Reforms boost outlook for carbon and renewables markets

A year of regulatory changes has boosted confidence that environmental markets have a bright future, say the winners in this year's *Environmental Finance* annual Market Rankings

Environmental markets are entering 2018 on a tide of optimism after a year of transition dominated by regulatory reforms. Most of the winners in this year's annual Market Rankings believe these changes should lead to bigger, more robust, markets and create possibilities for expansion into new areas.

"The market looks healthier than it has done for years," says Louis Redshaw, founding director of Redshaw Advisors, referring to the EU's Emissions Trading System (ETS) – the world's largest carbon market.

US carbon specialists are equally bullish. The outlook for the California market "is looking much more positive than it was at the beginning of the year," says Nicolas Girod, head of trading and research at ClearBlue Markets, which was voted Best Advisory/Consultancy for the North American carbon markets.

The confident outlook is based on reforms to the structure of the EU ETS and the North American markets – California and the northeastern Regional Greenhouse Gas Initiative – that should help correct the imbalance in supply and demand for emission allowances that has prevailed for much of the past decade.

It's a similar story in the markets for renewable energy certificates.

Scott Eidson, vice-president of

> Early concerns that the Trump administration would loosen the rules governing the use of biofuels have faded, triggering a sharp rebound in the price of Renewable Identification Numbers

The Biggest Winners in the 2017 Annual Market Rankings*

Element Markets	★★★★★★
Evolution Markets	★★★★★★
Baker & McKenzie	★★★★★
South Pole Group	★★★★
Sompo Global Weather	★★★

*Stars indicate number of awards received. Colours of stars relate to categories as laid out on right of page.

environmental markets at 3Degrees – voted Best Trading Company in North American Renewable Energy Certificates (RECs) – says: "We believe that voluntary and compliance markets will continue to grow in 2018 and beyond, and that several states will either extend or increase renewables mandates".

And early concerns that the Trump administration would loosen the rules governing the use of biofuels have faded, triggering a sharp rebound in the price of Renewable Identification Numbers.

Renewables are also on a roll outside the US. There has been "tremendous growth in renewable energy solutions in Asia, Africa and South America," says Marie Bluett, head of renewable portfolio management at South Pole Group, a multiple winner in this and previous years' polls.

In terms of new markets, all eyes now are on China, which launched a pilot national REC scheme in July and is due to follow up with a national carbon market in the next few weeks.

It's an equally positive story in the weather risk management market.

"I'd say the market is thriving," says Claire Wilkinson, managing director, alternative risk transfer solutions at Willis Towers Watson (WTW), voted Best Broker, Weather Risk Management – Europe. "It's all moving in the right direction."

And, although end-users are under no obligation to participate in this market, regulatory pressures for greater disclosure of climate – related risks could still lead to an increase in activity, some major players predict.

"If you have real disclosure (of climate risks) the next step is to quantify that exposure and the financial impact. Then the next logical step is for shareholders and rating agencies etc to ask – what are you going to do about that risk,?" says Barney Schauble, managing partner at Nephila Advisors, which took the crown as Best Dealer/Structured Product Seller in North America and Asia.

Most of 2017's multiple award winners featured prominently in last year's poll, but a notable success story this year was Element Markets, which converted several runner-up slots in last year's poll into gold medals this year.

The second new name among the big winners – Sompo Global Weather – is, in fact, a repeat winner, Endurance Global Weather, with a new name following its acquisition by Japanese insurer Sompo. EF

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How the rankings were conducted:

Companies were emailed in October and asked to nominate the leading traders, brokers and service providers in the markets covering carbon emissions, renewable energy certificates, and weather and catastrophe risk, via an online survey. Voters were asked to vote only in those categories in which they had direct experience and to make their judgements on the basis of: efficiency and speed of transaction; reliability; innovation; quality of information and services provided; and influence on the market, not just the volume of transactions handled. More than 850 completed responses were received. Only one vote per company site was allowed and those firms that nominated themselves had their votes disregarded.

Structural work underpins carbon market optimism

If 2017 was the year of carbon market maintenance, with legislation extending the life of schemes in the US and Europe, 2018 could be defined by greater linking between initiatives, says Michael Hurley

The past 12 months in the carbon markets have been high in drama – from litigation in the US to regulatory changes and fallout from contentious elections on both sides of the Atlantic, as well as enduring uncertainty as to when China's long-awaited national market will be launched.

However, the winners of this year's Annual Market Rankings broadly agree that, following a period of turbulence for the markets that has its origins in the 2008 financial crisis, there are signs that recent structural changes could create the basis for a period of relative stability.

Martijn Wilder, partner at Baker McKenzie, which picked up the title of Best Law Firm across four categories, agrees this "rebuilding period" is defined by a lot more talk about how carbon markets can become effective and stable, which is partly inspired by Article 6 of the Paris Agreement on climate change, he says.

In the EU Emissions Trading System (ETS), the price of allowances (EUAs) has been climbing, reaching €7.68 per tonne of carbon dioxide (CO_2) at the time of going to press – up from a low in May of less than €4.50 – which is a sign of confidence brought about by the EU agreeing to long-term reforms, according to Jeff Swartz, director of climate policy and carbon markets at South Pole Group. The Switzerland-based company was voted Best Trading Company on the secondary market and Best Project Developer for Kyoto project credits (JI and CDM).

