

Finding Petroleum

Decommissioning moves into a new gear
Applying onshore expertise to offshore
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Event Report, Decommissioning - the D word, June 23, 2017, London

Special report

Decommissioning - the D word

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Some presentations and videos from the conference can be downloaded from the event website.

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A new gear for decommissioning

The oil and gas industry is moving into a new gear with decommissioning – making it easier for smaller operators to take over assets, reforming tax rules, and with companies with expertise in onshore decommissioning getting involved. We reviewed developments in our London forum on June 23rd

The oil and gas industry is moving into a new gear on decommissioning, with a range of different services coming onto the market from software to insurance, and efforts being made to make it easier to sell assets to new smaller companies, in particular by making tax history less of an obstacle.

Also companies with relevant expertise in onshore decommissioning projects, such as in the nuclear and coal power industry, are getting more involved.

We reviewed the developments in our Finding Petroleum London forum on June 23rd 2017, "Decommissioning - the D word."

Above all, companies are starting to realise "it is possible to make money from stuff which is being shut down," said Graham Scotton, conference chairman, director of Petromall and a former COO of Dana Petroleum, among other roles.

But companies should be thinking about the issues very carefully. "We argue 'strategic exit management' is a phrase that should be in the lexicon - not just for mergers, but with investments and divestments," he said.

Money going in

There is still money going into the North Sea, Mr Scotton emphasised.

One of the largest FPSOs in the world, Glen Lyon, has just been brought on stream, to process and store oil and gas from the redeveloped Schiehallion and Loyal fields in the UK North Sea. Mr Scotton's former company Dana Petroleum, put a FPSO on the Western Isles "as of yesterday" and was tensioning the moorings at the time of the conference.

A new company, Neptune Oil and Gas, backed by private equity, has been created to access Southern North Sea assets. Enquest has taken on a portion of BP's Magnus field including operatorship. Magnus is a large asset, located 160km North East of the Shet-

land Islands. "That's a big ask, taking operatorship of that," he said.

Also Chrysaor, a private equity backed company, has taken on Shell's assets in the North Sea.

"There is new money coming into the industry when the talk is shutting up shop and running everything down," he said.

As part of all of these transactions, the decommissioning costs would have been carefully taken into account, including putting funds aside and contracts, and the cost of decommission would have been taken into consideration in the financial planning.

There was one example of a field producing 15,000 bopd, with one tie in planned for 2017, and scheduled decommissioning in 2023, which had an estimated decommissioning cost of \$400m. "That seems fairly conservative," he said. "People are making it work."

There are demands that the offshore infrastructure should be left in place as long as possible to mop up the smaller fields that remain, such as 10m or 20m barrels, he said.

Decommissioning plans

Decommissioning plans are also starting to take place. We heard about Shell lifting the topside of its massive Brent Delta in April 2017. Marathon have announced plans to decommission the Brae facilities and submitted plans to the Oil and Gas authority. Conoco Philips have announced that the Viking and Lincolnshire Offshore Gas Gathering Systems (LOGGS) will be decommissioned, which will have consequences on gas input from a number of fields having to go elsewhere, Mr Scotton said.

However, there is not yet any company specialising only in decommissioning management, including running the asset in late life, maximising economic recovery, planning the task, and ultimately disposing of the facility.

ABB – applying onshore expertise to offshore

Oil and gas companies can be reluctant to accept that decommissioning expertise gathered in onshore projects can be relevant to offshore projects – but onshore decommissioning companies can have a lot to offer, said Steve Andrew of ABB

Oil and gas companies have been sometimes reluctant to accept that expertise gathered in onshore decommissioning projects might be relevant to their operations – but there is a lot of similarity between the projects, said Steve Andrew, demolition and remediation manager with ABB.



Steve Andrew, Demolition and Remediation Manager, ABB

Customers can still have a perception that onshore decommissioning is about cranes with a ball and chain on, but “demolition isn’t like that anymore,” he said. “More engineering goes into demolition than you can imagine.”

For example, ABB is looking at decommissioning a number of coal power stations, in the UK, he said.

Mr Andrew told a story about an encounter with an operator. The discussion centred around a recent big onshore decommissioning project had 600 tonnes of ‘naturally occurring radioactive material’ (NORM), compared to an estimated 12 tonnes on an offshore platform, and 1600 tonnes of asbestos (compared to an estimated 12 tonnes on an offshore platform). Onshore projects often contain hazardous materials, such as phenol, where a small amount can kill.

Typical problems with onshore decommissioning are similar to problems with offshore decommissioning, in particular a lack of record keeping, so it is not possible to know what the hazards might be in advance, and there could be unknown electrical cables where no-one knows if they are live.

Onshore decommissioning projects also have corporate reputational issues to deal with (like offshore projects do). As an example, after a

fire at the Wilton Industrial Site in Teesside, the local press wrote that the fire was on an ‘ex-ICI plant’, although the plant had changed hands twice since ICI owned it, and ICI no longer exists, he said.

Onshore decommissioning projects in the UK are subject to Construction, (Design and Management) (CDM) regulations introduced in 1994, with various updates since then, the regulations place a duty on clients to provide information on potential hazards. This does not apply offshore, but it will apply to offshore assets as soon as they are brought onshore, if the facility is considered a “structure”.

Ultimately, the only big difference between onshore and offshore projects is location, location, location and the complexity that brings, he said.

Planning the work

The most important factor in a decommissioning project, offshore or onshore, is the planning process, he said. You have to decommission in a certain order, to make sure you don’t create problems later. For example, if you will need a facility crane during the decommissioning work, you should ensure it is maintained to be available for the decommissioning phase.

The planning process can include an evaluation of whether you might be able to re-sell equipment, and if so, you should make sure it does not get contaminated or damaged during the removal work.

