

ROUNDTABLE

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ENERGY & UTILITIES SECTOR



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## R O U N D T A B L E



## ENERGY &amp; UTILITIES SECTOR

Challenges in the energy & utilities sector have emerged not just as a result of financial turmoil, but also due to the rapid pace of global growth and change. The industry faces sweeping reforms aimed at tackling issues from anti-corruption to cyber-security, and an increasing global population raises supply concerns. Environmental issues remain at the fore and the nuclear sector is plagued by waste disposal and safety concerns. But while CO<sub>2</sub> regulation continues to squeeze fossil fuel generation, climate change legislation has opened up some unexpected opportunities. ▶▶

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Munish Sharma is a partner at Dua Associates. His legal practice focuses on mergers and acquisitions, private equity, in-bound and out-bound investments, public private partnership concessions, infrastructure projects, project finance, capital markets, corporate finance, cross-border transactions, joint ventures, business restructuring and corporate and commercial transactions. Mr Munish has been involved in infrastructure projects in energy, oil, gas, power, airports and roads and in other sectors.



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**What new challenges have emerged in the energy & utilities sector in the years since the global economic crisis? In your opinion, are companies in this space doing enough to manage the raft of risks they face?**

**McCarthy:** Aberrant low interest rates and their effect on regulated utility equities is a current challenge facing many companies globally, including the regulated utility sector in the US. In the US regulated space, I would turn that question around and suggest that a more appropriate focus might be on what regulators are doing to manage the risk created by unusual short-term issues created by the global economic crisis. Regulators should continue to be sensitive to the investor focus on return and how that return compares with competing investment opportunities – which are worldwide for many global companies doing business in the United States – and refrain from attempting to apply rigid or formulaic models to establish returns that could apply for longer periods. A related issue for some regulated US utilities is that they have significant CapEx plans that exceed their depreciation and amortisation expense. Once again, the issue of how this is managed during the global financial crisis may be more appropriately answered by regulators than companies, or individuals. As regulators have recognised the need for the CapEx, the follow-on is the need for regulators to continue to support the CapEx recovery in rates with healthy return on equity components.

**Sharma:** The major challenge since the global economic crisis has been raising requisite finance for projects in the energy and utilities sector. The other challenge is seemingly self-created by the government not framing or implementing policies. The energy and utilities sector has primarily relied on bank funding. Many banks in India have reached their prudential limits to lend. There are regulatory impediments for pension funds and insurance companies to invest in India even though, globally, they are key investors. The companies in this space are increasingly looking for alternate means of funding other than domestic banks. Some of these companies have secured financing from strategic investors, private equity funds, and listing their securities on the AIM market. They have not been able to manage the policy paralysis. Lack of available options with respect to imported coal is threatening the viability of several power projects. Fuel tie-ups and critical clearances, for instance the environmental approvals, continue to be problems in this sector.

**Ash:** There has been a marked tightening up of credit control, insofar as both financial risk and compliance are concerned. Accordingly, developers and sponsors are facing stricter criteria to access funding and to reach financial close. Most companies seem to have responded well, and anticipate security and compliance requirements when seeking funding. That is not possible in every case, resulting in some market ‘shake-down’.

**Vince:** The global economic downturn has had a mixed effect on the energy and utilities sector in the US. On the one hand, growth is impacted by slight to flat demand, which is slowed further by increased energy efficiency. However, there are also opportunities, such as easier access to capital at low interest rates, which allow utilities to make capital improvements without significant increases in costs or rates to consumers. In the oil and gas sector, over-development of shale gas has put downward pressure

on gas prices, causing distress for some producers, but leading to some M&A and investment to help companies wait out the glut. Increased pressure to diversify coal-heavy fleets may drive future mergers, although there is little appetite at present in the investment community to absorb merchant risk.

**Lyll:** The annual Global Risk Report undertaken by the World Economic Forum is always a useful synopsis of current and emerging risks and their correlations. From our perspective, it is always interesting to see that almost all have a security impact so the picture is not a positive one. Two key drivers in particular are of interest, namely economic disparity and global governance failures, both of which have a cascading effect on society, economics, politics, technology, legality and have created challenges for the energy and utilities sector. The risk map is much more complex and requires a joined-up approach led by and championed by the board. Do we think companies are doing enough to manage the raft of risks they face? No, we do not, and our experience of working with companies to manage security threats to assets and infrastructure provides ample evidence of that.

**Filsinger:** The energy and utilities sector has been hit particularly hard since the economic downturn. When I was at Calpine in 2007 and 2008 we experienced very high natural gas prices in the market place with prices reaching as high as \$14/MMBtu. Since that time, the load has dropped off with the recession, and natural gas prices have decreased to the \$2 to \$3/MMBtu range. This gas price decline, along with the current environmental rules, has placed increasing downward pressure on coal plant dark spreads and resulting plant values. Particularly in the US, the values of coal assets have declined in the past five years. Renewable and gas units are also feeling the pinch. We have gone from a time with large additions of renewable generation additions to a time where they only survive through subsidies. The power sector is now forced to deal with these declining margins while finding new reductions in fuel and operating costs among the fleets. The challenge is to maintain some level of diversity while managing the capital required to bring assets into compliance.

