts on and drives the contracting processes in the offshore wind market.

Suppliers also need to understand the process and timeline in the construction of offshore wind parks. They will face a longer and different tender process as to what they are used to and several events may impact the client's decisions and strategy as the project and concept matures.

There are different subsidy schemes depending on countries and areas. Subsidies will usually be awarded through some type of auction. Auctions happen in regular sequences and the developer must plan its corporate set-up, financing mechanisms and contracting according to the time of the auction. Suppliers often need to commit to the EPCI contract(s) and even commence their work before a final investment decision ("FID") is in place in order for the developer to reach the regulatory target dates for commencement of power generation. There are different mechanisms a developer may use to ensure commencement of work before FID – but all with the same result: The (EPCI) contract does not come into full effect before FID and suppliers may risk that the contract will never be executed.

Projects in the offshore wind sector are characterized by their multi-discipline nature. This means that there are several deliveries requiring various specialized disciplines or suppliers to complete and deliver the full balance of the plant. The developer will in an early phase decide on its contracting strategy. There are two common strategies which are applied:

- Multi-contracting strategy: Developers contracts with a number of different suppliers being specialised on the supply of a particular part of the project.
- Bundled EPCI(C)-based strategy: Deliveries within the balance of plant will be bundled to a few EPCI(C) Contracts requiring the suppliers to take on the interface risk between various specialised part of the work; One contractor will take on a larger scope than what may be his core competency.

Contractors should be prepared that the scope elements may be moved from one contractor to another and that interface responsibilities are expected to be handled between suppliers. It is therefore a likely scenario that EPCI(C) Contractors are made responsible for scope they are not particularly familiar with.

Whereas Norwegian suppliers in the oil & gas industry are used to a standard contract regime such as the NTK 15 contract, standard contracts have not yet been developed and adapt-

ed for the offshore wind industry. However, it can be noted that the FIDIC standard contract formats, and then mainly the yellow and silver book, are frequently used as the basis for contracts in the offshore wind industry. For that reason, suppliers may benefit from understanding the main principles applied in the FIDIC contracts and how these direct the allocation of risk between the supplier and the developer. The supplier should also note that amendments may have to be made to the FIDIC contract formats to ensure they are more suitable for offshore wind projects. However, suppliers should also be aware that FIDIC is often used only as a starting point and that the risk allocation determined in the FIDIC contract may have been subject to substantive alterations.

Mainly notable are the following requirements which differ from what suppliers may be used to in the oil and gas business:

- Lumpsum contracts with a commitment to price at an early stage in the tendering process
- Insurance and Indemnity regime; liability being negligence based and not applying the “knock for knock” principles usually applied in the Norwegian oil & gas industry
- Extensive quality requirements linked to “fit for purpose” requirements and particular performance warranties
- Defect liabilities including serial defect liability and with extended defect notification periods
- Liabilities being stricter and limited at “higher” levels

In order to accommodate such a risk profile and also the potential increased demand for scope responsibility, the supplier should consider carefully how to set up its own delivery strategy towards the client. Suppliers may face the need to cooperate with other suppliers in different ways to mitigate risk. There are several possibilities with regards to setting up a cooperation with other suppliers and each of them have individual benefits and disadvantages that should be carefully considered with reference to the client’s strategy and needs. The most common types of cooperation models are i) various ways of subcontracting (e.g. back-to-back, under long term standardised framework agreements, with shared incentives and risk, etc.), ii) incorporated or project specific joint ventures where profit and loss typically is shared according to a defined key, iii) various consortium arrangements with pre-agreed split of responsibilities and liabilities and iv) alliance arrangements where typically risk and opportunities are shared among several parties, often including the client.

Photo: Øyvind Gravås / Equinor

Contractors should be prepared that the scope elements may be moved from one contractor to another and that interface responsibilities are expected to be handled between suppliers.

2 The Global Wind Industry

The global offshore wind industry may offer large opportunities to Norwegian suppliers, but the suppliers should be aware that the general framework conditions, the economics of offshore wind developments and the various financing schemes applied may impact on and be decisive for how risks are distributed among the parties involved in an offshore wind project.

In the following section suppliers will be introduced to some of these features and how these may be different what suppliers may be used to from the domestic oil and gas industry.

The global offshore wind industry has opened up new business opportunities for the Norwegian offshore industry with its historical ties to the oil and gas business. Norwegian suppliers to the offshore industry may benefit from their vast experience with managing large and complex projects offshore. However, while there are many similarities between the offshore oil and gas industry and the offshore wind industry, and an experienced oil and gas supplier may recognize the contracting landscape, there are numerous specific features where these two industries differ significantly. Suppliers need to identify and address such differences at an early stage to be able to assess and manage potential risks properly and ensure profitability. Even though each offshore wind project and each developer has their own characteristics, there are also some typical key features which can be observed throughout the value chain.

2.1 THE ECONOMICS

Compared to the typical offshore oil and gas market, the offshore wind market has been, and still is, characterized by fixed prices on produced power for a significant period of the operational phase. Because the industry, to a large extent, remains dependent on support schemes/subsidies, the power prices are

Photo: Aibel

set by the various systems for such support schemes/subsidies in the different jurisdictions. The common models for support schemes may be divided as shown below.

For the industry to become commercially viable without public support, continued technological developments leading to cost reductions are necessary. The technological development over the last years has been significant, much of this due to increase in size and scale and the expectation is for this to continue in the coming years.

The developers of offshore wind projects face considerable construction, technology, operations and maintenance, price and volume risks. Many of these risks are in the planning and

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SUPPORT MECHANISM	DESCRIPTION
Feed-in- Tariffs (FiT)	Eligible renewable energy generators are paid a fixed price at a guaranteed level (irrespective of the wholesale price) for the electricity produced and fed into the grid. Ex.: Germany, Belgium.
Feed-in-premium(fixed)	Eligible renewable energy generators are paid a premium price which is a payment (xEUR/MWh) in addition to the wholesale price.
Feed-in- premium (floating)	As Feed-in-premium (fixed), however the floating premium would be calculated as the difference between an average wholesale price and a previously defined guaranteed price. Effectively it works as a floor price, a minimum revenue is guaranteed.
Contracts for differences	Similar to floating premium. However, if the wholesale price rises above the guaranteed price, generators are required to pay back the difference between the guaranteed price and the wholesale price. Ex: UK.
Zero-subsidy bids (Dutch Model)	Developers compete for the right to build a wind farm in a tender in which the selection criteria is not based on the price. The selection is made according to the experience of the bidders, the quality of the project design, the capacity of the project and the social costs, with added weight given to the quality of the survey, risk analysis and mitigation measures. While the winner doesn't receive any price premium, the transmission costs for the project are covered by the government.
Green Certificates	A tradeable commodity proving that certain electricity is generated using renewable energy sources. May have guaranteed minimum prices. The certificates can be traded separately from the energy produced. Ex: Norway, Sweden.

Table 5 – some modifications made to the table

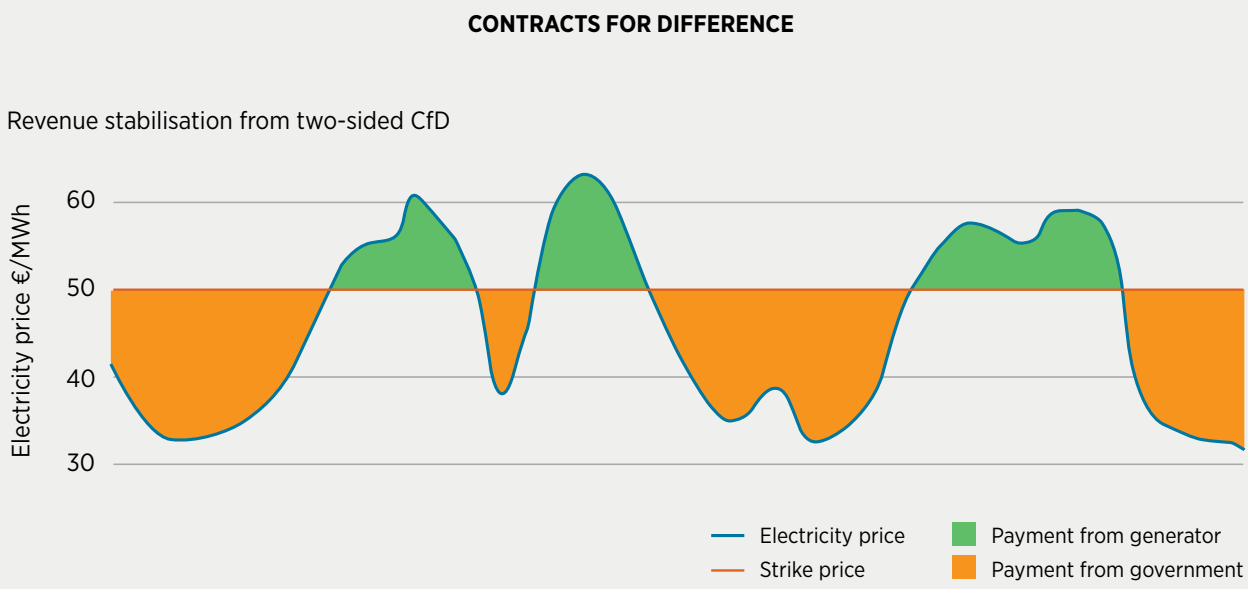


Figure 2.1: Source: Wind Europe Wind Energy in Europe in 2019 - Trends and statistics

construction phase, at the beginning of the project, at the time where it is still uncertain whether the offshore wind park will materialize, whereas the potential returns are towards the end of the project. Cost overruns from the construction phase will have a direct impact on the overall profitability of the project, where the margins are tight.

Developers have over time funded most projects through the balance sheet with corporate loans, as the risk was considered to be too high for alternative financing structures. As the technological and commercial risks (through support schemes) are perceived to have been reduced, project financing has become possible. Project financing is now increasingly in use within offshore wind in Europe, for different reasons, which again has implications for the supply chain.

2.2 PROJECT FINANCING AND ITS IMPLICATIONS FOR SUPPLIERS

Project financing is well known from financing of large infrastructure projects, energy projects (solar, onshore wind, biomass, heat plants) and other assets with specific characteristics, among them that the turnover is tied to fixed long-term contracts. For renewable energy projects this is reflected in «Power Purchase Agreements». Non-recourse project financing does not require any support from the owners apart from the budgeted equity. A "Special Purpose Vehicle" ("SPV") company is most commonly established without any financial guarantees from the owners. Very often the "developer" is a company (or several working together) with industry experience and the capabilities to obtain all licenses, permits, approvals and secure contracts including but not limited to financing of the project. Utilities such as Ørsted, SSE and the like are examples of such developers. Commonly the developer(s) will also be owner(s) in the SPV, however the developer may also be the SPV itself. The majority owner(s) of the SPVs are often referred to as Sponsor(s), taking on a lead role in the project, however a part divestment might already be planned to take place before start of construction or later.

The challenge is that the balance of risk needs to be acceptable and returns need to be sufficient to attract investors and be "bankable" for the lenders. For the suppliers the use of SPVs may lead to limited long term commitments to engage in development of the supply chain, as the primary focus will be on the economics of the individual project.

For a lender, risks have to be mitigated in a satisfactory way and lenders will typically only participate in a project financing subject to strict lender requirements. There will be a lenders' "due diligence process" whereby independent advisers prepare reports on technological, legal, environmental, social and if relevant, market risks, for the lenders review and comments.