There was a story of an offshore operator who stopped maintaining the accommodation units on a platform after cessation of production – but then had to refurbish them, so staff had somewhere to stay for the plug and abandonment process. The cost of installing new “beds and tellys”, which can conceivably be thrown away at the end of the project, ended up at £20m+, he said.

Perhaps it would be prudent to engage with resale companies several years ahead of doing the work, to get an idea of what you can sell.

Reselling equipment is an idea yet to catch on with the offshore oil and gas industry, Mr Andrew said. At one workshop where it was discussed, a representative of one operator turned

around and said, “Are you telling me, you expect me to put second hand equipment on my platform?”

Mr Andrew had replied, “No, that’s not what I’m saying. But this other operator here has 30 workshops full of critical spares he’s about to sell to the scrapyard. Surely there’s some opportunity there?”

Sometimes reselling items can change the economics in surprising ways. An example is an LNG plant, which was using perlite for insulation, a naturally occurring volcanic glass and inert substance.

Perlite doesn’t have a waste classification number, and so if it is sent to landfill, it needs to be classed as “hazardous waste”. Here, it would have cost several millions of pounds to dispose of.

ABB worked with the Client and found an alternative acceptable route, recycling it to be used in building materials in concrete blocks for example, and as a soil conditioner for gardens.

Other examples of equipment you could sell are power packs from offshore platforms. Power packs have been sold to various places to be used for other uses for example, to pump domestic water supplies, he said.

“Things might sell, but you need to engage early with people to sell things,” he said.

Simplifying the work

Sometimes in the planning process you can identify that putting in something new is actually an easier option.

For example, if you have many electricity cables, instead of trying to work out which ones are live, it may be easier to isolate them all and put in new ones. “If you put pink cables in, everyone knows pink cables are live and you shouldn’t touch them,” he said.

It may also be easier to install new generators rather than use the existing ones. One operator discussed the use of the back-up generators on the platform for power, but further studies identified that they consume so much diesel they would need a vessel supplying the platform with

Decommissioning - the D word

more diesel every four days, he said.

Knowledge

With both onshore and offshore projects, there can be difficulties from not having very good information.

Mr Andrew told a story of an onshore project involving decommissioning a Condenser, which (according to the documentation) contained stainless steel tubes. After opening it, washing out leaking tubes, and “11 fire engines later”, they found it was a titanium tube bundle, he said.

The decommissioning company found out later that the Condenser had been first installed with titanium tubes, but the company had problems trying to clean it, so they removed the titanium and replaced with stainless steel. But the stainless steel didn't last very long, so they put the titanium back and never updated the information.

Mr Andrew was once asked to decommission a pharmaceutical research and development plant, there were no records of what the plant contained except that it may contain many different chemicals.

It is important to have a bit of scepticism about what you told about redundant plant. Whatever you are told, “You're going to find contamination and need to plan for it,” he said.

Sometimes people believe that the more something falls apart, the easier it will be to decommission. “It isn't,” he said. “You can't trust the structural integrity of anything, can't access anything it gets really difficult.”

“The plant operators have the most knowledge on a plant, and we understand what you need to prepare to decommission safely and effectively however I have an extensive list of questions based on good and bad experiences. I'll never know as much as the guys operating the plant,” he said.

“We work with an operator which still maintains 16 inch gate valves on equipment that was redundant when they bought the platform 10 years ago,” he said. “They are still maintaining it every 6 months because that's what the procedure says.” This is due to lack of planning and understanding the current status of plant and equipment.

Personal issues

Decommissioning is often seen as negative with workers. “You can imagine the emotional turmoil people go through, they've worked here 30

years, doing their best to keep the plant operating,” he said. “The worker offshore spend 50 per cent of their working time there, imagine if that's your house you were planning to demolish.”

You also need to get people in a different mindset, similar to the transition from construction to operation, they have protected the asset value for all those years and now it is a materials segregation exercise.

Mr Andrew demonstrated his own decommissioning mind set by explaining how he had started off as a child breaking Tonka Toys on Christmas day and his dad had said, “Are you going to play with the box now, son.”

Sometimes people's attachment to equipment prevents them from seeing the cheapest way to decommission.

There was one story of an operator which was planning to bring in a vessel like Pioneering Spirit to remove the topsides in one piece. This would have required a substantial amount of strengthening work to be carried out.

“I said, we could get rid of most of this with top-side crane, bring a heavy lift vessel [rather than the Pioneering Spirit], save money” he said.

Doing that would require cutting equipment into smaller pieces to reduce the weight, or perhaps cutting it in half twice. The man's reaction was similar to if he had been asked to cut one of his children half, Mr Andrew said.

Then you can have the opposite problem, where staff do not think it will be very interesting working on an asset being decommissioned and seek jobs elsewhere, so you lose all of the knowledge. “If you involve them [in discussions] 3-5 years

beforehand, they might be more inclined to stay,” he said.

“One engineering manager said, ‘All my engineers and senior people have been offered five jobs’”

If people could have a more positive attitude to decommissioning, it might help attract people to work in it. There will be a big demand for people, including for the upcoming decommissioning work in coal power stations and other onshore projects.

The work can be easier, and so perhaps easier to attract people to do, if more of the structures can be brought onshore. You don't have to manage the risks of equipment falling into the water and requiring expensive retrieval, and it is easier to use machines, he said. This means that the work can be less physical.

There is still plenty of manual work involved. “Things like asbestos, hazardous materials, they all have to be removed by hand,” he said.

If you see a big building being demolished with explosives, the final demolition might be done with machines, but there will have been six months of manual work before that removing hazardous materials and soft furnishings, he said.

Graham Scotton, event chairman, noted that “most technical professionals want to shoot seismic, interpret seismic, drill interpretation wells and drill an oilfield, they don't want to take it apart. That seems a bit of a UK mind-set. Norwegians and Dutch are much more got ahead of this and invested in the whole industry of decommissioning. The UK oil and gas industry needs to move its thinking.”