**How is the increasing crackdown on corruption around the world impacting the energy industry? How must companies respond to the rising threat of enforcement and prosecution?**

**Sharma:** Despite the many positive outcomes of cracking down on corruption, there have been unintended downsides as well. The functioning of regulatory authorities has become increasingly prone to delays and a lack of decision making. The regulatory authorities seem to be hesitant in taking decisions at all with respect to granting approvals/consents for the projects, owing to fear of investigations and prosecution for actual or perceived corrupt practices. There have been instances where allocation licenses of natural resources to companies have been cancelled. This is despite the fact that companies were not implicated of wrongdoings; rather, the methodology adopted by the government in allocating these natural resources was questioned. The cascading effect of all this has been ‘inertia’ within the government machinery to take decisions. Companies have increasingly become aware of the risks involved and have strengthened their compliance divisions to ensure that they do not, even inadvertently, directly or indirectly become involved in such investigations or prosecutions. Many ►►



companies are even following the ‘wait and watch approach’, preferring to observe the outcomes of ongoing investigations in other cases before undertaking any expansion of their businesses or fresh business ventures. There is also an increasing trend in employing independent directors and setting up impartial audit committees.

**Ash:** For the clients we represent there is no particular impact for themselves, as they do not engage in corrupt activities. The various compliance requirements and mechanisms have broader implications, as energy clients are now required to vet and verify equity partners, financiers, contractors and sub-contractors. Accordingly, project structuring is more onerous, in order to ensure compliance. We find that energy clients have been astute to put in place various procedures and frameworks in order to verify that those they do business with are not engaging in corrupt practices and are compliant with domestic legislation.

**Vince:** Energy companies operating globally are increasingly being targeted in anti-corruption investigations, especially those whose activities take place in countries considered to be high corruption risks. The SEC has recently adopted rules requiring ‘resource extraction issuers’ to disclose payments – including by affiliates – to the US or foreign governments – including sub-national governments. US federal investigators have been vigorous in FCPA enforcement, with more investigations using a wider variety of investigative techniques, broader interpretation of the scope of activities and entities falling within anti-corruption laws, heavier penalties including imprisonment, and more frequent prosecution of individuals. We are also witnessing greater cooperation between federal agencies and foreign governments, and new or increased enforcement efforts by other countries, causing global companies to review internal compliance programs to ensure compliance not only with US laws, but with the laws of all jurisdictions where they operate, do business, or have a significant presence.

**Lyll:** There are two aspects to this. One relates to steps companies need to take to ensure they prevent corrupt practices from within their own organisations; and two, how they respond to the threat of loss from external corruption. With the former there is already tough legislation in place to deal with corrupt practices within organisations. The US Foreign Corrupt Practices Act (FCPA) and the Bribery Act in the UK have certainly changed expectations about compliance in this area, with an investment in

demonstrably effective systems and controls a basic requirement. How companies deal with the threat and risk of loss from corruption in markets they invest is different. The Corruption Index demonstrates the scale of the problem for global players and a board of directors must be aware of the nature of the threat, the cost to the business and the reputational issues associated with such an exposure.

**McCarthy:** While not ‘corruption’, the industries regulated by the US Federal Energy Regulatory Commission (FERC) – gas, electric and oil – are on heightened alert of FERC’s Office of Enforcement ‘crackdown’. On 31 October 2012 FERC issued a Notice of Proposed Penalty to Barclays Bank PLC which consisted, in part, of a proposed civil penalty of \$435m for alleged energy market-manipulation. While the case is at its inception, in that Barclays has not yet had a chance to respond to allegations made by FERC staff and the penalties are mere proposals at this point, the civil penalty amount is astounding. The significant penalty derives from a law the US Congress passed in 2005, specifically intended to provide FERC with what it would need to prevent market manipulation after the California meltdown that occurred over a decade ago. A rational response to issuances such as the Barclay’s proposed penalty is to ensure that ‘belt and suspenders’ compliance programs are in place. Companies want an effective compliance program in any event to make sure that the business is conducted lawfully. But for those US companies subject to routine regulatory scrutiny by FERC, an effective compliance program could actually prevent violation and also ensure that regulators view any violations as a mistake rather than something endorsed by senior management or supervisors.

**How are national responses to cyber security threats impacting the energy industry? What tools and strategies exist to address these threats?**

**Vince:** Cyber security reform is gaining traction in the US Senate, however proposed legislation to date has failed to achieve the full backing of industry. While there is general support for the notion of a voluntary incentive program, industry fears a shift during implementation from a standards-based, flexible program to an overly prescriptive and costly mandate. Congress is expected to reconsider legislation during the lame duck and, should it fail to quickly address the matter, the administration has hinted that it is prepared to issue an executive order. Meanwhile, the FERC is launching a new division to identify, communicate and resolve potential risks to US energy infrastructure, while Homeland Security, the FBI, FTC, FCC and Commerce all also have various initiatives underway. Among energy and utility companies, we are beginning to see executives conducting tabletop exercises and crisis management planning to provide cover as cyber security concerns continue to grow.

**Lyll:** Many energy companies have been the recipients of sustained cyber attacks and there is a consensus view amongst observers that these will increase in the future. As part of the Critical National Infrastructure, energy assets and infrastructure are integral to the economic resilience of a country; and, ensuring that resilience is a high priority for most governments around the world. In some countries advice is readily available from government agencies on how to identify and respond to the risk from ►►

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CLINTON A. VINCE

cyber attacks, but this is not widespread. Many companies are on their own. Our advice is that this is a security issue, not just an IT issue. What is required is a smart and supported process of threat identification and risk mitigation that has visibility at board level. Most companies have a fragmented approach towards managing security threats and risks of any kind – and that creates vulnerabilities, but when these occur at national level, the government needs to be engaged.