> "The market looks healthier than it has done for years."
> Louis Redshaw, Redshaw Advisors

EU Member States backed the ETS Phase IV (2021-2030) reform package in a November vote. The reforms include a commitment to reduce the overall cap on the total volume of emissions, annually, by 2.2%, to reduce oversupply – which has been a key weakness of the system in past years.

Louis Redshaw, founder and chief executive of Redshaw Advisors, says the proposed Market Stability Reserve (MSR), into which surplus emission allowances removed from the market will be placed, starting in January 2019, is "the main driver for the return of some speculative interest in the market."

Redshaw retained the title of Best Advisory/ Consultancy – EU ETS and was also voted Best Trading Company, Spot & Futures – EU ETS, in this year's poll.

"Investors and speculators who are not necessarily involved in the carbon market each day are now taking part due to the forecast impact on prices," he says. "The market looks healthier than it has done for years."

"The next 12 months is pretty much business as usual: the market will likely be slightly long but from January 2019 the 'MSR effect' will flip this situation on its head and the market will be short," says Redshaw.

The reforms must be approved by the EU's environment committee, with final approval not expected until February 2018.

Prices rose as much as 3.3% to €7.98 following announcement of the deal.

This increasing market confidence is likely to be important for the future development of carbon markets, Wilder says.

"This year, for the first time in a long time at the COP climate negotiations in Bonn we saw a lot more focus on how carbon markets should be linked. In that way, a strong EU

Category	Winner	Runner-up
EU Emissions Trading System		
Best Broker, Spot & Futures	★ Evolution Markets	Element Markets
Best Trading Company, Spot & Futures	★ Redshaw Advisors	ETS Markets
Best Broker, Options	★ Evolution Markets	PVM (TPIcap)
Best Trading Company, Options	★ Vitol	Vertis
Best Advisory/Consultancy	★ Redshaw Advisors	ETS Markets
Best Law Firm	★ Baker McKenzie	Reed Smith
Best Verification Company	★ Lucideon	DNV GL
Best Exchange/Clearing House	★ ICE	EEX

Category	Winner	Runner-up
North American Markets (California)		
Best Broker, Spot & Futures	★ Evolution Markets	BGC Partners
Best Trading Company, Spot & Futures	★ Element Markets	Vitol
Best Broker, Options	★ Evolution Markets	BGC Partners
Best Trading Company, Options	★ Vitol	
Best Offset Originator	★ Bluesource	Element Markets
Best Advisory/Consultancy	★ Element Markets	ClearBlue Markets = Karbone =
Best Law Firm	★ Baker McKenzie	Latham & Watkins
North American Markets (RGGI)		
Best Broker	★ Evolution Markets	BGC Partners
Best Trading Company	★ Element Markets	Vitol
North American Markets (All)		
Best Advisory/Consultancy	★ ClearBlue Markets	Element Markets
Best Law Firm	★ Baker McKenzie	
Best Verification Company	★ Ruby Canyon Engineering	First Environment
Best Project Developer	★ Bluesource	Element Markets

ETS market is very important," he says.

However, the discussions are "only just starting to play out", he says, and the subject of linking is fraught with difficulties that require further work on regulation. Wilder doesn't expect a significant amount of additional linkage to happen any time soon.

"The problem will be, come 2020, how does that linking stand up when countries have imposed obligations to reduce emissions," Wilder asks, referring to the Nationally Determined Contributions, made by countries under Article 4 of the Paris Agreement.

"There are a whole lot of interesting issues about how you account for linking under the Paris Agreement, which considers Internationally Transferred Mitigation Outcomes (ITMOs)," Wilder says. "If you transfer your carbon abatement from one country to another, one benefits while the other loses out."

Redshaw agrees this issue of 'overlapping policies' needs to be addressed.

"We see it all across Europe with national policies negatively impacting the EU ETS. The Phase 4 regulations have partially solved this problem by allowing EU Member States to cancel an amount of EUAs that corresponds to the emissions reductions caused by another complementary policy.

"But the question remains – will they do this? When it comes to the crunch will a Member State cancel 20Mt of EUAs that it could have auctioned at €20 each? €400 million is a lot of money to deny yourself and the Member States have not done well in the past – consider the massive over-allocation in Phases 1 and 2," Redshaw says.

Nicolas Girod, head of trading and research at ClearBlue Markets, which was voted Best Advisory/Consultancy for North American markets, said the UK's Brexit vote may affect pricing over the next year.

A Brexit clause in the EU's proposed Phase 4 reforms says that, to avoid UK EUAs being invalidated from 1 January 2018, UK law must ensure the compliance deadline for 2018 emissions is no later than 15 March 2019.

UK issued allowances from 1 January 2018 will no longer be marked with a country identifier and therefore will be valid for compliance, although the European Commission will be permitted to "regularly assess whether prohibiting the use of allowances is still necessary". The regulation will also allow EUAs to be marked with a country code and become invalid for compliance.

"It's just before the compliance for 2018 - will the free allowances in 2018 be worthless? That will be a lot of risk to manage for UK compliance entities," Girod says, adding that he is not bullish about EU ETS prices in 2018, which he predicts will remain between €8 and €9.

"What could happen with the UK is what happens with Switzerland – it's outside the EU but links with the EU ETS.

"I don't see why the UK would not start its own market and try to link to the EU's - or maybe link to the [North American] RGGI market."