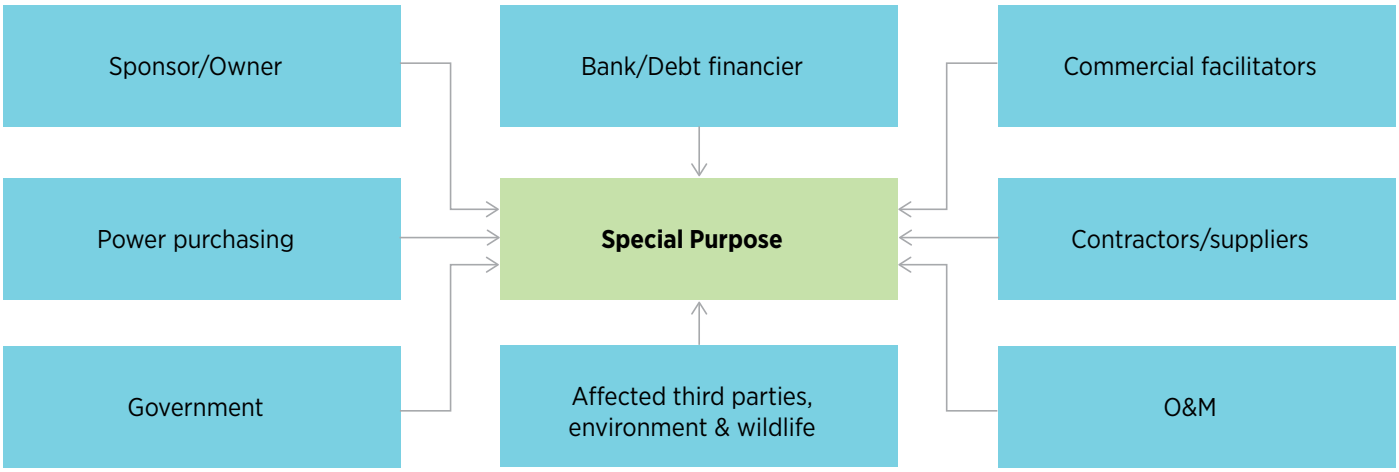


Figure 2.1: Source: Wind Europe Wind Energy in Europe in 2019 - Trends and statistics

All contracts entered into are scrutinized by advisers and the lenders – with the sole aim of ascertaining that the supplier is capable of delivering the given quality, at the given cost and time. This due diligence may result in a demand for subsequent amendments to already executed contracts.

From the lenders point of view, the capability of the suppliers and whether the specific deliveries are easy to substitute (within the time limits given) with supplies from alternative suppliers – is critical. Hence, the financing arrangements have a significant impact on the tendering procedure, distribution of risk and overall commercial balance in the contract structure and the contractual flexibility of the developers. Suppliers will commonly have to adhere to wide-reaching security arrangements, including novation of contracts by way of security. Project financing may result in stricter contractual terms, including increased focus on passing of risk onto the supply chain, with particular focus on delay risk and often high level of liquidated damages attached thereto. Caps on liability may generally appear high. Changes and variations will regularly have to be approved by the lenders, which results in a more cumbersome variation procedure. Another aspect of the lenders' requirement is their right to enter into all contracts and agreements and "take over" the project if the borrower (the SPV) is not capable of fulfilling the terms and conditions of the loan agreement. In this case the party to the supplier's contract will no longer be the original client, and the supplier will be in the hands of the financial institutions taking their positions in the contract. While this is very rare, it is important to be aware of.

2.3 OUTLOOK ON LENDER'S REQUIREMENTS

There is ongoing development in the standards for project financing as experience and competence grow- mainly in the UK market. If it is seen that projects are successfully executed, and solid sponsors back up SPVs a further development of less rigid demands can be expected. It is therefore expected that the benchmark for "bankability" will move over the coming years allowing the developers more flexibility in their contracting requirements.

2.4 PERFORMANCE BONDS

To mitigate the risk for the lenders, the financial, organizational and operational condition of the supplier is investigated in combination with a requirement to provide performance bonds, warranty bonds and parent company guarantees. The amounts required in guarantees (as % of the contract) are often significantly higher than those typically observed in the oil and gas industry and suppliers might consider the requirement for guarantees as unreasonably burdensome. Additionally, the duration of these guarantees are significantly longer than what is typical in the oil and gas market.

Such requirements may cause a need for the suppliers to rearrange its guarantee facilities or to find alternative schemes,

such as partnering up with its sub-contractors in order to be able to provide the security or avoid that all its financial capacity is employed on one or few projects.

The Norwegian Export Credit Guarantee Agency ("GIEK") as part of the Norwegian support structures for Norwegian export may lower the bank's exposure and the exporters use of its credit lines. GIEK may issue guarantees for a part of the required amount (typically 50 %) widening the banks capacity to participate. GIEK's participation is on the same terms and conditions as those of the banks, i.e., the same pricing and same documentation requirements including the security package. Such GIEK guarantees will also apply for sub-suppliers to the supplier with the export contract.

GIEK's participation will limit the exporters use of its credit lines, hopefully enabling the exporter to engage in more contracts without having to expand its credit lines with the bank.

2.5 CONTRACTOR'S COUNTERPARTY RISK TOWARDS SPECIAL PURPOSE VEHICLE (SPV)

As the project financed offshore windfarms typically will be held by a SPV, suppliers must rely on the equity commitments of the sponsors and conditional loan commitment of the banks. Suppliers will not, as a main rule, have recourse to the owners (or developers – if developed by other than the owners) for any claims towards the SPV. This increases the counterparty risk in the event of a default or other event which results in the lenders stopping disbursements of the loan proceeds, especially in the period after the equity has been utilized. It may also represent a risk if defaults or other events for which the owner (or developer) is responsible for or otherwise carries the risk for, cause damages, growth in scope or additional costs to be incurred by the supplier beyond what is accounted for in the financing of the project.

A projects cash flow is normally well defined. In the construction phase the draw-down of loans is adjusted to the milestone payments, and the project will of course seek to keep finance costs low. The total finance cost is also higher for project financing than for corporate loans – the price which has to be paid for transferring risk to the lenders. As the cash- flow is well planned and always measured against the financial model which is the base for the project financing there is also consequently limited room for changes or adjustments.

Finally, it should be observed that the SPV may be contractually bound by a relatively tight scope of authority as set out in the management services/operator agreement and in the financial arrangements/agreements. This, in turn, provides less flexibility as regards contract strategy and approval of changes or variations which may affect schedule, cost or risk profile.

A mitigating measure typically observed is that a number of contractors require payment guarantees as security for their own deliveries under the contract. These guarantees will initially be issued by the parent companies of the SPV, for later to be replaced by similar guarantees from the lenders if financial close is reached. Whether a contractor is in position to obtain such guarantees will to some extent depend on the negotiation situation. Not all developers are willing to issue such guarantees, but in general these types of guarantees can be considered as market standard.

2.6 THE CLIENT CONTRACTS TOWARDS MAIN CONTRACTORS

Experience shows that there has been a tendency in both the offshore and onshore wind industry, at least in project financed projects, to use the FIDIC Forms of Contract (FIDIC) as a contract basis, (and then most frequently the form referred to as the Yellow Book). Lenders are typically familiar with the FIDIC contracts and the risk distribution and administrative control mechanism contained therein. FIDIC is known to be somewhat more advantageous to the owners/developers than what contractors are used to from the Norwegian oil and gas industry. As mentioned below, FIDIC is developed to be used with different kinds of "background law" systems. However, it can be argued that NTK 15 is better designed to be implemented on the basis of Norwegian law. However, equally important is the fact that the FIDIC contracts by lenders and owners/developers are regarded as thorough and complete and well suited to ensure and maintain the necessary project control. Contractors should keep in mind that FIDIC was not developed for the offshore wind industry, but rather for a typical onshore infrastructure or energy project. The risk profile of an offshore project may differ materially from the risk profile of an onshore project. Any potential risk factors should therefore be considered carefully when applying FIDIC to offshore wind projects. Adjustments may have to be made although one should, as addressed in more detail further below (section 4.2), be careful about keeping such particular adjustments to those necessary to adapt the contract to offshore wind projects. Contractors should also be aware that many developers have their own bespoke versions of the FIDIC Forms of Contract that include various adjustments. These adjustments may often be in the favor of the developers, shifting risks towards the supplier.

3 Time from commitment to final award

Suppliers taking part in tendering processes for offshore wind projects may experience that the time from submittal of tender and commitments being made to the contract award and later execution may be significantly longer than in a typical oil and gas project.

The following section focuses on some relevant impacts of this prolonged timeframe that suppliers should be aware of.

The main reasons for the potentially longer time from the suppliers making their commitments until the developers may confirming the award of a contract and hence their corresponding commitments are the prevailing licensing regime, the need for obtaining power price support and finally the time needed for ensuring financial support to the project. Further, if project financing is applied, it will normally require time to reach "financial close", which normally is a condition precedent for any supplier contracts being made "effective".

When the developers start preparing the project, this is the initial phase of a competition against other developers, and this is done at their own risk and cost. In order to have a robust cost picture, the developers seek to obtain firm commitments for the major contract packages at an early stage. Normally this is done by entering into "preferred supplier agreements" or similar arrangements for securing commitments in terms of pricing and supply capacity. These are agreements that resemble Letters of Intent commonly used in the oil and gas sector. Even though this is normally done only for the main contracts in the project, such early phase procurement activities will also tend to flow down the supply chain. The challenge for suppliers with such processes is that they often need to reserve capacity for a potential, but highly uncertain, future contract. They may also have to commit themselves to fixed prices, without having the certainty about contract award required to hedge material prices or currency exchange rate exposure.

Prior to the contract being made effective, there will always be a risk that the developers are unsuccessful in winning the license to develop the field or the auction to obtain the required power price tariffs or even fail to secure financial support and/or third-party financing for the project. If the supplier for capacity reasons has turned down other (work) possibilities for the same periods, there is a risk that the suppliers will face losses if the project is discontinued. Such risk should preferably be handled by a reasonable cancellation fee, but there is currently no established standard for this. Such fees are subject to negotiation between the parties.

The level of the cancellation fee, and from which point in time it will apply, will vary significantly. In general, suppliers will observe that developers are hesitant to accept any cancellation fees prior to Final Investment Decision (FID) (which normally will be conditional upon secured license and financing) to hold potential costs at a minimum. Post FID, cancellation fees are more generally accepted, but as stated above, based on commercial negotiations.

If committing itself to fixed prices at an early stage, suppliers may also have to consider how to ensure proper adjustment mechanisms to cater for potential exposure to fluctuations in material prices or currencies during the pre-award period.

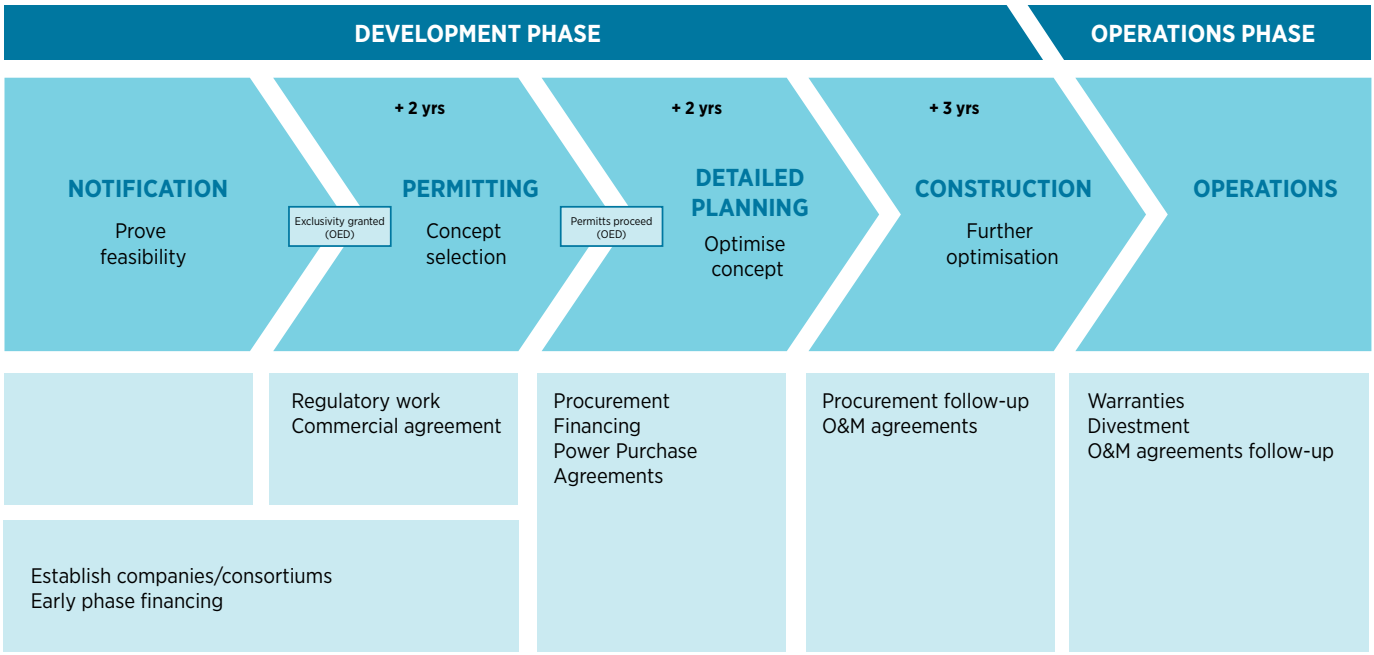
Commercial commitments in the offshore wind industry are typically formalized in a staged process. The main contract agreed between the parties will not come into effect until after FID. An alternative approach to "preferred supplier agreements" is that only certain parts of the main contract is operational in the early phases of the cooperation. In both cases, there will often be a need to carry out certain "early works" activities for procurement of long lead items and/or engineering. The activities are then typically formalized by the developer issuing a "limited notice to proceed", and thereby instructing the supplier to proceed with certain defined tasks.