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Zolnai / LINQ – improving decom information flows

UK consultant Andrew Zolnai is working together with New Zealand company LINQ to build information flow maps for oil and gas companies – which can ensure that everybody involved in decommissioning gets the right information

UK data management consultant Andrew Zolnai is working together with New Zealand software company LINQ, to develop information flow maps, which can be used to ensure that everybody involved in decommissioning has all the information they need.

The value of the service is perhaps best understood from the frequent times when expensive problems occur because people don't have the information they need.

The Zolnai / LINQ approach is to sit down with all of the people involved in a process, and try to understand how their business connects together. This can be used as a basis for mapping how the information flows between the different people – and so where the problems might emerge.

People involved in decommissioning can spend a lot of time chasing information, with telephone calls and e-mails, or might need to manage without having information. A better information process can avoid this, achieving a much more effective organisation, or cluster of organisations.



Andrew Zolnai - Owner, zolnai.ca

Every process can be broken down into steps, and at each stage, you can write down who does the step, and what information they need to do it.

"The main thing is to sit down with people and help them map out the processes," Mr Zolnai said.

This can be a difficult task because many people cannot explain exactly what they do, he said.

Then you can map out the tasks on large diagrams, with the help of the cloud based software which LINQ produces. "You can line up and lay out your processes in a very clear, mappable and re-usable way," he said.

You end up with one general workflow for the company activity, which can be called an "information supply chain". Mr Zolnai showed an example of what the data workflows can look like for a nuclear power plant.

You can have different colour boxes for manpower, information and the organisation. "You can pull together a lot of very different aspects in this.

Many companies have separate siloed software systems, for example for project management systems, financial systems and HR systems. The company operates as a whole, not in separate silos, but it is hard to work out how the information systems interact. This method can map out how the silos fit together.

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Petromall – making the decommissioning business easier

Decommissioning is already playing a role in many North Sea business transactions, but there could be ways to make the business issues easier – including putting decommissioning funds in trust, specialist insurance products, late life management services and political changes, said Christopher Robert Lloyd of Petromall

Decommissioning is already playing a role in many North Sea business transactions – but there could be ways to make it easier, such as different ways to structure businesses around older assets, putting decommissioning funds in trust, specialist insurance products and late life management services and political changes, said Christopher Robert Lloyd, consultant with Petromall.

Mr Lloyd has a background as a naval architect, and formerly worked for engineering contractor Saipem which was involved in heavy lift projects, including working on some of the first decommissioning projects in the North Sea, on the Frigg field.

There have been a number of recent North Sea



Christopher Lloyd - CL Consultancy

transactions where allowance for future decommissioning expense would have been a major factor, he said.

In early 2016, Premier Oil acquired a number of "significant" North Sea assets from EON for \$120m. The deal included around £250 million of tax paid historically accessible to offset against future decommissioning expenditure (so when the platform is decommissioned, money is returned to EON in decommissioning tax relief, which would then be paid to Premier).

So Premier believes they can make a profit after paying for the asset, continuing to operate the asset, paying for decommissioning and receiving EON's tax relief. "I'm sure they have done their sums," he said.

In January 2017, Enquest agreed to buy 25 per cent of BP's position in the Magnus field, including becoming the new operator, and taking a 25 per cent share in decommissioning costs. The field includes the Sullom Voe terminal on Shetland, and associated pipelines. The agreed price is \$85m.

So Enquest must believe it can pay the \$85m out of production profits and still make enough back to pay for its share of decommissioning costs.

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“What Enquest is buying here is the end of the Magnus production curve, the difficult part, the last trickle of hydrocarbons,” he said. “They aim to extend the time until decommissioning, and be able to milk that to make a profit.”

“BP gets to move its staff and finances onto higher value projects that appeal to their core business values, stuff they are good at, looking at seismic, development work, building new fields.”

Also in January 2017, Shell agreed to sell \$3.8bn of North Sea assets to venture capital backed operator Chrysaor. As part of the deal, Shell will only retain \$1bn of decommissioning liability, expected to be \$3.9bn, and Chrysaor will take the rest.

“This is a slightly different approach,” he said. “Shell has got to be comfortable with Chrysaor to be able to manage its decom liability when the time comes.”

Under UK law, if a company sells an asset to a second company which is unable to pay for decommissioning, the liability falls back onto the original owner, he said.

“Shell’s motivation, similar to BP’s, is to simplify its portfolio and move resources to better reservoirs and better projects,” he said.

A fourth deal, announced in May 2017, is for private equity backed Neptune Oil and Gas to acquire 70 per cent of the exploration and production business of Engie (formally known as Gaz de France Suez) for \$3.9bn.

“This is a bit different - Neptune is buying a whole company rather than one asset but the basic method is there,” he said.

And if Neptune fails to be able to pay for decommissioning, Engie will be asked to pay for it under UK rules, (as explained below) he said.

All of these transactions have been an investment opportunity, with big North Sea companies looking for a company which they can “offload the problem” of their old assets onto, while they continue with their core business of exploration and production.

Another complexity in these transactions is tax, where UK law says that the legacy owner of an asset can get a tax rebate on some of the decommissioning costs (effectively saying, the company paid too much corporation tax on previous years), but a buyer can’t – so decommissioning can be cheaper for the seller to do.

“The difference in tax history between an old established operator and a new buyer can be vast and it’s been cited as an impediment for several transactions,” Mr Lloyd said. “We have seen a couple of recent potential deals which have been prevented because the difference in tax history between companies has been too great.”

The “bad asset” model

One proposed model for late life assets is similar to Sweden’s “bad banks” idea, when the Swedish government nationalised a number of failing banks in 1991 and put them into a new government owned ‘bad bank’. Swiss banking applied the same model in 2008.

