



Environmental Insurance Market Update

2019

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The environmental insurance market is estimated to be more than \$2 billion in premium annually. Every business is impacted by environmental risk, but it is estimated that less than 20% of insurance buyers purchase specialized environmental risk transfer policies to protect them from environmental exposures.

In the nearly forty years since its introduction to the insurance market, environmental insurance has become more widely accepted as a standard form of coverage for property-related transactions and global operational risks. It is becoming widely accepted as a basic coverage requirement for many manufacturers, utilities, property owners, developers, contractors and environmental consultants. The percentage of clients purchasing environmental insurance is increasing due to the ubiquity of pollution risks and the fact that coverage for environmental claims and losses is and has been excluded from policies offered by standard property and casualty insurers in the United States and in many foreign markets.

Site-Specific Environmental Coverage

Though capacity is great, higher risk industries such as mining, chemical manufacturing and oil & gas are experiencing tightening capacities, premium rates, and dwindling policy term lengths for environmental coverages. Construction projects are also scrutinized more closely by markets, particularly for programs offered on development properties impacted by historic industrial operations and even large portfolio programs when they include higher risk operations. Such scrutiny is resulting in increases in pricing and coverage restrictions with some carriers declining to offer any capacity.

Construction Environmental & Professional Liability

Rates for Contractor's Pollution Liability (CPL) coverage remain competitive for activities ranging from general and trade contracting to large infrastructure projects delivered via public-private partnerships and integrated delivery programs. General construction project activity is on the rise throughout the US, and we are seeing a steady flow of opportunities on high-rise residential and

mixed-use projects in all regions of the country. Much like Environmental Site Liability (ESL) coverage, projects involving development and residential exposures are coming under additional underwriting scrutiny and increasing rates of change.

Aon's Construction Professional Team is focused on designing, implementing and servicing insurance programs that protect our clients from pollution claims arising out of professional services rendered in relation to construction projects. Often, professional liability coverage is placed in conjunction with contractor pollution liability and/or owner's ESL programs.

For more than 10 years, the insurance marketplace has kept pace with changes in the complex project development segment of the contracting industry, and insurers continue to refine both professional and environmental liability products as project delivery systems evolve. Contractors Professional Protective Indemnity (CPPI) and Owners Professional Protective Indemnity (OPPI) are the two policies most commonly purchased for contractors, developers and property owners. Currently, about a dozen markets actively provide these policies, which include pollution insuring agreements on the same or a separate policy.

As with the ESL and CPL marketplace, many new insurers have entered this space and their staying power remains uncertain. OPPI and CPPI policies have been available for more than a decade but are still being tested in increasingly complex claims situations. Carriers' policy forms are unique. Innovations are regularly introduced as demands for specific features expand, including limited insuring agreements for network security, and a new willingness to provide defense outside the base policy limits for third party professional liability claims.

OPPI and CPPI policies are available only on claims-made forms for the professional liability coverages. Project-specific policies are typically written for a term of up to 10 years for the construction and completed operations period, while corporate practice policies renew annually.

Limits of up to \$50 million per claim are available from single insurers. Layered programs may use follow-form excess policies to provide limits of up to \$150 million or more.

Due to the number of new entrants in the professional liability market, rates have remained competitive, however, professional liability coverage can be expensive even in a competitive market environment. Losses are relatively infrequent but severe when they do occur, and we have seen a recent uptick in large losses. Aon is counseling CPPI and OPPI insureds to increase their typical limits spend in response to recent increases in loss sizes. This has resulted in insurers trying to impose higher SIRs and an increase in rates. One market aspect potentially affecting rates for CPPI and OPPI programs relates to a concerning trend with Architect and Engineer (A&E) insurance programs. The increase in frequency of catastrophic claims over the last few years has caused the A&E market to harden materially. Several A&E carriers have dropped out of the U.S. marketplace, also contributing to increasing rates. It is expected that at some point this may have additional market impact on CPPI and OPPI insurance programs.

Mergers & Acquisitions

The environmental market remains cautious about providing long-term (10 years) coverage for transactions involving mergers and acquisitions, especially when development activities such as capital improvement projects and industrial sites are involved. A few long-standing market leaders have ceased writing policies with terms of more than three to five years for new and pre-existing pollution conditions. Along with shorter policy terms, these mature environmental markets are also less willing to offer limits exceeding \$25 million; requiring more recent environmental due diligence information; and restricting coverage on properties slated for development or redevelopment activities. Fortunately, several newer markets are becoming more aggressive in this space, somewhat minimizing the impact of the diminishing appetite of mature markets.

