

# **DECOM NORTH SEA and SOCIETY OF UNDERWATER TECHNOLOGY** **SALVAGE AND DECOMMISSIONING – REVIEW OF NEW CONTRACT TEMPLATE OPTIONS**

## **Executive Summary**

Decommissioning is an obligation and liability rather than an activity with intrinsic value to the operator.

To date, only approximately 10% of the facilities installed in the UK North Sea have been decommissioned. Many fields still offer great potential and will remain profitable as a result of improvements in technology and innovation, creating the opportunity to delay Cessation of Production (COP), or commingling assets, resulting in maximising recovery. As such, there are still opportunities for new entrants to the North Sea oil and gas market. Nevertheless, the UK Continental Shelf (UKCS) is likely to remain the largest decommissioning market in the North Sea for some considerable time. Annual decommissioning expenditure in 2016 amounted to £1.2 billion and this is forecast to remain at around £1.7 to £2.0 billion per year over the next five years.

The task ahead is not going to be easy; a number of major challenges need to be overcome. These challenges include the lack of reliable ‘as-built’ and ‘as-is’ data, when preparing for COP. This means that agreeing the exact scope of work to be performed - critical for assessing the scope and feasibility of decommissioning options - is unlikely to be possible. Other challenges include deteriorating conditions due to corrosion and the aggregation of marine growth, and the uncertain quantities of hazardous materials to be disposed of in accordance with the relevant laws and regulations. Any one of these has the potential to significantly impact the actual costs of decommissioning.

Decom North Sea (DNS,) The Oil and Gas Decommissioning Trade Body and the Society of Underwater Technology (SUT), the international Learned Society for underwater technology, science and engineering have taken the initiative within their Joint Strategic Partnership to reflect on, and draw comparisons between emerging Decommissioning and Salvage contracting frameworks.

The Salvage industry and the Oil and Gas Decommissioning industry have very similar end goals in the marine environment, however the approaches within the current and emerging contract frameworks are in many cases different. This article reflects a review of the soon to be published LOGIC and BIMCO contract templates, drawing upon legal and industry experience, with an opinion that taking a standardisation prospective could both simplify and reduce costs. In addition, the opportunity for a balanced approach to risk is proposed.

## **About Decom North Sea**

Decom North Sea is an independent trade organisation which connects capability with opportunity across the oil and gas decommissioning sector.

As a not for profit organisation, Decom North Sea is working to enhance knowledge transfer and facilitate collaboration to deliver “innovative models” that minimise decommissioning costs, ensuring best value for operators as well as maximising business potential for its member companies.

Decom North Sea has grown since its inception in 2010 to more than 370 members drawn from operators, major contractors, service specialists, consultancies and technology developers working in well abandonment, facilities cleaning and removal, decommissioning and onshore disposal, recycling and waste handling.

With UK decommissioning spend alone being forecast at an estimated £17.6 billion over the next decade (Oil & Gas UK Decommissioning Insight Report 2017), Decom North Sea plays and will continue to play a vital role in solution development, cross sector learning and helping to build supply-chain capability.

Decom North Sea is working with a number of strategic partners, including the Oil and Gas Authority (OGA), the Department for Business, Energy & Industrial Strategy and Oil & Gas UK, to achieve these objectives.

### **About the Society for Underwater Technology**

The Society for Underwater of Technology (SUT – [www.sut.org](http://www.sut.org)) was established in 1966 as the Learned Society for subsea technology, science & engineering, and is a registered Charity in England, Wales, and separately in Scotland. Overseas Branches of SUT are not-for-profits within their respective jurisdictions. SUT has members in some 40 countries and branches in 8, with the bulk of membership working in the offshore energy sector (oil, gas and renewables) and supporting services with a growing portion in marine science, robotics, and the legal, insurance and policy sector. SUT has observer status at UNESCO's Intergovernmental Oceanographic Commission and is committed to helping deliver knowledge exchange & capacity development from industry under the UN Convention of the Law of the Sea Part XIV and the UN Sustainable Development Goals, so lessons learned from UK decommissioning will be fed into international ocean governance frameworks. SUT grows and exchanges knowledge through a peer-reviewed journal, regular events for members and the public, technical publications, training courses and outreach to schools and colleges. Through the Education Support Fund SUT helps sponsor undergraduate and postgraduate students through university.