The idea is that the ‘bad assets’ could be put together in a company, (although it could be acquired by private funds).

A problem here is that the UK government’s track records in managing big projects with physical assets “isn’t great,” he said, an example being seen in the delays and escalating costs of Hinckley Point power station.

Trust funds

Under UK law, if a company sells an asset and the buyer proves unable to pay for decommissioning (for example if it becomes insolvent before the decommissioning work), the selling company becomes liable for the costs.

This can inhibit companies’ willingness to sell assets. But one proposed solution is if the decommissioning funds are placed in a trust, so they cannot be accessed by any creditors in the event of insolvency – they can only be spent on decommissioning.

It is possible that the existence of this fund could mean that the selling operator can be completely released from possible obligations to pay for the decommissioning (if the buyer can’t pay), Mr Lloyd said. “People we spoke to at HM Treasury are willing to discuss the option, there is room for a test case.”

Insurance

Another way to make it easier for smaller operators to take on larger decommissioning projects is the availability of specialist insurance products, he said.

Insurance companies can agree to accept certain types of risk – and if these can include the main decommissioning risks, then smaller operators can buy insurance rather than have to put funds aside in case something goes wrong.

If you manage the insurance carefully, you can gradually reduce the premiums as you go through the process, Mr Lloyd said. Plugging and abandonment is perhaps the most expensive to insure (because of the high costs of a well going out of control), and the heavy lift the next most expensive. After that the insurance costs should be less.

Late life management

All of this can make it more viable for a small company to offer services in late life asset management and decommissioning, taking ownership of an asset towards the end of its life, something which larger operators are typically not very interested in, Mr Lloyd said.

A small company can apply the attention to carefully manage the costs of a late life asset, not just “cut costs” as a larger company might.

A smaller company might pay much closer attention to which parts of the asset are most likely to fail and apply more maintenance there. “Ageing assets do need specialist care and attention,” he said.

A small company could also provide an interesting employment option for people who have worked with the asset for their careers (for a large operator), have thorough knowledge of it, but would prefer to work perhaps part time for a smaller company for the last years before full retirement.

Other engineers could become late life asset management specialists, developing an understanding of high-tech options that can be part of a late life strategy – including enhanced oil recovery, water injection, infill drilling and fracking, perhaps using the asset for CO2 injection.

There are new technologies which can help companies get a better understanding of assets, including surveys by drone, laser scanning, and corrosion detection technology (including internal corrosion).

As part of the late life management, older platforms can be powered by electricity rather than diesel generators, perhaps with renewable offshore energy, something explored in depth in the Danish sector of the North Sea.

The platforms could also be re-purposed to use as base stations or monitoring stations for large scale wind farms. Wind farms are no longer just being built close to shore, and we are seeing the first floating wind farms, he said.

There are technologies which can help manage information about how the platform has been built, and what is installed on it, and its current status.

Political issues

There are many political issues with late life asset management and decommissioning, which can have a large effect on business potential, he said.

There has been talk for decades about using older platforms for injecting carbon dioxide (from industry or coal power stations onshore) into reservoirs, and this could become a business opportunity for late life assets. This would

be dependent on gathering more political support, but there is a possibility that the regulations might change on the condition a seabed must be left in after cessation of production, reducing decommissioning costs.

Some marine scientists and oceanographers recognise that there are benefits to artificial reefs to the environment, and there are many environmental costs to decommissioning, in terms of CO2 emission from all the vessels involved. Much of the decommissioning costs are paid by taxpayers, and the UK has emissions reduction targets going forwards that it needs to meet.

These regulations are set by OSPAR (Convention for the Protection of the Marine Environ-

ment of the North-East Atlantic), which meets every 10 years. It will meet in 2017 to produce a technical report about relevant issues, and there will be a full meeting of the OSPAR Commission in 2018.

Opinions in environmental advocacy groups have evolved since 1995, when there was a big protest from environmentalists when Shell announced plans to dispose of its Brent Spar oil storage facility, by sinking it in 2.5km deep waters.

However many oil companies judge that it is probably not a good for their public image to lobby for platforms to be left where they are, Mr Lloyd said.

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Developing decommissioning insurance

Some insurance brokers are putting together new insurance products for decommissioning, including late life operations, the decommissioning itself, and post decommissioning pollution. Steve Giles of insurance broker KM Dastur & Company Limited (KMD) explained how it works

Major oil companies may be comfortable “self-insuring” operational and decommissioning programmes or by utilising their own “captive” insurance company.



Steve Giles - Energy Divisional Director, KM Dastur & Company Limited

But smaller companies can use insurance as a means to offer balance sheet protection, said Steve Giles, Energy Divisional Director with insurance broker KM Dastur & Company Limited.

porting underwriters taking similar or less. The broker meets underwriters personally in the Lloyd's insurance market, a physical building in central London, and will “travel around Lloyds and London companies until 100 per cent support is secured,” he said.

The Lloyd's building has four trading floors with access to over 50 different Energy underwriters. The underwriter and assistant underwriter sits at what is known as a “box” and the broker sits on a stool next to them.

“It's still old fashioned, handled on a face to face basis,” he said. “It does provide an immediate means to trade, come up with terms and attract capacity.”

Rates for buying oil and gas insurance have continued to soften since 2013, with rate reductions every year, although the rate of reduction is not as fast now as it has been in other years.

The overall amount of spending on upstream insurance in London has reduced drastically during the oil price crash from over \$3bn to just over \$1bn a year. This is because the reduced oil price has resulted in less drilling, less offshore construction, and people buying insurance with reduced limits (maximum pay-outs), he said.

When assessing their prices, underwriters try to balance the revenues from selling insurance to the pay-outs they may need to make if someone makes a claim on their insurance. So ultimately they need an understanding of what the risks are and the severity.

