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The enterprise risk management renaissance



Beleaguered utilities are looking to enterprise risk management in their search to add value. Stella Farrington reports

Need to know

- Interest in enterprise risk management (ERM) is growing among utilities, as they face falling revenues and uncertain times.
- ERM has a strategic focus, helping firms identify long-term risks and market shifts, important to utilities as they face today's existential threats.
- Viewing risk holistically, ERM promises firms better decision-making, as they try to eke out value amid shrinking margins.
- Achieving holistic risk management is difficult and ERM is underdeveloped at most utilities – many still carry out risk management in siloes.
- Both traditional risk management and ERM have limitations: ERM managers have focused on trying to quantify the big picture, while quants formulated a single model without taking the big picture into account.
- Optimum results might be achieved by understanding how to combine the tools of both disciplines.

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Enterprise risk management (ERM) is undergoing something of a renaissance at electric utilities in Europe and North America, with many firms hoping it will add value to their ailing businesses, say market participants and consultants.

In today's hostile environment, the ability to understand risk at an enterprise level is becoming increasingly desirable, market participants say. Faced with plunging revenues, rising costs and shrinking margins, utilities must eke out as much value as possible from every part of the business.

Viewing risk holistically gives firms a more meaningful picture of overall risk, allowing better decisions to be made, say ERM specialists. For example, a firm that can identify naturally offsetting risks can avoid putting on expensive and unnecessary hedges that actually add risk. Additionally, the wide scope and long-term focus of ERM makes it especially pertinent today.

As utilities grapple with existential threats such as the spread of renewables and the growth of distributed generation, greater emphasis is being placed on strategic analysis, identifying future

opportunities, long-term risks and disruptive trends – all important components of ERM, according to consultants and market participants.

"ERM is more crucial now due to the constraints we're facing," says Novera Khan, Düsseldorf-based chief risk officer at Uniper, the fossil fuel and trading firm spun off from German utility E.on in January 2016. "If we really want to identify where money is being left on the table, we must take a holistic view of the business," she adds.

While traditional risk management tends to take a statistical and quant-based approach to risk and is largely confined to trading and commercial activities, ERM might attempt to analyse all risks an organisation could face, from market, credit and liquidity risk to a broad range of operational risks including anything from generation and maintenance issues through to staff retention.

The concept generated a great deal of interest within energy firms in the early 2000s when discussions were rife about how best to identify and analyse the gamut of risks that could potentially destabilise an organisation. However, with a few exceptions – for example, French

giant EDF, North Carolina-based Duke Energy, Chicago-based Exelon and Uniper – most utilities have failed to achieve anything like the early vision for ERM, say consultants.

“All large utilities built ERM functions, but a lot of them are little more than compliance-driven exercises,” says Berlin-based Sönke Lorenz, a principal at the Boston Consulting Group. “Most firms have come up with an ERM register – a list of severe events that could occur – but it is usually rather standardised.”

But now, many firms want to go beyond that, he adds. The recent increase in interest in ERM prompted the Houston-based Committee of Chief Risk Officers (CCRO) to run a series of webinars last year under the Council on the Practical Conduct of ERM. These detailed both the good and bad experiences energy companies have had with ERM, and proved so popular that the CCRO is considering running more, says Bob Anderson, chief executive of the committee.

He notes, however, that although interest in ERM has revived, expectations for it now are a little different. “Unlike back in 2003, I don’t think anyone now expects to be able to generate a graph that is the risk profile of the entire enterprise,” he says. “I don’t think anyone believes today there is a single number that sums up risk for the entire company.”

Nevertheless, many utilities say they now want to achieve a much more aggregated view of risk. To do this, risk management needs to be aligned across business units in terms of processes, risk metrics, timescales and assumptions about external risk and risk appetite. However, this is not often the case in utilities. Even within market risk, different desks take different approaches, say consultants.

“We see many firms still operating in silos,” says Netherlands-based Cyriel de Jong, director of trading and risk management advisory firm Kyos Energy Consulting. “Market risk is often still controlled with a range of individual position limits, defined for each single activity of the organisation. This is far from ideal in a world where extreme events may be highly correlated.”