In addition, the SUT has a range of special interest groups, including Salvage and Decommissioning. The SUT Salvage and Decommissioning Working has been very active over the years and as a team have been one of the industry groups along with DNS that has recognised the value of knowledge sharing across Salvage and Oil & Gas Decommissioning.

### **Size of combined membership**

With a combined membership of over circa 1500 (approximately 380 corporate members of Decom North Sea, and 150+ corporate and over 1000 individual members of SUT) the two organisations provide access to a very wide range of participants in the offshore decommissioning sector. Drawing on the depth and breadth of experience of this membership provides the opportunity to ensure the full range of perspectives can be brought to bear on issues of common interest. The organisations have recently agreed a co-operation with the objective of regularly collaborating for mutual benefit of this joint membership.

### **The Author Team**

The organisations have drawn upon an experienced team of both Technical and Legal professionals who offer significant knowledge in both the decommissioning and salvage industries, you can see more of their details in the appendix;

- ***Tom Leeson – CEO – Decom North Sea***
- ***Steve Hall – CEO – Society for Underwater Technology***
- ***Kirsti Olson – Partner - Dentons UK and Middle East LLP***
- ***Tom Walters – Partner - HFW***
- ***Dick Lagerweij - General Manager Decommissioning – Boskalis Offshore & DNS / SUT Strategic Partnership***

- *Tony J.A. Laing – Director of National Subsea Research Initiative & DNS / SUT Strategic Partnership*

## **Introduction - A joint approach to decommissioning**

The oil and gas industry has been hit hard by the downturn in the oil price since 2014; no part of the industry has been immune. Companies have been forced to rationalise and streamline their workforce as well as looking at ways to maintain their competitive advantage whilst still making a profit in this difficult climate. Those that have been able to adapt have managed to increase their operational efficiency, which has helped to reduce operating costs and boost production. In turn, this has led to an extension of the field life of some mature fields, allowing the operators to postpone decommissioning to a later date.

This is a positive development. The desire to collaborate, in order to be able to deliver cost effective solutions for projects in the UKCS and further afield, is promoting the sector-wide sharing of guidance, tools and best practice, leading to projects becoming more efficient and cost effective. In the decommissioning sector, operators and contractors alike are waking up to the idea that by using lessons learned on previous projects, it is possible to drive down decommissioning costs.

The UK Government is keen to see the oil and gas industry work these issues, with regulators looking to achieve a reduction of 35 per cent (against a 2015 base cost) in the total cost of decommissioning projects on the UKCS. If this Government target is to be realised, it will be necessary to develop further strategies to drive down costs. This may include different removal methodologies for decommissioning (such as aggregating projects to combine resources and generate economies of scale), new operational management processes – potentially using the experience in the nuclear, construction, salvage and wreck removal industries, new technologies, and standardised contracts and insurance products.

The oil and gas industry recognises the benefits of minimising the costs, which will also benefit the national Treasury through minimising tax-deductible costs and its effective contribution to the overall spend. As such, Decom North Sea and the Society for Underwater Technology are keen to promote any developments that will allow the UKCS infrastructure to be decommissioned in a safe, environmentally friendly and cost-effective manner.

In this first article in a series, we look at how the industry is responding to the demands to introduce standardised contracts for decommissioning projects.

## **New standard contracts for the market**

A key cost reduction measure is the production of standard contract terms. Two new decommissioning contracts are currently being prepared (by LOGIC and BIMCO) to address this need.