Shaun Bainbridge, director of assurance at Lucideon, which was voted Best Verification Company for the EU ETS, agrees the implications of Brexit for the ETS are huge: "The one word associated with the ETS at the moment is Brexit. That's regardless of whether you are a UK operator or verifier or from one of the other EU countries."

There are three different pathways that could be taken post-Brexit for the UK, he says: full involvement in the ETS; a proprietary UK trading scheme that's linked to the EU ETS; or a "simple" carbon tax.

"The UK is such a large part of the EU – it will have implications on reporting, the carbon price, the fluidity of the market and, in the short term particularly, the timing of reporting and verification.

"You can see it even pre-Brexit, because of when people use their allowances to settle their accounts. The other Member States are asking the UK to bring forward verification and reporting [ahead of 2018 compliance] - there are very serious implications for UK companies," Bainbridge says.

If the UK were to implement its own carbon market, he says, it could link exclusively with the EU, with other schemes like RGGI, or even those in the Far East such as Taiwan, China or Korea.

"To link several would be challenging but doable. The timeframes would be long," Bainbridge says. "The key thing is fungibility of allowances: that all the allowances are equivalent and the reporting and verification is robust enough to prove

Category	Winner	Runner-up
China		
Best Advisory/Consultancy	★ ICF International	ICIS
Best Verification Company	★ CQC	
Best Exchange	★ Shanghai Environmental Exchange	

they are equivalent."

Redshaw agrees: "Brexit has served up a dose of the political realities of this market. But by being close to developments it is possible for companies to implement coping strategies," he says.

South Pole's Swartz echoes Wilder's call for more structural work around the ETS, and says that although the reforms have been successful in that they have increased investor confidence and pushed up allowance prices, EU law-makers have shown a lack of ambition that could undermine progress.

"The EU has a target to reduce emissions by 40% by 2030, and 20% by 2020, from a 1990 baseline – the 2020 target has already been met: it was achieved in 2014. We've now had six years where we're not working towards the 2020 target.

"The EU should increase its target, and one way to do it cost-effectively is by meeting it with international credits, by showing the rest of the world that the EU is interested in supporting other countries to reduce their emissions. This would allow European firms to purchase credits that are low cost, and also support action in developing countries, which are those hardest hit by climate change.

"It's a political decision Europe has declined to make and, taking that as an example, other governments have also decided not to take increased action on reducing emissions between now and 2020," Swartz says.

Meanwhile, in North America, regulatory changes similarly helped shore up the price of allowances when they were floundering.

Zach Eyler, vice president of greenhouse gas programmes at Ruby Canyon Engineering, which retained the title of Best Verification Company for North American markets, said: "The most important factor over the past year was the passage of the AB 398 bill, securing California's cap-and-trade programme to 2030. This certainty was welcome to all, even if the offsets component of the bill was disappointing."

AB 398 extended the California programme past its 2020 expiry date in the face of legal challenges which alleged that the pricing mechanism constituted a tax. Under local law, new taxes require a two-thirds vote to pass into legislation, which AB 398 achieved in July.

Lenny Hochschild, a managing director and head of US carbon markets at Evolution Markets, which was voted winner of six categories, said: "This event provided the political certainty that the linked California-Quebec market needed in order to grow, and meet the requirement of 40% lower greenhouse gas emissions by 2030, compared with the 1990 level."

> "The one word associated with the ETS at the moment is Brexit."
> Shaun Bainbridge, Lucideon

Randy Lack, chief marketing officer at Element Markets, winner of three categories in the North American markets, agrees AB398 instilled confidence in the California carbon market, which fed through to prices.

"Heading into the period when the bill was passed, we saw a strengthening of the market. We were around the $14 to $14.25 level. Going into and following the passing we saw the market touch as high as $15.75.

"Since then the auctions have been fully subscribed, the market's been much stronger and the volume has picked up," says Lack.

"Companies are looking out beyond 2030, and hedging exposure along the curve, which has increased volume and allowed some of the speculators to come back in and invest with confidence.

"As we reach that 2020 period, once we sop up the excess supply in the market - which some people believe will come in the mid-2020s - the projection is that we'll see higher prices."

For offsets, there is a different outlook, says Lack: part of the AB398 extension was a reduction in the potential use of offsets from the current limit of 8%, to 4% between 2021 and 2025, then after 2025 up to 6%. At least half of the offset credits must be sourced from projects that provide direct environmental benefits inside California, which "will create a bit of difficulty" for offset suppliers outside California post-2021, Lack says.

ClearBlue Markets' Girod, says the outlook for the market "is looking much more positive than it was at the beginning of the year."

California's November auction saw, for the first time, some of the unsold allowances from past auctions coming back to the market. Allowances were sold at $15.06 - $1.49 above the $13.57 floor price, and $0.31 higher than the August clearing price - the highest ever clear above the floor price since the market started.

Girod says an agreement that will see Ontario's carbon market link with California is a positive sign for 2018: "The Ontario market is short overall, so will add more demand in the Quebec-California-Ontario market," he says.

"The floor price next year will be around $14.50. I expect there will be a bit less demand in the auction at the beginning of next year, but by the end of the year I expect [a price of] $16."

Nonetheless, November 2018 will see the end of the second compliance period in the California-Quebec market, which will add more demand, he says. "In addition, a lot of unsold allowances will come back to the market, which will need to be absorbed."