Their understanding is always imperfect, and in the case of decommissioning they have very little knowledge of the risks because there have not been many claims so far.

“Determining the correct premium is fairly hit or miss,” Mr Giles said. In order to really test out the decommissioning insurance, you need people to actually have losses.

Overall, the mood to decommissioning insurance in the London insurance community is “caution but excitement,” he said.

What you can insure

An operator conducting decommissioning might want to consider a number of different insurance products covering different risks, including the risk of physical loss or damage to the asset (scrap value), and the possibility of reselling some of the re-useable equipment.

There are standard insurance packages available for platforms in operation (including late life operation), and well plugging and abandonment.

You need insurance for pollution damage (known as ‘OPOL’ or Offshore Pollution Liability Agreement) but only until the plugging and abandonment is complete.

If you are lifting modules (or whole topsides) from a platform, you can insure the risk of dropping something, which can be “quite a high risk”, he said.

Corrosion, including unexpected corrosion, is

Insurance brokers, including KMD, are putting together specialist ‘late life’ and decommissioning insurance products, that will meet the demands of operators and regulators.

The insurance business

The decommissioning insurance market is a subset of the oil and gas insurance market. Around the world, this has hubs in London, Singapore, Dubai and Oslo, and other companies serving specific countries and regions. Altogether there is over \$7.7bn of upstream insurance capacity, he said.

The insurance system in London is made up of underwriters and brokers. The underwriters take on a portion of the risk for a certain price.

Typically there is a lead underwriter taking on 7.5 to 15 per cent of the risk and other sup-

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an issue on any decommissioning project. Problems due to corrosion are typically excluded from insurance standard terms, but you can buy a special provision, known as 'buyback', to remove this exclusion, he said.

Similarly, metal fatigue and deterioration is a typical exclusion, he said, and you may wish to purchase a 'buyback'.

It is standard to have exclusions on cover for damage due to war, although you can request that your cover is extended to include "unexploded weapons of war from previous hostilities," he said.

Offshore terrorism cover will typically be provided.

If there is any pollution of the sea, there will be clean-up costs, and if there are any dropped modules for example they will need to be removed. This is something you can insure against.

There can be additional costs for vessels, due to vessels being delayed from bad weather, vessels being no longer required (but with a commitment to pay), or a need for additional vessels, or the costs of re-routing delivery of a topsides module to a different port, which can all be insured.

You can buy an increased limit ("increased costs of decommissioning"), so for example if the standard cover includes up to \$250m for removal of a wreck, you may wish to buy another \$100m in case that is insufficient.

There are risks when equipment is being transported to shore, on a vessel or being towed, which can be insured.

Separately, your vessel operator or contractor will purchase insurance for the vessel, including hull and machinery, loss of hire and protection indemnity.

However, you cannot buy insurance to cover the risk of costs increasing due to miscalculation and error, or a project taking longer than expected. There is no specific insurable proximate cause here which an insurance policy can be attached to.

There have been some questions about whether the insurance industry can do more with it than a "normal insurance product", for example agree to pay if the costs go above a certain amount.

But the insurance system is still the same, spreading risk among a number of underwriters

which will pay out if specific events occur. "Insurance provides pre-determined mechanisms," he said.

Standard wordings

Many areas of oil and gas insurance have 'standard wordings' which everyone is agreed on, which can be included in contracts. For example there are standard wordings for well control and construction.

However, there is no standard "market recognised" wording yet in decommissioning, and no recognised market body is developing one. This means that every agreement is made case by case.

There are a number of committees and associations in London who develop the standard wordings. Sometimes the work evolves over decades, with hundreds of parties giving feedback, such as for the "WELCAR" wording for offshore construction, where the 'Amended WELCAR' struggled to gain market acceptance.

"To get the London community aligned is a thankless task and almost impossible," he said. "Because each project is different it is difficult to create a standard wording that would fit. Broking houses are creating their own bespoke wording, KM Dastur included."

Over time, the market tends to converge on one wording, with certain underwriters and clients preferring it to another one and "it will start to float above the rest".

KM Dastur's insurance facility

KMD has put together an insurance facility for late life assets and decommissioning, together with Petromall. It can provide \$1.5bn capacity.

It has a primary focus for the North Sea, but can be applied worldwide.

The late life operating insurance runs over 12 months periods, and can be renewed annually, until you get to the decommissioning market.

The underwriters are mainly in the London market, and the facility leadership panel consists of Zurich, Chaucer and CNA Hardy.

The late life insurance is similar to typical operator insurance cover, including physical damage, well control, 3rd party liabilities, loss of production income.

However, the KMD/Petromall decommissioning insurance facility is truly a bespoke product, and offers broad form cover including various elements of 'buy-backs' as outlined earlier in this article.

Finding
Petroleum



Making tax rebates easier to transfer

The government is considering making decommissioning tax rebates easier to transfer from buyers to sellers. It sounds like an arcane issue but the sums involved are large enough to prevent assets being sold. Philip Reid of law firm CMS Cameron McKenna explained

The government is considering changing legislation so that tax rebates are easier to transfer from a buyer to a seller.

The current tax laws mean that the seller can end up spending much less than a buyer on the same decommissioning work, because the seller can claim more tax back. The difference is large enough to inhibit some sales deals, said Philip Reid, solicitor with law firm CMS Cameron McKenna.



Philip Reid, CMS Cameron McKenna

“Tax on decommissioning is a really important issue in mergers and acquisitions at the moment,” he said.

It is in the government’s interests that the sales deals go ahead, because a company which most wants the asset is probably the company which is most motivated to get the last drop of production out of the field.

So the government is looking at how the current legal situation can be improved, he said.