Both contract templates have several common features. Most fundamentally, neither is intended to deal with well plug and abandonment (P&A). As such, there is an assumption in both contracts that the asset will be ‘cold’ –at least to the extent that the wells will have been isolated and depressurised so that work can commence without further P&A activity having to take place.

## **The LOGIC contract template**

Work on the new LOGIC decommissioning standard form contract is nearing completion. The contract conditions are expected to be available for use in the first half of 2018. This will be the 11th document in the LOGIC suite of standard form contracts (see here: <http://www.logic-oil.com/standard-contracts>)

The new contract has been drafted by Oil & Gas UK's Decommissioning Working Group, a mixed group of operators, contractors and professional advisers. It is based on the LOGIC Marine Construction form (adapted to deal with decommissioning) and will be issued with Guidance Notes.

The contract is intended to provide a useful starting point for the parties to a decommissioning project, against the background of there having been a full discussion of the issues by the Working Group, together with input from the industry on the physical and technical challenges of offshore decommissioning projects.

### ***Length and style of contract***

In common with other LOGIC contracts, the new contract conditions will form Section II of the contract, with full details of the project (including the scope of work) to be contained in the other Sections.

### ***Applicability***

The contract will be capable of being used for the dismantling, removal and transport to shore of any offshore infrastructure, whether topsides, subsea infrastructure or otherwise.

### ***Information***

The Company will provide the Contractor with information about the structure to be decommissioned. But to what extent will that information be accurate and sufficient to allow the work to be priced? The consensus appears to be that it may be impossible to know what the true state of a structure to be decommissioned will be before the work starts, including the presence of hazardous material.

The new standard form will contain a place for the Contractor to specify the assumptions upon which its price, methodology for the work and allocation of resources has been based. If those assumptions are subsequently found to be incorrect because the technical information originally supplied was inaccurate or insufficient, this will be a variation, allowing the contractor to seek additional time to complete the work and compensation.

A scheme of this sort should keep the initial price down. It will give the Company visibility in relation to the risks it is accepting. The Company will be able to agree or qualify the assumptions made if they want to or ask the Contractor to include the risk in its price or in provisional pricing. This scheme should also encourage the Company to locate, retain and provide as much accurate information to the Contractor about the structure as it can in advance of the project commencing.

### ***Ownership***

The facility and its constituent parts will remain the property of the Company. However, the new decommissioning contract will recognise two circumstances in which ownership of property may transfer. First, the Contractor might have to add something on to the structure so that it can be decommissioned, for example to strengthen it for lifting. For simplicity, incorporated material will become part of the facility (and therefore the Company's property) when it is added. Second, the Contractor may decide to take ownership of part of the structure to sell it on as scrap. In the contract, this will be called transferring material. The parties will be able to define what material will transfer and say when ownership of that material (handover) will occur.

### ***Payment and dispute resolution***

The usual LOGIC payment terms will apply. The contract is entirely flexible. It will be up to the parties to decide how and when the work is to be valued and paid for.

It is vital that every contract contains an efficient and effective procedure for resolving disputes between the parties, particularly those arising in relation to payment. Drawing on the experience of the construction industry, the new decommissioning contract will introduce a fast track dispute resolution method called adjudication. After a dispute has been referred to an adjudicator, he or she will have 28 days to make a decision. Once made, the decision will have interim binding effect and so will be capable of being enforced straight away. Adjudication is a procedure designed to address problems quickly and keep the project moving.

### ***Delivery***

It will be up to the parties to define the scope of the work, when it is to be completed and how completion is to be measured, whether that is by delivery of material and structures to the quayside or otherwise. Recognising that some decommissioning projects may be completed in stages, the contract will facilitate completion in sections.

### ***Disposal and Hazmat***

Waste disposal, including dealing with hazardous material, is a key component of any decommissioning project. The contract will require the parties to comply with all applicable laws including “laws pertaining to the management, transport and disposal of waste”.

