

ENVIRONMENTAL PRESSURES ON THE CONTINUED USE OF CHEMICALS IN OFFSHORE OILFIELD APPLICATIONS.

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1 ABSTRACT

The objective of the OSPAR Commission Hazardous Substances Strategy is to prevent pollution of the maritime area by continuously reducing discharges, emissions and losses of hazardous substances. The ultimate aim is to achieve concentrations in the marine environment near background values for naturally occurring substances and close to zero for synthetic (man-made) substances. The Commission will implement this Strategy progressively by making every endeavour to achieve these objectives by the year 2020. OSPAR has already identified a List of Chemicals for Priority Action and a List of Substances of Possible Concern. Possibly of more importance to the offshore industry is the OSPAR Decision 2000/2 on the Harmonised Mandatory Control System (HMCS) which has been in force for nearly 5 years and is now looking to set interim targets for reduction of use and discharge of chemicals.

In November 2004 the European Commission approved new Commissioners and has opened the way for the newly elected European Parliament to finalise its EU Chemicals Policy. The **Registration, Evaluation, Authorisation and restriction of CHemicals (REACH)** has the potential for significant reduction of the supply of substances for all speciality chemical products including those used in the oil industry.

This paper reviews these and other environmental drivers, which may affect the future use of chemicals for oilfield operations.

2 THE REGULATORS

2.1 OSPAR Commission¹

The 1992 OSPAR Convention is the current instrument guiding international cooperation on the protection of the marine environment of the North-East Atlantic. It combined and up-dated the 1972 Oslo Convention on dumping waste at sea and the 1974 Paris Convention on land-based sources of marine pollution. The work under the convention is managed by the **OSPAR Commission**, comprising representatives of the Governments of 15 Contracting Parties: Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom, and also the European Commission which represents the European Community.

The work under the Convention applies the ecosystem approach to the management of human activities. It is organised under six strategies one of which, The Hazardous Substances Strategy, sets the objective of preventing pollution of the maritime area by continuously reducing discharges, emissions and losses of hazardous substances. The ultimate aim is to achieve concentrations in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances. The Commission is implementing this Strategy progressively by making every endeavour to move towards the target of the cessation of discharges, emissions and losses of hazardous substances by the year 2020.

The Strategy has identified a **List of Substances of Possible Concern**. These chemicals have been selected and prioritised as follows. Initial selection is by a worst case screening procedure that identifies certain hazardous substances on the basis of their intrinsic hazardous properties of persistence, likelihood to bioaccumulate and toxicity (P, B and T). Substances are placed on the List because they could adversely affect marine ecosystems. These substances are then ranked according to their actual occurrence and effects in the marine environment. Those substances from the ranked list judged to require priority action by OSPAR have been placed on the **OSPAR List of Chemicals for Priority Action**.

Alongside the Hazardous Substances Strategy is the **Offshore Oil and Gas Industry Strategy**. This has set the objectives of preventing and eliminating pollution and taking the necessary measures to protect the maritime area against the adverse effects of offshore activities so as to safeguard human health and conserve marine ecosystems. Also, when practicable, to restore marine areas that have been adversely affected.

The Commission will implement the Offshore Oil and Gas Industry Strategy progressively and, insofar as they apply, in a way consistent with the commitments made in other OSPAR Strategies. To implement this Strategy, the OSPAR Commission has adopted a number of Decisions, Recommendations and other Agreements which are discussed and agreed in the first instance by the Offshore Industry Committee (OIC).

2.2 European Commission ²

After centuries of frequent and bloody wars in Europe, a number of European leaders became convinced that economic and political unity was the only way to secure a lasting peace between their countries. After the French Foreign Minister proposed integrating the coal and steel industries of Western Europe in 1951, the European Coal and Steel Community (ECSC) was set up, with six members: Belgium, France, Italy, Luxembourg, the Netherlands and West Germany.

The ECSC was such a success that, within a few years, these same six countries decided to integrate other sectors of their economies. In 1957 they signed the Treaties of Rome, creating the European Atomic Energy Community (EURATOM) and the European Economic Community (EEC) and formed a "common market" by removing barriers to trade. In 1967 the institutions of the three European communities were merged and from that point there has been a single Commission and a single Council of Ministers as well as the European Parliament. From 1979,

members of the European Parliament have been directly elected by citizens of the member states.

The Treaty of Maastricht (1992) introduced new forms of co-operation between the member state governments and by adding this inter-governmental co-operation to the existing "Community" system, the European Union (EU) was created.

