For the first time, cyber risk has made it into the top ten global business risks in the Allianz “Risk Barometer” survey 2014

### Top 10 Global Business Risks For 2014

<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk Description</th>
<th>2014</th>
<th>2013</th>
<th>Rank (2013)</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Business interruption, supply chain risk</td>
<td>43%</td>
<td>46%</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>2.</td>
<td>Natural catastrophes (for example storm, flood, quake)</td>
<td>33%</td>
<td>44%</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>3.</td>
<td>Fire, explosion</td>
<td>24%</td>
<td>31%</td>
<td>3</td>
<td>—</td>
</tr>
<tr>
<td>4.</td>
<td>Changes in legislation and regulation</td>
<td>21%</td>
<td>17%</td>
<td>4</td>
<td>—</td>
</tr>
<tr>
<td>5.</td>
<td>Market stagnation or decline</td>
<td>19%</td>
<td>12%</td>
<td>8</td>
<td>↑</td>
</tr>
<tr>
<td>6.</td>
<td>Loss of reputation or brand value (for example social media)</td>
<td>15%</td>
<td>10%</td>
<td>10</td>
<td>↑</td>
</tr>
<tr>
<td>7.</td>
<td>Intensified competition</td>
<td>14%</td>
<td>17%</td>
<td>5</td>
<td>↓</td>
</tr>
<tr>
<td>8.</td>
<td>Cyber crime, IT failures, espionage</td>
<td>12%</td>
<td>-</td>
<td>-</td>
<td>NEW</td>
</tr>
<tr>
<td>9.</td>
<td>Theft, fraud, corruption</td>
<td>10%</td>
<td>-</td>
<td>-</td>
<td>NEW</td>
</tr>
<tr>
<td>10.</td>
<td>Quality deficiencies, serial defects</td>
<td>10%</td>
<td>13%</td>
<td>6</td>
<td>↓</td>
</tr>
</tbody>
</table>

The third annual Allianz Risk Barometer survey was conducted among risk consultants, underwriters, senior managers and claims experts in the corporate insurance segment of both Allianz Global Corporate & Specialty (AGCS) and local Allianz entities. Figures represent the number of responses as a percentage of all survey responses (557).

Source: Allianz
• Globally, it is estimated that cyber-attacks against oil and gas infrastructure will cost oil and gas companies USD1.87 billion by 2018.
• In the US, 40% of all cyber-attacks on critical infrastructure assets in 2012 occurred against the energy sector.
• The UK government estimates that oil and gas companies in the UK already lose approximately GBP400 million every year as a result of cyber-attacks.

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EXECUTIVE SUMMARY
— **The global (re)insurance markets remain heavily over-capitalised.** With no obvious alternative investment opportunities emerging, and with interest rates around the world still low in relative terms, capital providers are likely to maintain their funds in the (re)insurance markets where they are currently deployed - at least for the short term. Furthermore, new capital from non-traditional providers continues to filter into these markets, serving only to increase existing competitive pressures.

— **Market conditions in the Energy sector are now governed by this overriding factor.** Because investors have no incentive to move their capital elsewhere, it may now take more than a run of catastrophic losses to provoke any significant capacity withdrawal from the Energy sector; reinsurance market capacity is therefore likely to continue to be available, even if the Energy sector falls into unprofitability.

— **The need to maintain market share and premium income is therefore now paramount in the Energy insurance markets.** To counter a business environment characterised by this continued glut of capital, the majority of Energy insurers have realised that they have had to increase their capacity, if only to enable their portfolio to stand still.

— **As a result, overall theoretical capacities in both the Upstream and Downstream markets have increased once more, this time to the highest levels seen this century.** Total theoretical Upstream market capacity now stands at USD5.7 billion, with the equivalent Downstream total is now at USD4.6 billion. Meanwhile, statistics from Lloyd’s suggest that the overall Energy premium pool available to insurers may be reducing for both markets.

— **At the same time, the 2013 Energy loss record has been generally no worse than average.** On the Upstream side, the Willis Energy Loss Database has recorded only two losses in excess of USD200 million, while on the Downstream side, although there have been three serious incidents in Argentina, the USA and Canada, the loss record continues to improve as the impact of the catastrophes of 2011 begins to fade.

— **As a significant softening dynamic now sets in, the leadership consensus that may have held sway in both markets is now open to question.** Instead, new alternatives are starting to emerge to challenge the existing leaders’ profile, particularly in the Upstream sector. Meanwhile in the Downstream sector, the clash between global insurers expanding their footprint in key regions such as the Middle East, Latin America and Asia Pacific and insurers from these regions seeking to increase their own market profile is also serving to intensify competition.

— **In the fight to secure premium income, the midstream portfolio may become a key battleground.** With both markets able to underwrite this class of business, those buyers whose risk profiles feature significant pipeline and other midstream infrastructure are likely to benefit the most from Energy insurers’ search for new income.

— **In the meantime, the energy industry may be sitting on an uninsured cyber-attack time bomb.** In our Special Feature, we examine the issue of cyber-attacks on energy industry infrastructure, and examine whether the global insurance market can ever respond to buyers’ demands for more realistic protection from this emerging threat.
SPECIAL FEATURE: CYBER-ATTACKS
02 INTRODUCTION
INTRODUCTION

Welcome to this year’s edition of the Energy Market Review. Yet another year has passed without any damage to energy industry infrastructure from hurricanes in the Gulf of Mexico, while the 2013 loss record from the remainder of the Energy portfolio has also produced little in the way of major losses. In the meantime, fuelled by capital with nowhere else to go, market capacity continues its relentless march upwards, creating the sort of competitive pressures that we last saw back at the end of the 1990s.

It’s true that the market back then was fuelled by the availability of cheap reinsurance, the providers of which quickly went out of business once losses inevitably rolled in. Today’s Energy markets are a much more grown-up affair, with underwriters properly accountable to their own management and to external regulators for the efficacy of their underwriting strategies. But with the overwhelming majority of Energy insurers finding that they have had to increase capacity just to maintain their existing market share, something may have to give; elementary logic suggests that if every insurer adopts the same expansionist approach then some are bound to lose out, at least in the short-term.

The difficulty with predicting how market conditions will turn out in the next few years is that this is the first time we have seen capital deployed in the insurance markets that is unlikely to be put off by short term underwriting unprofitability. In previous market eras, we have always found that a major catastrophe or series of losses – for example, Piper Alpha, 9/11 and the 2005 Gulf of Mexico hurricanes – has led to a withdrawal of capacity and harder market conditions. But now it will take more than a headline-grabbing loss to precipitate a withdrawal; capital providers would have to find an alternative haven for their money if they are to withdraw from the insurance arena.

So what will happen if rates continue to decline and the loss record starts to deteriorate once more? Determining the market “floor” – the point which no further rating discounts will be tolerated by the market, regardless of competitive pressures – is no easy task. While we can expect some insurers to withdraw when the portfolio eventually becomes unprofitable, what is more difficult to determine is whether such withdrawals will be sufficient to generate a genuine market turnaround with capital still abundant. Only time will tell.

In the meantime a new and highly ominous threat has emerged onto the energy industry risk landscape – the risk of a catastrophic loss resulting from a cyber-attack. Alarmingly, this risk is currently excluded from most Energy insurance policy forms. Although we can now detect the beginnings of a market for this critical risk, much more needs to be done to bring Cyber, Political Violence and Energy underwriting expertise together to forge a product that will truly meet the needs of the industry. Our Special Feature in this Review examines this subject in some detail.

We do hope you enjoy this year’s edition, and look forward to any feedback that you may have.
SPECIAL FEATURE: CYBER-ATTACKS
SPECIAL FEATURE:
CYBER-ATTACKS - CAN THE MARKET RESPOND?
Why effective cyber-attack risk transfer is now a paramount energy industry need

These days, virtually everything that we own that runs on electricity has a computer inside it. While this development has undoubtedly enabled machines of all shapes and sizes to operate more effectively and efficiently, some of us can still be baffled when trying to work out how to make new electronic gadgets actually work. With the advent of wi-fi connected and programmable TVs, central heating, curtains and cookers, apparently you can now run everything in your home entirely from a smartphone – that is of course, so long as you are under 45 years old and do not consider such technological innovations more of a hindrance than a help in managing your own domestic environment.

If only these minor frustrations were the only issues thrown up by the relentless advance of cyber-space. Unfortunately, as everyone is now all too painfully aware, the internet has increasingly become an environment that attracts all manner of people or groups of people acting maliciously in one form or another. Sometimes this malice can simply take the form of personal abuse on social networking sites, but all too often hackers can ruin lives and livelihoods by appropriating all manner of data from personal and corporate websites. Indeed, from a corporate perspective a cyber-attack can not only result in theft of a company’s intellectual capital but also threaten revenue, profits and even the overall brand and reputation of the company, while tying up valuable resources.

So what effect do cyber-attacks have on the energy industry? Much more, perhaps, than many readers will realise:

— Globally, it is estimated that cyber-attacks against oil and gas infrastructure will cost oil and gas companies USD1.87 billion by 2018

— In the US, 40% of all cyber-attacks on critical infrastructure assets in 2012 occurred against the energy sector

— The UK government estimates that oil and gas companies in the UK already lose approximately GBP400 million every year as a result of cyber-attacks

(Source: ICS-CERT; ABI Research; KPMG)

Furthermore, now that connectivity to the internet is so often the norm for so many Industrial Control Systems (ICS) used by the energy industry, we can state that a major energy catastrophe – on the same scale as Piper Alpha, Phillips Pasadena, Exxon Valdez or Deepwater Horizon – could indeed be caused by a cyber-attack (whether politically motivated or not), and crucially – that cover for such a loss is generally not currently provided by the Energy insurance markets.
We have therefore made insurance coverage for cyber-attacks our key point of focus for our 2014 Energy Market Review. In this Special Feature, we seek to answer some fundamental questions:

— Why is the energy industry now waking up to the problem of cyber-attacks?

— Why is the energy industry particularly vulnerable?

— What type of coverage is offered by the Cyber insurance market, and what are its limitations?

— Why is this exposure currently excluded by the mainstream Energy insurance markets?

— Are there any signs of any other markets offering the coverage required?

— What will the future of cyber-attack coverage look like from an energy industry perspective?

As usual for our Special Feature of the Energy Market Review, we have sought the help of a panel of London-based experts to help us evaluate how energy companies should manage cyber-attack risk today. Those experts are:

— Carl Day, Senior Upstream Energy Underwriter, Hiscox

— Elizabeth Heslip, Senior Terrorism and Political Violence Underwriter, Novae

— Tom Hoad, Enterprise Risk Underwriter, Kiln

— James McDonald, Global Head of Marine and Energy, Talbot

— Chris McGloin, Risk Manager of Invensys and Chairman of AIRMIC

— Dan Trueman, Cyber Insurance Underwriter, Novae

Some of their observations are quoted directly on the following pages. We would like to thank them for their time and their willingness to give us the benefit of their expertise. However, we would point out that, apart from when quoted directly, the views expressed in this article represent Willis’ own conclusions as a result of our research and should be in no way be specifically attributed to any individual member of the panel.
Why is the energy industry now waking up to the problem of cyber-attacks?

1. The perpetrators now have the means

There are many reasons why the threat posed by cyber-attacks has grown recently in the energy industry. Such is the industry’s overall global profile that it is clear that there might be any number of individuals or groups that would have sufficient motivation to launch a cyber-attack – if they felt that it would have a chance of success. The problem is particularly acute when considering some of the areas of the world where high levels of oil and gas production and infrastructure sit side by side with political or environmental groups that are prepared to use cyber-attacks as a weapon. So who are the people who want to launch such an attack against the energy industry, and have the means to do so?

— Rogue employees: To start with, there is the obvious internal threat, including rogue employees, careless staff and contractors. Here the motivation is usually financial gain based on the perpetrator’s ability to provide insider information to a competitor. Oil and gas companies’ IT systems contain a wealth of intellectual property, including geophysical assessments, new rig information, pipeline technology and competitive financial data. However, it seems unlikely (although not impossible) that such an individual would either have the means or the motivation to mount an attack that could cause significant physical loss or damage to energy infrastructure, unless such an employee was actually responsible for the IT infrastructure itself.

— The environmental lobby: An energy company has to consider the activities of various political and environmental groups opposed to the energy industry’s stance on issues such as hydraulic fracturing and the exploration and development of remote and environmentally sensitive regions such as the Arctic. Clearly, these groups might be interested in mounting any cyber-attack that would result in a meaningful interruption of business and, more importantly, damage to the company’s brand and reputation, as well as obtaining key data with regard to the location of future drilling activity or perhaps the formula used in the production of hydraulic fracturing fluids.

— Politically-motivated and other malicious attackers: Finally, it seems clear that there are various political organisations located throughout the world that would stop at nothing if they were able to penetrate an energy company’s firewall to cause as much disruption as possible - and if possible, create a major headline-grabbing incident to increase publicity and provide a platform for their message. For example, in June 2013 it was reported in E&P magazine that an activist group called Anonymous had threatened to strike the oil and gas industry with a cyber-attack across the world. The magazine reported that this latest threat appeared to be motivated by a political desire to hurt the oil industry and the global oil markets, noting that the group’s main grievance was that because oil continues to be priced in US dollars, several Middle East countries were “selling out” to the west, exploiting the oil from local countries and thereby creating hardship for local families. State-sponsored hacking has also lead to loss and damage being caused to the oil and gas industry in the Middle East (see Point 2 to the right).

2. Recent attacks have demonstrated the potential threat to the industry

A few years ago, most would have considered the cyber threat to the energy industry might be limited to a successful hack-in by a disgruntled employee or protest group. What changed this perception for good was the huge impact of some successful cyber-attacks over the last four years or so. These include:

— Stuxnet: This was a computer virus discovered in June 2010 that was specifically designed to attack Siemens Step7 software running on a Windows operating system. Stuxnet ruined almost 20% of Iran’s uranium enrichment centrifuge capability by spinning out of control while simultaneously replaying the recorded system values which showed the centrifuges functioning normally during the attack. It was capable of downloading proprietary process information, and then covering its tracks. It also employed previously unknown vulnerabilities to spread, and was powerful enough to evade state of the art security technologies. Most importantly, Stuxnet showed that it was perfectly possible for a cyber-attack to result in significant physical damage to energy infrastructure as well as the ensuing consequential/business interruption (BI) losses. It is thought that the virus has spread to almost every internet-linked device in the world, although the malware was specifically designed to target the Iranian nuclear industry and therefore it does not generally affect the vast majority of software to which it may have migrated.

— Night Dragon: Attackers using several locations in the Asia Pacific region leveraged servers in the US and Western Europe.
to wage cyber-attacks against global oil, gas, and petrochemical companies, as well as individuals and executives in Kazakhstan, Taiwan, Greece, and the United States to acquire proprietary and highly confidential information.