The supplier may in turn be required to arrange for flexible cancellation clauses or implement other mitigating measures in its procurement of long lead items to provide cost visibility and control for the developer. Implementation of and compliance with such agreed measures to keep early commitments and costs to a minimum, will often be a condition for the supplier being entitled to have costs reimbursed where the project does not materialize.

The below tables illustrate the development and operation phase (Table: Phases in Offshore Wind) and in which order the events discussed in chapter 2 and 3 commonly occur.

THE FOLLOWING DEFINED TERMS SHALL HELP UNDERSTANDING THE TABLES AND SECTION BELOW:

SPV	Special Purpose Vehicle established for the single purpose of executing one or more projects. They usually do not have any value.
Licensing	Developer applies and purchase a license to be able to develop offshore wind parks. Preparation for auctions.
Financing	Financing may occur over the balance sheet (corporate loans) of developer or by using project financing without any guarantees / further commitments from the owners. If the developer is a SPV, it is often owned jointly by two (or more) developers. This is increasingly the case, both in the North Sea and elsewhere, as it is regarded as beneficial to the sponsors/owners/developers.They often require a certain risk allocation in the contracts with suppliers.
FID	Final decision to invest in the project and entitlement for developer to continue with the contracts entered into before FID.
Contracting	Developers in the offshore wind-market tend to bundle scopes for a certain part of the Balance of Plant and choose one Engineering, Procurement, Construction, Installation, (Commissioning) (EPCI(C)) Contractor for the bundled part. This may include scopes which the EPCI(C) contractor is not familiar with (i.e. Transport and Installation). Scope responsibility may also change during the contracting phase, impacted by changes in regulatory and subsidy regimes. Alternatively, multi-contracting strategies may be applied. Timing and sequencing of the three major contracts – cables, HVDC/HVAC station, wind turbines – is crucial for developer, in particular due to complex and interlinked requirements to testing of the equipment.
Auction and award of subsidies	Auctions for granting of subsidy schemes. These often occur in certain intervals at certain times. The developer is required to have its contracting in place.
Early Works/ Preferred Supplier Agreement	Contracts are often signed prior to Final Investment Decision (FID). Developers demand start-up activities either through limited notice to proceed of the EPCI(C) contract or through a special agreement.


DEVELOPMENT PHASE
OPERATIONS PHASE
NOTIFICATION
Prove feasibility
+ 2 yrs
PERMITTING
Concept selection
Exclusivity granted (OED)
+ 2 yrs
DETAILED PLANNING
Optimise concept
Permitts proceed (OED)
+ 3 yrs
CONSTRUCTION
Further optimisation
OPERATIONS
Regulatory work
Commercial agreement
Procurement
Financing
Power Purchase Agreements
Procurement follow-up
O&M agreements
Warranties
Divestment
O&M agreements follow-up
Establish companies/consortiums
Early phase financing

4 Contracting models and Clients' contractual expectations

An offshore wind development project will involve and require a wide range of deliveries interfacing with each other. Developers may choose varying contracting models where deliveries are more or less bundled to cater for the interface and coordination risk that will apply to such developments.

This section provides an overview of deliveries to typical offshore wind projects and contracting models that may be applied by developers, as well as identifying and discussing some typical contractual expectations clients tend to have to their suppliers. Finally, this section will provide suppliers with insight into some of the main differences in risk distribution be aware of if comparing an offshore wind project with a standard Norwegian offshore oil and gas project.

4.1 DIFFERENT CLIENTS' STRATEGIES

As opposed to most oil and gas projects, offshore wind developments will have to be connected to the power grid. This does not only provide limitations in terms of which projects can be economically sustainable without subsidies, but also requires that the offshore wind development projects must include for a wide range of deliveries, including deliveries from various parts of the on- and offshore industries such as:

- Wind turbine generators (WTGs)
- Offshore inter-turbine cables (electrical collection system)
- Offshore substation (for larger projects located far from the shore)
- Transmission cables to shore
- Onshore substation
- Onshore cables and onshore connection to the grid

Hence, projects in the offshore wind sector are characterized by their multi-discipline nature. This may be illustrated as in the figure 4.1:

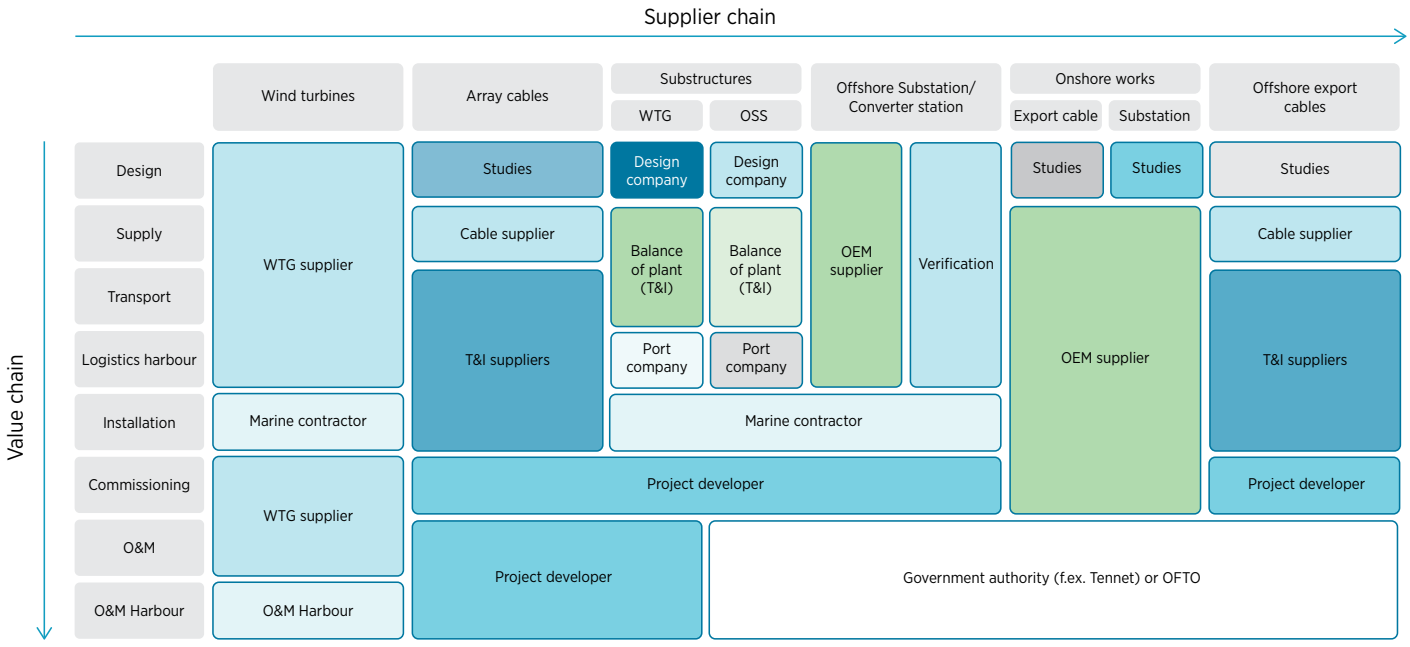


Fig. 4.1 Project execution model

For the client's contracting strategy, there are basically two main alternatives: a so called Multi-contracting strategy, or a bundled EPCI(C)-based strategy.

A multi-contracting strategy entails that the client will typically award separate contracts for each key element to be delivered, for instance entering into separate contracts for the turbine supply, the foundation supply, the turbine installation, the cable installation and the foundation installation respectively (as well as, if required, offshore/onshore substations/converter platforms). Multi-contracting requires the client to pay close attention to interface risk and the various deliverables from the suppliers and will thus often be a realistic option only for the (largest) utilities/owners that are established with internal project development organizations. The upside with such a strategy, is that it will allow the client to retain a higher degree of direct control/involvement with the development and provide for less risk-premiums being added by the suppliers to take on the interface risk that would otherwise follow from an EPCI(C)-based strategy. Such risk-premiums may be material, especially if a supplier is required to take on work that it is not very familiar with.

In an EPCI(C)-based strategy, it is, due to the multi-discipline nature of offshore wind projects, also common to enter into multiple contracts and not to contract for one single EPCI(C) contract covering the entire project. This is in part due to the lack of suppliers in the market having capacity and relevant experience to take on the complete EPCI(C) scopes. The client will typically rather enter into separate EPCI(C) contracts for various bundled parts of the scope to be performed – for instance entering one contract for the supply of turbines and another contract for a bundled part of the Balance of Plant (BOP) components, or by bundling together, for instance, cable supply, cable installation etc. Using such a strategy, which will entail fewer but larger contracts for the client than in a typical multi-contracting strategy, means that each of the EPCI(C) contractors (typically 3-4 EPCI(C) contractors for the entire project) have the responsibility to ensure a turnkey deliverable for its part of the total scope – and each of the EPCI(C) contractors must enter into contractual arrangements with its subcontractors, joint venture or consortium partners and others as required to ensure the fulfilment of such a turnkey obligation. Hence, an EPCI(C)-based strategy involves fewer interfaces to be handled by the developer and will often be preferred by smaller utilities/owners, private equity backed developers or various SPVs put together without having one particular owner taking on a management role (as such entities often will have less capacity and competence to follow up and coordinate interfaces).

It should be noted that irrespective of the contracting strategy chosen by the client, the client may aim to have the various suppliers coordinate themselves and take on material parts of the interface risk existing between their respective responsibilities. This may often be challenging as there may be limited opportunities for the suppliers to ensure and control such interfaces directly opposite the other suppliers.

4.2 OFFSHORE WIND CLIENTS' CONTRACTUAL EXPECTATIONS

A significant feature for offshore wind contracts is the preference for lump sum price formats and risk allocation that provides for price certainty.

A main reason for this approach is due to the financing model and support schemes for the project and the low and potentially long-term fixed margins, all resulting in limited options for recovery of cost overruns, as detailed above.

As the offshore renewable industry is still relatively young there are few standard contracts in use tailored for the typical types of goods and services to be provided in an offshore wind project. In the absence of alternatives and based on

As the offshore renewable industry is still relatively young there are few standard contracts in use tailored for the typical types of goods and services to be provided in an offshore wind project.

financing models and lenders requirements, the FIDIC Forms of Contracts, and in particular the FIDIC Yellow Book, have as mentioned above been commonly used, at least as a starting point. However, the FIDIC contracts were not designed for the offshore market and there have been challenges with a number of provisions and established practices which are not relevant or at least not targeted for offshore projects. Certain developers have hence adopted various contract models from the oil and gas industry as their starting point when tendering for offshore wind developments. However, in these circumstances challenges have been experienced with a number of provisions and established practices which are also not relevant for offshore wind projects or where the clauses dealing with a specific risk fail to meet the intent of the provision.