Economic and political integration between the member states of the European Union has meant that these countries have had to take joint decisions on many matters. This has resulted in common policies being developed in a very wide range of fields including agriculture, consumer affairs, competition, the environment, energy, transport and trade. As circumstances have changed so have some key policies. For example, the aim of the agricultural policy is no longer to produce as much food as cheaply as possible but to support farming methods that produce healthy, high-quality food and protect the environment. The need for environmental protection is now taken into account across the whole range of EU policies.

It took some time for the Member States to remove all the barriers to trade between them and to turn their "common market" into a genuine single market in which goods, services, people and capital could move around freely. The Single Market was formally completed at the end of 1992, though there is still work to be done in some areas - for example, to create a genuinely single market in financial services.

A number of waves of accessions has seen the EU grow in size with Denmark, Ireland and the United Kingdom joining in 1973, Greece in 1981, Spain and Portugal in 1986 and Austria, Finland and Sweden in 1995. In 2004, ten new countries signed up: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. To ensure that the enlarged EU can continue functioning efficiently, it needs a more streamlined system for taking decisions and the Treaty of Nice which came into force in February 2003 lays down new rules governing the size of the EU institutions and the way they work and also lays the foundation for the new EU Constitution if all EU countries approve this.

2.3 National Governments

Whilst installations for the exploration and production of oil and gas are located in sectors coming under the jurisdiction of national governments, any discharges to sea are not confined to those sector boundaries. This is why individual governments have joined the OSPAR Convention which covers the North East Atlantic including the North Sea. However, the OSPAR Convention as such cannot pass legislation and this has to be implemented by the Contracting Parties. As will be outlined later this implementation does not always occur in a harmonised fashion.

There is considerable overlap between the Contracting Parties to OSPAR and Member States of the EU. The most notable exception from the oil and gas industry point of view is that Norway although a Contracting Party to OSPAR is not a Member of the EU. It has however undertaken to adopt those initiatives which affect Europe beyond the boundaries of Member States eg environment issues.

The main difference between OSPAR and the EU is that the EU can and does pass legislation. Increasingly this legislation takes supremacy over the legislation that

individual Member States may have passed. It is in this light that the introduction of the EU Chemicals policy should be viewed.

3 THE REGULATIONS

3.1 OSPAR Harmonised Mandatory Control System

In practice, few of the substances on the List of Substances of Possible Concern and very few of those on the List of Chemicals for Priority Action are actually used offshore. The “regulation” currently covering the use of chemicals offshore is OSPAR Decision 2000/2 on a Harmonised Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals. The Decision is accompanied by two OSPAR Recommendations, 2000/4 on a Harmonised Pre-Screening Scheme for Offshore Chemicals and 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF). These have been described adequately in previous papers^{3,4} and it is not intended to elaborate further on these here.

3.1.1 Disharmony

Where appropriate, this Decision has been embodied into the national legislation of Contracting Parties with offshore interests eg in the UK, the Offshore Chemical Regulations 2002. The purpose of the Decision was to introduce a harmonised approach to the regulation of chemical use and discharge. However the way in which the different Contracting Parties have implemented the legislation has resulted in differences that were not perceived in 2000 when the Decision was agreed. This has led to substances not always being placed in the same group for management decisions and reporting, because of differences in criteria and cut-off values.

All relevant Contracting Parties have a system that puts substances into categories. The criteria for assigning substances to categories are established in each case, but the criteria or cut-off values may differ between countries. The national systems are tailor made to suit each country’s specific regulatory system and management decision practices. At the moment further harmonisation seems difficult and will be subject to further discussion this year.

PLONOR substances are treated the same by all Contracting Parties. However, some Contracting Parties also have “PLONOR-like” substances which they treat the same as formal OSPAR PLONOR listed substances. Some Contracting Parties have lists of substances that they treat as being of equivalent concern to Annex 2. These lists are individual to each country.

Most Contracting Parties except Norway accept fresh water biodegradation data. Norway does not currently accept fresh water toxicity data and also uses a different cut-off value for molecular weights. They use 1500 as the value above which bioaccumulation is not expected to occur, whereas other Contracting Parties use a value of 600 – 700. Some differences have also been noted regarding the use of log P_{ow} in the pre-screening scheme with Norway using normalised (weighted average) values while other Contracting Parties use the highest value.