Explaining tax and decommissioning

You have probably heard that the government has to pay a large chunk of oil and gas decommissioning costs. Here is an explanation why, based on Mr Reid’s talk.

All UK companies pay a corporation tax on profits that year. If they make a loss one year and a profit the next year, they can subject their loss from the profit and only pay tax on the difference.

Usually, British companies can’t take losses backwards more than 12 months. So if they make a profit two years running, pay corporation tax on the profit, then make a loss in the third year bigger than the profit from the previous two years, they can’t then say, we didn’t really make any profit in the first year, can we have the tax we paid back.

An exception is made for the oil and gas decommissioning, because there are large losses in the last year of production (when the decommissioning is paid for). Companies are allowed to claim that taking these losses into account, they actually made less profit on many of preceding years, and claim the tax back.

But if they sell the asset to another company meanwhile, the tax rebate is made to the selling company, not the buying company, which means it is much less expensive for the selling company to do decommissioning – which means it is often not worth selling the asset.

It is usually possible for the selling company to agree to give any tax rebate it receives to the buying company, but the buying company still ends up in a slightly different position to the selling company, as is explained below.

Different tax regimes

The UK has three different taxation systems on oil and gas operations – Ring Fenced Corporation Tax (RFCT), Supplementary Charge (SC) and Petroleum Revenue Tax (PRT).

RFCT and SC are charged similar to normal corporation tax, based on business profits (although the oil and gas industry pays tax at a higher rate to normal businesses, because it is selling oil and gas, something which is ‘owned’ by the country, and keeping the revenues).

Currently RFCT is 30 per cent and SC is 10 per cent, so it is broadly 40 per cent of the companies’ profits from oil and gas activities in total (with some extra complications not covered here).

It is charged on a company wide basis, so if you have one field making a profit of 100, another field making a loss of 100, you pay no tax.

PRT meanwhile is something different, charged on oilfields developed before 1993, and charged on a field by field basis. So if you have one field making a profit of 100, and another making a loss of 100, you still pay the tax based on the profit making field.

Since January 2016, the PRT rate has been dropped to 0 per cent – so the tax is effectively abolished – but it still ‘exists’ because companies will want to claim it back as decommissioning tax relief.

In most businesses, the purchases and revenues happen at roughly the same point in time (you buy something, buy some labour, do some work, and sell it). So if you make a loss in your financial year, you pay no tax that year, and can use the loss against any future profit, so you pay less tax in subsequent years.

But decommissioning represents a very large cost at a time when you don’t have any large profits and won’t have any further profits on that field.

So the government has decreed that RFCT and SC can be claimed back as far as April 2002, and PRT can be claimed back indefinitely (for payments made in connection with that specific field).

Oilfield lifecycle

If you look at an oil field’s profit and loss over its whole lifecycle, it will make a loss in the early stage as it is being built, then it will go into profit as it produces oil, and then make a loss at the end as it is decommissioned.

For the first part of production, you don’t pay tax, because you can balance any profit you make against the losses made when developing the field.

But eventually, the profit is greater than the losses, and you start paying tax.

Then when you reach cessation of production (COP), you start making losses again.

If your company had many fields, you might offset the losses against profits on another field. But eventually you would get to the last field and have no losses to set it against. (And if you are a small company, or a decom specialist, you might not have any other fields in profit).

So with the “extended carry” of decommissioning, you can set these losses against previous profits, and then get a repayment of tax.

Selling the asset

If you sell the asset to another company, they might not have any history of tax payments to get a repayment from.

Decommissioning - the D word

For PRT, because it is field specific, if the field makes a loss one year and has made a profit on a previous year, some of the profits can be returned to whoever paid them, which might be a different company to the one which is operating it now. So this is a 'windfall' benefit to the seller, since it did not incur any decommissioning costs. It is common in sales agreements for the seller to say that this money will be given to a buyer.

However, the overall effect of this is not the same as if the tax history could somehow be sold from seller to buyer, due to the way that PRT, RFCT and SC work together.

You pay PRT on the overall profits of the field – and then you pay RFCT and SC on the remaining profits. So if both are set at 50 per cent, you'd pay 75 per cent overall.

But if you get PRT repaid, then your profits where RFCT and SC are payable become higher. In the example above, if all PRT was repaid, then you would pay RFCT and SC on all of your profits, not just 50 per cent of them (so pay twice as much RFCT and SC).

So if a seller gets a rebate of PRT, it can't just pass this onto the field buyer, because it must also take into consideration the extra RFCT and SC it must now need to pay.

"So it's not quite as tax efficient as it could be, but it does at least mean the buyer is able to get the effect of the relief from the seller," Mr Reid said.

Also, with RFCT and SC, because it is done on a company basis, there's no mechanism for HMRC to return the money to the previous owner. "So if

you are a buyer here and don't have sufficient tax history there's nothing you can do about it - at the moment," he said.

One possible pathway is that a company sells an asset, but with an agreement that the selling company will do the decommissioning, not the buyer. HMRC has recently published guidance saying that they are happy that, in that scenario, the seller would receive the RFCT and SC relief.

But a complication here is that for PRT, there is a requirement that tax relief is only available to companies which are current participants in the field. This means that the selling company would need to stay named as one of the license holders – so probably does not feel it is getting the asset off its hands, the original objective.

A factor in sales transactions

Putting this together, it means that it can be much cheaper for the seller to decommission the platform rather than the buyer, particularly if the buyer is a "relatively new entrant which doesn't have a tax history of its own," he said.

The industry has been aware of the issue for a while, but has only recently taken more interest in it.

Since it is effectively cheaper for the seller to do the decommissioning, the parties can agree that the seller will do it, and the buyer pays a price for the asset which reflects that agreement. But this factor may mean that it is not worth the transaction going ahead, which means the asset stays in the hands of the seller, typically a large legacy oil and gas company with little interest in

running tricky old fields.