— **Shamoon:** This is a modular computer virus being used for cyber espionage in the energy sector. The virus has been noted as unique for having differing behaviours from other malware cyber espionage attacks, and is capable of spreading to other computers on the network, through exploitation of shared hard drives. Launched in August 2012, the virus has particularly affected major energy companies operating in the Middle East; although no significant physical loss or damage resulted from this virus, it caused a wholesale shutdown of 30,000 computers belonging to a major state-owned energy company on an unprecedented scale, destroying hard drives and data with a considerable loss of data and productivity. It also had a significant effect on a major Qatari energy company.

— **Flame:** Also known as Flamer, sKyWIper and Skywiper, Flame is a modular computer malware discovered in 2012 that attacks computers running the Microsoft Windows operating system. The program continues to be used for targeted cyber espionage in Middle Eastern countries.

— **Duqu:** A collection of computer malware discovered on September 1, 2011, thought to be related to the Stuxnet “worm”. Duqu got its name from the prefix “DQ” it gives to the names of files it creates.

**3. An increased regulatory burden may not be far away**

Given the high profile nature of these sorts of attacks, it is perhaps little wonder that the Obama administration in the United States has already responded to the potential threat to critical US infrastructure from cyber-attacks. In January 2013, the administration passed an Executive Order designed to set up the foundations in which a framework can be constructed between the government and US private sector industries. The framework will effectively allow intelligence to be gathered on cyber-attacks and cyber-threats to privately owned critical national infrastructure such as the private defense sector, utility networks, and the banking industry.

Although not necessarily directly affected by this Executive Order, the impact of increased potential future regulation as a result of this initiative and the highly publicised attacks outlined above has certainly served to focus energy industry thinking on possible measures they might now take to assess and deal with this threat in a more comprehensive manner. While many in the energy industry may not see regulation as the answer to the problem of cyber-attack, it remains a strong possibility that energy companies will increasingly be accountable (if only to their shareholders) for demonstrating that they have taken every possible step to counter this threat.

Indeed we understand that, in the US, directors are being closely scrutinised when their company has suffered from a cyber-attack, when it may become apparent that they should have done more, especially when knowing how vulnerable their organisation is to such an attack.

Furthermore, the Securities and Exchange Commission in the US now provides specific guidance notes about the level of Cyber Risk disclosure that should be considered in fulfilling disclosure obligations mandated by federal securities laws. It may not be surprising if in future if similar developments are forthcoming in the UK.
Why is the energy industry particularly vulnerable?

Energy companies are generally large organisations with a global footprint, with operations in many remote locations; they also often have particularly complicated IT domains, with a significant degree of legacy IT, outsourced IT operations and joint venture set-ups. These factors all increase the energy industry’s vulnerability to a cyber-attack.

1. Too many control systems remain internet-facing

Of particular recent significance has been the general imperative in the industry to cut costs, which from an IT perspective has led to the integration of Industrial Control Systems (ICS), including Supervisory Control and Data Acquisition Systems (SCADAs) and Distributed Control Systems (DCS) with other internet-based IT systems, sometimes without implementing adequate security measures. This strategy has been designed to improve efficiency and to allow management to view field data in real time; however, this seemingly innovative development has increased the possibility of oil and gas infrastructure being opened up to a cyber-attack.

Before we discuss these vulnerabilities, it is perhaps worth pointing out the following:

— Modern energy facilities are designed to shut down safely in the event of a loss of control. There are safeguarding systems installed specifically designed to move equipment to a safe condition when control is lost. There are also many pressure relieving devices installed to prevent equipment becoming over-pressurised.

— DCSs which are used to control process equipment on a 24/7 basis are not normally networked to any other systems. DCS and safeguarding systems are normally installed independently of each other; the only links between the systems can be a serial connection from the safeguarding system to the DCS (which may only be one way).

— There are many IT protocols in place to ensure that both individuals tasked with access to DCS/safeguarding equipment are appropriately vetted and trained, and that any software being installed is extensively analysed for malicious code.

But are these safeguards in themselves always sufficient to prevent a cyber-attack? Advanced process control (APC) modules are becoming more common-place alongside DCS systems. These modules send instructions to the DCS which potentially offers an access point to the DCS which could be hijacked and used maliciously. In some cases these APC modules have been known to have received updates across the internet, which could provide remote access to the DCS.

Furthermore, there is a growing trend within the offshore sector to develop operations where one or more production platforms are remotely operated. This could result in physical damage and loss of profits across several satellite platforms from any loss of process control as a result of a cyber-attack. Well blowouts are a possibility due to the low reliability of down-hole safety valves, which could either escalate or initiate fire, explosion, and pollution impacts.

The results of the increasing connection of SCADAs and other process systems to the internet could be highly significant in the future. Let’s take two examples of how this development can lead to a major loss - one onshore, the other offshore.

Example One – Major National Pipeline Network

Our first example involves the natural gas pipeline and compressor station network operating in the US, as displayed in the chart to the right – a network that certainly fits the bill as “critical infrastructure” from the perspective of the Obama Executive Order. According to the US Department of Homeland Security’s Industrial Control Systems (ICS-CERT) Cyber Emergency Response Team’s (ICS-CERT) own newsletter for Q2 2013, in February 2013 it received a report from a gas compression station owner about an increase in brute force attempts to access its process control network. The newsletter was not surprised by the number of brute force attacks on the gas compressor network, but was puzzled that there were still internet-facing control systems out on the network and that these systems were almost invariably the ones still being used by the oil and gas industry.

So what if any of these attacks had succeeded? This would almost certainly have resulted in some form of system impairment, which in theory might have led to incorrect operation of a valve, which in turn could have led to a build-up of gas, which in turn could have led to an explosion with significant physical damage and business interruption of the network.

If you are an energy company and you get stung by a cyber-attack, the last thing you want to do is to publicise it because it attracts other people to have a go. So to a certain extent the risk is hidden under the radar.

CARL DAY, HIScox
Example Two – MODU

Let us take as our second example a Mobile Offshore Drilling Unit (MODU). Typically, a MODU’s control system and IT data network are separated by an “air gap” which allows the control system to be unaffected by any malware infecting the data network. However, Control System security expert Christophe Goetz of Kingston Systems recently pointed out in Digital Energy Journal magazine that this “air gap” on many MODUs is dissipating. Increasingly, more external access points are being introduced, with further integration between the networks and disparate control systems.

Furthermore there is a general increasing trend to rely on contractors to carry out work on MODUs. This means that some personnel working on a MODU may not necessarily be known to facility management and are more transient in their work location. This generates workforces that have reduced emotional attachment to the rig, which could lead to malicious acts.

No wonder Goetz is moved to comment that “almost every rig manager has a story of a vendor boarding the vessel whipping out their laptop, plugging in to update a patch and leaving, only to have introduced a system regression or a virus.” And if the factor of ageing control systems is added into the equation, it can be seen that if these systems are infected with a virus, they will be much more likely to be unable to resist the impact of such a virus.

What could be the result of the introduction of such a virus into a MODU’s control system? One scenario might be an interference with the rig’s Dynamic Positioning System (DPS) when jacking down next to a platform and pipeline complex; if the rig’s computers suggest that the pipeline is 20 feet away from where it actually is, the ramifications may be potentially horrendous.

Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Natural Gas Transportation Information System
2. Frequency of Emergency Shutdown System suspensions

There is a continued practice in some areas of the energy industry to place Emergency Shutdown (ESD) systems into bypass for extended periods of time. This can occur in any facility, irrespective of its age, and is the result of a breakdown in management procedures. Insurers know that this practice exists in the energy industry and even though they have been highlighting this poor practice for over 25 years, it is still widely observed during insurance risk surveys.

Older facilities tend to have less-developed safeguarding systems, which could result in an increased vulnerability compared to the industry as a whole. Furthermore, older facilities will almost certainly have more issues concerning equipment reliability and the ability to source spare parts. This means that there is an increased likelihood that these older facilities will have equipment out of service, which could increase the risk of ESDs being by-passed – which would give any cyber-attackers a much greater chance of gaining access to the facility’s control system.

To illustrate, the following theoretical scenario sets out a potential path to a major property damage and business interruption loss resulting from an intentional cyber-attack on an energy company’s control systems. Given the nature of the threat, the sequence of events leading to the operational loss will be similar in nature to both upstream and downstream facilities; the differences between the two energy sectors will be in the type and quantum of physical damage and financial loss realised from the event. (Of course, some facilities will be more susceptible to this scenario than others.)

1. A facility is running normally, but one or more emergency shutdown systems are bypassed. The duration of these bypasses extends beyond that of a normal outage for routine maintenance activities because spare parts are not available.

2. A disgruntled employee or contractor (who may or may not be part of a wider environmental or political organisation) gains access to the DCS, and installs malicious code. (Sometimes the DCS Engineer/ Administrator panel keys can be found left in the DCS panel during insurance surveys, rather than stored in a secure location.) Access to the DCS could be either from hardware on the targeted facility, or remotely through the internet via a link to the DCS. A number of IT protocols are circumvented, which would be easier to achieve if the DCS connection is able to be activated remotely (this will depend on whether the connection is two way or one way).

3. At an unspecified time the malicious code causes a total loss of process control. Due to the bypassing of the ESD system, process equipment does not move to a safe condition but promotes increased temperatures and pressures that exceed both the normal process operating envelope and equipment design specifications and/or physical limits.

4. The result is a release of hydrocarbons from the primary containment resulting in a major fire and/or explosion.

It should be noted that this theoretical loss scenario considers a “double-jeopardy” event sequence (i.e. an ESD bypass followed by a cyber-attack), which is different to the standard insurance approach of single-jeopardy loss scenarios. However, due to the common occurrence of ESD bypasses in the industry, this can certainly be considered to be a credible event.
What type of coverage is offered by the traditional Cyber insurance market, and what are its limitations?

Given the potential impact of cyber-attacks on the energy industry, we must now look at the risk transfer products available today and determine if what is on offer at the moment from the market can truly meet the industry’s needs. We must first start by considering what is currently available from the existing Cyber insurance market.

1. First Party Network Loss
The cyber insurance market policy will provide cover for damage to digital assets affected by an attack, including the costs to recollect, recreate and reconstitute the digital assets of the company which are damaged, lost, altered, corrupted, distorted or stolen. Coverage is also provided for income loss and interruption expenses incurred by the company during the period of restoring the network directly as a result of the attack. However, there is no coverage for any physical loss or damage arising from the attack.

For standard ‘non-physical business interruption’ (BI) in the traditional Cyber market (i.e. flowing from a ‘cyber event’ but not flowing from physical property damage) the waiting hours period can be as low as 8 hours. However for energy companies, given their huge revenues, a waiting hours period of 24 hours is more realistic. In respect of BI that does flow from physical property damage (the initial trigger causing the property damage still has to be a ‘cyber event’) the waiting hours period would match the waiting hours period in the firm’s existing BI policy (i.e. up to 60 days).

So for energy companies, for non-damage BI the Cyber market will provide a 24 hours waiting period. What is interesting is how Cyber markets such as Kiln are also starting to respond in respect of BI loss following property damage (the initial trigger is still a cyber-attack) and we discuss this later in this Special Feature. For energy companies, the intention is to write-back the CL380 exclusion; in this scenario, the waiting hours period would dovetail with that contained in the company’s existing property BI policy.

2. Privacy and Security Liability
The policy will pay for damages and legal fees as a result of a privacy breach or breach of confidence, as well as Third Party damages and legal fees as a result of unauthorised use/access, the transmission of a virus, denial of service attacks and other computer crime.

3. Media Liability
The policy will pay for damages and legal fees as a result of a wrongful act in the course of publishing content in electronic or print media, including online social media platforms.

4. Privacy Regulation Defence, Awards and Fines
The policy will pay for expenses resulting from investigation, adjustment, defence and appeal of regulatory proceedings, as well as privacy regulatory fines and penalties (where insurable by law).

5. Crisis management and reputational expenses
The policy will pay the costs to employ specialist forensic experts and solicitors to investigate and respond to a privacy breach or system failure. The policy will also pay for costs to notify victims of privacy breaches and provide them with identity theft assistance and costs for PR related services to mitigate reputational harm.

6. Cyber extortion
The policy will pay the costs involved in engaging crisis management experts, as well as the costs involved in paying ransoms (if deemed to be necessary).

But what about a major catastrophe?
It will be obvious to most readers that this type of insurance cover, while very valuable to a great many buyers, is designed to cover essentially non-catastrophic cyber-attack losses to data and intellectual property (not the value of the IP itself), as well as small scale downtime following a computer network breakdown. Of course, any risk transfer solution regarding the protection and replacement of data, together with business interruption (loss of net profit) is to be welcomed, and many energy companies may well find the purchase of these risk transfer products to be a sensible and cost-effective risk management strategy.

However, what is not traditionally covered - or is even envisaged by the providers of this cover - is the truly catastrophic event involving significant physical loss or damage that may be caused by the sort of a cyber-attack that we described earlier, which could well have financial consequences way in excess of the limits offered by this market.

It seems to me that cyber coverages are designed to cover for data loss, not for real loss. So in a limited way they are providing cover, but that is not what most customers will want. Most customers want coverage under their property and liability programmes, having them properly addressed and not taken out by exclusions.

CHRIS MCLIN, INVENSYS
Why is this exposure currently excluded by the mainstream Energy insurance markets?

Given the limitations of the existing Cyber insurance market in providing the cover that is really required by the energy industry, it may come as a surprise to some readers that the sort of cyber-attack coverage that is required in consideration of the examples we gave earlier is not provided by the Upstream or the Downstream Energy insurance markets either. Instead, virtually all policies issued by these markets contain the following exclusion (CL380) for at least the last ten years:

Institute Cyber Attack Exclusion Clause

1.1 Subject only to clause 1.2 below, in no case shall this insurance cover loss damage liability or expense directly or indirectly caused by or contributed to, by, or arising from the use or operation, as a means for inflicting harm, of any computer, computer system, computer software programme, malicious code, computer virus or process or any other electronic system.

1.2 Where this clause is endorsed on policies covering risks of war, civil war, revolution, rebellion, insurrection, or civil strife arising therefrom, or any hostile act by or against a belligerent power, or terrorism or any person acting from a political motive, Clause 1.1 shall not operate to exclude losses (which would otherwise be covered) arising from the use of any computer, computer system or computer software programme or any other electronic system in the launch and/or guidance system and/or firing mechanism of any weapon or missile.

10/11/03
CL380

There can be little doubt that the removal of this exclusion would be the most effective way for coverage to be provided to the energy industry. So why do the Energy Property and Liability insurance markets continue to insist on this exclusion, when their clients quite clearly need the cover?
1. Losses resulting from cyber-attacks are not covered by Energy insurers’ reinsurance treaties

The most straightforward answer to this question is that the reinsurance market applies the same CL 380 clause to the reinsurance treaties purchased by the direct market, regardless of whether these are proportional or excess of loss. As a result, even if a broker could persuade a direct Energy market leading underwriter to include coverage for cyber-attacks for a valued client, he would find himself in a difficult position. Firstly, the line that the leader would be able to offer is likely to be a fraction of what is generally required to enable a placement to be completed; secondly, as any further “net” lines that the broker could elicit from the following market would almost certainly be insufficient to provide any sort of meaningful cover to the client. Given that we have demonstrated that cyber-attacks could now cause a major disaster that may require the full capacity offered by the market to transfer the risk effectively, the amount of capacity generated by a collection of net lines is unlikely to be worthy of serious consideration by the client.