3.1.2 Environmental Goals

All these differences mean that some substances are accepted for use and discharge by some Contracting Parties but are subject to restriction or even banned by other Contracting Parties. One of the major drivers for introducing Decision 2000/2 was to harmonise regulation so that reporting could also be standardised. The differences are such that 5 years after the Decision was agreed, Contracting Parties have not been able to report chemical usage in a harmonised way. As yet, environmental goals for the reduction of use and discharge of chemicals have still to be agreed due to the difficulty in establishing baseline figures.

At OIC 2005, all Contracting Parties were of the view that at present priority should be given to establishing goals for the discharge of chemicals that are, or which contain added substances, listed in the OSPAR List of Chemicals for Priority Action. OIC agreed to recommend to OSPAR 2005 the following environmental goals for discharges of offshore chemicals in the OSPAR maritime area:

- a. with immediate effect, Contracting Parties should not authorise discharges of new offshore chemicals that are, or which contain, added substances, listed in the OSPAR List of Chemicals for Priority Action (Agreement number 2004-12);
- b. by 1 January 2010, Contracting Parties will phase out the discharge in the OSPAR maritime area of offshore chemicals that are, or which contain added substances, listed in the OSPAR List of Chemicals for Priority Action (Agreement number 2004-12).

In addition to the above, OIC considered it appropriate to develop goals for chemicals that are, or which contain added substances that have been identified as candidates for substitution with Contracting Parties reporting to OIC 2006 on national achievements regarding reduction of discharges of substances identified as candidates for substitution for the years for which they had data available. Disharmony has resulted in some substances being candidates for substitution in some countries but not others, and for this reason, the setting of goals leading to the reduction of usage and discharge is still some time away.

3.1.3 PLONOR List Criteria

The PLONOR list is an integral part of HMCS. Substances on the list are only subject to "Expert Judgement" in the pre-screening scheme prior to authorisation for use. Up to 2001, there were no set criteria for new substances to be assigned to the list. Criteria were developed based on the properties and attributes of the substances on the existing list at that time. Even then, no new substances were added until a procedure was developed setting up a timetable for new substances to be considered prior to ratification at OIC meetings. This has been successful in that a small number of new substances have been added to the list and also synonyms and additional CAS numbers for existing substances have also been added.

The criteria that were agreed are now being challenged by some Contracting Parties with a view to excluding synthetic (man made) substances from being added to the list and also by suggesting that existing substances be reviewed, if necessary by looking at test data to confirm that existing substances meet the criteria. The criteria do need to be reviewed as currently silica sand, which forms an enormous part of the marine environment, is currently being challenged on its potential to cause cancer by

inhalation. There is concern among a number of Contracting Parties and Observer Groups to OSPAR that any review which reduces significantly the number of substances on the existing PLONOR List could throw the whole of the HMCS into disarray. The outcome of discussions about the criteria is due to be reported and agreed at OIC 2006.

3.2 EU Chemicals Policy REACH

3.2.1 The Proposals

Stringent safety assessments evaluating the potential health and environmental impacts have to be made on new chemicals before being marketed in the EU whereas “existing chemicals” have not been subject to such assessment. The European Commission published a “White Paper”⁵ on chemicals policy outlining new proposals requiring **Registration, Evaluation and Authorisation of Chemicals (REACH)**. This is designed to eliminate the differences in assessment between existing and new chemicals and will cover the potential effects of exposure to chemicals on human health and also the environment.

REACH will apply to all chemicals including those registered on the European Inventory of Existing Commercial Substances (EINECS). All substances manufactured or imported in amounts of 1 tonne or more per year will need to be registered. There are exemptions including polymers, intermediates, pharmaceuticals and foods which are deemed to be adequately covered by other legislation. Particular uses of each chemical will need to be registered and the registration dossier will need to be updated for each new unregistered use as they occur.

Registration will be with a new European Chemicals Agency (ECA) which will manage a central database. Registration will require basic data to be submitted together with brief descriptions of the uses of the substance. A technical dossier of test data and testing proposals will also have to be submitted. The data required will depend on the production volume and suspected toxicity of the substance with the deadline for registration also being governed by the production volume.

Once registered, substances must be evaluated by one of two methods. **Dossier Evaluation** will be the process where animal testing is proposed to check whether test data already exists to prevent further unnecessary animal testing. Where a substance is suspected of posing a risk to human health or the environment then further information may be required for **Substance Evaluation**. Evaluation ie assessment has to be completed in a time frame after registration depending on tonnage used.