So currently the UK Treasury and tax authorities, together with industry, are looking at how the situation can be improved. The Oil and Gas Authority has a workgroup on the matter.

The aim is that the tax history can somehow be sold from a seller to the buyer, so the seller gets no advantage (which might inhibit the value of the transaction).

"It is quite a difficult thing to do, not something which has happened before, and there's no easy way to do it," he said. "There are various potential solutions but also concerns that it has to work for the seller, the buyer and the treasury."

"The hope is that if the solution can be found, which allows the buyer to be in the same position as the seller. It will allow new entrants to decommissioning on the same basis as a seller with lots of tax history."

"If a proposal is picked, it should be included in the finance act next year. It will be another tool in the deal toolkit to allow buyers who otherwise may not be able to make the economics of purchasing a late life asset and incurring the liability work."

Note – a buyer will never get all of its decommissioning costs covered – so it will still have an incentive to keep the decommissioning costs as low as possible. For example, if the field or company paid an average of 50 per cent tax during the period when it earned as much profit as the decommissioning costs, then it will get 50 per cent of the decommissioning costs back.

Finding Petroleum

Dassault Systèmes – using digital 3D worlds to support decom

Dassault Systèmes is building virtual models of oil and gas projects – which can be used to plan and optimise the real-life project. This could be a great help in making decommissioning projects go more smoothly and reduce costs

Dassault Systèmes, the 3DEXPERIENCE company, is building virtual models of oil and gas projects, which can be used to plan and optimise work. These could be a great help in making decommissioning projects go more smoothly, avoiding problems which might increase costs.

Dassault Systèmes develops industry solutions and applications that support 3D design, engineering, 3D CAD, modelling, simulation, data management, working in the aerospace and automotive industries among others. Over the past few years it has



James Rosenshine, Industry Executive, Oil & Gas, Dassault Systèmes (left) with Graham Scotton of Petromall, event chairman (right)

gradually evolved from just making design tools to making digital "experiences" where

people can use digital 3D models to get a better understanding of the real (physical) world.

The company, headquartered in France with a global presence, describes itself as a "research and development based scientific company, which takes a systematic approach to the creation of knowledge associated with the physical world."

"We use the virtual world to observe, experiment and validate what is going on," said James Rosenshine, senior industry execu-

tive, oil and gas, with Dassault Systèmes.

As an example of how it can work, consider the “virtual model” of the city of Singapore, which Dassault Systèmes has been commissioned to create by Singapore authorities.

Dassault Systèmes is putting together all relevant and available data about Singapore to build a 3D model of the city and what is happening in real-time, as a “living model”. It includes details about buildings, weather / air, people and vehicles as well as underground infrastructure.

Using this model, it will be possible to answer questions like, if we build a skyscraper here, how will it affect the surroundings and factors like the airflow around it, he said.

“If a city, which is a complex ecosystem, can do it, then the oil and gas industry can do it,” he said.

If a similar approach was used for a decommissioning project (or group of projects), it would be possible for the people involved to see past and current progresses through online visualisation, experiment better ways to do work and see where the gaps in available information are.

This virtual world is much more than electronic files stitched together – it means transferring the company’s entire operation in digital version into a collaborative platform, he said.

There is often talk in the industry about making a “digital replica”, a digital representation of what is happening in reality. This is a similar idea.

“You can create a 3D model which incorporates all the requirements, all the functions, logical information associated with an asset. Also, you can understand entire (eco) systems and behaviours associated with that asset,” he said.

“This gives you a living model that you can use in late life and decommissioning.”

Making decommissioning go better

A platform can help make decommissioning projects go better.

The platform is hosted online, so everybody can work with it, you don’t need special software or computers. You can also link in customers, suppliers and partners.

The digital models based on the data available form a basis for multi-disciplinary collaboration, because everyone works on the same model and data basis. So, it can help break down the “silos” within organisations, where different departments don’t collaborate as much as they could.

The consolidated data can be used as a basis for creating dashboards and tailored views on operations for the various stakeholders, so they can track progress (and the elements of it they need specific information about), and drill down into the information to find out more.

The data can be used as a basis to create “work packages” – lists of tasks which can be assigned to contractors. The contractors can then see the information they require. Similar scenarios have been developed for the aerospace and automotive industry.

A 3D model can be used to help check materials are in compliance with hazardous substances regulations, anticipate risks, and perform overall master planning. You can make a 3D visualisation of the project status which people can use to better understand what is going on.

You can use it to better understand the pay-off between economics, performance and risk.

You can use it to understand where you have gaps in your information about your assets, and then perhaps fill them in with modern techniques, such as laser scanning.

A fully digitised approach would assist with many of the issues flagged up in a “risk and opportunities” matrix for decommissioning, developed by the UK Oil and Gas Authority as part of a 2016 “Decommissioning Strategy” document.

It identifies a number of issues as of “high significance” in decommissioning, which should be tackled early. These include “information transparency,” “lack of true collaboration,” “lack of robust data,” “supply chain capability,” and “execution schedule management.”

Digital models can help a company to adopt what Dassault Systèmes calls a “product li-

ifecycle management approach” to an offshore asset, over its entire lifetime from development to decommissioning.

Other benefits are that you can enhance the visibility, control and traceability of data.

Building the digital platform

The starting point for building a ‘digital platform’ is to integrate all the information you have.

Often companies say they don’t have all the information, or it is scattered throughout the organisation, or in different systems, and the data is in different formats, and some of it is not in very good quality.

However, you don’t need to actually feed your data into the platform, you can connect it to your data wherever it currently resides. You can build it up gradually and only put in data which you think is meaningful and useful, as you find it, Mr. Rosen-shine said.

Creating a digital model “is not as big [a problem] as people think.”