Similarly, physical damage losses following a cyber-event or business interruption losses flowing from a physical damage event are not presently covered in the ‘traditional’ Cyber market due to exclusions in reinsurance treaties.

2. The Energy insurance markets have an aggregation issue with cyber risk

Even if some major insurers took the decision to provide cover for a cyber-attack on a net basis, they could still run into problems with their aggregation of risk. Suppose, for example, that a specific cyber-attack was able to infiltrate a control system that managed a multiplicity of different platforms in the North Sea. In theory, a single event could result in an overall loss way in excess of the maximum amount these insurers could underwrite, which is usually based on their maximum exposure for any one platform. Furthermore, would a multi-platform attack be regarded as a single loss or as multiple losses?

This problem is compounded by the different joint venture participants for different platforms. For example, it might be that a single cyber-attack affects say five different platforms as outlined above, but with energy company A having an interest in two of the platforms and energy company B having an interest in the other three. In the event of an attack involving all five platforms, which energy company’s losses should be paid first by the market, given that any market offering would be subject to an aggregate limit per event? It’s a problem that the market has no answer to at the moment.

In my view, cyber risk is better left to specialists. How are we supposed to price it? A catastrophic loss resulting from a cyber attack has never happened.

JAMES MCDONALD, TALBOT

3. Most Energy insurance market are not cyber experts

A final - and critical - reason why the direct Energy market has not been able to provide coverage for cyber-attacks to date has simply been a lack of underwriting confidence in understanding the risk. While Energy underwriters are naturally fully aware of what can go wrong at energy facilities of all kinds, by their own admission they have limited (if any) expertise in determining the likelihood of a cyber-attack being successful or not. And while they can be fully aware of the ramifications of an explosion, fire or blowout at an energy facility, they lack the expertise to discern what effect a breach of a company’s computer network firewall can have on the facility.

These three factors have therefore prevented any meaningful capacity for this risk from the commercial insurance market, with the one exception of the London market Upstream Energy facility Chrysalis, which we describe in more detail later in this Feature.

Insurers have to recognise that the excuse that the reinsurers won’t play ball is unacceptable because after all, who is driving the reinsurance capacity? Surely the buyers of the reinsurance!

CHRISS McClain, Invensys

What I find difficult to get my head around is this: if a virus lies dormant for three months and suddenly the hacker activates it and three platforms are affected, is that one loss or three?

CARL DAY, Hiscox
Are there any signs of other markets offering the coverage required?

We have explained how neither the traditional Cyber insurance market nor the Energy insurance markets currently provide the comprehensive coverage that so many energy companies need to transfer the risk of cyber-attack. What other options are open to the buyer?

**Oil Insurance Limited**

Oil Insurance Limited (OIL), the Bermuda-based energy industry mutual, specifically includes coverage for terrorism and cyber terrorism in the USD300 million limit provided to each shareholder, providing at least one major source of risk transfer for the energy companies that are members. However, as many readers will be aware, coverage provided by OIL is aggregated at an overall total of USD750 million per event, allowing the mutual to manage the potential aggregation issue currently being considered by the commercial insurance market. It should also be remembered that OIL does not cover war risks and their associated perils and, in theory at least, it will be interesting to see if OIL deems a cyber-attack which is clearly the work of a specific government of a nation state as an act of war or not.

**Chrysalis**

Chrysalis is a London Upstream insurance market facility which provides USD100/125 million of cover per occurrence with a USD200/250 million shared aggregate over all insureds. The facility is designed to mirror coverage provided by OIL and as such follows the OIL form, including the provision of cyber-attack cover. Again, the reason that these insurers are able to provide this cover is the USD200/250 million shared aggregate limit; as there are relatively few members of Chrysalis, keeping track of their overall exposures under this market facility does not present the same problems for these insurers as might be posed in the open market.

**Fledgling stand-alone Cyber market**

Until very recently, it has been assumed in the London market that OIL and Chrysalis represented the only providers of meaningful cyber-attack cover for Energy insurance companies. However, in recent months some significant stand-alone Cyber market capacity has emerged from the Lloyd’s market in particular that is now, crucially, offering cover for physical loss or damage and consequent business interruption incurred as a result of a cyber-attack. At the end of 2013, we believe that there was no more than USD25-50 million of commercial market capacity available on this basis; however in recent weeks we understand that maybe as much as USD200 million may now be available, as various insurers begin to appreciate the scale of the potential demand and, in generally softening market conditions, perhaps the opportunity to secure additional premium income.
The Political Violence insurance market coverage spectrum

1. TERRORISM & SABOTAGE

2. STRIKES, RIOTS, CIVIL COMMOTION & MALICIOUS DAMAGE

3. POLITICAL VIOLENCE (REBELLION, REVOLUTION, COUP D’ETAT, INSURRECTION AND MUTINY)

4. POLITICAL VIOLENCE INCLUDING WAR

The PV market is now able to offer coverage for the full range of malicious damage to insured property. This makes this market a suitable candidate to offer energy companies cyber-attack related cover.

Source: Willis

The Cyber market has gradually come round to the fact that the involvement of PV underwriting expertise is next derivation of the market. Clients are coming to both the Cyber and PV market experts saying - we have a problem. I get to sit next to our PV underwriter and work closely with our political risk team - this part of the market is really going to be important to us. DAN TRUEMAN, NOVAE

Political Violence Market

The only other market that has a vested interest in providing cover for cyber-attacks is the Political Violence (PV) market (itself a subset of the global Terrorism market). Like the Energy insurance market, this market too currently excludes cyber-attacks from the coverage on offer. However, various elements of this market have appreciated the potential of offering this cover in conjunction with the Cyber underwriters operating in the same organisation, and it seems clear that the beginnings of a more robust market offering are now starting to emerge. We understand that several Lloyd’s syndicates are now working on a suitable policy wording and establishing common definitions. Furthermore, now that the PV market has widened its offering already by providing cover for all kinds of malicious attack, including war (see the chart above), when cyber-attacks are to be included in the future PV market offering, this will nullify the debate about whether a cyber-attack was an act of war or not – something that is still very much of an issue in the Energy markets.
Meaningful insurance market capacity by Q3 2014?

As this Review went to press, it seems that the initial conversations between Cyber and PV underwriters across the London market have already begun to bear fruit.

We now understand that the Cyber Physical Damage market can perhaps offer as much as USD200 million of aggregated cover per cyber-attack. At present, coverage is only provided on a net line basis, with perhaps only USD200 million available across 20 markets: the eventual aim is to make this an extension to the overall Terrorism and Political Violence capacity of USD1 billion. Although these amounts cannot be fully substantiated at present, it seems that the “genie may finally be out of the bottle”, with really meaningful cover for this exposure finally being offered to the energy industry.

We now expect this product to be available as a bolt-on to the existing Terrorism and Political Violence cover by the third quarter of 2014.

Support for our offering is really beginning to take hold in the London market – the PV market in particular is showing real signs of interest in covering cyber-attacks, albeit at the moment on an excess basis. — Tom Hoad, Kiln

Today a client asked me: I hear London is developing some capability for this cover - is this something I need to know about? It doesn’t appear to be happening in the US because Lloyd’s, with its syndicates and its joined-up approach, is the best place to offer this cover. If London wants to retain its competitive advantage, it needs to make sure it offers new products such as this. — Dan Trueman, Novae
What will the future of cyber-attack coverage look like from an energy industry perspective?

Future PD/BI cyber-attack programmes for energy companies at Q3 2014?

Given the developments that have been taking place in London over the course of the last few weeks, we can now perhaps see a way for energy companies to purchase significant amounts of cyber-attack cover. The chart above shows two possible future cyber-attack programme structures; in Example 1, we can see that over USD600 million of aggregate cover per event can now probably be purchased, by using a combination of the stand-alone Cyber market, OIL and Chrysalis. If the current movement in the PV market can be substantiated in practice, this could potentially provide a further USD1 billion, making a possible total of USD1.6 billion that might be purchasable later in 2014. However, that would still leave plenty of facilities, both offshore and onshore, exposed at a catastrophic level; this leaves the door open for the Energy market to perhaps sense a business opportunity and step in on an excess basis – with or without reinsurance market protection. There have certainly been plenty of examples in the past of entrepreneurial Lloyd’s syndicates taking a view on certain new classes of risk and offering a product without reinsurance market support.

The reason why I shy away from multiple covers and stack them alongside each other is because every time you have more than one programme you have got extra uncertainty. If the explosion is as a result of an excluded event, then you have to notify another insurer, it’s a real issue. The greater the number of insurers involved, the more complicated the settlement of that loss becomes. — Chris McGlone, Invensys
In Example 2, we can see that, without the involvement of OIL and Chrysalis, the amount of cover on offer is considerably reduced, showing that both the Energy markets and the PV market will have to step in to support the fledgling stand-alone Cyber market.

Of course, these programme structures are just possible ways in which the various markets might come together to create the kind of capacity that the energy industry really needs. Indeed, the only way for the markets – particularly the London markets - to innovate and create the kind of seamless “one stop shop” cover that the industry really requires is for Energy, PV and Cyber underwriters to come together to blend a workable solution involving the creation of one, seamless cyber-attack programme. This may mean, for example, the creation of a separate Lloyd’s Audit Code specifically for cyber-attacks on energy industry infrastructure.

One possible development is the further mutualisation of this risk beyond the current OIL offering, and maybe even the creation of a specific cyber-attack pool, underwritten perhaps by various governments as insurers of last resort.

Meanwhile we can only hope that these developments in the first party coverage arena eventually have a knock on effect on the global Liability market. To date, we have seen no moves to remove the CL380 exclusion from energy industry Third Party Liability programmes, perhaps for much the same reasons as the Physical Damage markets. Yet the Third Party risk is potentially very significant, and a major pollution incident generated by a cyber-attack is a very real possibility in the future.

Combining cyber-attack underwriting expertise in the global insurance markets

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*We have already been in discussions with Energy brokers because there is such a crossover - we have had numerous meetings recently, it’s apparent we are going to be working together and be entrepreneurial in our approach.*

**Elizabeth Heslip, Novae**
In the meantime, advances in technology, increased connectivity of control systems to the internet and the continuing destabilising factors in the geo-political environment continue to suggest that a major cyber-attack on the energy industry is only a matter of time. It remains to be seen whether this would be a loss that energy companies will be able to transfer effectively, or will simply have to absorb.

The reality may be that the energy industry needs a whole range of London market risk transfer expertise - from the Energy, Political Violence and Cyber underwriting communities - to come together to provide the type and extent of coverage that it truly needs and deserves.

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**A consortium is probably the best way to start providing cover. I don’t think anyone from the Energy market really knows what the right price is and what the real risks are, but if the market now has some expertise from the Cyber and PV fields, then let’s give them some capacity and see how they go.**

*JAMES MCDONALD, TALBOT*

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**Brokers need to find the people in the market that really know what they are talking about, and develop the capacity for cyber-attack cover. Then they must find a way to stitch that together so aggregated capacity can be provided in a simple way for the customer. That is the sort of programme innovation that I would like to see, not the kind of innovation that dumbs down the cover to the customer but innovation that increases it. It’s counter intuitive for most specialist markets.**

*CHRIS MCCLOIN, INVENSYS*
In 2013 we said:
- The impact of the Hurricane Sandy, combined with the deterioration of the Costa Concordia and Deepwater Horizon losses, served to arrest any softening dynamic at the beginning of 2013
- Despite another increase in overall underwriting capacity, in reality the largest projects could still not be insured on a 100% basis in the commercial market place
- However, the signs were that 2012 was turning out to be the best underwriting year for over a decade in this sector – at a time when premium income continued to increase
- In general terms, the sector had now remained profitable for four years following Hurricane Ike in 2008
- Encouraging signs for buyers included the potential threat from the composite company market, the recent efforts of Oil Insurance Limited to attract more membership and the reluctance of insurers to walk away from business which has been proved to be profitable, even at reduced rates
- As a result, with the ending of the supply/demand anomaly in the market, a renewed softening was anticipated later in 2013, barring a major catastrophic loss or an unfavourable Gulf of Mexico windstorm season

Upstream/Marine Liability market underwriter movements, Q1 2014 (London unless stated)

<table>
<thead>
<tr>
<th>Underwriter</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cliff Easton</td>
<td>Axis</td>
<td>Endurance</td>
</tr>
<tr>
<td>Benet Hellman</td>
<td>Skuld</td>
<td>Unknown</td>
</tr>
<tr>
<td>John Henderson</td>
<td>Aspen</td>
<td>Unknown</td>
</tr>
<tr>
<td>Tom Houston</td>
<td>Hiscox</td>
<td>Endurance</td>
</tr>
<tr>
<td>Robin Waller</td>
<td>Liberty (Singapore)</td>
<td>Advent (Singapore)</td>
</tr>
<tr>
<td>Chris White</td>
<td>Chaucer</td>
<td>Barbican</td>
</tr>
<tr>
<td>Chris Wildee</td>
<td>Chaucer (Singapore)</td>
<td>Aspen</td>
</tr>
<tr>
<td>Mark White</td>
<td>Ascot</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
In last year’s Review, we indicated that although Upstream market capacity had increased and the loss record had improved, there were still a number of factors that might prevent any further softening in 2013. These included the lack of new capacity from insurers entering the market, the increase in reinsurance costs, the restricted leadership options available, tight market discipline and the abundance of premium income to meet income targets.

However, in reality since last year:

— New capacity has indeed entered the market
— Reinsurance costs are generally in decline
— There has been a greater willingness of other insurers to lead, and therefore challenge the established leadership panel
— Pressures on insurer “signings” has produced a serious threat to premium income targets

To cap it all, the loss record has remained favourable, with another year free of Gulf of Mexico windstorm related losses; as a result, all the signs of a truly soft market have begun to emerge. The besetting question that remains to be answered in 2014 is this: just where will the market “floor” be found as the market softens, and how long will it take for the market to arrive there?
Capacity up again – and this time new leaders are emerging

Upstream Operating insurer capacities 2000-2014 (excluding Gulf of Mexico Windstorm)

Capacity for Upstream business continues on its relentless upwards trajectory.

Source: Willis

Our capacity chart for 2014 outlined above shows that maximum theoretical capacity has increased once more to a new record level of USD5.73 billion, up some 10% from USD5.17 billion in 2013. We also expect further capacity to be available from Endurance Insurance later this year.