**McCarthy:** The US federal government is appropriately focused on cyber security and cyber ‘vulnerability’. In October 2012, the FERC established a new Office of Energy Infrastructure Security (OEIS). That office is specifically intended to support FERC with respect to risks to FERC-jurisdictional companies and assets from “cyber attacks and such physical threats as electromagnetic pulses”. In parallel to the creation of the OEIS, FERC is proposing to compel the US reliability entity – the North American Reliability Corporation – to develop a mandatory standard to protect against failure in the event of a geomagnetic disturbance event. The utility investment required to respond to such a standard would not be insignificant. To the extent reliability authorities continue to see the need for significant cybersecurity related investments, regulators should ensure that those investments are fully recoverable in utility rates. In addition to the recent FERC activity setting up the OEIS – which became a talking point for Obama during the campaign – Senate majority leader Harry Reid (D-NV) has announced that he intends to propose cyber security legislations in the Senate during November’s lame duck Congressional session.

**Sharma:** The energy sector is a fertile target for cyber attacks and, with increasing reliance and application of the digital space, it has become extremely vulnerable to unforeseen cyber threats. The ‘Stuxnet’ worm, identified in 2010, is one such attack, recognised as the most sophisticated ‘cyber weapon’ as yet. Energy companies and governments have started recognising cyber security issues as well as identifying and implementing technologies for setting up cyber security infrastructure.

**Ash:** South African legislation regarding cyber security is still in formation.

**Taking into account both new and traditional sources, what do you expect the energy mix to look like in 2013? What impact may environmental regulation have on this balance?**

**Ash:** I can speak only about the South African situation. The energy mix is presently governed by the Integrated Resource Plan 2010 (IRP 2010), which is a proposed balanced procurement of new generating capacity up to 2030, utilising a mix of various power generation technologies. For example, under IRP 2010, the Department of Energy has confirmed government policy to procure 17.8GW of new generating capacity from renewable energy sources, 9.6GW new generating capacity from nuclear power, and a fair mix of generation from coal and gas for the balance. For the moment this remains national policy. The National Planning Commission has strongly endorsed further exploration for shale gas. Preliminary estimates indicate that South Africa may hold approximately 485tcf. This would make the South African shale gas resource the fifth largest globally, and would constitute a complete ‘game changer’, not least for domestic energy security. It is

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MATT ASH

to be expected that, given the concerns surrounding the claimed possible environmental impact of hydraulic fracture mining, the South African government will be careful to address legitimate concerns by way of appropriate regulation. Similar considerations apply to the South African nuclear new-build program.

**Bertoldi:** Traditional sources of energy, such as nuclear and large hydroelectric generation, will continue to represent the source of baseload generation in the Province of Ontario. In 2013, new sources introduced into the provincial energy mix will include those renewable resources contracted for under the Ontario Power Authority (OPA) Feed-in Tariff (FIT) Program. We will continue to see the development, construction and operation of these renewable generation projects, comprising mainly of wind and solar projects, contracted for by the OPA since the inception of the FIT Program. Going forward, and beyond 2013, environmental regulation will continue to encourage the introduction and development of renewable generation in the energy mix. However, developers of such renewable projects will likely focus on less costly and more economically viable renewable sources, such as small hydroelectric and/or biomass facilities. The continued introduction of renewable resources in the Ontario energy mix, is in-line with global projections. The International Energy Agency recently projected in its 2012 World Energy Outlook that renewables will generate almost 33 percent of electricity worldwide.

**Filsinger:** The global generating mix is definitely transforming, although this transformation is occurring at different paces in different regions. In the US the current generation mix is primarily coal, natural gas and nuclear. However, in other regions of the world new coal generation is still entering the market place. In China, for example, coal and nuclear baseload generation are important pieces of the future generation mix. While India and China are both considering renewable generation as a key component of the future mix, renewables alone will not be enough. With the rapid pace of load growth in these countries, large amounts of baseload assets are also needed. From the US perspective we are seeing the mix move more toward gas production. This shift in production is due in part to the changing market dynamics seen with the decrease in gas prices, as well as a result of both current and anticipated environmental regulation. Regulatory emissions constraints have a large impact on coal generation in the energy mix as tighter regulations force coal generators to invest in the capital necessary to comply or consider de-rating or retirement, thus pushing coal further out of the fuel mix. ▶▶

**McCarthy:** Our firm's Policy Resolution Group tracks fuel mix issues closely and keeps our lawyers updated. According to the US-EIA, Electric Power Month from earlier this year, the source of US electricity generation for 2011 was: 13 percent renewable, 19 percent nuclear, 25 percent natural gas and 42 percent coal. Last year, the coal fleet was 1400 units (580 plants). A large number of plants will retire in three to five years in part due to environmental regulations. Some attribute up to 31,000 MW of retirements to the Environmental Protection Agency (EPA) rules. Analysis of the reason for retirements is arguably complicated when considering the low natural gas prices in the US. Operator statements about whether the retirements would be permanent – rather than just 'mothballing' facilities – seem to refute that many of the retirements are a reflection of low gas prices.