Eyler, at Ruby Canyon, says that the California market seems in good health.

"The next 12 months could be interesting, with an election upcoming in Ontario as well as potential for new markets in Oregon and Washington.

"We are also very interested in developments in Mexico. We participated in the first ever mandatory facility greenhouse gas verifications this year and are excited

Category	Winner	Runner-up
Kyoto Project Credits (JI & CDM)		
Best Broker, Secondary Market	★ Evolution Markets	Vertis
Best Trading Company, Secondary Market	★ South Pole Group	Redshaw Advisors
Best Advisory/Consultancy	★ Kanaka Management Services	Redshaw Advisors = South Pole Group =
Best Law Firm	★ Baker McKenzie	DLA Piper
Best Verification Company	★ EPIC Sustainability Services	DNV GL
Best Project Developer	★ South Pole Group	EnKing International

about the steps Mexico is taking in developing their programme," Eyler says.

Girod says he has heard that Ontario has been pushing hard with California to link with Mexico.

He warns that elections happening in Ontario in June "will add a bit of stress - according to polls the Conservatives are leading the Liberals by between 10 and 20 points, and the Conservatives said they would scrap the Ontario cap-and-trade system."

For the Regional Greenhouse Gas Initiative (RGGI) market of nine US states, Lack says a reduction in the amount of allowances, which will come into place in 2020, "has really bolstered prices", while expected new entrants to the programme are likely to provide an extra boost.

"Following recent governor elections, it's expected Virginia will join RGGI, and New Jersey is very likely to join. This is giving additional support to the programme, and has really caused an uptick in prices as well as a lot of long-term pricing support - and we expect that to continue.

"I expect 2018 to be a pretty strong year for RGGI," says Lack.

Evolution Markets' Hochschild said a commitment by RGGI states to cut power plant emissions by an additional 30% by 2030, "signals further long term growth for the market".

Meanwhile in Asia, while most market observers await the launch of China's national carbon market, there are also eyes on the Korean ETS, which has been beset by supply issues.

Nandagopal Paramesh, a director at Kanaka Management Services, again voted Best Advisory/Consultancy for Kyoto project credits, says: "We had more than five million credits lined up to trade in the South Korean market by this year, …but the market is not ready to trade. I guess by the end of next year it should be."

Swartz says that across the water in China, when its national market launches, it will be implemented in phases. "As I understand, the market will start with just one sector – the power sector – and the government will gradually phase in other sectors over time," he says. "The market will be a test period for the first few years – consistent with how markets have started in other jurisdictions, including Europe.

He warns that, "in order for markets to work effectively, they need to send a long-term policy signal, and they need to be very liquid.

"Different entities need to engage in carbon markets, and we don't know yet if the market will be open in the sense that it involves many different actors - companies that provide offsets, those that can trade and provide liquidity.

"An open and liquid market is essential for China to have a long-term carbon price curve and for Chinese companies to effectively manage their exposure and reduce costs and risk," Swartz says.

Casting an eye into the future, the winners of this year's Annual Market Rankings are optimistic, but think change is essential.

Wilder says he is disappointed at the pace at which the International Civil Aviation Organisation's scheme for offsets, CORSIA, is progressing: "I had hoped it would go a bit faster - but it hasn't and it isn't, so that's a bit of an issue", and he sees the availability of quality carbon data from companies as a big challenge in the battle to reduce emissions, as it leaves them struggling to understand the carbon profile of their business.

Swartz says the potential for the CORSIA scheme is exciting, and is "a beautiful marriage between the aviation sector and the carbon markets", but would like to see airlines become more pro-active.

"The best thing they can do is get familiar with markets and explore what type of emissions reductions they would like to invest in – not only for the airlines but also for the markets to understand what airlines are interested in purchasing."

Redshaw says that, for the next 12 months, "It won't be plain sailing and volatility is the only certainty, but it is hard not to see prices rising through 2018. The MSR already is already starting to alter hedging behaviour across Europe."

Kevin Townsend, chief commercial officer at Bluesource, which retained the title of Best Offset Originator for California and Best Project Developer for North American Markets, believes additional sub-national markets will take shape in the US and Canada next year.

"There will be states and provinces designing their own programmes or looking to link with existing Western Climate Initiative jurisdictions [California, Quebec and Ontario]," he says. "There will be new actors that begin to shape their markets beyond the jurisdictions everyone's talking about today."

K. Sudheendra, a director and head of operations at Epic Sustainability Services, voted Best Verification Company for Kyoto project credits, says markets require enhanced government and business support, as well as increased ambitions.

Wilder nonetheless says the general health of the market is good – "You can see that from the increase in prices.

"Certainly all the structure behind carbon trading – the monitoring and reporting seems to be becoming more efficient – and becoming scandal free. Earlier on we had things like carousel trading [a tax avoidance scam], but those issues seem to have been ironed out, and we have a strong registry that seems to be working well.

"And in the US the states are more determined than ever to move ahead in the context of Trump," Wilder says. "All around it's relatively quite positive." EF

More corporates seek shelter from the weather

The weather risk management business is in good health and poised for further growth, leading market participants tell **Graham Cooper**

Demand for weather hedging is growing across a range of industries and geographies and there is plenty of risk-taking capacity available from insurance companies and others. In addition, improvements in data quality, modelling techniques and other technology developments are making it easier for companies to protect their bottom line against adverse weather conditions quickly and cost-effectively.