We would suggest that yet another increase in Upstream capacity was almost inevitable in 2014 for four main reasons:

— The insurance sector in general is still awash with capital which, to put it bluntly, has nowhere else to go as interest rates remain low across the globe

— As we show later in the Section, the Upstream market has retained its profitable track record since Hurricane Ike, thereby continuing to provide the return demanded by capital providers – most of them will prefer to increase their participation rather than withdrawing from a portfolio that continues to make money

— As upstream infrastructure values (particularly in the North Sea) increase, insurers can justifiably point out that they have to increase their capacity just to maintain their position on key market programmes
As we will show, pressure on market signings is now such that in order to continue to write a meaningful portfolio many insurers have decided that they must be able to write a larger line just to enable them to continue to maintain their existing premium revenue stream.

Given this increase, our chart also shows that we estimate that the maximum realistic capacity - i.e. capacity that can actually be placed rather than what is theoretically available – has also increased by a similar percentage, from USD4.2 billion in 2013 to approximately USD4.6 billion in 2014.

Captives and OIL membership reduce pressure on overall capacity requirements

In last year’s Review we suggested that some of the major Upstream programmes continued to test the available market capacity. However, given capacity has once again increased, we can now say that this in reality this is no longer so much the case, with programmes that require capacity greater than USD3-3.5 billion still in the minority.

A few North Sea placements still require the commitment of almost the entire market for completion, and some of these programmes, especially those requiring Business Interruption coverage, still attract relatively high rating levels for some key exposures (although these buyers will only buy economically viable limits so as to not test the market capacity too strongly). Furthermore, capacity for major programmes located in the Arctic is also restricted given the different supply/demand dynamics operating specifically for this region, as several major European insurers have indicated that they would prefer not to participate in these risks.

However, most major programmes have a significant proportion of these risks absorbed by captive insurance companies, with many requiring still less commercial market participation by virtue of their membership of Oil Insurance Limited. In particular, even some of the largest construction programmes, some of which feature Estimated Maximum Losses of USD7 billion or more, are being absorbed to a significant degree by some of the larger captive insurance companies, meaning that an amount less than the overall capacity available is being required from the market. As a result, the Upstream market has lost a significant degree of leverage with both brokers and buyers, with competition for non-capacity risks intensifying still further.

An easier reinsurance market renewal season a major factor - especially for Upstream Energy Specific treaties

In our last two Reviews we have explained why, since Hurricane Ike in 2008, there has been a “supply/demand anomaly” in the market as increased capacity levels have been accompanied by increasing rates. Now that this anomaly has come to an end (see last year’s Review for details) there can be little doubt that one of the primary drivers for a softer Upstream market is now the change in Reinsurance market dynamics. Right up to the final days of the January 1 renewal season just before Christmas, the rhetoric from the Reinsurance market remained steadfast, with leading reinsurers insisting that rating levels had to remain firm in order to justify providing their capacity to the direct market.

However, as we intimated last year, since surplus capital is still being deployed in the Reinsurance markets, then investors will continue to expect to be provided with a return on that capital - which means that premium income targets must continue to be met. Such is the extent of the over-capitalisation in the Reinsurance market since the onset of the global financial crisis in 2007/8 that simple supply/demand dynamics have fuelled an increasing appetite for more premium revenue; however, this has been at a time when the direct market has been trying to retain more of its own premium pot by increasing their reinsurance retentions.
Upstream insurers tend to buy their reinsurance protection from the Marine Reinsurance treaty market, or the Upstream Energy Specific excess of loss reinsurance market. In particular, while the general Marine Reinsurance treaty market (still smarting from their Hurricane Sandy, Costa Concordia and Deepwater Horizon losses) has remained relatively firm, the same cannot be said for the Upstream Energy Specific market, whose hunger for premium income eventually forced them to come to the table late in 2013 and accept more competitive terms than they had originally been hoping for. Those direct Upstream insurers that benefitted the most were the ones that had held out until the eleventh hour for more competitive terms from their Specific treaty reinsurers; but now, having secured cheaper protection, having increased the limit purchased they are now having to pay for it by increasing their own direct premium within an Upstream market which in itself now has even more capacity than ever before.

**Losses – nothing out of the ordinary for a second successive year**

As we show in the tables overleaf, the number of losses over USD50 million continues to be no more than should be expected from this class. In particular it should be noted that in 2013 (as recorded to date) only three losses have been recorded that have exceeded USD200 million, none of which is likely to have had any significant impact on insurers’ Energy Specific reinsurance treaties. Indeed 2013’s loss record seems as if it will be an improvement on that of 2012, in itself a relatively benign year for the market. When contrasted with 2011, the year of the Gryphon A loss in the North Sea, and 2010, the year of the Deepwater Horizon tragedy, the figures to date look very encouraging indeed for the market, as yet another year passes without any significant Gulf of Mexico windstorm losses. And while we can see the overall number of losses (both insured and uninsured) potentially increasing, this in itself will be of little significance in terms of altering the dynamics of this market.

“Even some of the largest construction programmes, some of which feature Estimated Maximum Losses of USD7 billion or more, are being absorbed to a significant degree by some of the larger captive insurance companies, meaning that an amount less than the overall capacity available is being required from the market.”
### Upstream losses vs USD50 million 2012

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CAUSE</th>
<th>COUNTRY</th>
<th>LAND / OFFSHORE</th>
<th>PD USD</th>
<th>OEE USD</th>
<th>BI USD</th>
<th>TOTAL USD</th>
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</thead>
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<tr>
<td>Rig</td>
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<td>175,000,000</td>
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<td>Offshore</td>
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<td>Pipeline</td>
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<td>Rig</td>
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<tr>
<td>Platform</td>
<td>Fire/ lightning/ explosion</td>
<td>Mexico</td>
<td>Offshore</td>
<td>54,200,000</td>
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</tr>
</tbody>
</table>

The 2012 and 2013 records continue to reflect modest loses compared to previous underwriting years.

Source: Willis Energy Loss Database as at April 1 2014 (figures include both insured and uninsured losses)
Another profitable year – but premium income volume may be in decline

Upstream losses in excess of USD1 million, 2000-2013 (adjusted for inflation)

The recent Upstream loss record may look reasonable - but premium income levels may be on the slide.

Source: Willis/Willis Energy Loss Database as at April 1 2014 (figures include both insured and uninsured losses)

How should the 2012 and 2013 years be viewed within the context of the last 14 years or so?

A glance at the chart above gives a reasonable impression; to date both years represent a significant improvement on their two predecessors, which as we have pointed out in previous Reviews have been the worst non-Gulf of Mexico windstorm underwriting years on record. On an inflation-adjusted basis, only 2006 and 2007 show a superior loss record in the last 10 years, albeit not by much. Of more interest from a market dynamic standpoint is the potential decline in actual global premium revenue from 2012 to 2013, also shown on the chart and evidenced by the table below:

<table>
<thead>
<tr>
<th>AUDIT CODE</th>
<th>2012 PREMIUM RECEIVED AT 31/12/12 (GBP)</th>
<th>2013 PREMIUM RECEIVED AT 31/12/13 (GBP)</th>
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<tr>
<td>EN (Upstream Property excluding Gulf of Mexico Windstorm)</td>
<td>467,649,607</td>
<td>454,968,385</td>
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<td>EM (Upstream Property Gulf of Mexico Windstorm only)</td>
<td>109,365,193</td>
<td>93,138,796</td>
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<td>EC (Offshore Construction)</td>
<td>128,664,752</td>
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<td>EZ (OEE Ex-Gulf of Mexico Windstorm)</td>
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<td>EY (OEE Gulf of Mexico Windstorm only)</td>
<td>30,729,131</td>
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<td>TOTAL</td>
<td>926,418,170</td>
<td>807,595,512</td>
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</table>

Source: Lloyd’s
The latest statistics from Lloyd’s outlined on the previous page, suggest that some 13% less Upstream premium income has been received by Lloyd’s for 2013 to date than for 2012 at the same time last year. Given the fact that rating levels did generally hold up until the second half of 2013 (after approximately 75% of the Upstream portfolio had been written), this does somewhat surprise us; it is of course possible that the timing of the receipt of Lloyd’s premium income may be a little different this year, but as things stand, the current figures still suggest an overall reduction from 2012, although some of this may be attributable to less “one-off” business and maybe even a shift towards greater utilization of European market capacity.

But if 2013’s premium development pattern does indeed continue in a similar vein to that of 2012, we may see a 13% overall Upstream market premium income reduction for 2013 - at a time when insurers are finding that meeting existing premium income targets is no easy task. And with many offshore construction yards full to bursting around the world, Upstream insurers won’t necessarily be able to rely on generating additional premium income from the Construction portfolio to make up for it, as the Construction premium income figures within the Lloyds’s figures on the previous page show.

Notwithstanding any insurer concerns with regard to a reduced premium income flow, the latest figures from Lloyd’s suggests that it still looks as if the Upstream market will continue to record a significant overall underwriting profit in 2012 (although 2013’s figures are still too immature to be germane). The chart above shows how, even when underwriting year data has become fully mature, incurred ratios (premium to paid and outstanding claims) since 2008 remain resolutely under the 80% level which most insurers accept is the minimum required or an overall portfolio profit.

So with capacity up, losses down and profitability maintained, all the factors are in place that should lead to softening market conditions. But if there is to be a softer market, where will the competition come from to challenge the existing leadership panel?
With many offshore construction yards full to bursting around the world, Upstream insurers won’t necessarily be able to rely on generating additional premium income from the Construction portfolio to make up for it.
For the last two years we have discussed how an apparent anomaly – between increasing underwriting capacity and rising rating levels – has been able to exist in the Upstream market. The main factors involved have been increased management control, the restricted leadership panel in this market and the unwillingness of other market participants to challenge the existing panel’s authority over the following market. As a result, when major losses such as Gryphon A and Hurricane Sandy have materialised, the rationale provided by the leadership panel to increase rates – despite an abundance of underwriting capacity – has been accepted by the remainder of the market, with few insurers prepared to break ranks and challenge the existing market orthodoxy in return for an increased line and more premium income.

However, with premium income levels now potentially on the wane, pressure on underwriter signings has increased as insurers seek to maintain or grow their existing revenue streams*. Insurer management focus, so often in the last ten years trained on the need to maintain underwriting discipline, has now switched to the overriding need to continue to provide a return on capital in this profitable sector; indeed, some underwriters are now being asked to provide individual programme signing data to their management on a weekly basis. This new attitude has in some cases opened up a disconnect between this overriding management imperative, which seemingly prioritises income over profit, and orthodox underwriting thinking, which is to refuse to follow the market down to unprofitable rating levels.

As a result, several insurers have realised that, if they are to meet their targets, they will have little choice but to instigate a “hostile takeover” by offering more competitive terms to win themselves either a leadership position on key programmes – with the potentially more preferred signed lines that are likely to be awarded to programme leaders – or try and gain an increased programme share further down the programme.

*Underwriter signings concern the difference between their actual written line on a given contract and the signed line that they eventually receive. Because London market practice is almost always to “over-place” a given placement, the actual total percentage of all written lines will usually be greater than 100% (or whatever the order is to the placement in question). So where there is a 100% order, if an insurer writes 10% of the placement, and the total number of written lines amounts to 125%, their actual “signed” line then reduces to 8% (signing 80%). If the signing promised by the broker reduces below what an individual underwriter is expecting, then there will obviously be implications from a premium income perspective.
The opposite diagram shows in general terms how the Upstream market is becoming more competitive. Since the catastrophes of Hurricanes Katrina and Rita in 2005, a consistent panel of approximately 5/6 established leading insurers has, until very recently, held sway for the majority of the premium income to the market. With an overall capacity of some USD1,200 million, this panel has been able to control the majority of upstream programmes and ensure that rating levels established in the aftermath of Hurricane Ike in 2008 have been maintained and/or enhanced.

However, we are now seeing increasing competition from alternative leaders, some of whom can boast similar capacity levels to the established panel. These alternative leaders can offer underwriting expertise that can rival the established market leaders, having either positioned themselves behind the established panel over a number of years or stood somewhat aloof, playing a waiting game and waiting for an opportunity to establish a more proactive market stance. Noting the potential danger in a softening market of losing control over their portfolio, they are increasingly making the decision to offer more competitive terms in return for increased lines to maintain their premium income and to guarantee increased signings, while at the same time positioning themselves to offer their own long term relationships with key clients. These insurers are specifically targeting what they consider to be the most profitable parts of the portfolio, and it seems that price is now a secondary consideration to an enhanced profile on these key programmes. No doubt part of their thinking is that, when eventually the market does turn, their new profile on these programmes will stand them in good stead.

Finally, there is a third group of insurers who have not yet developed a track record of leadership within the Upstream market but who are “bubbling under”, expressing a strong desire to lead business at competitive terms, or at least participate in more programmes with an increased line, enabling placements to be completed which 12 months ago might have failed to do so. These insurers – facing a distinct possibility of losing their traction in a market increasingly dominated by insurers offering capacity in excess of USD100 million - may well be willing to increase their line size by a considerable amount. The broking community, aware that the following market will still “play ball” in these market conditions, is therefore increasingly confident that if these new markets are given their head, so long as these programmes do not require maximum market participation they can still be completed, even at reduced terms with or without any change in leadership. Another alternative is for these insurers to offer to lead facultative reinsurance placements (so long, of course, that the direct market is persuaded to buy at a time of premium income shortage).

“These alternative leaders can offer underwriting expertise that can rival the established market leaders, having either positioned themselves behind the established panel over a number of years or stood somewhat aloof, playing a waiting game and waiting for an opportunity to establish a more proactive market stance.”

So although we are by no means seeing any sort of market free for all, with each and every Upstream underwriter trying to increase or at least maintain their existing share, there can be no doubt that competitive pressures are growing. We at Willis saw evidence of this quite recently during the January 1 renewal season, when some insurers, who had previously rejected a major programme featuring significant premium income for several years citing aggregation issues, suddenly contacted us during a critical period between Christmas and New Year with concerted and urgent requests to be allowed to participate, a trend almost entirely due to the increase in market capacity. In recent weeks, we are even seeing some leaders opting to offer lower deductibles as a means of offsetting reductions in premium income.
One important dynamic that gives some of the Lloyd’s insurers a little bit more flexibility as the market softens is the ability to use their company stamp as well as their Lloyd’s stamp; in some cases, this means they can compete more vigorously on their company stamp for certain parts of the portfolio away from the scrutiny of the Lloyd’s Performance Management Directorate.

In any event, brokers are certainly going to have a problem keeping every insurer happy for every popular programme. Simple logic suggests that if every insurer fights to maintain their current signings in a softening rating environment, they will all simply end up in the same position as before, exacerbating the current softening dynamic. To illustrate by means of an analogy, budget airlines have a habit of overbooking flights to ensure that they are still full for each flight to take into account cancellations, so have to act fast when flights remain oversubscribed on the day of the journey; brokers will find themselves in a similarly uncomfortable position if they promise robust signing ratios to every insurer for every programme that they place.
More interest in Offshore Construction – but less activity?