**Sharma:** The energy mix in India has not changed much in the last decade. The dependence on coal and oil continues. Renewable energy – solar, geothermal, wind energy, and so on – and nuclear energy have shown considerable growth, although the development of these sectors is still at a nascent stage. Due to environmental concerns, there has been an increased awareness to reduce the carbon footprint of the energy sector. Fossil fuels are expected to continue to fuel energy requirements. The National Solar Mission has set a target of 20,000 MW of solar electricity by 2020. Presently, most of the solar projects are photovoltaic (PV) generators, relying on solar panels. Developers are depending upon hefty subsidies from the government. Though the costs of solar panels have come down, PV technology continues to be uneconomical. Solar thermal technology in due course will replace PV technology in an effort to obtain economical and efficient renewable energy. Environmental regulations will continue to have an impact on the development of new projects. In the hydroelectricity sector, rehabilitation and resettlement of the displaced, as well as potential environmental re-alignment, continue to be areas of concern. Nuclear energy is impacted by concerns related to safety and waste disposal and its effects on the environment. Fossil fuels based projects will need to find means to address the continuing concerns of air and water pollution.

**Vince:** The energy mix in the US will continue to be driven by fuel availability, policy and regulatory decisions. Strict environmental regulations and abundant, cheap natural gas are prompting a decline of coal new builds and retrofits in favour of less emissive gas-fired generation. The EPA's proposed greenhouse gas standards for new power plants, if finalised, will further dis-

courage new coal builds but may spur carbon capture technology. Nuclear power will still be a necessary component though low gas prices will slow additions to the fleet. Renewables will remain important in states with RPS requirements and on military bases as the Defense Department pursues its islanding strategy. Investment in wind and solar is expected to decline dramatically if tax credits are allowed to expire. We can also expect to see increased domestic oil production and a revolution in energy efficiency and demand-side management driven by low-cost technologies.

**Where is the nuclear industry headed? How will challenges of price, waste and safety be addressed?**

**Bertoldi:** Canada has long been a leader in nuclear research and development, exporting its reactor systems to various countries across the world. Currently, over 50 percent of Ontario's electricity supply comes from nuclear sources. However, due to political uncertainty, the decision of whether to proceed with refurbishment of existing nuclear generation units as opposed to investing in new builds, has yet to be determined. On the other hand, Quebec, by way of the Parti Quebecois, has recently decided to go ahead with shutting down its only operating nuclear power plant, the Gentilly-2. Originally, the previous government had plans to refurbish the plant, extending its life to 2040. However, due to health concerns in the area, the current government has decided to close the plant in its entirety.

**Filsinger:** The nuclear industry is an interesting one. Environmental groups in the US and abroad were beginning to accept nuclear as a potential alternative to carbon producing generation. However, following the Fukushima accident, political favour changed dramatically away from nuclear generation both in the US and Europe. It is critical to understand that if there is a movement away from CO<sub>2</sub>, then nuclear energy is an important part of the solution. Natural gas units produce about half the CO<sub>2</sub> of a typical coal unit, and renewable generation is not likely to be a reliable source in all hours. Nuclear generation produces virtually no CO<sub>2</sub> emissions and is a reliable baseload resource. The challenges faced by the nuclear generation sector include: capital costs, associated waste and security/safety issues. I do expect nuclear generation to be part of the solution as we move forward; however, I expect that in the US, for example, a standardised 'few' designs will be used as opposed to the multiple designs seen in the 1970s and 1980s.

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TODD FILSINGER

**Sharma:** The tsunami in Japan and resulting damage to its nuclear reactor has placed a question mark over nuclear energy as an alternative to conventional fuels. Although there are safety concerns, nuclear energy remains important for India. The government is keen to address issues relating to design, construction, equipment, waste disposal, security and maintenance of nuclear energy plants, and attribution of liability in the case of unforeseen events. The central government needs to interact with state governments to allay any safety concerns and cite examples of other nuclear plants operating globally.

**Ash:** In South Africa, IRP 2010 stipulates that 9.6GW of new nuclear-powered generating capacity is to be procured by 2030. On current estimates, this would be of the order of six new nuclear ►►

power stations. Statements issued by the Department of Energy indicate that the government remains committed to this program. A special cabinet team was appointed by the state president to consider, monitor, and oversee the nuclear procurement program. That team has met recently, and has reported internally. Provided all the indicators remain positive, it is quite likely that an RFP may be issued early in 2013. However, the government will continue to move cautiously, not least to ensure that the embarrassment of the aborted Nuclear 1 procurement in 2008 is not repeated. The challenges of price and waste storage remain to be addressed. As for safety, the South African government and national utility, Eskom, have been proactive in supporting and undertaking various training initiatives to develop skills. It is also anticipated that technology suppliers will be required to co-operate the facilities for a significant period once these come online, in order to ensure skills transfer.

**Vince:** The shale gas revolution is the primary factor contributing to the stall of further development of the US nuclear industry, with a far greater impact than safety concerns, issues related to new licensing and funding, or the lack of a comprehensive waste disposal policy. Safety remains a primary concern, although the fact that all 34 facilities in the direct path of the recent east coast hurricane were unharmed or safely powered down has eased the public's mind somewhat. As long as gas prices remain low, domestic investment will be directed primarily toward CCGTs. Nevertheless, four new facilities are under construction, and more than 30 applications for additions or relicensing pending before the NRC. The problem of a long-term disposal site for spent fuel is unlikely to be definitively resolved in the near term. Also, scaling back of nuclear programs by Japan and Germany has reduced uranium demand, which impacts US suppliers.