However, as the FIDIC Forms of Contract are widely accepted and applied by both developers and lenders, a basic understanding of the FIDIC concepts and principles (represented most commonly by the Yellow Book (YB)) may provide Norwegian suppliers entering the global offshore wind market with an advantage and a good starting point to understand the contractual risk profile and opportunities of an offshore wind project. To enhance this knowledge and understanding, this report contains a summary comparison of the standard wording of the Norwegian EPC contract for the supply of large components to the Norwegian continental shelf - NTK 15 - and FIDIC YB highlighting certain contractual issues requiring special attention. The included topics of the comparison are not aimed at being exhaustive but shall focus on the most important differences which suppliers should be aware of when tendering under FIDIC based contracts and in assessing and pricing the risks associated therewith. Under each topic a section is included addressing certain modifications which experience shows developers may have introduced to the standard formats or in more bespoke formats - and that suppliers should be particularly aware of before agreeing to a contract.

The FIDIC Major Works Contracts applicable for EPC(I) work, and most commonly used in the offshore wind industry, consist of the Yellow Book and the Silver Book (SB), the latter also referred to as the Turnkey contract. SB's intended use is for engineering, procurement, construction and installation of infrastructure projects, while YB's intended use is for design, construction and assembly of construction works. In most aspects of relevance to understand the general risk allocation between contractor and employer, SB and YB are similar, and we will thus focus on the YB which in most circumstances is also more relevant to use in a wind project. One should however be aware that there are some major differences between the two related to the SB placing the majority of risk on the contractor, primarily including design and design co-ordination,

Photo: Ørsted

along with any employer design. According to the YB however, the employer takes on more of the risks such as unforeseeable ground conditions, unforeseeable operations of the forces of nature and planning and environmental permits. Furthermore, the party who prepares the design takes on the responsibility for its defects. Please also note that although assembly (as referred to in YB) normally will imply a more limited responsibility than installation (as referred to in SB) as assembly may not necessarily include the full installation at site and hook up to adjacent utilities and facilities, the actual difference may not be material and will depend on the scope specified and agreed both under a YB contract and a SB contract. More information on the differences and intended scope of the FIDIC contracts may be found on FIDIC | Which FIDIC Contract should I use? | International Federation of Consulting Engineers.

As for any other typical industry developed standard forms of general conditions, the FIDIC conditions should be regarded as "one set" of integrated conditions that is thoroughly and consciously considered against each other to achieve a specific risk balance between the Employer (FIDIC's term for the developer/owner being the purchaser of the works) and Contractor (FIDIC's term for the supplier). At the outset FIDIC YB is intended to represent a fair and balanced risk/reward allocation between the Employer and the Contractor and is widely recognized as striking an appropriate balance between the reasonable expec-

A further essential element of offshore wind projects is that the supplier is required to meet a range of obligations regarding the quality of the work and subsequent performance of the deliverables.

tations of the contracting parties. If changes are introduced into such documents this may very well alter the entire balance of the risk/reward allocation, or even worse make certain elements of the contract inefficient or unworkable. Both developers and suppliers should hence be concerned with limiting the changes being introduced to the minimum required and then ascertain that such changes have no unintended impacts on other elements. However, as FIDIC explains "General Conditions prepared for use in a wide range of projects and jurisdictions inevitably require supplementing with Particular Conditions that address the particular requirements of the Site location, the unique features of the specific project and (usually) the Employer's preferences. It may be necessary for such PCs to amend the GCs to comply with mandatory Laws that apply to the Site or to comply with the governing law of the Contract. Provided that such modifications are limited to those necessary for the particular features of the Site and the project and the Employer's preferences do not violate the GPs, the Contract is recognizable as a FIDIC Contract." For an offshore wind project one such particular feature may typically be that operations and activities may be required to be performed offshore.

FIDIC has developed a set of Golden Principles addressing the concerns related to the use of FIDIC contracts with material and often coincidental amendments that may be found on their websites: _golden_principles_1_2.pdf (fidic.org).

Observed differences in risk allocation under FIDIC and NTK 15

A typical featured difference between FIDIC and NTK 15 is the allocation of risk for permits and authority approvals. These are provisions more developed in FIDIC compared to NTK, and are adapted into most offshore wind contracts. An offshore wind project typically involves construction and supply activities relating to both onshore and offshore work, which may impose a number of challenges with respect to multiple regulatory regimes being applicable and numerous authority approvals being required. In addition, as the developers typically are involved in several projects in several jurisdictions, they recognize the risk of the permit and approval issues in the different jurisdictions. Such challenges can involve issues such as seasonal restrictions for construction activities and permit and custom clearance requirements for the import of personnel and goods required for supply of the agreed contract object. The risk for permit issues will of course vary significantly depending on where in the supply chain the relevant contractor is placed, but such issues may in any event cause delays in the execution of the project and impact the logistics for all suppliers involved. One should therefore be very careful when drafting provisions allocating the risk and obligations for permit related issues, even though the individual may not be directly exposed to permit requirements.

Another feature that is materially different is the insurance and indemnity regime. As indicated above, part of the reason for this is a required or desired difference in the risk allocation designed to maintain cost predictability for the developer.

Another reason could also be that the different parties involved in the negotiations come from different industries and thereby lack a common reference point for how certain risks typically are dealt with. A good example of this is the "knock for knock" regime which is a well-established system for mutual indemnity and allocation of the obligation to take out the appropriate insurances within the oil & gas industry, at least in Norway, or the concept of Mutual Hold Harmless Deeds used in the UK aimed at providing for a similar risk distribution as the Norwegian knock for knock regime. The view of this system may be relatively different with developers not sharing the same industrial background and having a differently structured insurance program, and it is hence common to see a more fault-based indemnity system in offshore wind contracts.

A further essential element of offshore wind projects is that the supplier is required to meet a range of obligations regarding the quality of the work and subsequent performance of the deliverables. The most common feature observed is very stringent requirements of "fitness for purpose", execution in accordance with "good wind industry practice" and express provisions for testing and inspections rights. None of these will be unfamiliar to Norwegian suppliers, but in general the international contracts tend to place more risk on the suppliers than what they may be used to from contracts applied in the Norwegian oil and gas market.

In regard to the stringent obligations described above, it is also

commonly observed that the suppliers' defect and warranty obligations go far beyond what is considered as standard in the Norwegian offshore oil and gas market. These requirements must be understood against the background described further above about developers frequently planning for divestments of the asset from the beginning. By requiring and securing increased caps on liability, serial defect liability, extended defect notification periods, performance liabilities and "fit for purpose" defect liability a potential buyer or new investor may have sufficient comfort in the remedies offered under the supply contract so not to require any further extensive warranties and remedies from the divesting party. The latter may hence exit the project and investment without carrying continued contingent liabilities in its accounts. The result will typically be requirements for warranty periods exceeding 5 + years, liability caps between 50%–100% of the contract price, combined with broad exclusions from the agreed limitations of liability. In addition, performance liabilities are often required for products/supplies where the availability and reliability are crucial to the performance of the plant and are considered key income factors for an energy transmission investor. Performance Guarantees may be provided for availability, reliability, power losses or spare parts. The performance will usually be measured over a period of time and any failure to the agreed performance parameters may cause the contractor to be liable for performance damages, often in the form of predefined liquidated damages. Typically liquidated damages and a cap are negotiable. Caps vary in the range of 5-15% of total contract value and are often combined with the overall liquidated damages caps (including for liquidated damages for delay) which can be in the range of 25-40% of the total contract value.

Although FIDIC is drafted with the intention of being applied under various jurisdictions and legal systems, and hence is rather comprehensive in its wording, suppliers should note that the choice of governing law may impact on the interpretation and hence on the final understanding of the contract.

The comparison included in the following is from the outset comparing the two sets of contract formats from a Norwegian perspective.

Photo: Aker Solutions

4.3 MAIN CONTRACTUAL DIFFERENCES BETWEEN NTK AND FIDIC

This section provides an overview and explanation of main differences between NTK15 and FIDIC. The term "Employer" is used instead of client or owner/developer and "Contractor" instead of supplier as otherwise used in this document. This is to use the same terminology as used in the FIDIC contracts. Employer is the equivalent of "Company" used in NTK15. The chapter includes also other defined terms. Wherever there is a defined term, this refers to the definition in the FIDIC YB.

This section is organized by explaining the main differences related to various central contractual matters. Under each listed matter suppliers may find a description of particular matters, if any, to look for and be aware of when being presented an amended version of the FIDIC format.

Parties to the Contract

FIDIC introduces the Engineer in addition to Employer/Company and Contractor. The Engineer is appointed by the Employer and is a key person in the execution of the Work. One should note that although the Engineer is generally committed to act objectively and without prejudice to the Contractor in his decision making, he or she is acting on behalf of the Employer in relation to at least certain of its obligations. The Engineer's task will typically replace those of an Employer's representative for executional matters.

Alterations to be aware of

Employers may have appointed one of their employees as the Engineer, or the Engineer may have clear ties to the Employer. This eradicates the neutrality purpose. Hence, independent expert determination processes may have to be considered and included.

The regulations concerning the Engineer are sometimes changed to a simplified version. Parties should be aware that this may create ambiguities if not handled properly.

Design Responsibility

FIDIC contracts will in most cases include more comprehensive design development work which results in a greater responsibility on Contractor for the suitability and sufficiency of the design of the Work for its intended purposes. The purposes should preferably be unambiguously defined in Employer's Requirements, but this is not necessarily included. How such a "fit for purpose" requirement will be interpreted and applied may vary under various laws and local advice should be obtained.

Both sets of contracts impose obligations on Contractor to review the information provided by Employer for errors, defaults and defects. The provisions found in FIDIC contracts are however stricter, and in many cases Contractor's right to claim an Extension of Time and/or Cost is more limited as such right depends on whether "an experienced Contractor exercising due care" would not have discovered the error, default or defect prior to submitting the tender. Thus it is important to comprehensively review the Employer's Requirements before submitting a tender.

Alterations to be aware of

The time Contractor is allowed to perform the design and to review information may be short, while the time the Engineer is allowed to review Contractor's designs may be either unspecified or long. Such misalignments must be adjusted if required to maintain the assumed progress.

Employers may place responsibility on the Contractor for delay or extra cost incurred by its other contractors if Contractor is delayed with its engineering design or has to re-submit such. Engineer's sole discretion in rejecting the documents might lead to undue extra costs.

Site Data and Conditions on Site

Contractors that are used to the concept of rely upon information provided by Company under NTK, will find that the FIDIC contracts impose a different regime on this matter which represents an increased risk and cost exposure.

FIDIC imposes comprehensive obligations on Contractor in terms of a deemed regulation where Contractor – considering that is practicable – is deemed to have obtained all necessary information on various circumstances which may influence or affect the Tender or Work. He is further deemed to have performed various inspections, including of the Site and sub-surface conditions, and satisfied himself prior to the Tender on all matters relevant for the Work. For Contractor to be entitled to an Extension of Time ("EOT") and/or Cost compensation in case of encountering adverse physical conditions at Site such physical conditions must qualify as "Unforeseeable".

Being used to the NTK regime, the FIDIC conditions represent a different balancing and distribution of risk. The importance of thoroughly examining the information made available by the Employer in the Tender package must be stressed.

Alterations to be aware of

Employer may fail to attach all required information prior to Tender / contract signing. Rely upon information (RUI) list must be agreed if applied, but Contractor should be careful with warranting that RUI list is sufficient to carry out project.

Photo: Elly Bjerknes

Employers may include adverse weather qualifying as Unforeseeable (Sub-Clause 8.5) as Contractor's risk, i.e. preventing entitlement to EOT even if there is adverse weather. Contractor should also ensure that sea-state is dealt with as a part of any applicable weather criteria.