He sees a need for aggregated risk metrics, such as an enterprise-wide application of earnings-at-risk or cashflow-at-risk that combines price risks, volumetric risks and liquidity risks. “This is non-existent in most companies,” he says. As a result, many firms still struggle to quantify, for example, the impact of a mild winter on their earnings: “Without being able to do that, they can’t then work out what action to take.”



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This is a concern shared by Berlin-based Michael Kirch, a former Goldman Sachs commodities strategist and now chief commercial officer of Washington Square TecÜologies, a specialist provider of enterprise-level trading and risk platforms. “Siloed risk management is a huge problem,” he says. “Risk measures such as value-at-risk or potential future exposure are highly non-linear and need to be calculated at the portfolio level. You can’t do ERM if trading is being run as several different enterprises.”

He gives the example of a company that has separate oil and gas trading desks, both with a VAR of \$1 million. Simply adding them together and saying the overall VAR is \$2 million is likely to be very misleading and result in poor decisions, he argues. “For example, trading might be stopped because risk limits are perceived to be reached before they need to be, leaving opportunities uncaptured.”

To meaningfully aggregate market risk, the risk reports of each trading desk need the same granularity, and the inputs into any at-risk measures must be either standardised or any differences need to be understood, say risk managers. However, meaningfully aggregating exposure across an organisation is extremely difficult, say ERM experts. “At a corporate level, it’s possible to get a good handle on certain exposures, but getting a complete picture of the

whole portfolio over multiple years is very challenging,” notes Garth Renne, vice-president of ERM analytics at Chicago-based utility Exelon. “At Exelon, there is nuclear generation, retail sale and regulated utilities, which are affected differently by factors such as price and load fluctuations. This makes aggregating risk difficult.”

Additionally, risk tends to become harder to quantify the further away you move from trading. “Providing you have some reasonable forward market data, for example option quotes for volatility, you can come up with pretty good quantitative estimates on trades that are hard to argue with,” says Renne. “But trying to calculate whether an organisation is overexposed to one particular sector, or the broader financial risks related to a credit downgrade, those things are more difficult to quantify.”

Moving out further to capture operational risk – the area many firms are now grappling with – becomes harder still, say market participants. “As you try to broaden the scope, it can become increasingly difficult to quantify and to bring those same analytical tools to bear; at some point the value starts to drop off,” says Renne.

Realising the point at which the value of statistical and quantitative analysis starts to diminish, and when other tools should be used, is one of the skills of an ERM manager. It’s a lesson that’s been learnt the hard way, says the CCRO’s Anderson.

“Many risk officers have disappeared into an office trying to calculate the ultimate thing only to emerge to find everything has changed,” he says. “Risk officers are now more careful not to get lost in the pursuit of the Holy Grail.”

But just as ERM managers can get lost trying to quantify the bigger picture, quantitative analysts can also become so focused on a model that they miss the big picture altogether, market participants believe. This is where having an ERM function with decent lines of communication to traditional risk management becomes invaluable. “The energy markets are littered with examples of serious problems that have occurred because of the inability to anticipate basic changes in market structure,” says Vince Kaminski, a professor at Rice University’s Jones Graduate School of Business in Houston.

From the US shale revolution in the 2000s, to the creeping spread of renewables and distributed generation, to the crash in commodity prices in 2008 and 2013, utilities have been caught off-guard by shifting market fundamentals.

Kaminski gives the example of Dallas-based Energy Future Holdings' disastrous \$32 billion purchase of utility giant TXU in 2007. At that time, TXU had the biggest annual returns of any US utility and planned to bolster profits further by building more coal-fired power plants, say analysts. High energy prices gave the deal what was thought to be a comfortable cushion. However, as electricity prices came crashing down at the end of 2008 amid a glut of cheap shale gas, combined with recession, the cushion was quickly used up. By 2014, Energy Future Holdings declared bankruptcy.

"The risk management around this deal completely missed the shale revolution," says Kaminski. "If the people working on this transaction had looked out of their windows on the way to TXU's office they would probably have seen the shale drilling equipment in operation," he declares. "They were so busy working on their models that they didn't look up and see the real problem."

The issue of how to allocate resources between the day-to-day risk management of a portfolio and looking at longer-term horizons is one that many utilities are now grappling with, they say.