If a substance is identified through registration and/or evaluation as being of high concern then it will be subject to authorisation without which it cannot be placed on the market. Such substances are carcinogens, mutagens, reprotoxins, persistent, bioaccumulative, or toxic or which cause serious or irreversible effects to humans or the environment. Where risks of using a substance can be proved to be adequately controlled, authorisation may be granted. This decision may take into account whether substitutes are available or actively being sought and could be time limited if granted for socio-economic reasons. Even substances not classified of high concern could be restricted if their use is poses unacceptable risks.

The EINECS database contains some 100,000 existing chemicals of which around 30,000 are used in quantities of more than 1 tonne per year which would require registration under REACH. About 20,000 substances are used in volumes of 1 to 10 tonnes per year requiring less data than for higher tonnage use. The European Commission estimates that about 6,000 substances will need to be evaluated and that some 1,500 may require authorisation.

3.2.2 Implementation Timetable

The White Paper was published in 2001. The first draft was made and the detailed proposals put out for public consultation. Little progress was possible with the European Parliamentary elections held in 2004. With MEPs now elected and new Commissioners in place the impetus is increasing and the second draft is expected before the end of 2005. The proposals will be subject to a co-decision process between MEPs and the Council and the final regulation is expected by the end of 2006 or early 2007.

Registration and assessment deadlines will depend on tonnages used and are shown in Table 1.

Table 1 *Registration Deadlines for REACH*

Production Volume	Registration Deadline (Assuming negotiations end 2006)	Assessment Deadline
>1000 tonnes +CMR cat 1 & 2	2008 - 9	2010
>100 tonnes	2011 - 12	2013
>10 tonnes	2016 - 17	
>1 tonnes	2016 - 17	

Whilst the registration deadline for substances over 10 tonnes and 1 tonne are the same, there are different data requirements for these categories.

3.2.3 Industry Impact Assessment

Various estimates have been made of the costs of registration and testing to comply with REACH. For substances used offshore in the oil and gas industry with likely tonnages less than 100 tonnes per year these are of the order of £80,000⁶ per substance and £20,000 per substance for tonnages less than 10 tonnes per year. If these costs are recouped over say a 10 year period then the increase in cost per tonne could be £80 - 200/ tonne or even higher as the tonnage approaches the registration threshold of 1 tonne per year. The testing will need to be paid for in the first year however and manufacturers are unlikely to be able to defer recovery of this cost over such a long period. If manufacturers cannot recoup these costs they may decide not to manufacture some substances. This could put many formulations at risk and in turn the processes that use the chemicals containing these substances.

If a component is an active ingredient of say a corrosion inhibitor, then the integrity of an installation may be put at risk if the corrosion inhibitor goes off range and a suitable substitute cannot be found. Similarly, if a demulsifier goes off range and a suitable replacement is not available then a platform may not be able to separate oil and water efficiently. This could lead to a reduction of throughput to increase residence time to allow less efficient chemicals to work or to the release of more oil in the overboard discharge water or more water in the exported oil.

These could affect the economics of the whole field operation and be out of all proportion to the cost of chemical testing. If a reduction of just 10 bbls/ day is caused by inefficient separation, at the current oil price of \$60/ bbl, the loss of income over a 350 day production period would amount to \$210,000. If a component of a drilling mud formulation goes off range, then the costs of developing fields may increase significantly if the available formulations mean significantly longer well drill times. If drill times are increased by only 1 day per well, for a 10 well field development at say \$30,000 per day rig costs the increase in costs would be \$300,000. The operators would not be the only losers here. Governments would lose revenue from taxation of profits due to the operator's increase in costs and reduction of income.

In order to try and get some assessment on the impact of REACH on the Offshore oil and gas industry EOSCA, the DTI and CEFAS jointly developed a questionnaire that was issued to all companies with products registered with CEFAS under the existing Offshore Chemical Regulations. The main problem with REACH at the moment is that the regulations are still subject to change and suppliers cannot be sure what the final regulation will require. It is very difficult for them to say with any certainty whether or not they will continue to manufacture and supply substances or not. The questionnaire asked them to best guess based on the proposals as they stand.