Subcontracting

Contractor's right to Subcontract part of the Work is somewhat limited and subject to the other party's consent under both FIDIC and NTK. Under both FIDIC and NTK, Contractor is, as a starting point responsible for the work and defaults of a Subcontractor as if such work or defaults were the Contractor's own, irrespective of whether said subcontractor is nominated by Employer or not. Under both sets of Contracts, Contractor is also responsible for the payment of any compensation Subcontractors may be entitled to pursuant to their subcontracts. Contractor must hence make sure to review the nominated subcontracts at the tender stage.

Alterations to be aware of

Under the FIDIC contracts the Employer may want to add in the Special Provisions that the Contractor shall ensure and warrant that all Subcontractors comply with any relevant provision of the Contract. How this shall be implemented must be carefully considered, in particular if the Contractor would like to use an existing supply chain based on established contracts.

Collateral warranty may be required from subcontractors (warranty issued to the direct benefit of the Employer/project financer). Alternatively, or also in combination with a collateral warranty, it may be required step-in rights for the Employer and/or the project financer. Experience show that collateral warranties primarily are required in UK projects. In other places it is more common to limit the requirement to implement step in rights.

Co-operation with Employer and Employer's other contractors

Contractor is obliged to cooperate with Employer and its other contractors both under NTK and FIDIC. Under FIDIC, Contractor must use "all reasonable endeavors" to coordinate its activities at the Site with those of other contractors. This implies a rather high expectation. Contractor may under certain conditions claim compensation for cost or time incurred in doing so under both contracts, but under FIDIC it appears that the obligations are somewhat wider, and hence its entitlements somewhat more limited, as the right to claim compensation for cost or time is limited to the situations where cooperation/coordination was Unforeseeable having regards to what is specified in the Employer's Requirement. The number of parties involved is often more extensive in offshore wind projects, and hence the obligation may also be more onerous in such projects. It will therefore be important to scrutinize what Employer's Requirements indicates and express with respect to what is expected in this respect.

Alterations to be aware of

Some contracts may be very specific on Contractor carrying extensive co-ordination and interface risks towards Employers' other contractors. Such schemes may introduce damages liability if Contractor causes delays or additional costs to incur under Employer's other contracts, e.g. in relation to Employer's marine contractor. (See also comment under section regarding liability for delay relating to a similar risk embedded in the FIDIC standard).

Progress reporting

The required progress reporting under FIDIC is more extensive than what is normally required under NTK. The most important difference however is that failure to comply may have more direct impact on entitlements to extension of time and costs under the FIDIC conditions than under the NTK regime. It will be required that particular administrative resources are assigned to the task. It may be practical to consider merging all reporting requirements into one set of requirements.

Alterations to be aware of

Employer may reserve a right to withhold payments in case Contractor fails to submit progress reports.

Liability for delay – acceleration measures and liquidated damages

Under both contract regimes, Contractor undertakes to implement necessary acceleration measures if progress of the Work falls behind schedule for reasons it is responsible for. Under FIDIC the Employer has a right to claim additional costs incurred due to Contractor's acceleration measures. A similar right is not found in NTK.

Contractor risks incurring pre-defined (liquidated) damages if it fails to meet the agreed (penalised) milestones for completion of the whole or parts of the work. Please note that although such damages are referred to as delay damages under FIDIC, they should not be confused with what is often referred to as general damages imposed to cover the actual loss incurred. The damages are predefined – or liquidated as one often says – and are hence nothing different from what is referred to as liquidated damages in NTK. The damages shall be capped and with regards to delay, these damages are the Employer's sole remedy. There is nothing that indicates that the daily penalties or the caps are higher under one regime compared with the other. It should nevertheless be noted that in some aspects the regulation in FIDIC is less favorable to Contractor, e.g. under FIDIC the Employer is entitled to deduct any incurred Delay Damages from Contractor's invoices and there's no claw back mechanism in the standard wording. Under NTK liquidated damages are not due until the Final Account and penalties linked to intermediate milestones may under certain conditions be clawed-back.

The rigid test programs, and time and risks related to procedures for retesting, must be accounted for in the scheduling.

It is also somewhat unclear under the FIDIC conditions whether liquidated damages (and potential termination) is the sole remedy for any delay or just for the Delayed Time of Completion. There may be a risk that Employer is entitled to other remedies, such as general damages under background law if Contractor is delayed in respect to other milestones or with the general progress, e.g. if such delays cause other contractors to incur delays or additional costs.

Alterations to be aware of

LD caps may be introduced at extensive levels. Levels tend to vary from typically 10-15% of the contract value, and in some instances may be higher.

Testing

There is no material difference between NTK and FIDIC with regards to the testing requirements. Contractors should however take note that there is a structural difference between the two, as the testing requirements and procedures found in FIDIC are included in the General Conditions as opposed to NTK where these are found in the appendices. Thus, under a FIDIC based contract any qualifications concerning testing must be made against the General Conditions.

FIDIC provide the Employer with severe remedies and sanctions in case of failures to pass Tests on Completion. This should be taken into consideration by Contractors tendering for FIDIC based Contracts. The rigid test programs, and time and risks related to procedures for retesting, must be accounted for in the scheduling.

Liability for non-conformities and remedial work prior to delivery

There are notable differences between NTK and the FIDIC conditions with regards to Contractor's liabilities and obligations in respect to non-conformities and remedial work prior to delivery.

NTK leaves it to the Contractor to remedy any non-conformities as it sees fit unless the Company issues a formal instruction. The FIDIC conditions prescribe much more involvement from the Engineer/Employer linked to formal procedural requirements and requirements for various approvals from the Engineer.

Further, the Employer is in some situations provided with a discretionary right to engage a third party to perform the remedial work at Contractor's risk and cost – prior to delivery. If Contractor fails to comply with the Engineer's instruction to perform remedial work, the work performed by the third party becomes Contractor's responsibility. If the Engineer instructs remedial

Photo: Jan Arne Wold / Equinor

work which imposes a greater burden on Contractor compared to Contractor's preferred/recommended methodology or approach to the remedial work, such instructions may (like any other instructions) constitute a variation to the work. Contractor may hence be entitled to claim Extension of Time or Cost under the ordinary variation regime applying for instructions.

Loss or damage to the Contract Object

There are considerable differences in the two contracts concerning the provisions governing potential loss or damage to the Contract Object / Work, Goods and/or Contractor's Documents in the period Contractor is responsible for the care of the Works (prior to delivery). Contractors will take on an increased risk and economical exposure related to these matters under FIDIC compared to NTK.

Under FIDIC the potential loss or damage to the Works is not subject to an Employer provided CAR-insurance which co-insures Contractor Group as it is under NTK. So, where NTK limits Contractor's economical exposure in case of loss or damage to the Contract Object to the deductible amount under Company's insurance or a pre-agreed amount, FIDIC does not include any similar limitation in terms of the financial exposure. As long as Contractor remains responsible for the care of the Works, and unless one of few exceptions takes effect, Contractor will carry the risk for the Works and must rectify any loss or damage to the Works for his own (unlimited) cost and risk. Contractor should and is obliged to procure insurance covering such risk.

Alterations to be aware of

In some projects, Employer may have decided to procure a CAR insurance covering all parties in the project. In such case it may be prudent to also look at the risk distribution in the contract to avoid double insurances.

Insurances

FIDIC imposes an increased burden on Contractor regarding insurance coverage compared to NTK. Amongst others, FIDIC establishes a requirement for Contractor to insure the Works for full replacement value plus 15% and to take out professional indemnity insurance, whilst NTK assumes the Works will be insured under Company's Construction All Risk insurance and does not contain any requirement for professional indemnity insurance.

NTK also specifies that Company shall be responsible for transport insurance. This will be for Contractor's risk and cost under the FIDIC provisions.

It is important to ensure that any increased costs for insurance is included for in the Tender. Professional indemnity insurance (as required under the FIDIC regime) might be a considerable expense. Under the FIDIC conditions, it may also be required to procure additional General Liability coverage if the risk of causing damages to other parts of Employer's project or to Employer's subcontractors is significant and such will not be covered by Contractor's ordinary policies.

Photo: Aibel

Under FIDIC, Employer is not obliged to procure any specific insurances. However, if Employer fails to procure necessary insurances there may be a risk that the Employer will not be able to fulfil its obligations (e.g. to indemnify Contractor) if severe damages or losses incur.

Warranty Period

If not otherwise agreed, the default Defects Notification Period (DNP) in FIDIC is one year from Date of Completion and may be extended by up to maximum two years. The Guarantee Period under NTK is two years after conclusion of the Delivery Protocol but will be extended with respect to any guarantee work by minimum one year after the date of completion of the guarantee work up to maximum two years after completion of the initial attempt to remedy the defect.

FIDIC does not contain a similar provision to NTK regarding Company's right to direct enforcement of guarantees provided by Subcontractors. Such rights may however follow from some background law.

Alterations to be aware of

It is not uncommon to see 5 years original warranty period, 5 or 2 additional years for re-work and a drop-dead date of 7 years or more from taking over. Also, it is not uncommon to see that Employer suggests "latent defect" or similar clauses with longer drop-dead periods. All such matters should be carefully considered with respect to cost and risk.

Further, it is also not uncommon to see inclusion of direct claim provisions with effects similar to the ones in NTK. In some situations, Employer may also be provided certain rights under Subcontractors' warranties also through step-in arrangements.

Warranty Obligations

Both under FIDIC and NTK, Contractor has an obligation and a right to remedy any defect or damage in the Works notified to the Contractor before the expiry of the DNP/Guarantee Period. The obligation to remedy is not qualified or limited, except under the agreed total liability cap for breach of Contract. Under FIDIC Contractor will also be obliged to remedy defects or damages for which Employer is responsible against a right to seek compensation for such remedial work through the Variation order regime. Contractor must make sure to provide timely notification if he wishes to be compensated for such remedial work.

FIDIC does not contain any exceptions for particular offshore costs etc., similar to what Contractor's may be used to from NTK.

Under FIDIC, Contractor has a particular obligation to indemnify and hold Employer harmless from consequences of acts, errors or omissions by the Contractor in carrying out the Contractor's design obligations that result in the Works (or Section or Part or major item of Plant, if any), when completed, not being fit for the purpose(s) for which they are intended. NTK does not contain any similar liability for Contractor, and design defects will hence be regarded similar to any other defects.

Both contract regimes contain limitations on other financial remedies being available to Employer. While Company may be entitled to damages for specific expenses in addition to the direct repair costs under NTK, FIDIC provides for certain rights to reduction in the Contract Price in case of unsuccessful remedy of the defect.

Both contract regimes include for a right for /Employer to terminate the contract if the defects are severe enough, but the consequences under FIDIC may be full repayment from Contractor of all payments received (if the defect or damage substantially deprives Employer of the benefit of the Work), whilst NTK lacks a similar provision implying that Contractor will be entitled to maintain payments for the Work already performed.

Alterations to be aware of

Employer may propose significant additional remedies in case of a defect. In some instances, one may see provisions regarding Serial defects (implying that a certain type of defect occurring with respect to one particular part/component may cause Contractor to have to replace/remedy all similar parts/components part of the Works), e.g. if the same type of defect appears on three wind turbine generators, Contractor may be obliged to change the relevant component in all wind turbine generators at the same site. Such clauses may result in a materially different risk exposure.

Liability for loss or damage to property and/or personnel

The provisions concerning potential liability for loss or damage to property or personnel in the FIDIC contracts and NTK are materially different. FIDIC does not apply a similar knock-for-knock regime as in NTK, where losses (and hence insurance interest) remain with the party who suffers the loss. Contractors tendering for a FIDIC based contract should be aware of a considerably increased risk and cost exposure related to such liabilities and procurement of associated insurances. As a minimum, Contractor should assess if applicable insurances held contain the required coverage.

The indemnifications under the FIDIC contracts mainly cover third party claims and risk for loss or damage to property or personnel, and these are mostly allocated to the party having

caused the relevant loss or damage. This may necessitate both parties having insurance coverage for the same assets-risks. FIDIC contains no specific regulation on the risk of pollution or removal of wrecks. Claims associated with pollution and removal of wrecks will hence be handled as any other third-party claims or any other claim regarding damage to property (or personnel). In this respect, Contractor risks an unlimited responsibility for pollution offshore unless qualifications are made, or limitations follow from applicable law.