"Overall, I'd say the market is thriving," says Claire Wilkinson, managing director, alternative risk transfer solutions at Willis Towers Watson (WTW), voted Best Broker, Weather Risk Management – Europe, a title it shared last year with France's Meteo Protect. "It's all moving in the right direction."

"There's plenty of capacity in the market from insurers, reinsurers and hedge funds," and "on the buy-side – all our existing clients have renewed coverage and some new buyers have come into the market".

Category	Winner	Runner-up
Weather Risk Management North America		
Best broker	★ Choice Energy	Aon Benfield
Best dealer/structured product seller	★ Nephila Capital	Sompo Global Weather
Weather Risk Management Europe		
Best broker	★ Willis Towers Watson	Aon Benfield
Best dealer/structured product seller	★ Sompo Global Weather	Nephila Capital
Weather Risk Management Asia		
Best broker	★ Aon Benfield	
Best dealer/structured product seller	★ Nephila Capital	Sompo Global Weather
Weather Risk Management Australia		
Best broker	★ CQ Partners	
Best dealer/structured product seller	★ Sompo Global Weather	Nephila Capital
Weather Risk Management Global		
Best advisory/data service	★ Speedwell	
Best law firm	★ Reed Smith	

Marty Malinow, president of Sompo Global Weather – voted Best Dealer/Structured Product Seller in Europe and Australia – agrees. His team was formerly known as Endurance Global Weather, until Japan's Sompo Holdings acquired Endurance's parent company for $6.3 billion in March.

"Demand is definitely increasing," he says, "We're very encouraged by growth not only from existing customers but also from new industry verticals beyond energy and from buyers in emerging markets in Asia, South America and Africa".

Sompo's rival, Nephila Advisors, which claimed the Best Dealer/Structured Product Seller title in North America and Asia, has seen the same pattern.

"We're seeing consistent growth in interest from existing and new clients," says managing partner Barney Schauble. "There is increasing awareness that weather is a risk you cannot control but that you can get protection for."

Some insurers incurred losses this year, after having to pay out on policies protecting clients from yet another warm winter and this caused a few to withdraw from the market. But the losses "pale into insignificance" compared with the impact of the multiple natural catastrophes in 2017, says Wilkinson.

After some significant losses from natural catastrophes this year, "I expect to see some retraction of capital from those doing both cat and weather," agrees Kurt Cripps, managing director and global head of weather risk at Aon Benfield, winner of the Best Broker - Asia category and runner

–up in the Europe and North America categories.

Malinow at Sompo, says he has not seen capacity withdrawn from the market but notes that 2017 was the worst year in the past decade for insurers and reinsurers in terms of losses from natural catastrophes. If this leads to a significant increase in reinsurance rates in January there will probably be a knock-on impact on the cost of weather coverage, he says.

"We believe weather pricing is going to follow reinsurance pricing … but with a time lag of about a year."

As in previous years, the energy sector remains the biggest single source of demand for weather hedges, mostly to offset shortfalls in demand due to unseasonal temperatures. But the agriculture and construction sectors are gaining in importance.

Demand is primarily from the energy sector, but agriculture is "a meaningful second", says Nephila's Schauble.

About half of WTW's clients are in the agriculture sector, where droughts and frost are the main perils of concern, Wilkinson says. Most contracts for these clients are therefore based on temperatures and/or rainfall.

Agriculture is a "gigantic and scalable industry", which makes it a "target-rich vertical for insurance companies", says Malinow at Sompo.

The traditional strength of Endurance has been in the US gas and power sector, but its US subsidiary ARMtech Insurance Services is a leading provider of solutions to the agriculture industry.

Globally, Sompo is developing an integrated platform for agriculture insurance and reinsurance solutions across the world. This 'AgriSompo' initiative aims to deliver a range of risk management solutions, including protection against yield and revenue shortfalls from single or multiple perils to farmers, agricultural insurers and other agri-businesses, the company says.

Sompo already provides agriculture insurance products in a number of countries but this new initiative aims to expand its geographic footprint significantly.

The agriculture sector "has phenomenal potential", agrees Cripps at Aon Benfield. But so does construction, and this is where his team's efforts are most heavily focussed as it is a significant 'vertical' market for the Aon group.

"We've had some exciting wins in the US this year," particularly for pipeline projects, but there is still a clear need for more education about the benefits of hedging weather risk, he says.

Sompo has also seen increasing interest globally from the construction sector and has developed products specifically for the industry, says Malinow. We are seeing most of the demand coming from the more mature weather risk markets – North America, Western Europe, Australia and Japan – he notes.

But interest from the construction sector is also growing in emerging markets as the population shift from countryside to cities drives demand for more building.

> "There is increasing awareness that weather is a risk you cannot control but that you can get protection for,"
> Barney Schauble, Nephila

Excess rainfall and adverse temperatures are the main concerns for construction contractors as the delays they can cause on large projects can be extremely costly.

For offshore projects, however, wind speed and wave height can be the most critical factors and delays to these projects can be even more expensive. For example, the cost of hiring the specialised vessels used for erecting offshore wind turbines can reach $500,000/day.