"Day-to-day risk is the priority, and very often there aren't enough resources for the next time horizon," says Kyos's de Jong. "The last thing any firm wants right now is an academic division working on things that might not be used. While the largest risks are usually in the longer term, the further out you go the more difficult it is to assess risks."

However, he stresses firms should still try it. "Longer-term assessments can provide very practical insights into enterprise-wide risks, as well as the rewards of different dynamic hedging strategies," he argues.

Exelon's Renne also sees a lot of merit in long-term analysis. "By blending market and historical data, as well as expert judgment, one can get a pretty reasonable picture of overall risks," he says.

And while longer-term analysis tends to become more qualitative in nature, there is still room for a mathematical approach, says Uniper's Khan. "There is a qualitative element to ERM, but it still needs to be backed up by a number that can help you make assessments about, for example, where you should be de-risking or whether you are extending yourself too much," she says. "If you're trying to get to an intelligent risk price tag then I would recommend an at-risk metric," she adds.

However, to make these as meaningful as possible, everyone must understand exactly what they are trying to identify, she stresses. "For example, are we trying to add up worst cases, or expected cases, or to understand what is most likely to happen?" When the objectives and the assumptions behind the metrics are understood and communicated, it becomes much easier to aggregate various at-risk calculations, she says.

For example, when calculating credit risk, firms can look at worst-case counterparty exposures, but they can also assimilate how the company transacts and transforms market risk into credit risk. "I don't want to count credit risk in two places so I need to understand the total

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Bob Anderson, CCRO

price tag," she says. "The minute I de-risk market risk by hedging, for example, I transform it into a credit risk. So before I do that I need to understand whether it's cheaper for my company to sit on market risk or credit risk these days."

This might involve, for example, looking into the cost of over-the-counter versus exchange trading and taking into account ratings constraints, cash constraints and margining. It could also involve mitigating the risk by going through other channels outside direct markets, for example using structured products or conducting M&A activity.

The importance of buy-in

While there is a place for some of the statistical tools of traditional risk management in ERM, there's also room for other tools such as decision trees, scenario analysis and even games theory, say ERM managers. However, it is widely agreed that the success of an ERM function depends very much on the level of buy-in it gets from senior management and business lines within the organisation.

"How the ERM function is managed politically within an organisation will have a big impact on it," says the CCRO's Anderson. "If business unit heads see ERM as unwanted interference in their business, they won't be motivated to co-operate."

ERM heads agree. "One of the challenges ERM departments can run into is how to demonstrate the value of the function upfront when it may be viewed as another audit function or a brake on what they are trying to achieve," says Cory Kuchinsky, director of ERM and solutions at CPS Energy, a large US municipally owned power and gas company serving San Antonio. "There is always some natural resistance to change. I don't think our ERM function could have developed as quickly or been as successful if we didn't have the support of the chief executive and chief financial officer from the start."

Bradford Radimer, an associate with energy consultancy Alliance, and former director of governance and ERM at US utility NRG Energy, argues senior management has a vested interest in including ERM in top-level discussions. "If an ERM executive is invited into boardroom discussions about a company's strategies and the potential risks around those strategies, he or she may bring a perspective no-one else can," he says.

A defining factor for the ERM function at CPS Energy was that risk was included as a component of the prioritisation process for allocating funds to projects, says Kuchinsky. "This really ramped up the engagement level of the business units, as they could see a tangible benefit to getting their risks highly visible to the organisation," he says.

Uniper's Khan found one of the best ways to get buy-in to ERM, and thereby spread a risk culture, was to talk about success stories. "We would spend time demonstrating where we had added value and would show the tangible result of that to the team. Once you get a good reputation, people are more likely to listen next time you suggest making a change," she says.

It is widely agreed that developing an ERM function is as much about changing company culture as it is about using the right tools. It involves constantly updating processes and moving within a changing environment, say ERM experts. "It is a never-ending enhancement process," says the CCRO's Anderson. "The ideal state for an ERM function might be one where the risk committee could present to senior management the uncertainties, risks and upside of two completely different business units on the same piece of paper. If you can have these conversations with senior management and include just about every bit of the company, that's ERM at its optimal. ■"