Energy & Transportation

Environmental coverage for energy-related risks remains in demand, especially for firms involved in producing oil and/or natural gas from shale formations by hydraulic fracturing (fracking). A limited number of environmental insurers continue to provide coverage for these risks and offer programs for both contractors active in production

and extraction activities and investors that provide capital to these operations. After several large losses from the midstream sector on pipeline and marine terminal risks, retentions for these exposures are being reevaluated, and clients with adverse loss histories are likely to see significant premium increases.

Environmental insurers have typically provided contingent transportation coverage for all types of commercial and industrial exposures, and this coverage continues to be available to energy sector clients. We are seeing demand increase for transportation coverage into Mexico and Canada for crude oil and refined products.

Catastrophic transportation-related events have stimulated interest in environmental coverage for cleanup and third-party claims for transporters, including freight forwarders, railcar owners and logistics companies. Responding to the market need, Aon introduced a specialized solution for the catastrophic pollution risks of the rail industry. Cantilever Excess Pollution Liability Insurance provides additional capacity excess of standard general liability and marine coverage forms for sudden and accidental pollution incidents.

Financial

We are seeing renewed interest in environmental risk transfer from financial institutions, commodity traders, investment bankers, and private equity firms. Many are expanding programs to include environmental insurance for both investment activities and operational risks. With growing revenues, restored risk management budgets and increased concerns related to environmental exposures, industrial and commercial clients are seeking increased environmental insurance limits.

Middle Market

Combined environmental and general liability policies (which can include the products pollution coverage typically excluded from traditional casualty programs) remain popular among middle market clients, particularly manufacturers and distributors of chemical products and other goods that involve environmental exposures. Since these combined policies may offer less robust environmental coverage than separate site-specific pollution policies, Aon consults with clients to ascertain the extent of environmental exposure and may recommend an option to place environmental and CGL policies separately.

Certain environmental insurers have revised their combined commercial general liability (CGL) and site-specific pollution liability forms with new restrictive terms. We are helping our clients work through these carriers' wording challenges, using alternative markets to preserve important coverage features where necessary.

Underground Storage Tanks and Dry Cleaners

Underwriting guidelines for older underground storage tanks (USTs) have become significantly more stringent. A growing number of clients are finding it hard to insure tanks more than 30 years old. As a fallback position, the carriers offering pollution coverage for tanks are either excluding these USTs or increasing retentions, which in many cases are already \$250,000 or more.

Insuring dry cleaning operations, even at hospitality locations, is also problematic with some environmental insurance markets. Having access to good historical information about these sites is key to providing coverage with the least amount of restrictions.

International Exposures

More U.S. multi-national corporations are seeking to purchase environmental insurance policies for risks associated with activities outside of the United States. By addressing clients' needs for locally written policies

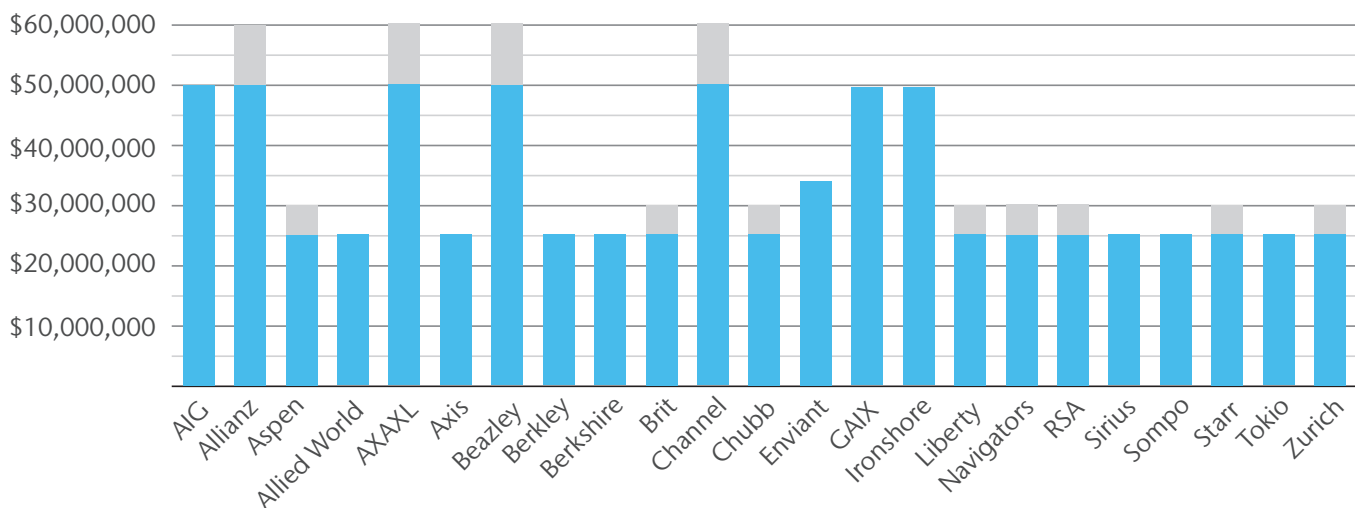
integrated with global environmental insurance programs, Aon helps to effectively and efficiently navigate the complexities of complying with a wide variety of regulatory and enforcement regimes utilizing global master policies.