Several winners report growing interest from the renewables sector, mostly from onshore wind farms. Solar radiation levels are much less volatile than wind speed, but Malinow points to the growing number of utility-scale solar projects, which tend to be more highly leveraged, and therefore can have millions of dollars at stake if sunshine levels fall well below predictions.

Reed Smith, which retained the title of Best Law Firm in the weather risk markets, has a strong presence in the renewables sector and has seen interest "all the way down the supply chain", from generating companies to construction firms, says partner Claude Brown.

But demand from the renewables sector has "not grown as fast as anyone would like to see," says Cripps at Aon.

We see a lot of enquires about wind and some on solar, but hedging is much more challenging for the hydro market. "Correlation is very difficult to establish between rainfall and run-of-river," he says, because many other human interventions – such as varying demands for irrigation – can affect the river flow.

Speedwell Weather, however, which retained the title of Best Advisory/Data Service reports interest from hydro projects in South America. "We've seen some very large bespoke transactions in Peru, Colombia and Brazil, says co-CEO David Whitehead. "We're doing a lot of work down there."

And, although there is plenty of volatility creating risk for wind farms – especially onshore – many developers have agreed long-term power purchase agreements or benefit from other forms of price support, so many projects have protected cashflows.

But, with such support being gradually removed, demand for weather hedges from the renewables sector should increase, he predicts.

By 2030, the trade association WindEurope estimates that only 6% of European wind capacity will benefit from support schemes such as feed-in tariffs that fully protect against power price volatility, down from 75% today.

Hedging the resulting increase in weather risk will be made easier by the dramatic improvements in weather data in recent years – from ground-based stations and satellites.

A major advance for Speedwell in 2017 was February's official launch of its weatherXchange platform, which offers end-users:

- free access to weather data for thousands of sites;
- free structuring tools to help companies design a suitable hedge; and
- free indicative price quotes from several risk-takers.

It aims to open up index-based weather hedging to new users in the energy, renewables, agriculture, construction and tourism industries and also gives hedgers access to middle-office calculation services and settlement services.

Hedges are sometimes structured as derivatives contracts, but the word still has negative connotations for some clients and "there is a definite trend towards insurance products," says Aon's Cripps.

Regulatory changes are pushing in the same direction, adds Brown at Reed Smith. In particular, he cites the margining requirements of the European Market Infrastructure Regulation.

"We've seen a couple of deals that would previously have been derivative-based but were structured as insurance-linked securities because of the margin requirements," he says.

Speedwell's next major product launch aims to help end-users with their margining. It will provide a formal framework for margining index-based weather and "permit a more efficient use of capital for entities who would otherwise expect to fully collateralise trades and will allow new participants to deploy capital to the weather risk market by providing credit support", says chairman Stephen Doherty.

Among other regulatory pressures that could shape the market in future are the recommendations of the Task Force on Climate-related Financial Disclosures.

"I think this could help," says Nephila's Schauble. "If you have real disclosure (of climate risks) the next step is to quantify that exposure and the financial impact. Then the next logical step is for shareholders and rating agencies etc to ask – what are you going to do about that risk?" EF

Cat risk: A test of resilience

A spate of natural catastophes triggered payouts in the cat bond market, but this year's winners remain bullish, finds Peter Cripps

Category	Winner	Runner-up
Catastrophe Risk Management – Global		
Best Dealer (Structurer/Arranger)	★ Sompo Global Weather	Nephila Capital
Best Broker	★ Aon Benfield	

A spate of hurricanes, wildfires and earthquakes in the second half of 2017 brought to an abrupt halt a benign decade for the catastrophe bond and insurance-linked securities (ILS) market.

A violent hurricane season saw Harvey, Irma and Maria wreak havoc on parts of the US and the Caribbean.

Two earthquakes hit Mexico in September – the first, in Chiapas, killed 98, and was followed by a quake in Puebla that killed 370.

And California has been hit by a series of wildfires that destroyed real estate and caused fatalities.

Some estimates have already put the combined value of insured losses from these events at more than $100 billion.

The combination of disasters was sufficient to trigger payouts from at least 21 cat bonds – tradable instruments that allow insurers and reinsurers to cede risk from various perils to capital market investors.

Figures from Lane Financial suggest that the losses on cat bonds was approaching $1 billion as this article went to press.

"The major topic of 2017 was the return of significant cat losses in the US," observes David Bigley, chief underwriting officer and head of global catastrophe reinsurance at Sompo International, which was voted Best Structurer/Arranger for the third year running. In previous years, it won the title under the name of Endurance, but the Bermuda-based company was bought by Japanese insurer Sompo earlier this year.

While it is too early to put a final figure on the value of the losses, it will clearly represent a test of the resilience of the market, says Paul Schultz, CEO of Aon Securities, which was voted Best Broker, seizing the title from last year's winner, Willis Towers Watson.

"This was one of the largest tests for the market since its inception in the late '90s," he argues. "The market was very orderly and professional. There were no bad actors. Secondary trading was quite orderly."

As a result, confidence in the market remains high.

By early December, when this article went to press, 2017 had seen record issuance of $11.8 billion, the first time it had passed the $10 billion mark in a single year, according to data provider Artemis. This was significantly higher than the next biggest year, in 2014 when $9.1 billion was raised, and brings the value of cat bonds outstanding to $31 billion.

Although most of this capital was raised in the first half, before the spate of major catastrophes began, issuance has continued throughout the year.