Dassault Systèmes also talks about customers creating a “book of knowledge” about the asset, or a single data repository which can be accessed by both operator and suppliers so they can collectively make decisions about what work needs to be done and how to do it.

Similar methods have been used in the nuclear industry.

“It comes back to having a systematic approach to knowledge management, having better visibility and control of your costs. That transparency is needed for people to collaborate together,” he said.

Sometimes there are concerns about sharing competitive information, but maybe there shouldn’t be, because the 3DEXPERIENCE platform includes robust IP and access control tools according to individuals’ roles and functions across the entire organisation ecosystem.

Simply said, the “link to where the data is” method means that if engineers want to (for example) continue working with Excel, they can do, and the Dassault Systèmes 3DEXPERIENCE platform takes over any new data.

Decommissioning - the D word - Jun 23 2017 attendee list

Steve Andrew, Demolition and Remediation Manager, ABB

Rob Gill, Senior Advisor, Advisian

Paul Murphy, Key Account Manager, Oil and Gas Division, Airbus Defence and Space

Geoffrey Boyd, Field Development Consultant, Antium FRONTFIELD

John Mc Keon, Founder -Director, Ardilaun Energy Ltd

Richard Taylor, Oil & Gas Analyst, BMI Research

Harvey Johnstone, Global Manager, Decommissioning, Prevention & Waste, BP

Carl Fredrik Gyllenhammar, GeoScientist, CaMa GeoScience AS

James Brown, Chaucer

Elena Alvarez-Pino, Chaucer

Christopher Lloyd, CL Consultancy

David Rutherford, CMS

Calum Tilston, CMS

Philip Reid, Solicitor, CMS Cameron McKenna LLP

Clive Magnus, CNA Hardy

Graham Clevett, Managing Director, Cornhill Economics Ltd

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Mohamed Sharaf, Dassault Systemes

Humphrey Douglas, partner, Dentons

Alex Tostevin, Dentons

Marcus Flint, Senior Principal Consultant, DNV GL Ltd

Brian Davis, Journalist, F/lance Journalist

Avinga Pallangyo, Conference Organiser, Finding Petroleum

Richard McIntyre, Sales Manager, Finding Petroleum

Karl Jeffery, Editor, Finding Petroleum / Digital Energy Journal

David Harper, Principal Consultant, Harper Associates

Richard Reeves, HSBC

John Hanson, Manager, IDS (Asia) Pty Ltd

Evgenia Kukina, Sr Product Manager, IHS

Inga Shamsutdinova, IHS Markit

Phil Carpenter, Business Development Manager, Ikon Science

Irina Mosina, Imperial College

Greg Coleman, CEO, Independent Resources Plc

Mark Jones, Business Development Manager E&A, INTECSEA

Phil Penfold, Partner & Global Director BD, IO Oil & Gas Consulting

Katerina Gunningham, Partner, Iskra Consulting Ltd

Sangeeta Jordan, Researcher, JOGMEC

Nina Howell, Counsel, King & Spalding International LLP

Brian Richardson, KM Dastur

Martin Kotarba, KM Dastur

Steve Giles, Energy Divisional Director, KM Dastur & Company Limited

Christoph Ramshorn, Director, Manage Your Options

Penny Cygan-Jones, Senior Knowledge Lawyer, Norton Rose Fulbright

David Hamersley, GIS & Ocean Remote Sensing Specialist, NPA Satellite Mapping (CGG)

Robert Parker, Consultant, Parker

Philippe Bara, Partner Re

Graham Scotton, Petromall

Chris Hayes, Well Operations Director, RPS Energy

Martin Smith, Business Development Manager - Operations, RPS Energy

Michele Peduzzi, Santander

Elvira Mullakhmetova, Risk and Insurance Adviser, Shell

Meera Shah, Shell

Tom Martin, Director, Shikra Consulting

Daniel Sim, Director, Simmar Ltd.

Alexander Chalke, Business Development Director, Simpson Booth

Ben Holland, Partner, Squire Patton Boggs

Michael Davar, Associate, Squire Patton Boggs

William Hanson, Project Manager, Suez Oil & Gas Systems

Andre Sharma, Petroleum Analyst, Svenska Petroleum Exploration AB

Ali Elyaseri, Petroleum Economist, Svenska Petroleum Exploration AB

Claire Seffens, Swiss Re

Simon Bradbury, Chief Operating Officer, The Steam Oil Production Company Ltd

Nick Wootton, Deputy Underwriter, Tokio Marine HCC

Phil Houston, Senior Consultant, Worleyparsons

Andrew Zolnai, Owner, zolnai.ca

Gary Ware, Zurich

Ed Turner, Zurich



What did you enjoy most about the event?

“ “ A full understanding of the Tax issues / transfer of liability etc.

Simpson Booth

” ”

“ “ Mixture of different topics.

” ”

“ “ Steve Andrews presentation. Well chaired by Graham Scotton.

David Harper (Harper Associates)

” ”

“ “ An excellent overview, in particular the ones by Philip Reid on tax and the ABB talk on “hidden surprises” when decommissioning - i.e. Traceability of works and improvements that went unrecorded.

” ”

“ “ The mix of disciplines present; the time available for talking to other participants.

*Christoph Ramshorn
(Manage Your Options)*

” ”

“ “ Variety of companies presenting at the event.

” ”

“ “ Understanding the technical challenges; Learning more about the insurance market for decom.

” ”

“ “ The Q&A sessions.

” ”

“ “ The variety of content and perspectives was useful, especially as decommissioning is not a simple process.

” ”

“ “ Presentations, in particular KMD presentation from Steve Giles.

” ”

“ “ Good varied aspects over the whole subject matter.

” ”

“ “ Good content in a half day.

” ”

“ “ Information.
*Andrew Zolnai
(zolnai.ca)*

” ”