Several U.S. carriers are working to expand their worldwide coverage footprints by increasing their ability to write local policies that address environmental financial responsibility obligations in jurisdictions around the world.

Overall Capacity & Appetite

Aon clients are benefiting from favorable conditions in the environmental insurance market, with broad, competitively priced coverage available. Total U.S. market capacity continues to exceed \$300 million, and with more London markets taking on environmental risk, global capacity for certain product lines is as high as \$800 million. In addition, we are seeing some carriers previously exclusive to wholesalers now moving to retail brokerage.

The following chart provides a summary of capacity data from environmental insurers. Please note, this is not an exhaustive list of environmental markets. Capacity in gray is provided through Aon Client Treaty¹



Limit Capacity Per Carrier (in Millions)

¹Aon Client Treaty enables our clients to access 20% of pre-secured, unique Lloyd's co-insurance capacity on any order (for risks that satisfy pre-agreed criteria) placed through Aon's Global Broking Centres (GBC) in London and Singapore. This solution encompasses virtually every industry segment, product range, and geography underwritten in the London market. With a truly international footprint, this treaty brings A+ rated Lloyd's security and its specialist underwriting capabilities to all eligible Aon clients.

Market Trends

▲ Capacity	↔ Coverage	↔ Claims & Losses	▲ Limits/Retention	▲ Pricing
Capacity is continuing to expand as more markets enter and mature in sector.	Coverage continues to evolve and become more responsive to insured's unique needs.	Unique losses are being addressed — emerging constituents can be problematic, e.g. PFOA/PFOS Focused enforcement actions	Limits and retentions are responsive for insured's needs.	Pricing trends have been stable for past few years, however, certain higher risk categories should expect rate increases from 3% to 5%.
<ul style="list-style-type: none"> Over 35 unique insurers provide environmental capacity. Capacity is available domestically, in the EU, and in Bermuda. There is over \$800M+ in theoretical capacity available in the environmental marketplace. 	<ul style="list-style-type: none"> Pollution policies are typically highly manuscript and tailored to needs of insured. Markets remain competitive but are beginning to require more underwriting information and loss review. Engineering requires more detailed information before releasing terms. Terms have become more restrictive over prior years, possibly due to AIG exit from PLL markets. Multiple year policy terms are still typical for site-specific coverage. Coverage for mold, redevelopment and older storage tanks has become more restrictive. 	<ul style="list-style-type: none"> Claims volume has increased as more companies buy coverage and understand how to use it properly. Carriers have been mixed on claim responses — some pushing for delay and detailed coverage reviews while others have been responsive with minimal imposition on insured. Due to the increase in claims for particular risks, carriers are considering increasing retentions or providing sub-limited coverage. 	<ul style="list-style-type: none"> High policy limits are available in the market, and can vary greatly based on industry class, size and unique exposures. Retentions can impact overall pricing and terms. Retentions have shifted upwards and now are typically \$50,000 or more. 	<ul style="list-style-type: none"> Renewal premiums are generally holding flat or reducing with favorable loss history. Higher risk operations can expect rate increases from 3% to 5%.

Emerging Issues of Concern

Mold

Many carriers are reacting to what they perceive as out of control mold claims by utilizing per unit/room/doorknob deductibles and business interruption sub-limits on some healthcare, habitational, and many hospitality risks. One longtime carrier has begun restricting mold and legionella coverage arising from water damage by endorsing time element coverage on pollution policies for all risk classes, if they cover it at all. We are managing clients' expectations in this area by encouraging a focus on preventative measures, including robust operations and maintenance practices, and mitigation protocols. The goal is to help make underwriters comfortable with relaxing restrictive endorsement wording.