Alterations to be aware of
Employers may require Contractor to enter into certain mutual hold harmless deeds with its other contractors. Contractor must consider such clauses carefully to ensure that the mutual hold harmless regime is consistently implemented.

Global limitation of liability

Both NTK and FIDIC contain a global limitation of Contractor's liability to be agreed on a case-by-case basis. Under FIDIC contracts the default cap on Contractor's total liability is the "Accepted Contract Amount" set out in the contract. One must expect that the Employer in many cases will require Contractor to take on an increased global liability cap compared to NTK, where the default cap has normally been 25% of the Contract price between Contractor and Company.

Employers may require Contractor to enter into certain mutual hold harmless deeds with its other contractors. Contractor must consider such clauses carefully to ensure that the mutual hold harmless regime is consistently implemented.

FIDIC contracts explicitly exclude certain liabilities and indemnities from the total liability cap. Such exclusions include Contractor's responsibility for the Employer's Equipment, for temporary use of Employer provided Utilities, and Contractor's indemnities in respect of violation of third-party Intellectual Property Rights, and loss or damage to property and personnel. NTK is structured somewhat differently as it does not have any explicit exclusions. However, the cap on liability in NTK only applies in respect of liability for "breach of Contract". Indemnifications may be held to be an agreed risk distribution not resulting from breach of contract, and liabilities occurring under such may therefore be excluded from the capped liability for breach of contract. In conclusion therefore, although there may be some differences depending on the situation, the general structuring of the limitations on liability under NTK and FIDIC may not be very different.

Alterations to be aware of
Extensive global caps may be suggested and may be proposed at levels as high as between 50 and 100% of the Contract Amount.

Consequential and indirect loss

With potentially two exceptions, there is no major difference between NTK and FIDIC contracts in respect of consequential and indirect loss. Under both contracts neither party shall be liable to the other party for indirect and consequential loss. However, the use of group-definitions known from NTK is not found in FIDIC contracts, which results in increased risk exposure from third party claims that would have been included in the "Employer Group" if group definitions applied.

Moreover, NTK has structured the exclusion as an indemnity enforceable irrespective of fault, whilst FIDIC has structured it as a mere limitation of liability subject to exception in case of fraud, gross negligence, deliberate default or reckless misconduct by the defaulting party. Under Norwegian law this may in reality not imply a material difference, except perhaps in case of gross negligence where it may be argued that the parties have explicitly agreed to set aside or at least limited the scope of the background law regarding "limitations on liability being unenforceable in case of gross negligence, fraud deliberate default or reckless misconduct".

Payment provisions

In both FIDIC and NTK the Contract Price is subject to change. Under NTK, Company has limited rights to make deductions, whilst retentions are fairly common under FIDIC. In accordance with FIDIC, Delay Damages are to be deducted as they occur, which can have a substantial impact on the cash flow. Under FIDIC, Contractor is furthermore expected to require interim

payments and should be cognizant of the time periods for the application and approval of payments from Employer. Generally, FIDIC applies a rather heavy administrative procedure regarding payments with long time-periods from processing of payment requests until payments become due. This should be considered carefully when agreeing on the payment schedule and evaluating cash-flow impacts.

Both FIDIC and NTK include strict procedures for final accounts and final payment where claims, counter claims and objections may be lost if not presented in time.

Alterations to be aware of
Employer may have added set-off rights for Employer's counterclaims, i.e. retention of undisputed amounts and no release until settled. Such matters may have large impact on cash-flow.

Often proposed back-loaded cash flow linked to milestone achievements that needs to be approved by lenders.

Security

In accordance with both FIDIC and NTK Contractor shall obtain a Performance Security/bank guarantee. The amount under NTK is usually around 10 % of the Contract Price, whilst the Performance Security under FIDIC is often a substantially higher amount.

Please note that the Performance Security required in accordance with FIDIC shall be issued by an entity and from a country to which Employer gives consent. This should be agreed prior to signing the Contract. In both contract regimes payments are conditional upon issuance of the guarantee. The content of the guarantee shall be agreed and will be attached to the Contracts. While NTK has no detailed regulation about how and when Company can make use of the guarantee, FIDIC includes for such provisions. Normally, the guarantees will under both regimes be of an on-demand type.

Under both regimes, the bank guarantee is often combined with a requirement for a full Parent Company Guarantee to be issued by Contractor's ultimate parent company.

Alterations to be aware of
May be suggested three securities in addition to PCG: advanced payment, performance bond and warranty bond. Standard rating requirement of issuer may be as high as S&P A- or equivalent. Size may vary from 15% and all the way up to 50% on performance bond and half for warranty bond. Detailed requirements for replacement of securities if bonds or novation of bonds to transferee of Employer are not valid.

Photo: Aker Solutions

Force Majeure

Both NTK and FIDIC contracts recognise a right for the parties to claim relief in case of events known as Force Majeure, or "Exceptional Events" which is the equivalent to Force Majeure in the FIDIC contracts. The definitions of the terms are very much aligned, with the addition that for a circumstance to be considered an Exceptional Event under FIDIC the circumstance must not be "substantially attributable to the other Party". The assessment of whether an event qualifies as "Exceptional" is subject to the interpretation of wording such as "reasonable" and "substantial" therefore the interpretation of the contracts may very much depend on the agreed subjective law applicable to the contract.

Under FIDIC it is sufficient to terminate the Contract that an Exceptional Event has prevented execution of the Work for 84 days in comparison to NTK which requires 180 days. Under FIDIC, if Contractor's performance of the Work is prevented by Events listed in Sub-Clause 18.1 (a) to (f) (e.g. war, terrorism, natural catastrophes etc.) in the Country (i.e. the country in which the site of the project/development is located), Contractor is entitled to payment of incurred Costs in addition to an Extension of Time. There is no similar provision in NTK. However, under NTK Contractor will be entitled to compensation of certain costs if the work is prevented by Force Majeure invoked by Company.

NTK also accounts for the particular effects Force Majeure may have related to marine operations, whilst FIDIC does not cater for such. Under NTK, Contractor is entitled to compensation for the additional costs incurred in relation to certain marine operations being impacted by Force Majeure.

Change of law

There are differences between the "change of law" provisions found in NTK and FIDIC contracts that may impact on Contractor's risk exposure. Most notable from a Contractor's perspective is the limitation of applicability of the change of law provision under FIDIC due to a stricter definition of the term "Site".

According to NTK, "Site" comprises all places where the Works are executed. In FIDIC, "Site" is limited to the place where the Permanent Works are to be executed and Plants and Materials are to be delivered, therefore, places where Contractor manufactures Goods or performs several other activities will not qualify for adjustment in case of a change of law event.

On the other hand, it is possible to argue that the causal requirement found in FIDIC contracts is more beneficial to Contractor as the wording only requires that the delay or increased costs is a "result of any change in Laws", whilst under NTK the change of law must have direct impact on the requirements for the Work or the execution of the Work. However, note that this is subject to interpretation under applicable law which provides uncertainty to how this condition will be considered. Note also that if any change of laws necessitate any adjustment to the Work, the Engineer must be notified.

Performance guarantees and performance damages

FIDIC contracts are based on Contractor providing the Employer with guarantees for the performance of the Works and/or Plant in the Schedule of Performance Guarantees. If the Work does not fulfil the given guarantees this can be sanctioned with Performance Damages. Employers usually require Performance Guarantees related to both the availability and output. The contract does not include a specific cap on the Performance Damages, which implies that the only limitation of potential liability for such damages is the total liability cap discussed above.

Contractors tendering for FIDIC contracts must be aware of the impact of having to provide these guarantees, both the potential impact on the design of the Work as such and the potential increased cost exposure if the guaranteed performance is not met.pact on the design of the Work as such and the potential increased cost exposure if the guaranteed performance is not met.

Variation order regime/instructions to perform work

Employer may in accordance with both sets of conditions order or instruct changes to the agreed scope of work under the Contract. Under NTK Company's right to discretionally order Variations is limited to what the Parties reasonably could have expected upon entering into the Contract. Under FIDIC Contractor may have a similar right to object if the Variation was unforeseeable with reference to the scope and nature being described in Employer's Requirements. In addition, Contractor may under FIDIC object to the instruction if the Variation, causes non-compliance with applicable laws, adversely affects the safety of the Works or Contractor's ability to comply with the required HSE requirements, will have an adverse impact on Contractor's achievement of the Schedule of Performance Guarantees or the obligation to complete the Work so that it shall be fit for purpose or if the Goods required to perform the Variation are not readily available. Contractor should however note that if the Engineer disagrees with Contractor's objection, Contractor shall still execute the Work.

Under both sets of conditions, certain time limits are placed on Contractor for notifying Company/the Engineer in order to preserve its rights to an adjustment of the Contract Price or to an extension of time resulting from an instruction (that is not issued in a Variation Order (NTK) or stated by the Engineer to be a Variation (FIDIC)).

Both in accordance with FIDIC and NTK, Company must comply with certain procedural provisions as set out in the Contract for an instruction to be valid. Any changes to the original scope, that have an impact on time and/or cost gives Contractor a right to appropriate compensation in terms of price adjustment or extension of time.

Under NTK both disagreements regarding time and cost shall be submitted to arbitration within certain time-limits, if not the estimated consequences as set out (by Company) in the VO shall be considered final.

In accordance with FIDIC there is no time-bar in relation to the settlement of disagreements regarding time and/or cost. If the Parties fail to agree, The Engineer proceeds to agree or determine the question. Until such adjustments are agreed or determined, the Engineer shall assess a provisional rate or price for the purposes of Interim Payment Certificates. The Engineer is obliged to act unbiased in its determinations and assessments, but in practice it is difficult to be a neutral party while at the same time being a representative for the Employer.

Regardless of any disagreement between the Parties regarding compensation/EOT, Contractor must under both sets of contracts implement the variation to the work.

Both standard conditions include certain provisions on how impacts of a Variation shall be calculated and documented. Contractors should be aware of FIDIC's rather strict requirements on Contractor to keep contemporary records, i.e. records that are prepared or generated at the same time, or immediate-

Suppliers should be aware of international standard contracts and industry's contractual expectations.

ly after, the event or circumstances giving rise to the claim, cf. sub-clause 20.2.3.

Both under FIDIC and NTK the Variations regime also applies to certain other circumstances resulting in changes to the Work. However, to some extent the two sets of conditions have some practical differences on how to deal with for example, Employer's breach of contract.

Alterations to be aware of

If project financed, Lender's representative may have to approve any Variations or additional compensation or EOT to be approved by the Engineer. Please note that this may result in a rigid system limiting flexibility needed to ensure rational decisions in order to secure effective operational progress in the project.

Dispute resolution

In accordance with FIDIC any disputes between the Parties shall be settled by the Engineer. The Engineer shall consult with both Parties in an attempt to reach an agreement, if such agreement cannot be reached the Engineer proceeds to determine the issue. Note that strict time limits apply. If either Party is dissatisfied with the determination the matter may be referred to a Dispute Avoidance and Adjudication Board (DAAB), which is appointed by the Parties. In complex or long-lasting projects, it is highly recommended that the Parties agree on a "standing DAAB" at the start of the Contract, who visits the Site on a regular basis and remains in place for the duration of the Contract. Contractors should be aware that determinations made by the Engineer shall be final and binding on the Parties if a Notice of Dissatisfaction (NOD) has not been filed within 28 days after the dissatisfied Party received the determination. Decisions made by the DAAB are binding and final unless a NOD has been issued within 28 days after receiving the decision by DAAB. If the Parties cannot reach an amicable solution with regards to the NOD within 28 days after the day on which the NOD was issued – referred to as the cooling-off period- then the issue shall be finally settled by arbitration.