#### **How is climate change creating both opportunities and threats to the energy industry?**

**Filsinger:** The climate change argument continues to offer both threats and opportunities in the power sector. In the US, coal units are under significant pressure from current environmental rules. However, the CO<sub>2</sub> landscape in the future is somewhat unknown. For this reason, it is difficult for entities to make decisions around these assets. The same is true of low CO<sub>2</sub> generation. If entities are developing or planning generation in anticipation of CO<sub>2</sub> legislation, they are placed at a similar risk. The current regulations put pressure on the coal plants that are not retrofitted with the necessary environmental controls. There is a real argument that with the pressure of the current regulations and low gas prices, that CO<sub>2</sub> legislation is not necessary in the power sector as the market will naturally be driven toward lower CO<sub>2</sub> emitting facilities. We are seeing the impact of this as the market shifts to produce less energy from coal generation and more from gas generation. Renewable resources are also seeing increased output as they enter the grid as a result of this change. This uncertainty surrounding future CO<sub>2</sub> legislation is where the opportunities are created. Currently, the market place does not seem to have a clear view of how to value a coal facility. I have seen appraisals from many consultants in the market place that value coal facilities based on comparable sales, effectively ignoring the specifics of each facility. I believe there are significant opportunities for those that understand coal's place in the future

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MUNISH SHARMA

market and the massive value differences between facilities. Renewables present an equally complex issue. Renewable generation, particularly wind, has seen increased development in the past decade, driven in large part by the move to green energy and CO<sub>2</sub> reduction. In many cases these units have been added in areas that do not have the load or the transmission capabilities to transport the generation into the load centres.

**McCarthy:** President Obama mentioned climate change in his acceptance speech on the evening of 6 November 2012 but did not make climate change an issue in the 2012 Presidential election. There was really no 'upside' for President Obama to focus on climate change during his campaign because he already had whatever 'environmental vote' existed. There will likely be 'significant discussions' about the possibility of carbon tax which could bring in billions to the annual budget. The discussion would likely include opposition to such a tax because such a tax could diminish the advantage the US's affordable and reliable power gives it from a manufacturing standpoint. EPA regulations have been 'bottled up' for some time and we would expect there to be some forward movement at the EPA in the first and second quarters of 2013. Also, the EPA will likely focus on enforcing its new GHG regulations.

**Sharma:** Since the Kyoto protocol, climate change has taken centre stage in energy policy formulation. India has tripled its renewable energy generation capacity in the last five years. The government offers a number of incentives to renewable energy developers. At the same time, concerns over climate change have resulted in more stringent environmental regulations, especially concerning emissions in the energy industry. The obtaining of environmental clearances concerning non-renewable sources has become a lengthy process and often a determining factor in project viability.

**Ash:** It very much depends from technology to technology. Obviously, climate change arguments have fostered the development of renewable energy power generation. But the challenges as to cost and baseload deliverability by renewables sources remain. The International Energy Agency has declared the current era to be 'the Golden Age of Gas' for good reason, owing to relatively low costs, relatively high source of supply, and relatively low carbon footprint. Of course, there are those who remain opposed to any dependence on any form of fossil fuel power generation, which is of itself a compelling argument for the nuclear program. ▶▶



Threats to particular sectors of the energy industry may come and go – but economies survive and grow on power.

**Vince:** Climate change is a critical issue nationally and globally. In the US, ‘cap & trade’, the carbon tax and clean energy appear dead-on-arrival under the current political stalemate. Although many Americans believe in climate change, their immediate economic worries often trump other concerns. However, people are beginning to understand that climate change has real impacts on their lives and well-being, and requires a realistic solution. Impacts, such as more frequent heat-waves, droughts and intense storms, stress the energy sector by increasing demand for power and scarce water. Climate change disrupts food supplies, raises energy prices and competes for fuel and water, and impacts other economic activity. At the same time, melting polar ice creates an opportunity to recover resources previously thought to be inaccessible, complicating efforts and incentives to resolve this problem. Reducing carbon emissions also creates opportunities for more efficient and cleaner energy production.

**Bertoldi:** Discussion on climate change policies and the necessary framework to put into effect such policies have been stagnant in North America over the past few years due to lack of consideration of the issues by US Congress, and continued scepticism among the Republican Party – which currently controls the House of Representatives. Consequently, climate change discussion has also diminished in Canada, with no recent developments or progression on this front.

**To what extent will developing countries become a game-changer for energy demand and efficiency in the global market?**

**Sharma:** Developing countries will be the dominant players since their energy requirements will continue to grow. Sustained economic growth results from the growth of all sectors and, in particular, from growth in the infrastructure sector. This is the foundation for growth of the manufacturing and services sectors, among others. India is the ninth largest economy in the world and registers among the highest GDP growth in the world. To sustain such rapid growth in developing countries energy sector, growth is key.

**Ash:** Developing countries are already a game-changer for energy demand and efficiency. In Africa we see this across the continent,

**Whilst we do not think developing countries will be ‘game-changers’, their appetite for oil will ensure existing programs for diversification and self-sufficiency remain a priority for most governments.**

ALISON LYALL

with extensive development of gas resources in particular to establish energy self-sufficiency. Africa is a centre for economic growth, and that requires power. This presents major opportunities for international players, given the dearth of domestic skills to procure that much-needed power.