Natural Resources Damages

Natural Resource Damage (NRD) is a federal statutory liability scheme outlined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as "Superfund", and the Oil Pollution Act (OPA). We saw a major uptick of NRD lawsuits in late 2018 by the New Jersey Department of Environmental Protection.

- Six environmental lawsuits were filed in August 2018 in New Jersey with eight more filed in December 2018.

The state has signaled there are more to come and has retained 18 private law firms to assist in the pursuit of these claims.

- New Jersey Governor Phil Murphy (D) has sent a clear message that environmental enforcement, natural resource damage, and environmental justice are priority issues for his administration. All signs indicate this recent activity is the tip of the iceberg and more action should be expected against all responsible parties, not just the "big names" or "deep pockets".

In the U.S., States like New Jersey have recovered more than \$10 Billion in NRD Damages. Due to the recent recoveries there, we may see an increase in other states' NRD activity.

Emerging Contaminants

In geographies with robust enforcement and more mature environmental legislation particularly in the USA, The European Union, Canada, Australia and Japan, developing issues of concern focus on "emerging contaminants". Aon is closely monitoring a category of "emerging contaminants" that are receiving heightened industry and media attention. These "emerging contaminants" include chemicals and compounds that, while not necessarily new are identified as having a perceived, potential or real threat to human health and

the environment. In the USA, Canada, Australia and some parts of the European Union, these contaminants include the following:

Lead:

As a result of the Flint Michigan water crisis, social media exploded with information (and misinformation) about water quality. Because of continued national scrutiny, we are seeing new interest in environmental coverage from public entity clients and prospects. So far at least one major carrier has implemented a corporate directive limiting coverage for water risks, particularly around lead contamination. Aon continues to provide market solutions for water including customized policy forms and extensions for pollution products liability.

PFAS

PFAS is a class of organic man-made chemicals containing Fluorine (per-and polyfluoroalkyl substances – pronounced “P-FAS”) widely used in industrial processes and consumer products since the 1950s. While they are ideal for consumer and industrial applications, there have been numerous lawsuits against manufacturers with awards in the tens of millions of U.S. dollars. On the regulatory front, individual U.S. states have imposed restrictions or banned PFAS in food packaging. Recently, several Michigan congressional representatives introduced a bill (“PFAS Action Act of 2019”) to require the EPA to classify PFAS under CERCLA. If passed, the law would extend “Superfund” resources to PFAS remediation and provide more enforcement leverage.

1,4-Dioxane:

1,4-Dioxane is a synthetic industrial chemical that was historically used as a stabilizer in certain chlorinated solvents (such as TCE), paint strippers, greases and waxes. As of 2016, 1,4-Dioxane was identified at more than 34 sites on the EPA National Priorities List (NPL) and it is likely present (but not yet tested) at many other sites. To date, no federal maximum contaminant level (MCL) for drinking water has been established for 1,4-dioxane. As with PFAS, various states have established drinking water and groundwater guidelines, that range from 0.3 micrograms per liter (µg/L) in Massachusetts to 77 µg/L in Alaska. Litigation on 1,4-Dioxane is emerging. Lawsuits concerning dioxane pollution have been filed by cities and public water supply

agencies against several chemical manufacturers seeking unspecified damages and clean-up costs (estimated in one case to be more than \$300 million) to remove dioxane from drinking water.

Glyphosate (Monsanto “Roundup”):

Glyphosate is one of the most widely used herbicides in the world. In 2015 a scientific study concluded that there was sufficient scientific evidence of carcinogenicity in experimental animals and probably to humans as well. Following that report, numerous product liability lawsuits were filed including a \$289M award to a California groundskeeper who alleged his cancer was caused by Monsanto’s Roundup product.

More than twenty countries in Europe, Latin America, Asia and North America have banned or restricted the use of glyphosate over health concerns.

PCBs (Polychlorinated biphenyls):

PCBs are a group of man-made organic chemicals that were widely used from 1929 until banned in 1979. Due to their nonflammability, chemical and thermal stability, they were used as insulating fluids in electrical equipment such as transformers and hydraulic systems, as surface coatings, and as flame retardants.