Waste that is transported onshore for disposal will be subject to whatever the onshore disposal regime happens to be in the country of its destination.

### ***Engineering***

It is expected that the Contractor will decide how the project is to be performed. The Contractor will be obliged to provide all management, supervision, personnel, materials and equipment required to carry the works (unless the Company specifies otherwise) and to execute the works with all due care, diligence and skill.

Although completion of a decommissioning project may be thought to be less time critical than a construction project, there are in fact situations that could occur on a decommissioning project where delay could lead to the Company or its other contractors suffering loss.

For example, the regulator may have set a deadline for the completion of the work. Or, another contractor may be waiting to take the structure e.g. a heavy lift vessel. Alternatively, an onshore disposal yard may have allocated capacity for the structure and be turning other work away while it waits for the structure to arrive.

The new LOGIC standard form contract will therefore contain a very general liquidated damages clause. It will be up to users of the contract to specify the events (if any) that will give rise to liquidated damages.

### ***Marine Warranty Survey (MWS)***

The contract will not require a Marine Warranty Surveyor to be appointed. The Company and the Contractor will each have a representative, with authority to commit the parties to certain courses of action and to serve and receive notices.

### ***Indemnities and Insurance***

The contract contains a mutual hold harmless scheme. However, the definition of Company Group in the LOGIC forms does not extend to the Company's other contractors and sub-contractors. The parties may therefore wish to sign up to the Industry Mutual Hold Harmless Scheme.

The Contractor will be expected to put in place the usual insurances: Employer's Liability, General Third-Party Liability, Third Party and Passenger Liability, Marine Hull and Machinery and Protection and Indemnity cover (including wreck and debris removal and oil pollution liability).

The Company will have the option of providing a Decommissioning All Risks policy but at its discretion it may elect to provide an indemnity in lieu.

### ***Change Management and Variation Orders***

The contract will contain the usual LOGIC variations procedure, to govern the situation where changes occur or are instructed. As noted above, where information provided about the structure is found to be incorrect or insufficient, a variation may be granted but the Contractor will be expected to comply with the usual notice provisions.

### **The BIMCO contract**

Work on the BIMCO contract is still ongoing. Current expectations are that a draft will be available for first review in November 2018 before it is put out for wider industry consultation on BIMCO's website (see here: <https://www.bimco.org/>).

The drafting sub-committee includes: marine service providers, marine contractors, P&I and legal experts. In addition to this, IMCA and the ISU are also represented. Guidance on insurance has been provided by a leading insurance broking and risk management company and a major oil company is also involved the project.

The intention is to produce a marine services agreement that fairly represents the interests of both parties by creating a balanced set of terms and conditions. BIMCO's objective is to create a global, industry standard, scalable contract for offshore structure dismantling work.

The contract has been loosely based on the BIMCO's WRECKSTAGE 2010 contract that is commonly used by contractors for performing salvage and wreck removal work but the draft contract, currently named BIMCO DISMANTLECON is unlikely to bear any resemblance to the WRECKSTAGE 2010 that is currently in use.

Whilst the contract is still very much a 'work in progress', it is the intention that the contract will appeal equally to the party requiring removal of the structure and the marine contractors whose services they use.

### ***Length and style of contract***

The form of the contract broadly follows the familiar layout of all other BIMCO contracts with two parts. The second part contains a simple boilerplate contract that can be amended and adapted to meet the needs of contract partners. It will be scalable so that it can be used for small to medium sized projects – such as the removal of subsea tiebacks, mattresses, templates, FPSO riser and umbilicals and fixed jackets – to larger and more complex projects – such as topsides and other infrastructure.

The scope of work and operational detail will be set out in annexures to the contract.

### ***Applicability***

The use of the contract is not limited to one particular type of facility or operation, but can be used for removal of any offshore field architecture such as pipelines, mattresses, manifolds, jackets, topsides, platforms and monopile structures. The contract is designed for global use in contrast with the regional contractual standards currently available.