Another capacity increase for Offshore Construction

In last year’s Review we demonstrated that the market’s attitude to Offshore Construction risks had mellowed in recent years, and that previous rating orthodoxies had been recognised as being somewhat conservative. As a result, there had been renewed interest in this sub-class as a means of supplementing overall Upstream portfolio premium income. Indeed, we have recently seen instances where some insurers have employed specialist Construction underwriting expertise to boost their profile within the broking community. As we reported last year, this market has already been softening for some time so may not continue to do so to the same extent as the Operating portfolio, depending on sector activity and depending on income from the operational book and the amount of construction risks offered to the market.

Less premium income for 2013?

Indeed, as we have seen from the Lloyd’s statistics earlier in this section, overall premium income for this class in 2013 may not match that of previous years, with captive insurance companies continuing to participate significantly in this line of business. Although there is still plenty of activity in certain parts of the world, particularly China and the Asia Pacific region, activity in other developing regions such as Latin America has slowed as yards remain full.

Offshore Construction insurer capacities 2000-2014 (excluding Gulf of Mexico Windstorm)

![Graph showing Offshore Construction insurer capacities 2000-2014 (excluding Gulf of Mexico Windstorm)](image)

Offshore Construction market capacity has increased in line with the Operating portfolio.

Source: Willis

“There had been renewed interest in this sub-class as a means of supplementing overall Upstream portfolio premium income. Indeed, we have recently seen instances where some insurers have employed specialist Construction underwriting expertise to boost their profile within the broking community.”
As a result, some Operators are now taking to utilising less well-known yards in less favourable parts of the world, a development which is beginning to give leading Construction underwriters some cause for concern.

In the meantime, insurers continue to be concerned as claims costs continue to rise; furthermore, with many yards full, insurers’ aggregate exposures in some yards (in Latin America and particularly in some parts of the Asia Pacific region, which is more exposed to natural catastrophe risk) have now risen to worryingly high levels.

Although there is still plenty of activity in certain parts of the world, particularly China and the Asia Pacific region, activity in other developing regions such as Latin America has slowed as yards remain full.

2013 loss record already at 2012 level

The chart below reflects the progression of Offshore Construction losses over the past seven years, collated based upon the year in which the losses occur. The chart also reflects how the record adjusts annually as the loss estimates mature.

It will be seen that, during the past 12 months, there has been no significant deterioration in the loss estimates recorded for the 2007–2011 years. The loss record for 2012 has deteriorated during the past 12 months, in line with expectations; however, this can be attributed to a general maturing of figures and in particular a notification, during the past 12 months, of two significant losses:

— A jack-up rig mechanical failure, estimated at USD85 million
— A platform loss estimated at USD43 million

Offshore Construction loss record deterioration, 2007-2013 (losses occurring basis)

The 2013 loss record already matches that of 2012; at the same stage last year, 2012 had only recorded some USD100 million of losses.

Source: Willis Energy Loss Database (figures include both insured and uninsured losses)
One worrying trend from an insurer standpoint is that the 2013 loss record already matches 2012 (approximately USD400 million); at the same stage last year, 2012 had only recorded some USD100 million of losses. However, over 50% of this figure relates to three losses involving damage sustained by a semi-submersible rig, a platform and a sub-sea completion system. In each instance, the loss is likely to be attributable to faulty workmanship, which could reduce the insured amounts depending on the coverage and limit purchased.

**OIL and captives complicate the picture**

As most readers know, the Willis Energy Loss Database records both insured and uninsured losses excess of USD1 million. This is a critical factor in analysing this sub-sector, as in recent years a number of the major Offshore Construction losses recorded by our Database have not been borne entirely by the commercial insurance market, as we understand that a significant proportion of these major losses have been retained within operator’s OIL entries and captive insurance companies. As a result, the commercial market’s appetite for this sub-class remains robust (albeit not as much as for the Operating portfolio).

**Pipeline loss ratio falls as overall loss figures remain relatively benign**

In last year’s Review, we also highlighted the fact that the sub-sea loss record has historically resulted in a higher rating level for this aspect of a project compared to the platform element. Furthermore, we noted that certain underwriters are reluctant to commit their full capacity if a project involves a significant element of sub-sea installation.

Twelve months later, as the chart below shows our records indicate an improvement in the percentage of losses involving sub-sea pipelines. Last year we recorded that pipeline losses accounted for 46.46% of all recorded Offshore Construction losses since 2007; from the chart overleaf it can be seen that this figure has now fallen to 38.65%. It would be encouraging to think that closer attention to the engagement and attendance of Marine Warranty Surveyors has resulted in an improvement in the frequency of pipeline losses. However, in reality, only another three or four years loss records going forward will highlight whether or not an improving trend is in place.

Given the number of large projects which are due for completion within the next few years, it will be interesting to see how these numbers develop during this period.

“**In recent years, a number of the major Offshore Construction losses recorded by our Database have not been borne entirely by the commercial insurance market, as we understand that a significant proportion of these major losses have been retained within operator’s OIL entries and captive insurance companies.**”
Pipeline losses have now fallen from 46.46% to 38.65% of total Offshore Construction losses.

Source: Willis Energy Loss Database at April 1 2014

Offshore Construction losses xs of USD10 million 2012

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Offshore Construction losses xs of USD10 million 2013 (to date)

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The benign nature of the recent Construction loss record continues mirror its Operating counterpart.

Source: Willis Energy Loss Database at April 1 2014 (figures include both insured and uninsured losses)
Liability risks and owned surrounding property – an ongoing issue...

Although we comment more fully on Offshore Liabilities elsewhere in this Review, it is important to address here an ongoing issue which particularly affects Offshore Construction policies at present. (Although we discussed this issue in last year’s Review, we make no apology for doing so once more as this continues to be a key issue for many insurance buyers.)

Despite being a relatively benign class of business that has generated few losses of any note, in recent years various reviews of underwriting practices within the Upstream market have forced many underwriters to assess the basis on which they are insuring Liability risks. This change was triggered by the Macondo tragedy in the Gulf of Mexico and was driven by the Lloyd’s Performance Management Directorate (PMD). The PMD instigated a reform of the Offshore Liability market which encompassed both Operating and Construction disciplines which required dedicated liability professionals to underwrite the portfolio. As a result, certain aspects of a project’s liability exposure have received closer attention, resulting in premium increases and, for certain exposures, a contraction in capacity.

The pure Third Party liability aspect of the Offshore Construction risk profile does not raise any particular concerns for insurers. However, as previously reported, they have become increasingly mindful that the contractual liability exposures they have been insuring encompass both the risk of physical damage and the risk of loss of use. Specifically, underwriters have continued to focus on strict ‘no fault’ contractual liability for loss of use arising out of crossing and tie-in agreements. Capacity for such strict liability loss of use risks remains lower than pure Third Party liability capacity, with a resulting adverse effect on premium levels for this niche exposure.

Today, we now find that alternative markets are now considering providing contractual liability cover in respect of Offshore Construction risks. These insurers usually underwrite on their own policy forms and as such, careful attention needs to be paid to the basis on which contractual liability cover is being provided. However, from our experience the coverage provided by these alternative markets can satisfy those Operators whose property is being crossed or tied into.

Another issue that insurers have recently focussed on is the longstanding practice of declaring owned surrounding property cover under the Liability sections of Offshore Construction policies. Specifically, this relates to damage to surrounding non-project property which is owned by the same Operator and/or Joint Venture Partners who are insured under the Offshore Construction policy (for example, tie-in to or modification of owned platforms in the vicinity of the new offshore platform). Historically, this practice has been designed to assist in protecting loss records under Operators’ existing Operational policies and to secure cover for a minimal premium spend - and lower deductibles - from the Offshore Construction market.

Increasingly, Offshore Construction underwriters are now requiring a very clear declaration in respect of such owned surrounding property risks, with buyers experiencing a rise in premium levels.

What’s more, Offshore Construction insurers are reluctant to provide Operators and Joint Venture Partners with Business Interruption-style loss of use cover in respect of their owned surrounding property, given that such coverage can potentially be provided their Operating policies.

Specifically, underwriters have continued to focus on strict ‘no fault’ contractual liability for loss of use arising out of crossing and tie-in agreements. Capacity for such strict liability loss of use risks remains lower than pure Third Party liability capacity, with a resulting adverse effect on premium levels for this niche exposure.
Insurers launch FUMA – but have they got their timing right?

The problem of major losses stemming from floating unit mooring failure has been in the minds of senior Upstream underwriters for some time now, following a well-publicised spate of losses and the apparent difference between the assumed design life of the mooring systems and the actual reality. Between 2001 and 2011 there were 8 major incidents involving vessels adrift because of mooring failure, so this issue was seen by the market as a serious issue some time before the well-known Gryphon A loss in the North Sea in 2011.

Following these losses, the London Market Join Rig Committee (JRC) sought to establish whether there were any standard government or industry regulations that govern the building of a mooring system and their subsequent installation, and if so, whether there existed any specific methodology by which they were applied. Their findings disturbed them sufficiently enough for them to decide to take matters more into their own hands. After a relatively long period of research, the result has been the January 2014 launch of the Floating Units Mooring Assessment (FUMA).

Notwithstanding the imposition (or not) of FUMA, insurer concerns regarding writing the contractor-controlled book of FPSO business remains, as the contractors’ ability to invest money in unit maintenance is often hampered by their contractual obligations where in most cases it is the Operator that has the “whip hand” in the contractual negotiations.

A proactive underwriting tool?

This assessment has been created as an underwriting tool to help the market understand their floating unit mooring risk in greater detail. The assessment form, when completed by the buyer, has been designed to provide the Upstream market with the confidence to underwrite floating unit risks more readily - perhaps at more preferential terms than would otherwise be the case. The idea has been to produce some standardization in terms of questions that Upstream insurers need to ask when considering these risks.

There are several key points which the JRC emphasised at the launch:

— The application of FUMA is entirely discretionary - it is not designed to be mandatory or to be imposed as a warranty in any way

— It is not suggested that the completion of this assessment would in any way have prevented the losses that have occurred in the past

— It is recognised that not all the world’s floating production units will be able to be assessed in this way

— It has been designed as a means of improving the current dialogue with buyers as a meaningful underwriting tool
It’s all in the timing…

There can be no doubt that the creation of FUMA has been carried out with the best of intentions from an underwriting perspective; few neutral observers would suggest that the development of more detailed underwriting information and the sharing of intellectual capital between buyer and insurer is ever a negative development. If carried out in a logical and controlled fashion by insurers, we can certainly see some benefit accruing to the buyer in the long term, as well managed units will be able to be more readily identified and perhaps be underwritten at more competitive terms.

However, the JRC’s timing may not necessarily inure to their benefit: while of course there will be some buyers who will be perfectly willing to undertake the required work to produce the information to complete the assessment as part of their overall strategy of developing a strong risk partnership with their key insurers, the reality may well be that many more will seek to avoid what may be construed as an unwanted additional administrative burden imposed by the market. In this softening rating environment, we would suggest that it is entirely possible that some leading insurers will be prepared to waive any FUMA requirements in order to maintain – or indeed enhance – their leading position on the most attractive programmes. In any event, it will be interesting to see if the established leaders can hold the line on this issue if they see coveted premium income related to this class from established buyers – whose engineering credentials would never be in doubt in any event – being diverted towards their competitors.

Gulf of Mexico Windstorm: will demand match supply in 2014?

After yet another North Atlantic windstorm season free from energy industry-related losses, there can be little doubt that the premium income associated with this sub-class has been doing a great deal to augment the overall Upstream portfolio premium income.

Some readers might wonder, after so many benign years, whether buyers should think twice about the need to purchase this cover, given the recent loss record and the limited nature of the protection on offer. However, demand for this particular product is relatively inelastic; those that purchase this product usually have little choice but to do so. Indeed, we would imagine that, mindful of Board member interest, most of these risk managers are unlikely to be able to propose abstaining from purchasing this cover in the fear that a major hurricane finally strikes energy infrastructure in 2014 for the first time since 2008.
OEE – for interest limits becoming the norm?

One additional sign of the softening market conditions has been the ability of major (but by no means all) buyers who have large scale package programmes to insist on being provided with increased Control of Well or each “For Assured’s Interest” (FAI) Operators Extra Expense (OEE) policy limits. For many years, the established Upstream leadership panel has insisted on limits being provided on a 100% basis, for fear of their aggregate exposures spiralling out of control. However, buyers and their brokers have understandably fought to be provided with FAI limits as this ensures that their OEE programmes truly cover them for their risk and provide them with the maximum coverage possible in the event of a loss. We have recently seen some major programmes where the buyer has been able to increase their FAI policy limits with minimal resistance from the market – a sure sign of hunger for more premium. However, for those programmes where premium income is not so significant a factor, insurers are much less likely to be so accommodating.

“\nIn fact, the combination of a softer reinsurance market, more leadership options and more capacity may enable the market to soften more dramatically than we could have forecast at this stage last year.\n”

The outlook for 2014-2015 – is the market floor further away than we thought?

Upstream Capacity versus Rating Levels, 1993-2014

The last time the market faced this sort of competitive pressure was back in 1997.

Source: Willis
In this section we have explained why the softening pressures caused by excess capacity and premium income requirements have now changed the dynamic in this market. So where in the Upstream underwriting cycle are we as we head further into 2014? The chart above shows how average rating levels have moved in comparative terms over the last 22 years, compared to the maximum theoretical market capacity provided. It shows that we are perhaps now on the cusp of a new era in this market’s history, given the recent changes in the market.

2013 market floor may have been made of glass...

Last year, we indicated that, given the strength of market discipline and the absence of any new challengers to the established leaders’ position, the modern market “floor” – the rating levels beyond which insurers would begin to walk away from programmes – was at approximately 67% of our base 1992 rates. In fact, the combination of a softer reinsurance market, more leadership options and more capacity may enable the market to soften more dramatically than we could have forecast at this stage last year.

This new dynamic makes forecasting where the new “floor” is particularly difficult, as the reality is that we are already nearly at where we thought the new market floor would be in 2013 - with no sign at all of any lessening of competitive pressures. Indeed, the chart shows averaging rating levels decreasing more rapidly than at any time in the last 15 years, although of course individual programmes continue to be rated on their own risk profile, premium income opportunities and loss records. Our chart on the opposite page therefore shows three possible options for 2014/15, depending on the actual level of competition generated, with the most competitive option crashing through the existing market floor.

One notable side-effect of the softening conditions is programmes that have been “out of sync” with their peer group (for whatever reason) may now be able to attract the going rate for these types of risk, which they would not have been able to do in a harder market. Some programmes are therefore likely to benefit from more marked reductions than others, although it is important to point out this would not necessarily signal a change to the overall market trend.

Will markets withdraw before the red ink flows?

What is difficult to forecast is whether any of the current insurers will have the desire to withdraw while profits and returns on equity are still being maintained and with other competitors still in the game. History suggests that insurers tend to withdraw from particular lines of business only when red ink appears in their figures presented to management; to date, there is no sign of this being likely in the immediate future. And with the Reinsurance market tending to be some 18 months behind the direct market in terms of reaction to major losses, even if a series of catastrophic losses were to occur in 2014, it would still take a while for the direct market to run out of reinsurance capacity.