**Vince:** Emerging markets will have a huge impact on the global energy industry. Substantial capacity builds in these countries over the next decade, for all fuel sources, will reshape global markets, impacting price and demand, but also affecting global climate policies. Brazil, Russia, India and China are expected to be both major exporters and consumers, but will also bring renewable technology development to scale. Brazil will develop its oil reserves. Russia will export natural gas, although its continued stranglehold on European markets is uncertain as those countries seek alternative supplies or switch to other energy sources. India will be an enormous consumer, with growth potentially surpassing China. China, now the world’s largest energy consumer, will drive both demand and innovation, and will become the leader in nuclear energy. These developments, combined with increased energy self-sufficiency in the US, will prompt a global shift in energy exports, especially in the Middle East.

**Lyall:** Access to affordable and secure energy is a key issue for the global market and especially for developing countries. There are several reasons why the oil price has risen over the last decade to unprecedented levels, an increase in demand from developing countries being only one. Over the same period, demand from developed countries actually fell because there is simply a greater capacity to curtail discretionary spend. Developing countries do not have that luxury. Whilst economic growth continues in developing countries price rises will continue – and we believe governments will need to take action. In developed countries this will mean a concerted focus on policies that encourage lower fossil fuel consumption and, in developing countries, recognising that alternative energy sources need to be a greater part of the mix. This change will not happen overnight, but it has to happen. So whilst we do not think developing countries will be ‘game-changers’, their appetite for oil will ensure existing programs for diversification and self-sufficiency remain a priority for most governments.

**Filsinger:** Developing countries have a real opportunity to get it right as they develop their power systems and provide electricity to the population. The real issue is that these countries must contribute significant intellectual capital investments to achieve success, as they feel the pressure to develop their energy sectors as cost effectively as possible. In my visits to several of these countries and in discussions with the energy ministries, I noted that these countries are in some ways looking to the West to lead on these issues.

**Have you seen continued consolidation of the energy & utilities sector over the last 12 months? What factors are driving M&A activity?**

**McCarthy:** In 2011, utility M&A in the US rose to its highest level in years. 2011 announced transactions included Duke-Progress, Kinder Morgan-El Paso, Exelon-Constellation, and AES’ acquisition of DPL. The parties to these transactions sought to broaden ►►

and diversify their base in the industry. Capital markets generally favour increased diversity and larger balance sheets. Also, many of the US reliability and other new US regulatory requirements are more easily addressed with a larger entity. With the exception of AES-DPL – which closed late in 2011 – these transactions all closed in 2012. The NRG-GenOn transaction, proposed in 2012 and not yet closed, would create the largest competitive power generation company in the US. It would be difficult to ‘match’ the pace at which we saw these large combinations. Going forward, we would expect to see some restructuring and possibly M&A around distressed generation assets. In many of the centralised markets in the US, there is surplus generation capacity which is depressing prices in some markets. We would expect some market participants owning ‘surplus’ generation – which includes but is not limited to some coal-fired generation – to be involved with restructuring and M&A activity over the next 12 months. Also, as banks consider whether to exit the commodity business, as a result of the Volcker rule and other US regulation, we could see the sale of banks’ energy commodity subsidiaries or the sale of ‘trading books’, or the movement of groups of traders.

**Ash:** Speaking for South Africa, consolidation continues, particularly in the renewables sector. A good number of developers and sponsors could not have anticipated the financial and logistical challenges in major RE projects under the South African renewable energy IPP procurement program, and these have driven a significant secondary investment and M&A market.

**Vince:** Recent M&A activity in the US has been influenced by bankruptcy-related initiatives. Stricter environmental regulations will require increased capital expenditures, which will lead to the retirement of some facilities, and restructurings with new equity investment in compliance for others. In the oil and gas sector, over-development of shale gas, combined with reduced demand, have artificially suppressed gas prices. Further M&A activity can be expected as companies attempt to ride out the gas glut. In addition to gas assets, distressed assets for sale have included fossil power plants that were leveraged when gas prices, and thus energy margins, were higher. Increased pressure to diversify coal-heavy fleets may also drive future mergers. Renewable assets that are contracted continue to attract M&A activity, and two electric utility mergers – Exelon-Constellation and Duke-Progress – overcame competitive concerns and received federal approvals this year.

**Lyll:** Certainly the sector remains active in terms of M&A activity. In terms of factors driving this, one that stands out is the shift in position on nuclear power post-Fukushima. The impact of this in Europe has been considerable and, for companies who have invested heavily in the sector, disposals and mergers will occur as they try to survive the impact to their investments. But this is only in some markets. In other parts of Europe, nuclear power remains an attractive investment with projects being funded across new member states.

**Bertoldi:** Since the restructuring of Ontario’s electricity sector through the Energy Competition Act, 1998, we have seen the number of local electricity utilities reduced from over 300 to approximately 80, with most of that consolidation taking place in the early 2000s. There has been limited consolidation activity in the past 12 months, but municipal shareholders have continued

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to consider consolidation opportunities, and we anticipate that a small number of local utilities may be the subject of RFPs for consolidation in the coming year. Opportunities to monetise the value of local utilities, and risks to the ability to earn full regulated returns, may continue to drive consolidation. Consolidation is predominantly among publicly-owned entities, as transfer tax rules create disincentives to private sector M&A activity beyond minimal investments in local utilities.