### ***Ownership***

Ownership of the asset remains with the company and title in the property is not transferred to the contractor during any stage. Notwithstanding this, BIMCO are looking at including specific limited carve outs for certain situations which may depart from the usual knock-for-knock regime that is currently in place in the other BIMCO suite. This reflects the situation that the contractor will largely be free to plan its operations to fit within its own schedule and so, a number of operators have indicated that the agreement should give the contractor some limited responsibility for his actions.

### ***Delivery***

The BIMCO contract anticipates delivery of the asset in one of three ways: on a barge at the location of the asset, delivery alongside on a barge at the reception facility or, on the quay at the reception facility.

### ***Payment***

The contract is drafted to provide payment against the provision of specified services with estimated time schedules and prices. Payment will be made in stages upon completion of various milestones identified as part of project.

### ***Disposal***

There is a general obligation under the agreement to comply with all the legislation, rules and regulations that are in force at the time in the jurisdiction which the property is located. In this regard, the agreement does not contemplate that the contractor will deal with the 'disposal' of the asset as the agreement will end once the property is delivered (see above).

In this regard, BIMCO have recently been approached by a number of offshore disposal contractors who have expressed a desire to have a standardised onshore disposal agreement. This currently being considered by the Documentary Committee, but it is anticipated that a modified version of the BIMCO's RECYCLECON will be adapted for the offshore disposal market which would then allow owners and operators to enter into a

separate agreement for the onshore disposal that will 'dovetail' with the BIMCO DISMANTLECON to provide a complete contractual solution.

### ***Hazmat***

The presence of hazardous material should have been identified by mapping and assessing all the material on the asset however, it is recognised that there will be instances where parcels of trapped gas, asbestos, residual hydrocarbons, mercury and NORM (to name the most likely examples) may occur. If these are not identified prior to the parties entering into the contract, then the contract price can be adjusted to take this into account.

In the UK, in accordance with the Petroleum Act 1998, the operator must submit a decommissioning programme that sets out the measures to decommission an asset, the methodology required to undertake the work and in certain cases, the handling and removal of radioactive material and other hazardous material. The view has been taken that it is reasonable for the operator to take responsibility for the identification of hazardous material and the data should be provided to the contractor as part of the tender package where appropriate.

### ***Information***

The status of the asset, as verified in any "as-is" (as opposed to the "as-built" condition of the asset which may be very different as a result of changes to the structure) forms the bench mark from which the scope of work and price for the services is fixed.

The ability of a contractor to seek a Variation Order as a result of some change in the condition of the asset, the conditions on site or other unknown aspect, will depend upon the information provided to the contractor.

The BIMCO contract seeks to make a distinction between assumptions (upon which the parties have relied upon and are agreed as part of the contract), validated information (that is warranted as being accurate and correct) and other company information that is provided during the project. It is intended that breaches of the first two categories will give rise to a Variation Order. Any new company information provided after the contract is signed *may* result in an entitlement to a Variation Order in so far as the contractor can show that show that the company information is incorrect, inadequate, insufficient, or inconsistent and, they have complied with the notice provisions.

The intention is that the Contractor should take some responsibility for the planning and methodology

### ***Engineering***

In decommissioning projects, it is unusual for the contractors to be under the same time pressures as say an Engineering, Procurement, Installation and Construction contract where there is a requirement to meet the deadline for first oil. The BIMCO DISMANTLECON therefore envisages that the contractor will take more responsibility for the engineering and planning of the project and, as such, will be able to dictate the programme so that it fits in with their own timings. This is not dissimilar to the BIMCO WRECKSTAGE 2010.