Only major catastrophes can turn market conditions around

So what could change the market? We would suggest that only a major high profile loss - along the lines of Piper Alpha, Exxon Valdez, Hurricane Katrina and Deepwater Horizon – together with a series of medium size losses (i.e. ones that have to be paid for without recourse to the Reinsurance market) will be sufficient to alarm senior underwriting management to the point where they begin to view this portfolio in a more unfavourable light. Alternatively, maybe a succession of losses that are not recoverable from Reinsurance Excess of Loss treaties but are still relatively significant (in the region say of USD500 million per loss) may be sufficient to trigger overall underwriting losses. Perhaps the most likely reason would be a capital flight to other more attractive investment opportunities as the global economic recovery continues.

Of course, some insurers have been predicting this softening for some years, but an intervening event – Deepwater Horizon, Gryphon A, Elgin, Sandy – has always postponed it. Now, in 2014, as we go to press we can see no such intervening event to prevent it deepening, with the result that the softening is considerably more pronounced than it would have been if these factors had not delayed the process during the last few years.
Perhaps the real tell-tale sign of where this market is going will be when we reach the second quarter of this year, just as this Review goes to press; given that some 70% of this portfolio is written in the first half of the year, by then it should be clear to insurers if they are facing a serious premium income problem or not:

— It may be that the Gulf of Mexico windstorm premium income continues to be stable – but as we discussed earlier, this will require all the energy companies that have previously bought this product to do so again

— We have also seen that construction income may be down in 2014

— What is also not clear at this stage is the degree to which the overall market softening has been woven into individual insurer budgets

— It may even be that insurers have indeed allowed for such a softening - but of course, if they all have, then we are back to square one

— If so, the deeper the softening goes, the quicker the time will inevitably come when the loss record deteriorates once more

In the meantime, buyers can now take full advantage of what are now the softest market conditions since the turn of the millennium. Those insurers who have not increased their stamp capacity for 2014 may well be the first casualties - especially if premium income levels fall and if the favourable loss record of the last two years does not extend into a third.
In 2013 we said:
- Market capacity remained flat as “bottom of the cycle” rating levels continued to threaten profitability
- Insurers’ efforts to increase rates continued to be hampered by excess capacity
- 2012 was another bad year for losses, many of which could not be recovered from reinsurance programmes while others featured a significant Business Interruption element
- Insurers remained caught in a classic dilemma: raise prices, and others will cut into your portfolio, or maintain existing rates to generate premium income and risk future profitability
- Insurers adjusted their global models to focus on key regions
- Some markets appeared to remain on the cusp of a withdrawal as little good news appeared to be on the horizon

Downstream market underwriter movements, Q1 2014 (London unless stated)

<table>
<thead>
<tr>
<th>Underwriter</th>
<th>From</th>
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<tr>
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<tr>
<td>Lorena Gallagher</td>
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<td>Alex Murray</td>
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<tr>
<td>Hikmet Ogan</td>
<td>Allianz (Dubai)</td>
<td>Unknown</td>
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<td>Peter O’Neill</td>
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<td>Greg Walters</td>
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No escape from the excess capacity trap!

For the last two years, this Review has focused on the difficulties being experienced by the global Downstream Energy insurance market, with historically low rating levels being unable to be corrected due to high levels of capacity. We have suggested last year, and indeed the year before, that it would not take much for overall profitability levels to fall to a degree that would prompt a wholesale market withdrawal from this class. In 2014, we must accept that the economic realities of the global business environment have changed the paradigm for this and indeed other markets where high severity, low frequency risks predominate; the usual triggers that should prompt some capital providers to withdraw from an arena where rating levels are not considered profitable are simply no longer sufficient to do so. As we have intimated in the Introduction to this Review, there continue to be few alternatives available to major capital providers than the insurance industry at present; as a result, it becomes increasingly difficult for us to forecast exactly when any market turnaround is going to take place.

Our review of the Downstream market this year is therefore coloured by this overriding dynamic; insurers continue to find themselves shackled by competitive pressures of increased capacity, despite rating levels continuing to fall well away from where their models are telling them they should be.

While on the face of it this is good news for buyers, it is still essential that while reaping the benefit of a renewed softening in this sector they continue to plan for the long term, managing their market relationships in such a way as to offset any upswing when eventually it arrives.

So how is the market reacting to the predicament in which they continue to find themselves, and what has changed from where we were this time last year?
Capacity at record levels after stalling last year

To put today’s market conditions into an accurate historical context, we have shown in the chart above how challenging this environment is for Downstream underwriters. After stalling last year – which suggested that a downward trend might be imminent – we can now see that overall maximum theoretical capacity is now back on an upward trend, both for International and North American business. Indeed, although of course not all of this capacity can be accessed for any one risk – a significant proportion is composed of insurers who are restricted to writing purely regional business – it remains true that there has never been so much capital in this market for many years. Our realistic estimates of what might actually be available for a given risk (depending of course on risk profile and location) have therefore also increased:

— For International business, we now think that a commercially available maximum of USD3 billion can be secured, up from USD2.5 billion in 2013

— For North American business, we estimate that a realistic commercially available total of USD2.5 billion is achievable, up from USD2.3 billion last year

Where has this increase capacity come from? To some extent from the existing market leaders, some of whom have increased their capacity by as much as 150%. However, we have also seen other insurers, particularly those who are restricted to underwriting on a regional basis, increasing their capacity, and we comment on this a little later in the section of the Review.

Market capacity is back up again – this time to its highest level for over 15 years.

Source: Willis
## Losses – 2013 an improvement, but nothing to write home about

### Downstream losses xs USD50 million 2012

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CAUSE</th>
<th>LOCATION</th>
<th>COUNTRY</th>
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### Downstream losses xs USD50 million 2013

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<td>100,000,000</td>
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2013 has resulted in fewer major losses than 2012, or indeed 2011.

Source: Willis Energy Loss Database as at April 1 2014 (figures include both insured and uninsured losses)
The Downstream loss record for 2012 did little to improve underwriters’ morale following the disastrous year of 2011, which included the massive Canadian upgrader, Thai flood and Japanese earthquake losses. As we pointed out in last year’s Review, 2012 included several losses that, while not catastrophic in their own right, fell just short of what might be recoverable under their reinsurance treaties (i.e. between USD500 million and USD100 million).

To date, 2013 has shown something of an improvement; although the market has suffered another major loss excess of USD1 billion, the number of losses falling into “large but retained” arena has fallen, from 12 in 2012 to 4 in 2013.

The one constant theme from this data is the continuing one of Business Interruption losses outstripping Physical Damage losses. With oil prices remaining resolutely above the USD100 per barrel level, it is perhaps unsurprising that the quantum of Business Interruption loss continues to be a hugely significant factor in the overall risk profile of major downstream clients.

**Reduced premium pool may be influencing softening process**

**WELD Downstream Energy losses 1990–2013 (excess of USD1 million) versus estimated global Downstream Energy premium income**

Overall global premium levels may have actually reduced during 2013 – a worrying development from an insurer perspective.

*Source: Willis Energy Loss Database as at April 1 2014 (figures include both insured and uninsured losses)*

The chart above shows how the last three years of losses relate to other underwriting years from a historical perspective. It can be seen that the three most recent years are the worst loss years in recent history, if the Gulf of Mexico windstorm losses of 2005 and 2008 are removed from the equation. If we super-impose our annual estimate of global downstream premium income, this does provide an indication as to why rates are perceived by the market to be too low to sustain underwriting profitability in the long run. We must of course point out that the losses recorded by our Database include insured and uninsured losses, but even so the differential between premium income and overall losses, certainly for 2011 and 2012, continues to suggest an unprofitable portfolio. It should also be pointed out that these same insurers have also suffered some very significant power, utility and mining losses over the course of the same period.
What is perhaps of greater concern to the market is that we now estimate a small but discernable reduction in overall premium income levels – by approximately 2.5%. While this is only an estimate, based on the progression of premium income figures from Lloyd’s, it does suggest that any further market softening may well be exacerbated by a diminishing overall premium pot. And if more global energy companies were to take the lead of two of the super-majors and decide to retain significantly more of their Downstream risk, then the threat to the market would be even greater than it is today (although it is also possible that there is potential for more premium development on the horizon, as more shale gas becomes available, particularly in the US; we discuss this issue later in this Section).

Furthermore, although the frequency and severity of the major losses in 2013 has improved since 2012, the chart above suggests that the overall quantum of 2013 Downstream Energy losses may well eventually match that of 2012, if previous patterns of loss record deterioration continue. This suggests an increase in the frequency and possibly severity of attritional losses, a development that would not auger well for the market given the current softening trend.

The only other metric that we can use to ascertain the health of the Downstream portfolio is the Incurred Ratio data from Lloyd’s. As we point out every year, this data is less germane for the this market as for its Upstream counterpart, as only a small percentage, (some 10-15%) of the overall portfolio, is placed in this market. However, we can see that Lloyd’s has not made money in the first year where the overall figures are mature enough to be reliable, 2010, and it is very possible that the years 2011-13 will mature to the detriment of the market. (It should be remembered that a significant amount of the 2011 losses will have been paid for by programmes incepting during 2010).

If these figures from Lloyd’s are anything to go by, Downstream insurers seem to be making money from 2011 onwards – but are these figures still too immature to reflect the reality of the overall market situation?

Source: Lloyd’s

* Some Japan earthquake losses were claimed on programmes incepting in 2010
Major composite insurers react as regional competition intensifies

Rates remain below technical norms - with no sign of any change in direction
A more benign Reinsurance renewal season at January 1 has helped to intensify the existing competitive pressures within the market. Once again the excess capacity available to Reinsurance buyers has kept prices down, providing the direct market with the ability to at least maintain their existing gross capacity and market positions. So despite the negative effect of recent losses, there have been virtually no withdrawals from the market; all the existing leaders are still at their posts, but with increased premium income targets and a directive from senior management to continue to expand their market share. As a result we are witnessing in general terms a wholesale replacement of technical underwriting as a key driver with the maximisation of premium income and market share. Those insurers whose dearest wish it has been for the last few years to see rates return to a technical norm continue to be disappointed, as competitive pressures keep rates depressed well below where they think they should be. Instead, they are seeing their colleagues becoming increasingly preoccupied with finding ways to maintain their profile in the market.

Why the drive to increase market share?
Some readers of the Review may be wondering why, given today’s glut of underwriting capacity and softening rating environment, insurer management continues to insist on increasing premium income targets. The reality is that every insurer that has invested heavily in specific markets and/or regions needs to grow their business to pay for the cost of investment. Very few insurers are in a position whereby they can afford to stand still, and while their overall portfolio figures show them still recording underwriting profits, the pressure continues to mount to drive growth even further.

European (re)insurers flex their muscles
As a result, the major European (re)insurers have increased their profile in several key areas, beginning to lead business on some programmes where in previous years they had been content to follow other leading insurers. Assuming a leadership role has given these major companies a much greater control over their own destiny, as they can control not only the terms and conditions of sought after programmes but also the line size that they are awarded by the broker.

Smaller insurers join the leadership party
At the same time, some of the smaller international insurers are now also increasing their profile; armed with at least USD50 million of underwriting capacity, some are no longer content to play a bit part on programmes, offering their capacity to brokers on a quota-share basis rather than merely as a participant on excess layers. Furthermore, the overall panel of leadership options available to buyers will be increased still further by the time this Review goes to press with the entry of Endurance Insurance in this market in April.

Regional insurers wake up to the threat
Finally, to add to the increasingly competitive environment, those insurers who can only offer capacity on a regional basis are also realising that the only way to survive in this environment is to compete more vigorously themselves for business located in their region. Several of these insurers have become alarmed at the way that a significant number of global insurers, armed with their own underwriting expertise and technical research, have invested in setting up offices in their regions in direct competition for their own portfolio. In some of these regions, including Africa, the Middle East and South East Asia, there are only a certain number of major programmes from these regions that these insurers can participate in. The result of their apprehension has been predictable; we have seen significant increases in capacity from these insurers as well to stoke the competition still further.
Perhaps one of the most competitive regions in the world in early 2014 is China, which is the only region outside Western Europe and North America to offer its own well-rated, indigenous and significant capacity which is not dependent on major global reinsurance providers. As other international insurers attempt to crack this highly sought after portfolio, Chinese insurers are continuing to out-compete their global counterparts to maintain their position on key Chinese programmes. In other parts of the world such as Russia, Sweden, South East Asia, Latin America and the Middle East, local capacity is certainly available but not to the same degree, making these marketplaces less competitive than their Chinese counterpart.

**Global insurers sacrifice downstream to finance investment in key regions**

However, wherever major global insurers have invested, it seems that their senior management has accepted that their Energy portfolio in the region may not in itself make profitable returns in the short term. Indeed, it makes little sense to regionalise an insurer’s Downstream offering when there is self-evidently a homogenous international insurance marketplace for this class; there just isn’t enough premium income available from a specific region to make it worthwhile, and indeed the insurer concerned can end up undercutting itself. However, some global insurers have recently used their Downstream portfolio to spearhead their overall investment in a particular region; for example, should a global insurer wish to establish its presence in the Middle East, they might well use their Downstream premium to finance their set-up costs and to kick start their presence in other less premium-rich lines. So by using their Downstream premium to pay for the introduction of their full suite of middle and floor risk transfer products to the region in question, their overall corporate strategic goal is realised; whether they actually make money out of their Downstream portfolio during this period may well therefore be of secondary importance.

**Appetite for North American business continues to grow**

In last year’s Review we mentioned that North America had become a more attractive region for global insurers to invest in. This year, we can report that this dynamic has gained more momentum. From being a net importer of natural gas, the United States has benefitted significantly from the turnaround in its shale gas and gas to liquids industries as the country has become a net natural gas exporter; this development is also having a significant impact on downstream infrastructure, as new feedstock becomes available. Old facilities first constructed in the boom years of the mid twentieth century are increasingly making way for brand new chemical and petrochemical plants as well as gas processing and gas to liquids facilities. As a result, insurers have recognised this positive trend as offering an exciting new source of premium revenue. In recent years the US market has reacted in a more disciplined fashion to the setbacks of 10-15 years ago, an era characterised by several large insurers taking 100% shares of primary layers on major programmes at a time of particularly severe losses. Now we are seeing competitive pressures re-assert themselves, as the emergence of this new infrastructure is allowing the market to view parts of this portfolio as new business – a dynamic that we have not seen for some time in this hugely significant region.

“By using their Downstream premium to pay for the introduction of their full suite of middle and floor risk transfer products to the region in question, their overall corporate strategic goal is realised; whether they actually make money out of their Downstream portfolio during this period may well therefore be of secondary importance.”


Midstream – a major market battleground?

A major arena in which we expect to see even more competitive pressures for Downstream insurers in the future is in the Midstream arena, a sector which has provided significant premium growth in the past. In the Upstream chapter of this Review we show that the softening dynamic in this market is even more intense than in the Downstream market, with virtually the whole market increasingly focused on the hunt for fresh premium income. Although Upstream insurers are precluded from writing the majority of Downstream business by virtue of the Refinery Exclusion Clause in their reinsurance treaties, the clause does not apply to Midstream business such as pipelines and other similar transmission infrastructure. Traditionally, the Upstream market has proved to be the more expensive market for these risks; however, given the circumstances we certainly expect these insurers to compete more vigorously in this arena in the months ahead.