"The losses, while significant, were not of the scale you would expect to scare investors away," adds Bigley. "There was concern over whether investors would be happy to stay in the space. The concerns about capacity were not played out – investors were happy to stay involved."

Schultz agrees: "The asset class continues to grow and be attractive to capital providers, the significant majority of which are pension funds. We continue to see increased allocations via renewals and new clients," although he concedes that some may decide to reduce their allocations in the wake of this year's events.

Paul Schultz, Aon Securities: The asset class continues to grow and be attractive to capital providers

"We expect the asset class to grow and more capital to be available in 2018. To us, the events of recent months are another growth engine.

"Given the events of this year I think it's likely there will be much more emphasis on property peril, which will provide more opportunities," he adds.

He also expects to see more 'aggregate' transactions, which are triggered by cumulative losses rather than single events. These already account for some 40% to 50% of the bonds issued in the past 12 months, he says.

Sompo's Bigley predicts the market will also continue to expand into new geographies.

"There has been an acceleration of parametric cover in south-east Asia – we have looked at several this year," he says, adding that he views this as welcome diversification.

He also notes a recent trend towards diversification into areas such as pandemic perils and extreme mortality cover. EF

Strong markets await regulatory changes

Markets for renewable energy certificates (RECs) are growing around the world, but regulatory developments are keeping the biggest market players on their toes, says Nick Roumpis

2017 was a good year for RECs around the globe. The traditionally strong markets of Europe and North America prospered while recent adopters such as China increased in importance.

In the US, after a slow 2016 when the supply of certificates outstripped demand, the renewable energy market saw healthy growth.

Izzet Bensusan, CEO of Karbone, which was again voted Best Advisory and Best Broker in the North American RECs market, says: "Volume has gone up … because the Renewable Portfolio Standards (RPSs) call for more introduction of renewable energy in different states. As a result, you have more credits generated and more trading of these credits taking place."

He points to states such as Pennsylvania, New Jersey, New York and Illinois, where regional legislation is expected to boost the renewable energy sector further. Pennsylvania and New Jersey are already among the biggest RECs markets in the US.

Bensusan also notes growing demand for RECs from voluntary corporate buyers and attributes this to an increase in impact investing over the past 12 months. "There is a big trend towards the voluntary market driven by much more impact investing going on," he said.

Scott Eidson, vice-president of environmental markets at 3Degrees, which retained the title of Best Trading Company – North America, agrees: "The number of participants, renewables capacity and market pulse, all point towards needing new renewables to meet voracious voluntary demand.

"We believe that voluntary and compliance markets will continue to grow in 2018 and beyond, and that several states will either extend or increase renewables mandates, partly in response to the current federal administration's stance on the environment and energy.

"Look out for volatile markets, rising voluntary prices, and interesting regulatory changes at the state level in 2018."

The Trump administration is having an unsettling impact on the market because of uncertainty about possible changes in federal regulations.

"This has been a crazy transition year for the market," says Randy Lack, chief marketing officer at Element Markets, which claimed the titles of Best Broker, Best Advisory and Best Trading Company for Renewable Identification Numbers (RINs). "Once Trump was elected, we saw him nominating Scott Pruitt as the Environmental Protection Agency (EPA) administrator, so someone who had sued EPA was actually nominated to handle EPA.

"There was a fear that

"Look out for volatile markets, rising voluntary prices, and interesting regulatory changes at the state level in 2018"
Scott Eidson, 3Degrees

"The more governments get involved in renewable energy tracking, the more solid the market will become"
Marie Bluett, South Pole Group

Category	Winner	Runner-up
Renewable Energy Certificates – North America		
Best broker	★ Karbone	Evolution Markets
Best trading company	★ 3Degrees	Vitol
Best advisory	★ Karbone	Element Markets
Best law firm	★ Dentons	
Renewable Energy Certificates – Europe		
Best broker	★ Cleanworld	
Best trading company	★ South Pole Group	
Best advisory	★ South Pole Group	
Renewable Energy Certificates – Australia		
Best broker	★ TFS Green	GFI = High Voltage Brokers =
Best law firm	★ Baker McKenzie	
Renewable Identification Numbers		
Best broker	★ Element Markets	Evolution Markets
Best trading company	★ Element Markets	Bluesource
Best advisory	★ Element Markets	
Best verifier	★ Weaver	
Best law firm	★ Eversheds Sutherland	

there would be steps to unwind a lot of the progress around the renewable fuel sector, but … this has been the best year in our company's history," he adds.

The EPA oversees the Renewable Fuel Standard (RFS), a national policy to ensure each gallon of gasoline or diesel sold in the US contains a certain percentage of biofuel. RINs are the credits issued to biofuel producers to monitor compliance with the RFS.

The price of RINs rose steadily under the Obama administration, as the EPA tightened the RFS and the agency had planned to raise the targets to record levels in late 2016. But, after billionaire investor Carl Icahn was appointed as an advisor to President Trump, this tightening did not go ahead. Icahn is the majority owner of refiner CVR Energy which has lobbied for lower RFS targets.

The market reacted by sending RINs down to a 12-month low in February. However, the administration's failure to act on CVR's recommendations saw prices rebound by 200% by August, and Ichan resigned from his government role later that month.