There is no intention to include a liquidated damages clause in the contract as this is not considered necessary or commercially attractive. The contract price will be fixed and only agreed Variation Orders will alter the contract price. These will be permitted if the contractor can show that there has been a deviation from any of

the assumptions that the parties have agreed upon when entering into the contract. For example, where the contractor has relied upon validated company data which the company has warranted as being accurate, this would give rise to a Variation Order.

In return for having the flexibility to engineer and plan the project, the expectation is that the contractor will take responsibility and agree to certain warranties about its own capabilities, the performance of the services, the methodology and the planning. This is not inconsistent to those terms that may be implied into a contract in English law where there is an element of 'design' involved in a project.

### ***Marine Warranty Survey (MWS)***

There is no contractual requirement for a marine warranty surveyor to be appointed since not every project will require one. There is however nothing to prevent a party from instructing an MWS to attend but the contract is drafted on the basis that each party will appoint a representative who will be available on site with the authority of the contractor or the company to issue and receive notices and otherwise be available during the services.

### ***Insurance***

The current intention is for the contractor to obtain and maintain such insurance policies as may be required by them to perform the services. This includes H&M, P&I, General Third-Party Liability Insurance, Workmen's Compensation and Employer's Liability Insurance for Employees, Air Transportation Insurance and such other insurances as may be agreed. Given that the contract is meant to be used for a variety of structures, the general view was that it is unnecessary to include reference to a Decommissioning All Risks policy with both parties as co-assured as this may not be necessary. Instead, the parties should consider what insurance each of them has in place already and then decide if they need to purchase any additional cover, say to cover the transportation of any part of the asset that may be lost in transit.

Within the UK, the Offshore Safety Directive (implemented by the Offshore Installations (Offshore Safety Directive) Regulations 2015) provides that operators are financially liable for the prevention and remediation of any environmental damage that is (or may be) caused by an asset or any activities carried out by persons acting on their behalf.

The BIMCO contract anticipates that the operators will maintain sufficient interest and resources for to provide effective emergency response capabilities and to repair any damage to the asset whilst they are the licence holder. This will include appropriate insurance and/or maintaining membership of the Offshore Pollution Liability Association Limited (OPOL).

### ***Change management and Variation Orders***

The sub-committee has spent a considerable period reviewing the change management provisions as they are an area that can generate disputes. As with any project, problems may arise during the operations that require a substantial change of method, equipment, etc. In Clause 4 of the BIMCO WRECKSTAGE 2010 contract, the clause sets out the circumstances under which the contractor may seek a variation to the contract price on the basis of a substantial change before or during the services resulting in additional costs, or the project becoming easier due to a change in circumstances and where the company can ask for a reduction in the money due to the contractor.

In the BIMCO DISMANTLECON, the circumstances when the contractor and/or company can raise the request for a variation order are less prescribed given the uncertainties involved in decommissioning activities. Rather than driving up costs through potential disputes and litigation, the view has been taken that the parties should be free to raise a Variation Order at any stage for review so that there is an ongoing dialogue in relation to the progress of the project. It is then open to the parties to agree upon the time and costs implications to the project.

If the parties are unable to agree that a Variation Order is required or are unable to agree upon any impact to the schedule and the associated costs, then the default position under the contract is for the matter to be referred to adjudication for determination. The intention is that this will be similar to the procedure already used in the construction industry and will allow matters to be referred and determined quickly without the need to use the formal dispute resolution mechanism whilst the services can continue at the worksite.

## **Conclusions**

From a marine contractor's viewpoint, the decommissioning market is promising and may help to create utilization for the North Sea based (floating) assets such as Dive support vessels, Heavy lift vessels, Suppliers, Tugs, Barges etc. Importantly this market will also create or extend possibilities for the workforce in the UK, Norway, Netherlands and other European countries. As the Decommissioning market is evolving against the background of desired cost reduction while maintaining high standards on HSE and reputation of clients and contractors alike, the contract risks are very important to understand. To date, limited standardisation in contracts and insurance products has been possible, while offshore decommissioning contracting involves a multitude of risk areas that need proper discussion, allocation and agreement between Operators, contractors and subcontractors. An example is: how to deal with 'Ownership and transfer of title' of offshore assets throughout the chain of companies involved: e.g. From the owner /operator of the asset while it is producing, to the late life O&M contractor assuming Duty Holdership when the asset is brought to 'light house mode' onward to the offshore contractor who lifts of modules and will bring it onshore to a disposal yard which in turn may have multiple subcontractors to handle waste & recycle streams.