**Sharma:** In India there has not been much consolidation in the energy and utilities sector over the last 12 months. Companies have adopted a ‘wait and watch’ approach. There have been instances of discussions between companies for M&A and initial documentation, however deals have fallen through. An uncertain climate of global slowdown, domestic political issues, a frenzy in anti-corruption, and certain regressive steps taken by the government, have all collectively led to slowdown in M&A activity owing to issues with respect to project completion and revenue generation.

### In what ways are political developments likely to affect energy policy in the months ahead?

**Vince:** The main priority of the federal government over the next two years will be reducing the national deficit. This goal will inform all other policy, including energy policy. As lawmakers search for solutions, we may see a renewed interest in ideas previously rejected, such as the carbon tax, which could increase revenue while tempering the climate change debate, at least in the short term. We are also likely to see continued emphasis on development of domestic resources, although the position that gas, oil, coal, nuclear and renewables will occupy in the national fuel portfolio, as well as regulation of their production and availability of subsidies, will depend on who is at the helm and what the Congress looks like.

**Bertoldi:** The OPA is anticipating accepting applications under Version 2 of its FIT Program for renewable generation projects in the near future. Version 2.0 of the FIT Program Rules, Contract and other program documents have been posted on the FIT web site and are now final and effective. However, the recent resignation of Ontario’s premier and the likelihood of a provincial election next year have raised concerns about the future of the FIT program. Many proposed renewable projects have prompted community opposition. The leader of Ontario’s official opposition ►►

party has proposed winding down the FIT program – existing, connected FIT projects would remain in place, but all new projects still in the approval queue would be halted; more decision-making authority over wind and solar farms would be given to municipalities; and projects that have FIT contracts but are not yet connected would be subjected to cost-benefit tests.

**Filsinger:** Since the re-election of President Obama in the US, it is likely that coal will continue to be under extreme pressure. The winners and losers in this space will become more pronounced, thus creating opportunities for those that can decipher the differences in the value of the assets and understand the value proposition in the coal sector. Renewables will continue to see a push; however this will also increase the pressure on those assets that do not deliver as expected. There will be added pressure on the grid when these assets are not generating as planned. As a result, we will see significant stranded costs in the renewable space with clear winners and losers. This is not just a US issue, but a global issue as several countries push ahead on the renewable front. Renewables can be great assets with the proper infrastructure and supporting market rules; however, there is significant market lag.

**McCarthy:** Given the re-election of President Obama, we would expect to see the EPA moving forward to finalise pending regulations that will affect the energy industry and also to enforce its GHG regulations. In addition, we could see some hydraulic fracturing regulation proposed. Also, there may be a discussion of carbon tax and possibly proposals for comprehensive climate change legislation.

**Sharma:** Political developments are not likely to affect energy policy in the months ahead. The growth of energy and utilities is imminent in India considering that we still have lot of ground to cover. Political developments can, at best, delay the growth. There have been positive developments with respect to dispute resolution. Another positive development has been the revision of tariff rates at which electricity is procured from power developers in the majority of states in India.

**Ash:** For South Africa, the single most important political event that is likely to affect energy policy going forward is the ANC elective conference in Mangaung in early December 2012. It is evident that the change of guard at Polokwane in late 2008 precipitated the demise of the Nuclear 1 procurement. No major procurement decisions, except under the renewable energy procure-

ment program, will be made before this crucial conference which will determine the South African political landscape for at least the next four years.

**Have any legal and regulatory developments come to light, which will impact the sector?**

**Lyall:** From our perspective, we are looking for legal and regulatory developments that touch on security risk issues – those relating to requirements placed on companies to identify and address criminal activity, implementing and testing the effectiveness of systems and controls to deliver good governance, duty of care, identifying vulnerabilities across the supply chain, restrictions on managing personnel security, information security, and so on. Any legislation and regulation has a cost to it and those that affect energy companies need to be managed. Post-*Macondo*, many in the sector have instigated compliance and risk assurance reviews to see whether systems and controls are both adequate and effective. These reviews are important, but can be a distraction and the last thing the sector needs is stifling regulation that hampers investment and curtails the risk-taking that is so crucial to growth.

**Bertoldi:** On 18 October 2012, the Ontario Energy Board released the Report of the Board – Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach. The report extends the incentive regulation period between re-basings to four years from the current three, and establishes three rate-setting methods ranging from a small mechanistic annual rate adjustments to custom five-year cost of service rate applications. The board believes that the variety of rate-setting methods will “provide choices suitable for distributors with varying capital requirements, while ensuring continued productivity improvement. The board will also require distributors to file five-year capital plans to support their rate applications. Planning will be integrated in order to pace and prioritise capital expenditures, including smart grid investments, and regional infrastructure planning will be undertaken where warranted. Finally, the board intends to develop standards and measures related to the performance outcomes discussed in the report.

**Filsinger:** The environmental rules will continue to have a significant impact on the power space, in particular on the coal facilities. The uncertainty around the lack of an energy policy and potential CO2 regulation will continue to put pressure on the higher emitting facilities. Again, it is likely that there will be more of a mandate toward renewable generation.

**Significant amounts of coal generation capacity will be retired over the next three to five years, and companies and regulators at the state and federal level will need to respond to related reliability concerns.**

**McCarthy:** A significant issue that continues to come into sharper focus is the changing generation resource mix in the US and related reliability issues. Significant amounts of coal generation capacity will be retired over the next three to five years, and companies and regulators at the state and federal level will need to respond to related reliability concerns. In addition, the most profound change in the US energy markets is the recent dramatic increase in shale gas production. Shale gas development has resulted in significant changes in pipeline infrastructure to accommodate non-traditional shale gas supply routes. There have been many related regulatory and legal developments. For example, interstate natural gas pipeline cases have related to changes in utilisation of pipeline capacity resulting from large quantities of shale gas. Also, controversies ▶▶

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involving pipeline proposals to adapt to the influx of shale gas have arisen and have not been easily resolved.