The results cannot be taken as definitive but give some useful pointers to what might happen. One production chemical supplier had some 300 substances in its portfolio from which its product formulations were made. The cost of registration and testing all of these would clearly be prohibitive if these costs fell to the supplier rather than the manufacturer. Even given the uncertainty, suppliers indicated that they expected a reasonable number of substances would go offline when REACH comes into effect. On scrutiny of these substances no particular class or functionality stood out. It was expected that some substances associated with all the different uses offshore would go off range. This means that every process could be affected and that some operators might be particularly at risk if particular products are specific to their operations. The basis of the questionnaire was such that confidentiality prevents drilling down of the information to identify particular operations that may be affected.

3.3 HMCS vs REACH

While there is still much discussion on specific requirements, some comparisons between the features of HMCS and REACH are given in table 2 and which were presented to OSPAR by EOSCA at OIC 2005. From this table, which is not complete, it can be seen that there are many areas of overlap between the requirements of REACH and HMCS. There is also potential for confusion if a

substance that might be authorised for use with one regulation is perhaps not authorised with the other regulation.

Table 2 Comparison of REACH vs HMCS

	REACH	HMCS
Applicability	Applies to all chemical substances listed on EINECS that are manufactured or imported into the EU above 1 tonne per year.	Applies to all chemical substances that are used and discharged into the NE Atlantic.
Not applicable (examples)	Polymers Substances which result from a chemical reaction that occurs incidental to exposure of another substance or article to environmental factors such as air, moisture, microbial organisms or sunlight; Substances which result from a chemical reaction occurring upon end use of other substances, preparations or articles and which are not themselves manufactured, imported or placed on the market; Minerals, ores, or substances occurring in nature if they are not chemically modified during their manufacturing, unless they meet the criteria for classification as dangerous according to Directive 67/548; Natural gas, crude oil, coal.	Exemptions identified in OIC 02/11/1, Annex 10.
Quantity Threshold	Priority is based upon amounts used.	All deliberately-added substances
Testing Requirements	Mammalian and freshwater ecotoxicological tests	Ecotoxicological tests (marine preferred).
Registration	Required for all chemicals manufactured or imported in quantities above 1 tonne per year.	Required for all chemicals using HOCNF.
Evaluation	Required for all chemicals manufactured or imported in quantities above 100 tonnes.	Data on HOCNF is evaluated against pre-screening scheme and in some countries, CHARM.
Authorisation	Required for all chemicals of high concern ie. carcinogens, mutagens and reproductive toxins and persistent, bioaccumulative and toxic substances. Granted by central Chemicals Agency.	Required for all chemicals and granted by national authorities as frame permits or certificates eg. CEFAS templates.
Approximate cost /substance	€ 160,000	€ 9,500

3.4 DREAM

Whilst not strictly a regulation, the **D**ose related **R**isk and **E**ffect Assessment **M**odel, DREAM, is a self imposed method of assessment of chemicals which also has the effect of a regulation.

The Norwegian government issued a White Paper in 1998 requiring the oil industry operating in the Norwegian sector of the North Sea to develop a strategy for reaching “zero environmental harmful discharges” of produced water within 2005. The Norwegian Oil Industry Association (OLF) working group for produced water was

asked to develop the Environmental Impact Factor (EIF). The EIF is based on a combined environmental risk and hazard assessment of produced water discharges, accounting for both composition and amount of the discharge. Determination of the EIF for an installation allows the operator to rank the available technologies for produced water discharge reduction on a cost-benefit basis by identifying the source of potential environmental damage and quantifying the benefit of any action taken to reduce this. Technologies like produced water reinjection, treatment and removal or replacement of process chemicals can thus be ranked based on cost and environmental benefit.

Little data on organic acids fulfilled the quality criteria for toxicity data considered for use within the DREAM Model. The majority of the toxicity studies had been carried out on freshwater organisms. The results showed a very high toxicity, presumably due to a pH effect rather than an actual toxic effect of the compound. Tests using marine organisms are preferred for determination of toxicity threshold levels for organic acids in the marine environment. More reliable data describing the toxicity of organic acids was felt to be needed. As natural seawater is a buffer solution with a fairly constant pH and due to the poor quality of the toxicity data collected for organic acids, PNEC values were not determined for organic acids and these were not included in the EIF calculations. To arbitrarily exclude a class of compounds because the data was not available does not inspire confidence in the model.