Both Contract Templates clearly recognize the importance of the data set available to the Contractor and the potential impact if data is missing or incorrect. In addition, both documents are being designed to build on existing templates, providing confidence that users will be familiar with the approaches to common issues. However, it appears that these two new templates will differ in many regards, not least with how the scope of work is bounded and the how impact on other contractors is treated. Careful choice will therefore be required depending on the contracting strategy envisaged for a specific project. Potential perceived advantages from Transfer of Title, or the management of interfaces with other operations/contractors may require significant variations to the basic templates. In each phase, each individual company involved must know where its responsibilities start and liabilities end.

In conclusion, it is believed that adopting these standardizing contract formats and using 'tested' contract clauses will help at the negotiation table and facilitate all individuals involved to better understand potential risk involved (think about the P&I club, Marine Warranty Surveyor, Port authorities, HSE, etc.). Ultimately, it is the aim to have clear guidelines to assist cost reduction and simplify processes to the benefit of all parties involved. Such guidelines provide the opportunity for utilization to develop into the international market within the decommissioning industry.

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## Appendix

### Abbreviation and Acronyms

BIMCO	Baltic and International Maritime Council
COP	Cessation of Production
FPSO	Floating Production Storage and Offtake facility
H&M	Hull and Machinery Insurance
HSE	Health, Safety & Environment
IMCA	International Marine Contractors Association
ISU	Interntional Shipping Union
LOGIC	Leading Oil & Gas Industry Competitiveness
MWS	Marine Warranty Sureveyor
NORM	Normally Occuring Radioactive Material
O&M	Operations and Maintenance
OGA	UK Oil and Gas Authority
OPOL	Offshore Pollution Liability Association Limited
P&I	Protection and Indemnity Insurance
SUT	Society of Underwater Technology
UKCS	United Kingdom Continental Shelf
UNESCO	United Nations Educational, Scientific and Cultural Organisation

The Author Team : -

***Tom Leeson – CEO – Decom North Sea***

In post since November 2017, Tom has a long history of involvement in decommissioning covering a wide range of the requirements and approaches used internationally providing understanding of the constraints, technical challenges and the decision processes involved.

He started his career with Shell after completing a B.Sc. and Ph.D. in Chemical Engineering at the University of Birmingham. After well operations management roles in Oman, the Netherlands and on the Brent field, he joined the service sector and worked for several companies in a variety of sales, product development, engineering and project management roles. During this period, he got his first exposure to well abandonment with Acteon and working with subsea wells in the UK and overseas.

More recently, Tom has filled well abandonment engineering and project management roles for Halliburton, followed by the position of Global Business Strategist for well abandonment and decommissioning working on projects in Norway, UK, Denmark, Indonesia, Brazil and in the US. For the last 3 years Tom has specialised in the decom sector, working as a consultant on a number of decommissioning scopes in UK, Norway, Australia, Malaysia, Thailand, Timor Leste, South Africa, Canada and Brazil, including developing local regulations, operator decommissioning strategies and planning processes, and abandonment methods, compiling market analysis, identifying cost reduction opportunities and training regulator and industry personnel.

Over this period, Tom was a Director of Decom North Sea for approximately 6 years with involvement in many aspects of the organisations operations.