Although no longer commercially manufactured and now heavily regulated, there are several potential sources for continuing pollution releases from PCBs including their presence in:

- Transformers and other electrical equipment manufactured before 1977;
- Building material (caulk, paint, roofing materials) from construction/renovation circa 1950-1979
- Recycling of PCB-contaminated products;
- Releases from waste storage, disposal sites and illegal or improper disposal of PCB wastes;
- Leaks or releases from electrical transformers containing PCBs;
- Disposal of old PCB containing consumer goods and household waste into municipal or other landfills not designed to handle such waste.

A recent Harvard study found that up to 14 million students in 26,000 schools in the U.S. could be exposed to unsafe levels of the highly toxic chemicals, even though they were banned several decades ago.

Perchlorate:

The majority of perchlorate was used in the defense and aerospace industries. According to the EPA, low levels of perchlorate have been detected in both groundwater and drinking water in 26 states in the U.S. In 2014, the EPA secured one of the largest ever settlements - \$1.1B for cleanup costs to resolve environmental liabilities with the owners of the former Kerr-McGee chemical plant in Henderson, Nevada – which was the source of the nation’s largest perchlorate plume. As of 2011, perchlorate is classified as a contaminant under the Safe Drinking Water Act. However, there is no federal drinking water standard. The EPA is working toward a proposed final rule expected by mid-year 2020. In the meantime, many states have added Perchlorates to their drinking water regulations. Massachusetts has the most protection at 2 ppb. Arizona, California, New Jersey, New York and Texas also regulate perchlorate in drinking water; California set a public health goal of 1 ppb in 2015, but its legal limit remains 6 ppb.

Because of the above concerns, we will see enhanced underwriting scrutiny around potential for exposure to the above emerging contaminants and, perhaps, blanket exclusions for manufacturing and other industries that regularly have been using these chemicals.

Recent Cat-Related Pollution Claims

Recent catastrophic hurricane, flooding, and wildfire events have resulted in pollution-related claims. We have received claims on losses such as fallen trees that ruptured above ground tanks, and 55-gallon drums that floated away from an insured’s property, subsequently breaking open and releasing pollutants downstream. To assist our clients in responding to pollution releases, we published “Filing Environmental Claims after a Storm” and “Top 10 Technical Fouls to Avoid When Filing Environmental Claims” which are available on [Aon’s Environmental Services Group website](#).

Aon Innovation – Keys to success

The key to amassing needed capacity is in the understanding of the risk and the coordination of brokerage teams to get the most out of the market. Aon has done this with Aon Client Treaty (ACT) and Cantilever Excess Pollution Liability, both described above, and continues to create innovative risk transfer solutions and

deploy capacity strategically, as in the following unique solution offerings:

- Aon Environmental EdgeSM - This product was originally developed in 2008 to provide corporate veil protection for financial institutions and private equity clients. Designed as high capacity to fill the gaps left by primary environmental programs of subsidiaries, it has been effectively deployed to provide protection worldwide on a non-admitted basis, offering difference in conditions and difference in limits for our largest clients.
- Aon Power WrapSM - Power and utility companies often buy pollution coverage on a combined general liability form that may have ambiguities as respects certain aspects of environmental coverage. Aon Power WrapSM provides pollution coverage with clarity and sits difference in conditions/ difference in limits to the primary combined form.
- Aon Asbestos Products Pollution Liability (APPL)SM - This product was developed specifically for the Mergers & Acquisition space. It is a value creation tool designed to provide bodily injury coverage arising from asbestos product liability claims post 1980 made by third parties.

Aon also partners with carriers and alternative capital organizations for risk transfer of existing environmental remediation liabilities. For this risk we work with a cutting-edge firm that provides permanent pollution services along with clean-up liability settlements. An insurance policy is used to ring-fence environmental remediation costs with a contractual risk transfer settlement agreement that assumes regulatory obligations.

Conclusion

Given Aon’s market strength and relationships, clients can be confident in their ability to obtain the environmental, construction and professional liability insurance they need, whether it is placed with long-established insurers or new players. Our clients can rest assured that they will benefit from skillfully negotiated coverage terms, conditions, and pricing, through varied market conditions.

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About Aon

Aon plc (NYSE:AON) is a leading global professional services firm providing a broad range of risk, retirement and health solutions. Our 50,000 colleagues in 120 countries empower results for clients by using proprietary data and analytics to deliver insights that reduce volatility and improve performance.

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