Cross-class underwriting remains a real option for major composite insurers

We have mentioned in past Reviews that the potential exists for major composite insurers to maximise their value to brokers and buyers by offering their capacity on a cross-class basis. The potential battle in the Midstream arena is but one sign of the way in which insurers are reflecting on new ways of offering their capacity. In a softening rating environment in both markets, there is no doubt that those insurers who can offer their capacity on a cross class basis – not just Upstream and Downstream Property, but Liability, Construction and D&O as well – stand to maintain more of their market share and present themselves as better choices than those insurers who only offer their capacity on a class by class basis, and who will have to fight harder to maintain their market share.

Claims disputes leave both buyers and insurers frustrated

Meanwhile, in recent years it has become clear that the number of claims disputes in the market continued to grow, as the frustration felt by both buyers and insurers – rightly or wrongly – has intensified. Insurers complain that buyers often do not have the right paperwork, are inadequately prepared and do not report losses within the required framework. On the other hand, buyers are increasingly frustrated by what they regard as opaque policy wordings and by the market’s seeming reluctance to pay claims promptly and efficiently. Recently brokers have moved to address some of these issues, and there can be no doubt that a wholesale revision of policy wordings and claims protocols across the market would be no bad thing for the industry.

This problem is particularly an issue when corrosion is a feature of the loss in question; buyers, perhaps under the impression that an All Risks policy wording does “exactly what it says on the tin”, have often been less than impressed when informed that the proximate cause of a particular loss was not caused by a “sudden and accidental” event but was in fact the result of wear and tear caused by corrosion and therefore excluded by the policy. Another difficult scenario is when there is indeed a “sudden and accidental” explosion at the facility, but the establishment of damage caused by the explosion itself rather than by any previous gradual corrosion is very difficult to establish.

In this market environment, a clear way for insurers to differentiate themselves is the way in which they address the issue of claims handling and payments; it remains to be seen if any major insurers are going to be prepared to differentiate themselves in this way in the months ahead.

Have retentions reduced in real terms?

While there have been no meaningful changes in retention levels in recent years – its seems that both buyers and insurers have got used to the levels imposed in the immediate aftermath of 9/11 – in real terms we would suggest that in many instances they have fallen, due to inflationary pressures. The fact that there are no moves by the market to increase retentions is therefore yet one more sign of the current softening market environment, although some insurers operating in specific regions may decide to differentiate themselves in this way in the future – particularly if faced with even more competitive pressure from their global competitors.
Where does the market go from here?

The laws of supply and demand do not lie and the chart to the right shows just what sort of a predicament the Downstream market finds itself as we head further into 2014. Capacity levels are now at their highest since the turn of the century, now some 13 years ago; meanwhile average rating levels, which last year had shown signs of a tiny recovery, are once more heading in the wrong direction from an insurer perspective. For the market, there is no hiding place from the fact that the softening dynamic, arrested following the significant losses of 2011 and 2012, is now back again with a vengeance as insurers in almost every sector of the market make their preparations to meet their enhanced premium income targets. In this environment, insurers will have to choose the programmes they really want to fight for; if they have to offer a heavily discounted rate in order to do so, that may well be a price worth paying to secure their most preferred business. Apart from any other factor, each insurer will be wanting to position themselves to take full advantage should a market upswing eventually emerge.

Losses won’t turn the market on their own

Often in past Reviews we have speculated about what sort of losses would need to occur before there was indeed a change in direction of a softening market. The reality is that, in a world where capital has found few better havens than insurance in the fallout from the global economic crisis of 2007, losses themselves are unlikely to be market changing events. If we consider the recent history of the market, the only time we witnessed a significant withdrawal of capacity was after the collapse of the old Reinsurance market at the turn of the century, which was of course further exacerbated by the impact of 9/11. Those days are probably gone forever; such cheap (and primary) reinsurance is unlikely to be available to the direct market again in the future. Indeed, the market generally has increasingly relied less on reinsurance – as we have seen, some of the most important players in this market are the major European (re)insurers themselves.
So given the current dynamics of the market, it will take more than a serious run of losses to make any meaningful dent in existing capacity levels. Indeed, recent history supports this thesis; for example in the aftermath of Hurricanes Katrina and Rita, the resulting hardening dynamic lasted only 12 months; after Hurricane Ike, again it lasted only 12 months; while in the aftermath of the serious losses of 2011, the market tried to harden for a month or so but eventually stayed basically flat.

The conclusion one comes to in studying the recent past is therefore that, in the absence of a more efficient arena in which to deploy capital, capacity will remain – regardless of any major losses which may materialise.

**Can buyers hedge against a future market upturn?**

So how can buyers best capitalise on the renewed softening in the Downstream market? In past reviews we have highlighted the benefits of pursuing long-term relationships with key leading insurers; simply because we are once again into a softening market environment this strategy does not suddenly become redundant. Indeed, the very best deals to be had may well be negotiated with long term risk partners that can be confident of being able to offer their current capacity for at least the next three years or so. These insurers are likely to be keen to offer a long term arrangement (for their share of the programme at least) that would protect the buyer in the event of a market upturn. A refinement of this “hedge” might be to secure a certain percentage of the buyer’s programme on a long term basis with its key risk partners, while leaving the balance renewing on a 12 month basis, allowing for a possible further softening of the market.

In the meantime, competitive pressures can only increase further in 2014 as the market heads into unknown territory for all concerned.
In 2013 we said:

- The impact of 2011 natural catastrophe losses begins to recede
- Testing and commissioning was still an issue
- The market remained competitive as capacity remained abundant
- New markets were anticipated and Construction seen as a sustainable class
- Macro factors such as economic uncertainty might change market dynamics
Capacity remains stable at USD4 billion

The Onshore Construction market remains highly capitalised globally and can respond to capacity and coverage needs of all industry sectors. However, locations exposed to natural catastrophes continue to pose a challenge; for example, recent LNG projects under construction in Australia have challenged this capacity, resulting in stakeholders accepting a loss limit. The Probable Maximum Loss capacity of around USD4 billion is provided on a “best in class risks” basis, assuming every insurer commits their full capacity - a scenario which hardly ever materialises in practice.

Positive claims record fuels softening process

Compared to its peer group in the Upstream market, the Onshore Construction market has enjoyed a positive claims experience for a number of years. This factor, coupled with increased capital and high insurer appetite, is the primary reason why the Construction market remains soft. The market is likely to remain competitive for at least the next 24 months, with capacity likely to rise further next year. Indeed, we anticipate a further scramble for market share from emerging insurers in places such as Korea, China and Bermuda as well as from non-traditional markets such as Berkshire Hathaway.

Delay in Start Up remains a specialist product

While the Energy market for construction risks continues to be a target for insurers to generate additional premium income, several features continue to attract attention when these programmes are being underwritten. Typically, scrutiny is paid to the importance of risk management, work methods and any potential financial loss, particularly if Delay in Start Up insurance is being considered by the owner or financing parties.

Projects located in remote areas featuring logistical issues, difficulties in transportation and quality of supply chain for constructing access therefore continue to attract attention. For most types of projects, Delay in Start Up insurance remains a specialised class and the assessment of insurance for advance financial risk continues to ask questions of underwriters. Other risk features which insurers continue to focus on include transportation, storage, defects (Design, Workmanship and Materials) and Maintenance or Defects Liability, with the wider Guarantee Maintenance still regarded as a need for evaluation and information to secure this cover. The importance of risk management and other quality controls remains a differentiator, although this is clearly changing in the wake of the greater competition and continuing softening of the market.

Decentralisation dynamic intensifies as project values increase

The Onshore Construction market continues to decentralise, increasing resource and expertise and indeed underwriting authority in regional underwriting centres or hubs such as Singapore, Sao Paulo, Hong Kong, South Africa and Dubai. Key decisions still remain firmly with the head offices of the leading companies such as Munich Re and Swiss Re, with the London market still a driving force behind innovation and creativity for the higher risks of tunneling, underground mining and heavy civil works, together with coverage changes or improvements.

Improving technology, particularly efficient scale up, continues to be an important issue, although rising capacity and the squeeze on underwriting profits will be a driver for improvements in the coverage offered. These can take the form of combined Construction/Operating policies, wider design cover, lower deductibles and more easy to obtain Maintenance, Delay in Start-Up and other financial risks.

Meanwhile energy projects are growing in value, reaching peaks of USD20 billion to USD30 billion for some projects. Some insurers are being forced (through reinsurance treaty or internal rules) to restrict their participation to a maximum of 20% to 30% of their capacity, thereby reducing their lines and requiring brokers either to access more insurers or to impose an artificial loss limit on the programme in question.
**Damage to Existing or Surrounding Property cover remains an issue**

One important topic being constantly debated in the market is the issue of Existing or Surrounding Property belonging to the Principal and how efficiently and effectively it can be insured. Construction markets limit this extension to an amount normally representing the deductible under an Operational Property policy, expecting that amounts beyond this deductible would be covered under this policy. However, as we have shown elsewhere in this Review, Property insurers themselves are already experiencing extremely soft conditions and as such are trying to pass as much responsibility to other markets as possible. This is having the effect of Existing Property limits under Construction policies rising to amounts far higher than previously seen - in some cases, to as much as USD200 million. However, it should be remembered that any damage to Existing Property is only covered arising out of the performance of the construction works and does not cover any resulting financial loss to the owner that is normally insured under a Business Interruption policy.

**Interface with Operating policies requires contract clarity**

A major issue within the energy sector is that the Operating insurers are reluctant to include testing and commissioning risks under their policies while the Construction market will only provide limited cover for projects that have been commissioned, taken into use and are therefore effectively operational. Projects that have phased completion, but also have items that are required to commission other parts of the project, can often be operational for a long period, and Construction underwriters are hesitant to provide cover for fully operational risks beyond six months. The prevailing market conditions create opportunities for more flexibility, but careful consideration is still required as to the exact periods of commissioning and handover. In particular, it should be clearly identified as to where responsibility resides for completed works, ensuring at the same time that the Construction policy insurers accept that they will be required to cover such works in the event of re-commissioning. The implementation of Maintenance cover for completed works that are handed over early, or on a phased basis, should also form a major part of the programme design.
In 2013 we said:

- In spite of the death of Osama Bin Laden, his legacy lived on and extremist terrorist activity became increasingly widespread and sophisticated.

- Terror groups were more developed in terms of strategy and capability as well as being better funded. Attacks were increasingly politically and financially motivated with Western companies a prime target.

- Increasing levels of violence and anarchy led to increased looting and theft - threats covered under the Hiscox Political Violence wording.

- In spite of the increased level and intensity of attacks, the Terrorism market was generally stable. However, rates did harden for loss-impacted programmes and insurers required more information in higher threat areas.

- Lloyd’s continued to restrict capacity for certain territories.
Global terrorism summary

The past year has seen a continuation of the increase in global terrorist activity, with record levels of attacks once again reached. Almost 20,000 separate attacks were recorded with over 50% of the total coming from Syria and Libya. Attacks have predominantly been conducted on sectarian and religious lines and over 60% of attacks have been explosive by nature – a significant change from the days of gun attacks in the past decade. The Al Qaeda brand continues to draw support across the globe and remains the single most significant cause for attacks.

Geographically, the Middle East, Africa and Central Asia have been the hotbeds of violence. The conflict in Syria has continued to become progressively more violent and Al Qaeda inspired groups have become increasingly involved both in Syria and in neighbouring countries, in particular Iraq and Lebanon. Iraq has been the scene of levels of violence unseen for several years since US forces withdrew, with attacks becoming ever more sophisticated and coordinated, especially in the centre and north, and with a marked increase in suicide attacks. Whilst the targets for Iraqi attacks are generally sectarian, the effect has been felt in a much wider sense with a lack of confidence in general security.

The Afghan Taliban continue to mount spectacular attacks and these can be expected to continue up to and beyond the withdrawal of coalition forces later in 2014, while attacks in Pakistan have also continued and are becoming more sophisticated.

The effects of the Arab Spring continue to rumble on across the Sahel, with Libya and Egypt in particular bearing the brunt of attacks; the energy sector in Libya, the mainstay of the economy, has been severely disrupted since the February 2011 uprising. While the political situation across the region remains unstable and uncertain, continued attacks should be expected to continue. Violence continues in West Africa, with Al Qaeda inspired groups, Boko Harem and Mend, and in East Africa, predominately from Al Shabaab, and further attacks against Western interests should be anticipated in both regions.

Recent attack round-up

Key attacks across the globe in the past 12 months include:

— On September 21 2013, Al Shabaab launched an audacious attack on the Westgate shopping mall in Nairobi, Kenya killing 67 and injuring over 100. While not energy sector specific, this was clearly an attack focussed on western interests in the region and further major attacks should be expected.

— In May 2013, the Areva Uranium mine and a local barracks in Niger were attacked by simultaneous suicide groups by an Al Qaeda affiliate, leaving 35 dead in response to French military intervention in the region. This attack followed the January 2013 attack on the Tigantourine gas facility near In Armenas, Algeria demonstrating the regional nature of the threat and the active targeting of international energy sector interests. Further such attacks should be considered likely as it becomes increasingly difficult to mount major attacks in Europe.

— Two attacks in as many days took place in Volgograd, Russia in December 2013, providing a warning to Russia just before the Winter Olympics. An unprecedented and successful security operation was mounted that ensured security for the Olympics but the attacks demonstrated both the motivation and means to attack high profile targets in a crucial energy zone for political effect.
ERRORISM AND POLITICAL VIOLENCE
The energy sector has become a strategic target for Al Qaeda in Iraq as the organisation attempts to undermine the government’s plan to triple production to finance massive national reconstruction. While attacks have previously focussed on the Kirkuk fields in the North, 2013 has seen a shift south towards the fields around Basra as well as regular attacks on the pipeline between Baiji and the Turkish border. Whilst western employees have yet to be killed, the threat has certainly increased and any exodus of the international energy sector would seriously undermine the Iraqi regime.

As we explain much more fully in the Special Feature of the Review, the energy sector, particularly in the Middle East, is increasingly vulnerable to cyber-attacks. 53% of attacks in 2013 were against the energy sector, in some cases resulting in expensive outages at pipelines, oil refineries and drilling platforms. Critical energy infrastructure is an attractive target for terrorists seeking physical, economic and environmental damage.

Market movements / transfers
Compared to the significant changes to the terrorism markets that were reported in the last edition of this Review, the past twelve months have seen a considerable degree of stability and there have been no new entries to the market. We have seen a number of key markets (e.g. Talbot and Liberty) increasing their capacity, offering opportunities for clients. We have also seen an increase and growth of competitive local markets in the Middle East and Asia that are backed by Lloyd’s Markets and Syndicates including XL and Talbot (Asia) and Liberty (Middle East). This has created additional competition which, once again, has been to the benefit of clients.