***Kirsti Olson – Partner – Dentons UKMEA LLP***

Kirsti is a partner at Dentons UKMEA LLP. She has specialised for over 20 years in contentious construction and engineering work, with a focus on disputes arising in oil industry construction and decommissioning projects. Dual qualified in Scotland and England, Kirsti has been actively involved in the decommissioning market for several years, advising clients during the tendering stage of projects and managing and resolving disputes arising both during and after the removal and disposal phases. Kirsti is legal advisor to Decom North Sea. She is a member of Member of Oil & Gas UK's Long-Term Liability Group, which is investigating solutions to perpetual liability for decommissioned structures. She is the Chair of Oil & Gas UK's Decommissioning Work Group, which is currently drafting a new LOGIC decommissioning standard form contract for use in North Sea projects. Kirsti is also a member of Aberdeen University's Industrial Advisory Board, advising on the content of their MSc degree course in Decommissioning.

***Tom Walters – Partner - HFW***

Tom graduated in 1995 after which he worked for a naval architecture practice on the South coast of the UK for two years designing superyachts. He re-trained in law and joined HFW in 2002 where he qualified into the Shipping, Offshore and Logistics department in 2004 and became part of the Admiralty and Crisis Management team. Tom was made a Partner in 2014.

In addition to a number of high profile salvage and marine litigation cases, Tom has worked on a various complex technical cases in the offshore oil & gas industry dealing with; construction disputes involving jack up and semi-submersible rigs, decommissioning and disposal of marine assets, insurance claims, towage

disputes involving the transportation of various offshore units, contractual disputes involving pipe laying vessels, the salvage of several semi-submersible platforms in the Gulf of Mexico after hurricanes Dennis and Katrina. Notable cases include: the "Thunder Horse" PDQ (2005), the "Deepwater Horizon" (2010), the "Kulluk" (2012), the "Perro Negro VI" (2013) and the "Troll Solution" (2015).

Tom remains a member of RINA (The Royal Institution of Naval Architects) and currently sits on the BIMCO drafting sub-committee developing a new contract to be used in dismantling and decommissioning projects in the offshore industry. He is also a member of the Society of Underwater Technology (SUT) participating in the Salvage & Emergency Subsea Response sub-committee and the Technology and Innovation sub-committee.

### ***Dick Lagerweij - General Manager Decommissioning – Boskalis Offshore***

Dick Lagerweij started his career at sea and worked onshore for around 20 years involved in marine civil construction projects, renewable and various other Transport, Installation and Decommissioning projects in the oil and gas sector. In the course his career, Dick and gained experience dealing with project management, engineering, procurement, transportation and installation of various offshore assets. This also includes the decommissioning, removal and recycling of various structures, most recently the topsides from the Lemna BH platform for Shell. Working at Boskalis, Dick is responsible for the global decommissioning portfolio as well as being responsible for business development and the execution of various decommissioning projects.

At Decom North Sea, Dick has served two terms as a Director in support of DNS' members in the European Decommissioning supply chain. Boskalis supports the development of standardised decommissioning contract formats and has been implementing the lessons learnt programs and collaboration initiatives for a number of years in its Offshore Energy Projects.

### ***Tony J.A. Laing – Director of National Subsea Research Initiative***

Tony Laing has a career spanning over 35 years within the subsea sector, working for Operators, Contractors and Suppliers, in leading many commercial and technology firsts, within subsea production, process systems and well abandonment technologies. Tony, is a strong believer in technology enabling the industry and has gained his experience in various regions, working both onshore and installation and commissioning offshore. However, Tony firmly believes the key success in project delivery is appropriate commercial models that offer mutual benefits for all of which robust appropriate contracts is the key foundation.

Tony is the SUT Representative in the DNS and SUT Strategic Partnership, and part of the SUT Salvage and Decommissioning Working Group.

Tony has been engaged with the Society of Underwater Technology for over 20 years, where he is a Fellow and Aberdeen Branch Treasurer, plus he is one of the founding presenters with the well recognised, SUT Subsea Awareness Course and is still engaged today.