Of the various RIN categories – for biodiesel, bioethanol etc – biogas was the strongest market in 2017, Lack says. "The prices have basically doubled again this year. It's a very robust market and we are seeing a lot of new biogas projects".

Biogas currently accounts for the largest number of projects and the most capex of all the US renewable fuels, he adds.

David Bennett, partner of energy compliance services at Weaver, which was voted Best Verifier in the RINs market, says: "One of the biggest factors is the change in the administration in Washington and there is a lot of uncertainty around the effect this might have on the renewable fuels market." But he agrees that none of the proposed changes has been confirmed so far.

In the RECs market, there is less concern about the new administration. "You really need to look into what kind of impact they have had," says Karbone's Bensusan. "The federal government does not have an impact on renewable energy credits on a local level, while the RPS [which set targets for renewable energy output] are decided by the states.

"The investment tax credit (ITC) has largely been decided by the previous administration and they are not touching it." The ITC allows some investors to recoup up to 30% of the value of renewables projects and was due to expire at the end of 2015, but has been extended to between 2019 and 2022.

Carl Steen, partner at Dentons, which was voted Best Law Firm for North American RECs, adds: "The RECs market in North America is a maturing market and it's not really liquid yet, it is largely driven by compliance and in many cases, it's a state-by-state driven market, so you have a wide fluctuation of prices in different markets.

"The RECs market will hopefully

> "2018 is going to be a huge year. Stand by for a big one"
> Chris Halliwell, TFS Green

mature, but right now it's unpredictable. If there are additional compliance requirements, this will give a boost to the RECs trading market.

"There is tension between what is happening at the state level and what is happening at the federal level. When this harmonises, you will see a more robust RECs market."

Steen notes that there is also growing momentum for more specialised RECs in certain states. For example, "RECs for offshore wind are likely to develop in the next few years". New Jersey and Maryland already have separate REC incentives in place for offshore wind energy and New York and Massachusetts are considering similar schemes, he notes. Some states also have separate REC programmes for solar energy.

In Europe, demand for renewable energy credits, known as 'Guarantees of Origin' (GOs), has risen by more than 80% between 2011 and 2016 and this momentum continued in 2017 as companies are gearing up their efforts to achieve their 2020 clean energy targets.

GOs are issued to power producers for each MWh of renewable energy generated, in the same way as RECs in the US, and they can be traded on the Leipzig-based European Energy Exchange (EEX).

But Marie Bluett, head of renewable portfolio management at South Pole Group, which once again took the titles of Best Trading Company and Best Advisory – Europe, notes that the momentum is global, not just European.

"We see two markets joining forces, the voluntary carbon world and the renewable energy world," Bluett says.

In the last year, there has been "tremendous growth in renewable energy solutions in Asia, Africa and South America," she adds.

In Asia, the most significant development was China's launch of a pilot national REC scheme in July. The National Development and Reform Commission (NDRC) said it was intended to incentivise further development of the renewable energy sector without government subsidies.

As in established RECs markets, the Chinese RECs, known as Green Certificates, will be used by suppliers of electricity to prove how much of their purchased power came from renewable sources, excluding hydro.

Bluett says: "China has been super interesting. On the one hand you have the international RECs, but then you have the Chinese government looking to implement its own certificate scheme.

"The more governments get involved in renewable energy tracking, the more solid the market will become."

Michelle Davies, head of clean energy and sustainability at Eversheds Sutherland, is optimistic about renewables globally. "We expect clean energy to dominate our global approach to power and its utilisation and supply," she says.

A trend towards more aggregation of projects along with new finance tools will culminate in "renewable energy being the dominant power source being developed on a non-supported basis with enhanced technology solutions making it even more competitive," she predicts.

Eversheds Sutherland was voted Best Law Firm in the RINs market.

Australia also saw a lot of activity in 2017.

"The Australian renewables market has been nothing short of crazy in 2017," says Chris Halliwell, senior broker at TFS Green, which was again voted Best Broker in that market. "[There was] a boom in projects due to an influx of capital and soaring energy prices, and very high RECs prices due to the federal Renewable Energy Target (RET) scheme running short.

"A lot of adaptation was required for both developers and off-takers to structure deals in this environment," he adds.

Australia launched its RET scheme in 2011 and, since then, it has operated in two parts, the Small-scale Renewable Energy Scheme (SRES) and the Large-scale RET (LRET).

Izzet Bensusan, Karbone: "The federal government does not have an impact on renewable energy credits on a local level".

"2018 is going to be a huge year," Halliwell predicts. "The RET scheme is expected to run into a short squeeze." This will create chaos in the short-term but create opportunities to take positions for the following years, he says. "Stand by for a big one."

Australia has set a target for large-scale generation of 33,000 GWh, meaning that around 23.5% of the country's electricity in 2020 will be from renewable sources.

The government is currently reviewing its RET scheme and a new national target could emerge in 2018.

"The future of the market very much depends on policy decisions," says Martijn Wilder, partner at Baker & McKenzie, the long-standing winner in the Best Law Firm – Australia, category. "There has been a lot of healthy trading but the extent to which that volume increase will affect the price really depends on what happens on the policy side".

Energy has been the top political issue in Australia for the past year, he notes.

"No matter what happens, there is going to be a mechanism to regulate emissions and to encourage renewable energy and certificates," he says. "The actual specifics for that are still unknown – this is the challenge. The details are just not there." EF