Underwriting philosophies and outlook
In spite of a number of losses over the past twelve months, the market has continued to soften, primarily due to the increased competition outlined above. The new entries and expanded capabilities we discussed in the last edition of this Review have driven prices down across the board, sometimes to buyers’ significant benefit. We anticipate similar developments over the forthcoming twelve months, with buyers once again reaping the benefits of increased competition.

“The energy sector has become a strategic target for Al Qaeda in Iraq as the organisation attempts to undermine the government’s plan to triple production to finance massive national reconstruction.”
In 2013 we said:
- Historical losses continue to shape underwriting strategies
- Capacity remained flat
- Tough requirements for market entry – particularly hydraulic fracturing
- More competition was possibly emerging to challenge the Lloyd’s market
- Company-based capacity not subject to the same restrictions as imposed by Lloyd’s PMD
The International Liability sector remains largely a buyers’ market; the lack of recent significant insured losses and the apparently short term memory for long-tail losses has done much to sustain the existing softening dynamic. There are some sectors of exposure where the markets are pushing back on rate reductions; however, even where competition is at its most aggressive, discipline is being maintained in the underwriting process. Indeed, high quality underwriting information is still a differentiator and hard negotiations are needed to achieve significant coverage enhancements.

Despite this, we might have expected to see tightening conditions in the market in 2013. Some of the more significant Energy-focussed excess insurers have been cutting back their line sizes, particularly for offshore exposures. At least one major global insurer is closely tracking their aggregations within the group, in some cases leading to significant cuts in capacity offered on some risks. However, instead through the end of 2013 and into the first quarter of 2014 we have continued to see an offsetting increase in capacity, especially on the onshore side:

- Apollo, a new market for this class, is offering up to USD25 million of capacity on a combined on and offshore basis
- Canopius is offering USD25 million on an onshore basis
- We are seeing increased capacity from Kiln and Brit
- There has been an increased appetite for this class from a variety of insurers, including Amlin, W.R. Berkley, Dual and Mitsui.

The last two years have produced a small upswing in available liability market capacity.

Source: Willis

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- We are seeing increased capacity from Kiln and Brit
- There has been an increased appetite for this class from a variety of insurers, including Amlin, W.R. Berkley, Dual and Mitsui.
As the chart on the previous shows, this means an increase in the theoretical market capacity for this class to approximately USD2.7 billion, although for Onshore Energy risks the reality is a more realistic figure of USD1.5 billion. Offshore capacity is between USD800 million to USD1 billion, of which approximately USD500 million would be available on a follow form basis.

**Market place for Energy business remains complex**

While the general Liability market remains buoyant, with plentiful capacity and a benign claims environment, the Energy Liability market climate is of course more complex, with the events at Enbridge and PG & E continuing to focus underwriters’ attentions. The situation has been further compounded by the intense spotlight shone on Energy Liabilities by the Lloyds’ Performance Management Directorate. From a Marine and Offshore Energy perspective, the events at Macondo, Costa Concordia and Gryphon A, whilst no longer necessarily generating a significant upward impact on rates, have again focused underwriters’ attentions.

While these events have certainly not generated a genuine “hard market”, Energy Liability markets have changed their behaviour. They are watching aggregations much more closely, there is greater scrutiny on the level of information provided (particularly from a pollution perspective on and offshore) and many are reducing their average line size per risk. Despite these hardening factors there is still strong competition in the regional markets for small/non-complex business emanating from regions such as the Middle East, Asia Pacific and the FSU; complex and capacity driven risks naturally have a different market dynamic than more run of the mill business.

In summary, we are finding that reductions being achieved for programmes where:

- The exposures are considered to be well managed
- There is a good claims experience
- The current placing is not already too competitive
- The limits purchased do not “push the envelope” of existing market capacity

However, whilst there is an increase in competition in 2014, market discipline is not entirely eroding. As such, an area for particular scrutiny for this market is the level of underwriting information provided by clients.

**Pipeline risks continue to give cause for concern**

Notwithstanding any increased competitive pressures, the market is concentrating on the risks posed by pollution, especially in respect of pipeline operations, in part due to a number of significant losses that the markets have had to contend with in the past few years, including Enbridge and PG & E. In March 2013 an oil pipeline ruptured in Mayflower, Arkansas, dumping at least 12,000 barrels of Canadian crude into a housing development. This is a chilling reminder of the potential pitfalls in transporting crude via pipeline and reiterates insurers’ concerns.

As a result, some markets are reviewing their entire pipeline portfolio and withdrawing from risks where they do not feel comfortable with the level of risk management or maintenance of operation. To reiterate, market discipline has not subsided and the market has become increasingly demanding in relation to the general level of information they require in order to underwrite risks accurately. However, if the correct level of information is provided, competitive solutions can still be achieved. In summary, the failure to provide sufficient information may form a significant disadvantage in efforts to secure competitive terms.
Offshore market shows no sign of softening

Unlike the Onshore market, there has been a significant shrinkage in Offshore Liability capacity for reasons surrounding the loss record of the class and the perceived adequacy of the current market pricing. Some insurers have pulled out of the class entirely, some are restricting their capacity per risk and some syndicates/companies are also facing cutbacks in their reinsurance capacity and increases in their reinsurance costs. Last year, the Offshore and Marine markets were looking for rate increases in the range of 10% + for risks with no Gulf of Mexico exposures - the general consensus now is that rates are either flat to plus 5% on any risks with non-Gulf of Mexico Offshore/Marine exposures.

Offshore E&P continues to be under the spotlight, following the Lloyd’s Directive from Performance Management Director Tom Bolt. Insurers continue to focus on the issues of aggregation, pollution exposures and removal of wreck, with underwriters demanding that submissions include details of complete schedules of wells (including interests), vessels, cargo volumes etc.

Arctic pollution a major concern but insurers comfortable with fracking

According to an assessment conducted by the U.S. Geological Survey Holding, the Arctic holds an estimated 13% (90 billion barrels) of the world’s undiscovered conventional oil resources and 30% of its undiscovered conventional natural gas resources. The potential from this region is leading to oil and gas majors heavily investing in the area from the US to Russia. Insurers are wary of the potential pollution liabilities and this is especially being highlighted in European countries due to the Environmental Liability Directive. We are therefore seeing increased interest from clients in Environmental Impairment Liability insurance and pollution extensions to their liability policies. Despite hydraulic fracturing having been a hot topic in the US for years, the UK is catching up, with this issue being fanned by press coverage. However, most insurers seem to be more comfortable with this risk, although they will still require full details of activities to understand the exposures.

Transportation by train a major issue

Due to the issues with pipelines, there has been an increasing trend towards transporting oil by train. This has been especially highlighted in the US, where originated carloads of crude oil on US class I railroads have exponentially increased, from 29,605 in 2010 to 400,000 in 2013.

In August 2013 a runaway oil train derailed and exploded in a Quebec town, killing 47 people. The insurance market is therefore keen to understand client’s exposures, contractual obligations and growing concern that liability is being pushed on all interested parties. Insurers are concerned about their own accumulations, with all touch points from shippers to loaders, railcar owners to lessors, maintenance contractors and end customer.

Combined market restricted to excess players

The last piece of the jigsaw of the Energy Liability market is those insurers who can write Energy risks both on and offshore. The climate here is a blend of the situations in the two distinct specialist Onshore and Offshore/Marine markets. Capacity of this kind is more readily available excess of a USD50 million attachment. At a primary level, there are only a handful of alternatives, which obviously restricts competition.
In 2013 we said:

- The market environment remained challenging
- Realistic market capacity stayed static at around USD750 million
- Lack of leadership choices continued to frustrate buyers
- The loss record continued to deteriorate
- The outlook for buyers remained gloomy
Additional market appetite is being seen at Lloyd’s, with stand-alone capacity from syndicates such as Hiscox, Apollo, and Advent. And in Bermuda, Allied World is showing signs of recommitting to the Energy arena by hiring Jason Pugi from another island insurer.

No significant catastrophes, but rail exposures draw attention
Since April 2013 there have been very few losses in this class of business which have been significant in terms of monetary amount. However, past losses (which have been chronicled in previous issues of this Review) continue to deteriorate. Perhaps the most significant loss during 2013 was the Lac Megantic, Ontario train derailment in July. Apart from the terrible loss of life and significant third-party property damage, this loss also brought to attention many of the issues surrounding the transportation of crude oil by rail. Subsequent events involving derailment of trains carrying crude have virtually become nightly news items; the considerations raised run from operational to political including the origin of the crude, the possible liability of parties other than the railroads, the debated need for additional pipelines, and the unallocated liabilities arising from an event.

AIG retracts Excess Liability capacity
2013 was marked by AIG’s continued retraction of its Excess Liability capacity, both in terms of the total amount offered to buyers and selective withdrawals from primary and lead excess placements. We have noted that this behavior appears to have softened a bit during 2014; however, AIG is managing its capacity in a much more transparent fashion.

Market movements – Lloyd’s profile increases
In January, John Henderson and Aspen agreed to a parting of the ways. Henderson has always been a strong supporter of primary and lead Excess Liability placements for the tough Energy classes; furthermore he was a prominent leader behind the JL London umbrella forms. Most recently he championed the 2013 revisions which, among other things, address and clarify additional insured status intent (in recognition of recent court decisions in the United States).

Capacity remains flat – but is USD1 billion achievable for E&P programs?
Theoretical worldwide Excess Liability capacity for North American domiciled Energy programs is in the area of USD900 million, with more realistic capacity being in the area of USD750 million. This amount has not changed significantly in the past 4-5 years, with certain market withdrawals being offset by new entrants.
However, with regard to Exploration and Production programs, and depending upon specific retentions, it is possible to compile closer to USD1 billion of capacity. This will usually entail use of capacity from Marine markets, both from North American and London. Some might require the exclusion of various onshore exposures, and many will not utilize a Bermuda type policy form such as XL004, opting instead for a London Claims Made form.

Meanwhile capacity amounts can ebb and flow, depending upon exposure, coverage/policy form, attachment point, pricing and the extent of insurer commitment to reinsurance of the International Group of P&I Clubs with its inherent clash potential. The level of underwriting information remains critical.

Underwriters will continue to require the high level of information they have mandated over the past decade in respect of pipelines, unconventional hydraulic fracturing, co-venture and partner information, and offshore exposures.

Underwriters will continue to require the high level of information they have mandated over the past decade in respect of pipelines, unconventional hydraulic fracturing, co-venture and partner information, and offshore exposures. To this list we must add in 2014 the scrutiny of rail operations and leased and owned rail car exposure, including loading and unloading, maintenance and the assumption of liability through contract. On the topic of contracts in general, insurers are also looking to understand their clients position more thoroughly with respect to the provision of Additional Insured status and the relation of indemnity provisions to insurance for all counterparties.

Rates basically static as markets show more appetite for Marine business

In general terms, premiums have been seen as flat to slightly up in the Excess Liability market, while slightly down for the Marine sector. Certain trading of premium can be negotiated for decreased retentions, but this area has not been subjected to tremendous pressure yet. Indeed, US buyers will continue to feel upward pressure on retentions, notably in certain sectors such as offshore operations and Automobile Liability.

In terms of coverage, in the United States the renewal of current version of the Terrorism Risk Insurance Act at the end of 2014 will continue to be an issue until it is dealt with. Some sort of solution involving government backstop is expected; however, individual insurers anticipate additional retentions to be applied.

Canadian legislation raises required level of financial responsibility

In January 2014, the Energy Safety and Security Act, a long expected proposal, is now under debate by Canadian legislators, which is designed to amend three current acts which deal with, in part, financial responsibility for offshore pollution. (The proposed act also deals with Nuclear Energy operations). The proposal deals with almost all aspect of offshore and marine operations, and intends to raise the required evidence of financial responsibility from CAD30 million/ CAD40 million to “at least” CAD1 billion. Insurance should be able to assist buyers to comply with this legislation; however the issue of strict liability of the polluter is also being debated. The number of impacted buyers is small, but upon the changes to the acts we anticipate an impact on capacity supply and demand for those using insurance to comply.
Will the transformation of property catastrophe reinsurance marketplace affect this market in future?

Some good news for buyers for this class may finally be on the horizon. The recent property reinsurance renewals (as highlighted elsewhere in this Review) may lead to an increase in Excess Liability capacity in the future. Although capacity and rating levels for the direct market remain essentially static, the traditional property/property catastrophe Reinsurance market is being transformed, as new capital from non-traditional capital providers continues to enter and impact the marketplace. This coupled with many direct insurers retaining more previously reinsured risk as well (as other factors), has resulted in over capacity in this sector, with enhanced terms and conditions and premium reductions offered - all in an effort by traditional property reinsurers to maintain market share. Given this environment, some property reinsurers are expanding into other lines and some may expand into Excess Liability reinsurance in conjunction with their Property cedents. As this plays out in 2014, given the loss volatility in the Energy Liability sector it remains to be seen whether any increase in general Excess Liability will find its way to the Energy sector.

Meanwhile, most markets in this class continue to offer commodity capacity, preferring attachments higher in individual programs. Markets that will entertain leading programs excess of retention continue to be limited. These include Swiss Re, XL Bermuda, Markel, Lexington, Berkshire Hathaway (if price is to their liking), AIG, ACE (but generally for smaller to medium size accounts) and Zurich, as well as Lloyd’s. As might be expected, the number of carriers and leadership options grow as retentions increase. As we mentioned earlier, Aspen in London plays a significant role in leading certain Energy classes for North American risk; we therefore expect the renewal process to reflect the experiences and talents of the underwriters taking over.

The dynamic of mature insurance programs, which we have noted before, remain. For the buyers of capacity it should be noted that individual markets have migrated to the capacity levels and attachment points with which they are most comfortable. As a result, it has become very difficult to move markets around to restructure/create competition, especially at lower levels of an Excess Liability tower. And finally, multi-year policies are still generally not available for operational risks.

"The traditional property/property catastrophe reinsurance market is being transformed, as new capital from non-traditional capital providers continues to enter and impact the marketplace."
ACKNOWLEDGEMENTS

THE FOLLOWING WILLIS ASSOCIATES CONTRIBUTED TO THIS EDITION OF THE ENERG Y MARKET REVIEW:
- Charles Beuzelin
- Justin Blackmore
- Chris Bond
- James Borrie
- Chris Dear
- Chris Domingo
- David Clarke
- James Excell
- Jerry Garner
- Simon Gilderson
- Steve Gillespie
- David Griffiths
- Alan McShane
- Patrick Miller
- Mark Moore
- Mike Newsom-Davis
- James Sudbury
- Marie Reiter
- Alistair Rivers
- Neil Smith
- Richard Spotswood
- David Thomas
- David Warman

WITH SPECIAL THANKS TO:
- Carl Day
- Elizabeth Heslip
- Thomas Hoad
- James McDonald
- Chris McGloin
- Dan Trueman

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NORTH AMERICAN LIABILITIES

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