Under NTK and regarding the question of whether the Work covered by a Disputed Variation Order (DVO) is a part of the Work, each of the Parties may request that the issue is provisionally decided by an expert. As for the Engineer's decision under FIDIC the expert's decision will become final unless one of the parties commence the ordinary dispute handling mechanisms within a certain time period. The expert may however not decide on any consequences regarding time and/or cost, while under FIDIC the Engineer may decide also on these questions. Regarding any other disputes, the Parties may under NTK

Photo: Ørsted

agree to appoint an arbiter or mediation panel to assist the Parties in resolving such dispute, referred to as Project Integrated Mediation – PRIME. The purpose of PRIME is to assist the Parties in reaching an amicable solution. Any dispute which is not solved amicably between the Parties shall be settled by arbitration, unless the Partis have agreed otherwise.

The Dispute Resolution regime under FIDIC may appear to be more comprehensive than under NTK, nevertheless it is assumed that the strict regime and the applicable time limits under FIDIC results in decisions being made in a timelier manner.

Alterations to be aware of

The DAAB regime may be deleted by Employers, without adding any other alternative dispute resolution regime. If combined with the Engineer being a potential biased Employer representative, this may cause numerous disputes to be required handled through arbitration.

Further changes to the dispute resolution mechanism may be introduced. The supplier should pay attention to the arbitration rules, venue and governing law as this all may have an effect on risk and costs (time for arbitration may vary depending on rules).

4.4 Intellectual Property Rights

As in all other industries, protection of intellectual property rights ("IPR") and other proprietary information is of importance to both clients and suppliers in the offshore wind industry.

In general, the contractual positions in the offshore wind industry as regards IPR appear to be very much similar to what is common in the oil & gas industry. One observation however is that the international offshore wind industry has not traditionally had the same focus on supply chain development as has been the case for example in the Norwegian offshore oil & gas industry, where funding and user rights are closely interlinked. In the various types of contracts observed there is a relatively standard regulation of rights to background and foreground IP. The same applies to other technological information such as know-how.

The main differences between offshore wind and oil & gas contracts normally relate to how rights to transfer, sublicensing and disclosure of confidential information are regulated. Even though the latter relates to a slightly different issue than IPR, these issues are still of importance for what is seen as the main concern for the supplier: protecting its technical and commercially sensitive information. One reason for these differences is the existence of a significant number of "third parties" involved in an offshore wind project compared to a typical oil & gas project. These may be financiers and their advisors in the phase prior to financial close, and the lenders technical advisors in the execution phase. Normally, these will require the right to review all details of the project, including all technical information from the suppliers. Even though confidentiality obligations are put in place, there is always a risk of later misuse of this technical information which is difficult to control, in particular if these third parties are direct competitors in the same industry.

As mentioned earlier, step-in rights and relatively wide assignment rights in project financed offshore wind projects may result in contractual positions, including licenses to technology granted to the original developers, being assigned to third parties without the supplier's approval.

Wind farm developers may also receive funding through various investment support and innovation schemes. For a number of these (e.g. Enova), some level of public reporting, transfer of know-how and dissemination of results will be required. In relation to all of the issues above -it will be of importance for the supplier to understand how his Intellectual Property may be used and shared before deciding on the right strategy for protection of his own rights.

5 Cooperation Models

To mitigate certain contractual expectations an offshore wind developer may present, suppliers may have to carefully consider how to arrange its execution and cooperation with the supply chain.

This section provides an overview of different types of contractual cooperation models available for the supplier.

Suppliers' need to cooperate will to a certain extent depend on the client's contracting strategy, as described in section 4.1 above. The need for coordination between suppliers delivering different parts of the total scope will be greatest if an EPCI(C)-based strategy with turn-key elements is chosen. But even in cases where the client follows a multi-contracting strategy, the client and certain suppliers will often rely on the cooperation between their respective suppliers on the same or different levels of the value chain. Various types of cooperation may also provide various ways of offloading particular risks or complying with particular technical or financial requirements.

As there are advantages and disadvantages with each of the cooperation models compared to other models, different suppliers may have different preferences. The choice of a cooperation model will therefore depend on the concrete circumstances of a project and the market conditions as well as the bargaining power of the parties involved.

5.1 SUBCONTRACT

Description
Subcontracting, supply, procurement and sourcing are words describing the same concept; a delivery to the main contractor, in connection with such main contractor's delivery to the client. Even though the above-mentioned words are not defined terms, it is fairly common in the industry to differentiate between procurement and subcontracting.

- Procurement: Generally used to describe supply of "standard" equipment and materials, bulk or off the shelf. In such cases, general conditions for purchase – on a standalone basis or included in a frame agreement – often governs the procurement/purchase in question.
- Subcontract: Generally used to describe projects in which a subcontractor performs a specific scope of work defined by the main contractor – e.g. the offshore installation scope or the engineering, procurement and construction (EPC) of a firefighting system to a converter platform.

Types of subcontracts
Tier 1 Contractors with on-going projects within offshore wind apply a variety of different types of subcontracts, generally varying the contracts used based on the subcontract scope in question. The types of subcontracts used the most are:

1. Subcontracts for major scope, based on a back-to-back approach
2. Subcontracts for supply of standard equipment and materials
3. Subcontracts for major scope with shared incentives/risks

Advantages
For the client, one advantage of entering into a "traditional" contractual setup with one general contractor, (who in turn will enter into subcontracts with various subcontractors) is that the client will only have to deal with one contractor directly.

For the main contractor and subcontractor(s), an advantage of entering into a "traditional" subcontract setup, as opposed to other cooperation models such as a Joint Venture (JV) or Con-

sortium, will be that a defined and specific scope of work from the main contract can be "outsourced" to the subcontractor in question – allowing the subcontractor in question to focus on its part of the scope. Further, for the subcontractor such a contractual setup it is an opportunity to participate in a project together with another contractor without having to comply with or fulfil all requirements set from the client (which will be required in a JV or Consortium setup) – instead focusing on the fulfilment of the scope set out in the subcontract.

Another advantage, for both contractor and subcontractor, of a "traditional" setup is that it will often be much more complicated to exit a JV, Consortium or Alliance than it will be to exit a traditional subcontract setup.

Disadvantages

A potential disadvantage for the client in a traditional contractual setup with one main contractor, which in turn will enter into subcontracts, is that the client will only be directly involved with one of the companies executing the scope in question – thus reducing somewhat the client's opportunity for following up directly on parts of the scope which are executed by subcontractors.

A potential disadvantage is that an EPCI(C) contractor may need to take on responsibility and risk for scope it is not necessarily familiar with.

Another disadvantage for the main contractor is that a traditional setup with subcontracts may contribute to margin stacking in the delivery chain (compared to the situation in, for example, a consortium or JV), as mark-up will have to be added on subcontractor(s)'s deliveries in order for the main contractor to have the required profit on the total contract value of the main contract. The same applies to risk and contingencies priced in. This may, in turn, result in the main contractor not being sufficiently competitive in its tender towards the client – or in the project not being sanctioned by the client due to the cost being too high.

Risks

The traditional contractual setup with one main contractor, which in turn enters into subcontracts, is a traditional one – which most companies in the industry will be familiar with. However, as it is indeed a traditional setup, one risk will be that potential gains in terms of efficiency, lower contingencies throughout the value chain etc. may be more difficult to obtain than in, say, a Consortium or JV.

A potential disadvantage for the client in a traditional contractual setup with one main contractor, which in turn will enter into subcontracts, is that the client will only be directly involved with one of the companies executing the scope in question.

5.2 SUBCONTRACT – LIMITED SCOPE

Photo: Aker Solutions

Description

As mentioned in Section 5.1 above, it is common to differentiate between procurement and subcontracting – with the latter being used generally when a subcontractor performs a specific scope of work defined by the main contractor. In such a situation, where a major part of the main contractor's scope shall be performed by a subcontractor, the main contractor will often have a particular incentive to ensure that the subcontract entered into reflects the main contract with the client – both in terms of provisions pertaining to the execution of the work and in terms of risks, liabilities etc. The means for ensuring this will generally be to enter into a so-called "back-to-back" subcontract, where the terms and conditions that apply in the main contract are "mirrored" and used between the main contractor and the subcontractor. For example: If the contract with the client is based upon NF/NTK 2015, it is common to use NIB 2016 as basis for the subcontract the scope to be performed by the subcontractor.

Other particulars to note in respect of a back-to-back subcontract setup:

- The intention of such a setup is to ensure that the subcontractor has the same undertakings related to liability for delays, defects and damages etc. towards the main contractor as the main contractor will have towards the client.
- The use of the term "back-to-back" with regards to subcontract obligations is not a precise term, as the obligations undertaken by subcontractors are in most cases less than the obligations undertaken by the main contractor – reflecting both that the main contractor will have a broader scope to perform than the subcontractor as well as the fact that the caps on liability etc. from the main contractor will have a higher monetary value due to contract value of the main contract being higher. Attention needs to be paid to clauses establishing time limits for presenting claims such as for variations originating in the subcontractor's scope. If the subcontract introduces the same time limits as the main contract (e.g., 21 or 28 days after the relevant instruction), the main contractor may be left with no time to forward the claim to the client. Allowing the main contractor more time could on the other hand deprive the subcontractor of any practical means to present the claim because the time allowed would be too short.

Advantages

Examples of advantages of a back-to-back subcontract:

- It ensures, at least to a certain extent, that the subcontractor will have the same undertakings related to liability for delays, defects and damages towards the main contractor as the main contractor will have towards the client.
- Especially for subcontracts pertaining to major parts of the scope, it will be important for a Tier 1 Contractor to ensure that the requirements from the Main Contract are reflected in the subcontract, as well as to ensure that the subcontractor in question carries a proportional share of the risk involved with the completion of its scope (in terms of LDs, liabilities etc.).

Disadvantages

For the main contractor, one disadvantage will be that the obligations/risks undertaken by subcontractors are in most cases less than the obligations/risks undertaken by the main contractor in respect of the scope in question and the risks attached thereto.

Examples in that respect are:

- Where the subcontractor has capped its total cumulative liability to 100 % of the subcontract value, the monetary amount of this value will be less than the main contractor's exposure for the situation in question – even if the main contractor has the same cap of 100 % of its contract price in the main contract.

- The same applies when the client and main contractor have agreed liquidated damages; the main contractor will then have full schedule responsibility for the subcontractor's performance while only being able to claw back part of the liquidated damages for which it risks being responsible towards the client for delays caused by the applicable subcontractor.

From the main contractor's perspective, it will therefore be important to ensure i.a. that:

- That Liquidated Damage (LD) milestones for subcontractor(s) are on critical path, i.e. ensuring that as much of the LD exposure as possible is passed on to the subcontractor(s) in question and that float (extra time) is included in setting that milestone.
- That the warranty period for subcontractors does not expire before the main contractor's warranty period does, for instance with a final "drop-dead" date that is the same as main contractor's "drop-dead" date for warranty obligations towards the client.

Risks

Using a back-to-back approach in respect of subcontract(s) means that the main contract entered into with the client must be reflected properly in the subcontract(s) to be entered into by the main contractor – to avoid to large "gaps" in terms of execution and responsibility/liability for the work scope to be executed under the main contract and subcontract(s) respectively.

5.3 SUBCONTRACT (SHARED INCENTIVES/RISKS FOR MAJOR SCOPE)

Description

This section 5.3 pertains to situations where the main contractor and subcontractor have agreed to include certain elements related to compensation/incentives/risks. The purpose of this will be to ensure that even though the contractual setup is within the frame of a subcontract, there are certain shared incentives/risks that will encourage the parties to strive for the most cost-effective possible way of performing the subcontract scope in question. Except for such shared incentives/risks, the advantages of the subcontract (back-to-back) model will be as explained in section 5.2 above.

Advantages

Advantages of introducing a scheme for shared incentives/risks include:

- Will allow the parties to move away somewhat from the traditional main contractor – subcontractor setup, thereby achieving some of the potential gains seen in other cooperation models such as Joint Ventures (sections 5.4 and 5.5 below) and Consortiums (section 5.6 below)
- One such potential gain will be a potential reduction in the contingencies usually included when subcontracting a specific scope.