**Ash:** One particular legal development in South Africa which may influence the gas power sector is the *Maccsand* case, which in essence states that regional/district planning and land-use codes are not trumped by the governing mining law – the Mineral and Petroleum Resources Development Act – and that a rights-holder must still comply with such codes in all respects before any mining activity can be undertaken. This may well be dealt with by particular legislative amendments.

**Vince:** One of the most significant, albeit negative, legal developments impacting the domestic energy sector has been the gridlock among US policymakers. Absent comprehensive federal legislation, the EPA has been instrumental in setting policy impacting energy and fuel mix. Additionally, states continue to become innovative, and highly visible, in their regulatory efforts. For many, this outcome is optimal because localised geology, environmental needs and economic priorities vary widely, making states better-positioned to address some issues. Even on Capitol Hill, with all the posturing over policy, it is generally recognised that for most energy issues, a one-size-fits-all solution is neither desired nor workable. However, this approach results in a patchwork regulatory scheme that increases costs and uncertainty for energy companies. Another result of gridlock is that the federal court system has become the ultimate policymaker on energy and environment – probably the worst forum for developing policy on complex issues.

**Sharma:** India has large untapped potential in waste-to-energy technologies (WtE). The Jawaharlal Nehru National Urban Renewal Mission has provided explicit support to WtE by setting up projects creating 200 MW for energy recovery from urban wastes. The government has provided specific policy and regulatory incentives and drivers to achieve these targets by the end of the 12th plan – 2012-2017 – representing a huge opportunity for investment in this sector. Also, to explore and realise the potential of unconventional hydrocarbons, the Indian government has issued the Draft Shale Gas Policy, 2012, which is currently under deliberation and undergoing a stakeholder consultation.

**What are some of the key strategic considerations energy and utility executives are focusing on as we approach 2013?**

**Bertoldi:** Two strategic considerations energy and utility executives are currently focusing on include ageing infrastructure and workforce renewal, both of which will continue to be a pressing concern in 2013 and beyond. Many utilities have equipment that is near or at the end of its useful life and which now must be replaced to address adequacy and reliability concerns. The total cost of this renewal will be substantial across the entire sector. Additionally, as the baby boomers working in the sector begin to approach the age of retirement, there will be a need to address significant workforce renewal as large parts of the workforce will need to be replaced and new workforce provided with proper training.

**Filsinger:** Energy executives have challenging times ahead as they plan to meet their customer needs while trying to make sense of the future regulatory, economic and political terrain of the coming years. At the same time, utilities are facing crises that

require immediate attention with limited resources and very little empathy from politicians. The recent tragedy in New York – Hurricane Sandy – is a good example of this as the governor has made it clear that the system is ‘broken’ and must be redesigned on a fresh piece of paper. Balancing capital, consumer and regulatory expectations can be quite difficult. Prior to a crisis, low rates and low cost generation seem to be the priority, however, once a crisis strikes the priorities and retroactive expectations change. Executives must find a way to remain competitive while managing regulatory and consumer demands and expectations.

**McCarthy:** There could be three strategies for 2013 – advocate/educate; a focus on compliance; and the consideration of opportunities. Through ‘education’, regulated utilities should attempt to ensure that regulators and customers understand that current market conditions are abnormal and regulators cannot simply apply formulaic models to determine return. Separately, executives should continue to ensure the implementation of robust and up to date compliance programs that are consistent with regulators’ enhanced enforcement regimes and reflect a top-down culture of compliance. Finally, in the M&A context in the US, executives may choose to examine distressed assets and how the big banks’ possible exit from the commodity business might present opportunities.

**Sharma:** Key strategic considerations are essentially the source and cost of funds, environmental issues, land allocation and the regulatory regime.

**Ash:** Some of the key strategic considerations include costs, opportunities, risks including compliance and corruption, and access to funding, in particular for new ideas and out-of-the-box concepts.

**Vince:** Executives in energy and utility companies heading into 2013 are faced with an industry and policy landscape that is in a state of flux. Questions such as what the next Congress will look like, what the future of renewables will be, whether there will be continued access to low cost capital, what the effect of federal and state policy will be on price and availability of fuels such as gas and coal, and when and where the next major storm or cyber attack will strike are all uncertainties that are on the minds of industry leaders at present. Other issues executives will grapple with through the next year will include energy efficiency measures and demand-side opportunities, allocation of costs associated with infrastructure improvements, and the impact of climate change on the industry.

**Lyall:** We are interested in seeing how the European Programme on Critical Infrastructure Protection (EPCIP) develops during 2013 and thereafter. It has an all-hazards focus on infrastructures that affect two or more member states. Smoothing out the cost of transportation within the EU, looking at the Internal Energy Market – all of this points to the development of a level playing field that reduces price and risk arbitrage opportunities within the sector, but is a necessary pre-cursor in a regional market, let alone a global one. This needs a coherent industry voice so that the sector does not get a solution it does not want. Companies just need to look at the banking sector to see how organisations with a quasi-public sector role in a global market can come under scrutiny from policy-makers. ■