The DREAM model was initially developed for the naturally occurring substances in produced water for which substantial environmental data was available. In subsequently applying the model to added production chemicals for which lesser datasets are available, these chemicals become disadvantaged compared to the naturally occurring substances. This is despite the fact that the same datasets for the added chemicals are acceptable for other risk assessment models such as CHARM which is endorsed by OSPAR and its Contracting Parties. The DREAM model is based on chronic data, for the PNEC calculation. Since chronic data is not generally available for production chemicals, a high assessment factor is applied resulting in a much higher contribution to the EIF pie chart. There is pressure from some operators in Norway on chemical suppliers to provide chronic toxicity data and some resistance from the suppliers. Chronic toxicity testing takes considerably longer to obtain results and is significantly more expensive than acute toxicity testing.

The developers of the DREAM model are currently looking at the impact on EIF values of the assessment factors contained within the revised marine EU-TGD⁷. This review has indicated that for one corrosion inhibitor, a 55% reduction in EIF would be achieved using chronic toxicity data on zooplankton and a 98% reduction in EIF with chronic toxicity data on fish and zooplankton. What these values fail to show is that the environmental impact is actually **unchanged**. All that has changed is the perception of environmental impact, due to the use of different assessment factors when more test data is available.

4 INTO FUTURE UNCERTAINTY

4.1 Substitution

The HMCS has been in force since 2001 and OSPAR has a requirement to review any Decisions after 5 years. OIC 2005 concluded that HMCS was itself satisfactory but that differences in its implementation was problematic. Intercessional discussions will be held to try to resolve areas of disharmony between the Contracting Parties. If these differences are resolved, then OSPAR will be able to set more environmental goals regarding reduction of chemical usage and/or discharge. OIC has already determined that the next step should centre on chemicals that are labelled with substitution warnings from the pre-screening process.

Some Contracting Parties already have substitution policies in place and all Contracting Parties report that substitution has occurred for some substances. There is also a feeling amongst both suppliers and regulators that many of the substances already substituted comprise of “low hanging fruit” and that many other substances will not easily be substitutable if at all. Given that reporting differences have already made the establishment of a baseline year for comparison before 2005 difficult, any future target or goal calling for the reduction of substances with substitution warnings would likely miss the efforts already achieved. There is also some discussion as to whether targets should aim at the reduction of the numbers of substances to be substituted or the overall tonnages used.

One of the stated aims of the European Commission of REACH is to stimulate innovation in the chemical industry through the development of alternative substances as substitutes for existing chemicals. The overall effect may be to stifle innovation with new uses being sought for existing chemicals rather than funding the considerable costs for bringing new substances onto the market.

4.2 Data requirements

The testing aspects of the REACH requirements are not proposed to start to come into effect until 2010 and would be phased in over a number of years. From the offshore oil and gas industry perspective, many oilfield substances are not produced or used in great quantities and testing of these may not be required until 2013. The interchangeability of fresh water versus marine data is still to be determined and agreed upon.

With potentially 30,000 substances to be tested there is concern within the wider chemical industry that the amount of testing that the REACH proposals will require will not be physically possible in the required timeframe considering the number of testing laboratories within the EU. OSPAR requirements regarding substance testing on marine species by 2007 will have placed a considerable extra burden on the producers and/or suppliers of offshore chemicals before REACH is finally agreed.

As stated previously Norwegian Operators using the DREAM model are also pressing for chronic toxicity data on some substances, again increasing the requirements for testing in an already busy market.

4.3 Dual Regulation

It is widely recognised that the use and discharge of chemicals offshore is already well regulated. Since there is the potential for much overlap between HMCS and

REACH, and not wanting a second layer of legislation imposed on the industry, EOSCA requested during the UK consultation that derogation be given for oilfield chemicals. Even derogation may not prevent a significant number of substances, currently in use, going off range solely due to the costs of registration rather than any adverse properties. This could have a significant effect on the ability of operators being able to carry out their existing and future activities.

4.4 **PLONOR List**

Challenges to the content and criteria for placing substances on the PLONOR List have still to be resolved. The reduced regulation that these substances currently enjoy makes the addition of new substances onto the list an attractive proposition. Some suppliers see little benefit however in carrying out test work to get the data to be able to put substances forward for the list. There is no financial incentive in making it easier for potential competitors to be able to supply substances based on data they have not had to pay for. The status of the PLONOR List as and when REACH comes into force has also to be determined.

By the time this paper is published, there will be little opportunity left to influence any changes to REACH. The proposals, whilst having admirable objectives concerning the potential effects of chemical exposure on human health and the environment could seriously affect the future supply of chemicals in the EU. Whilst some effort has been made to quantify and justify the costs and benefits to human health, it is recognised that any environmental benefits of REACH are difficult to quantify. Only time will tell.

5 REFERENCES

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