Disadvantages

Disadvantages of introducing a scheme for shared incentives/risks include:

- As opposed to cooperation models such as Joint Venture and Consortium, a regular subcontract setup lacks specific mechanisms for ensuring trust and building a "same boat" culture (less us/them) in respect of the specific project.
- This may, even though the parties have financial incentives towards delivering on time and below costs, reduce somewhat the chances of achieving the objective(s) sought by the introduction of shared incentives/risks.

Risks

As a regular subcontract setup lacks specific mechanisms for ensuring trust and building a "same boat" culture (less us/them) in respect of the specific project in question, there is a clear risk that the potential upside of shared incentives/risks will not be fully achieved. And on the other hand, trusting that the joint interests will prevail should not entail removing mechanisms designed to sort out the unavoidable conflicting interests likely to emerge if project funds run unexpectantly low or progress becomes a crucial issue at some stage. Striking this balance may be the greatest challenge in constructing the "same boat" concept by contractual means.

5.4 JOINT VENTURE (JV) - INCORPORATED ENTITY

Description

JVs may be established for general business purposes or as a special contracts vehicle for specific projects. Here we are covering a joint venture for a specific project, which is a business arrangement in which two or more parties agree to pool their resources for the purpose of accomplishing a specific task or project.

JVs can take many forms and establishing a company/incorporated entity is one of them. Each partner is a shareholder with limited liability for the company's obligations. However, the limitation of liability may only be structural as the shareholders will most likely be required to provide parent company guarantees. By its nature it is an exclusive arrangement between the parties but there can be exceptions. It is governed by the relevant private limited liability companies act and rules. Run as a normal "company" with a board etc.

Photo: Ørsted

It is important to have a clear exit strategy prior to formalizing the JV.

Type of contracts:
There are various types of contracts that would be drawn up in the case of a JV, some of which are below:

- JV agreement between the partners
- Contract with the client for the project
- Subcontracts for services

Advantages

- A JV in the form of an incorporated entity is fully joined up in front of client and both partners share in the success of the full project.
- There is of course the advantage of a lower selling price than a traditional subcontract where a JV avoids profit on profit or risk contingency on top of a subcontractor's risk contingency. There is also transparency between the partners. This is important and predicative of the selling price.

If required, the JV entity may be used on more than one project and can directly employ resources.

Disadvantages

- An incorporated JV can be complex and fully joined up legally. Tax considerations have to be carefully checked as both partners share in the losses of the full project
- There are also administration costs as it is run as a normal company with annual reports to be filed.
- In Norway it appears that an international contractor's Norwegian corporate tax liability cannot be consolidated (tax is done at JV entity level).
- The parties must also check anti-competition rules as these may hinder the setting up of a JV.

Risks

- Any major decisions have to be approved by both parties which might take time
- For the sub-supplier, liability is up to JV share value and this may be a hindrance in terms of risk for the whole project.
- There is full transparency regarding costs and mark-ups that is dependent on a high level of trust. If trust during project execution deteriorates it can obstruct good project execution.
- The exit strategy may not be straightforward if there are claims from clients, rework etc). The original planned exit may be delayed sometimes for years until all claims are settled.

5.5 JV – PARTNERSHIP

Description

- A partnership is a formal arrangement by two or more parties to manage and operate a business and share its profits.
- Partnerships are registered in relevant jurisdiction and create a separate legal person. The registration allows both parties to consolidate with affiliated entities.
- The Partners will have 100% joint and several liability to

all third-party creditors to the Project, including the client, sub-contractors and supply chain
- Any bids/projects will be on an "open book" basis and all profit, costs, risks and liabilities will be split in accordance with an agreed percentage split, but liability can be capped at the parties' respective participation interest
- There is not a need to have direct employees, but each partner may opt to supply resources to the partnership from their respective base organisations.
- In Norway, General partnerships (ANS) are governed by the Partnership Act
- It is fairly common for a steering committee to be set up that the Project Manager reports to and such steering committee helps make any major decision that the Project Manager needs advice on.

Types of contracts

Some of the main contracts required would be:
- Joint Venture Agreement between the Partners
- Partnership agreement as per the country's Partnership Act
- Main contract between the client and main contractor
- Subcontracts for services

Advantages
- There is a fully joined up approach before the client. Commercial model of sharing liabilities and profit/loss with no limited liabilities except as provided by the client contract.
- It provides a greater profit opportunity whilst maintaining a balanced risk profile and thereby a more competitive offer to the client.
- It is also relatively easy to set up with often a minimum capital inclusion and is less complex than an incorporated entity.
- There is full transparency between the partners.
- The Parties continue to be separate legal entities but often the Partnership laws allow pass through / consolidation of tax liabilities to parent companies.

Disadvantages
- It is often necessary to have trust and build a "company" culture (less us/them) as essentially two base organisations will continue to provide resources and input into the partnership.
- There is a separate VAT registration in Norway & perhaps in other countries – this is to be carefully checked by a tax advisor in the relevant jurisdiction.
- There is a new legal entity created and therefore related administration follows. Most large conglomerates try to avoid setting up legal entities and this may be considered a disadvantage.
- Insurances may need to be purchased for the project.

Risks
- There is joint & several risk towardsm, which might be a risk for the "smallest" part of the partnership
- If exclusive arrangement, anti-competition issues may arise
- There can be a complex contractual framework & contractual liabilities to each other, client and subcontractors.
- The JV is most likely not controlled by subcontractor
- Lack of trust between the partners during project execution can help obstruct deliveries in the project thereby leading to erosion of trust from the client.

5.6 CONSORTIUM – UNINCORPORATED JV

Description

A consortium usually describes a contractual relationship in which two or more companies agree to work together for a specific project. Each consortium member takes over the responsibility for a part of the total works to be provided to the client, which it then executes more or less autonomously.

Types of contracts

A consortium can be formed as an open consortium or as a silent consortium. The most important difference between the two forms is the legal relationship with the client (external relationship):

1. *Open Consortium*
   In the case of an open consortium the client contract is entered into between the client and all consortium members. All members of the consortium are jointly and severally liable for the performance of the contract. Generally, one consortium member is appointed by the other consortium members as the consortium leader for managing the contract with the client. Usually, the consortium leader has the authority to conduct negotiations for the members, however cannot enter into any binding agreements on their behalf.

2. *Silent Consortium*
   In the case of a silent (or internal or undisclosed) consortium the client contract is entered into between the client and one of the companies involved as the main contractor. In this less frequently used model only the main contractor is party to the client contract and is liable to the client for fulfilment of the contract. For those supplies and services, the main contractor is unable to render itself, the main contractor forms a silent consortium with other companies. The "silent" members are not liable for the fulfilment of the contract in the external relationship. However, with regard to the internal relations, the regulations and risk allocations are almost identical to those of the open consortium. In particular, the silent members alone are internally liable for the

fulfilment of their scope as if they had concluded a contract with the Customer directly. They bear the complete technical and commercial risk related to their scope.

Advantages

The main advantages of an (open) consortium model typically is:

- Less subcontracted works typically lead to lower risk contingencies. Also, the consortium reduces margin stacking in the supply chain. Both effects typically result in a more attractive offer for the client in case of a consortium model compared to a subcontracting model.
- The volume/scope or complexity of the project requires a splitting of risks (resulting in smaller liability deltas, better terms for securities, joint bearing of interface risks, etc.), creates the necessity to combine technical expertise and/or exceeds the capacity or means of production of a single company (e.g. in procurement).
- Sometimes clients request that manufacturers of key components are direct parties to the main contract in order to be able to directly approach them in case of problems.
- In some countries, local contractors have a preferential status, in particular due to "government policies" in the course of public tendering processes. In such countries market entry is facilitated by teaming up with local partners.
- An open consortium can have tax benefits by avoiding (double) taxation in the project country, in particular due to the possibility to split the scope into on- and offshore services.

Disadvantages

The main disadvantages of an (open) consortium model typically is:

- The joint and several liability of the members of an open consortium implies an increased risk exposure for its members. A member may take external responsibility for design, interface and performance of technical solutions which it does not control.
- Limitations of liability and liquidated damages or penalties under the main contract with the client are usually based on the overall contract value and not on the proportionate value of the scope of the respective responsible consortium member.
- Internal claims under the consortium agreement for indemnification, damages or cost compensation depend on the creditworthiness and proven ability to properly perform of such partner.
- If a member is not the leader of the consortium, trust in and control of the consortium leader is of the essence. Unapproved concessions made by the leader to the client on a unilateral basis might bind the other consortium members in their relationship to the client.
- The internal alignment in a consortium requires mutual consent during bid submission and contract performance. In course of the project realization, the members may follow contradictory interests. The handling of any resulting conflicts may require substantial efforts.

Risks

Since the consortium members are jointly and severally liable for the performance of the contract, it can lead to an unreasonable liability risk in the external relationship if the share of one member is too small compared to the total value of the client contract. Therefore, the ideal consortium does not have more than three members, with sufficient financial strength and nearly equal shares of work.

5.7 ALLIANCE MODEL

Description

An Alliance usually describes a contractual relationship in which two or more companies agree to work together for a number of projects / portfolio of projects (as opposed to a Consortium, which is normally limited to a specific project). Typically, an Alliance will be entered into between the client and two or more contractors. Such contractors will in turn be responsible for a part of the total work to be provided to the client and undertakes to execute its part of the scope more or less autonomously under the Alliance Agreement.

It should, however, be noted that certain players in the offshore wind market also use "alliance" to describe a contractual collaboration between two or more contractors that offer their joint products and services to multiple clients, without the client being part of the "alliance" in question.

Hence, the term "Alliance" is not an altogether precise term, as it can be used to describe both cooperation between the client and two or more contractors as well as cooperation between two or more contractors only (without involving the client).

Types of contract

As for JVs or Consortiums, the setup of Alliances may vary greatly. Quite often, however, an Alliance Model will be set up with an overriding Alliance Agreement between all parties involved in the Alliance with separate underlying contracts being entered into between the client and the respective Alliance members.

An Alliance Model typically includes some of the following features:

- Each Alliance contractor is responsible for performance

Photo: Fride Moen

of the parts of the Alliance work allocated to it under the respective underlying contract(s) – i. e. its own scope. Conversely, each Alliance contractor also has the warranty obligation for its own work.

- Mechanisms for ensuring shared risks/incentives, such as:
  - Compensation; pain/gain share regime
    - Target price(s) to be established in joint collaboration between all parties for each project in the portfolio to be executed
    - Cost underruns to be shared between all Alliance members in proportion to the risk and size of each member's scope etc.
    - Cost overruns to be shared in accordance with detailed arrangements set out for the respective Alliances
  - No-change philosophy (changes to the work shall be avoided to the extent reasonably practicable)
  - Adjustment in terms of responsibility for delays and defects
    - Client not being entitled to LDs
    - Client not being entitled to compensation for defects (re-work being the relevant remedy)

Advantages

The main advantages of an Alliance model will be as for the consortium model (ref. section 5.6 above), however having a larger number of projects / portfolio of projects will give the Alliance members a certain foreseeability in terms of pipeline going forward – which in turn may (to the extent that future projects are likely to be sanctioned) incentivize them towards making necessary investments in respect of material, resources etc. needed to execute such a portfolio of projects.

Each party's project organisation will learn to know each other through all phases of each of the projects. Thus, lessons learned from the previous project can easily be reused between the Alliance members.

Disadvantages

As an Alliance is meant for a portfolio of projects to be executed within the Alliance setup it is even more important that the contractors entering into such an Alliance are confident that the setup is viable both from an operational and economic perspective.

If the Alliance partners lack confidence in the Alliance and the other partners, it will be an unhappy marriage preventing the partners to seek other opportunities.

Risks

The main purpose of an Alliance Model is to create a relationship that is not entirely project-specific but shall instead be based on a broader/larger portfolio of projects. Hence, the model more or less depends on cooperation between "proven" partners, i.e. companies that have worked together previously on such projects and are confident that the execution of future projects between the same companies (Alliance partners) will enable the delivery of projects at a cost that is competitive in the market.

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