WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Energy Industry Partnership Strategy Meeting 2013

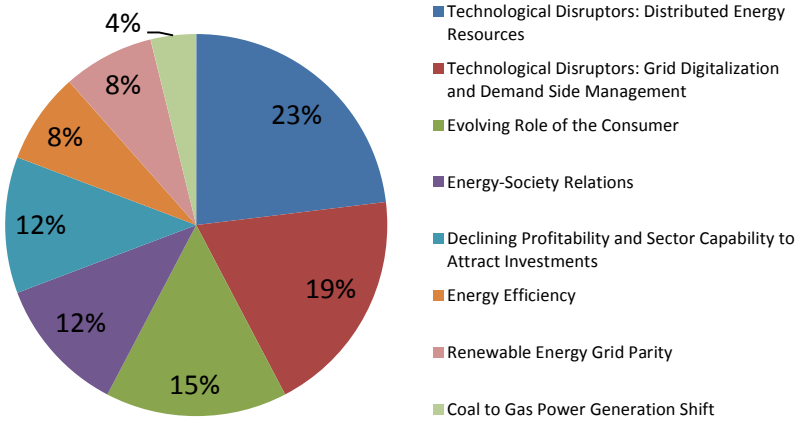
New York, NY 2 October ~ Convene Meeting Space

Key outcomes of the day:

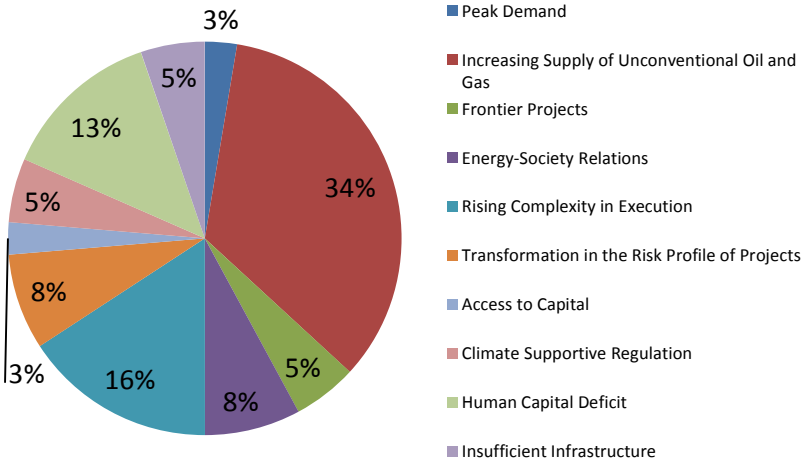
- The energy industry - held to the highest public standards – needs to improve in identifying the "pre competitive" space and relevant collaboration areas (like environment, cyber security and safety protocols).
- Participants recognized that both the Oil & Gas and the Electricity industries are undergoing very significant transformations, and highlighted the need to better understand the "direction" of the change. This transformation generates uncertainty in the sector, but also creates opportunities.
- Cheaper gas in North America is affecting the competitiveness of energy-intensive industries unevenly at a global scale, which is in turn impacting economies (disposable income & job creation).
- Stable regulatory frameworks on the national and local levels are critical to unlock longer-term financing. When subsidies are used to introduce new technologies to the market, it is most effective to invest in the R&D phase, avoiding market distortions linked to deployment subsidies.

Survey results

Electricity Sector Transformation:
The majority of survey respondents chose technological disruptors as the top challenges/opportunities that will transform the electricity industry in the next 5-10 years. These disruptive challenges are radically testing the traditional electricity business model, though they have yet to prove their potential to reduce the overall system cost. Utilities will struggle to capture the new value pools due to regulation constrictions and long-term investments made.



Oil & Gas Sector Transformation
The majority of survey respondents chose increasing supply of unconventional oil & gas and the rising complexity in execution as the top challenges/opportunities that will transform the oil & gas industry in the next 5-10 years. Oil and Gas production is becoming more complex and riskier. Addressing these challenges make responsible and efficient project execution critical for successful industry development.



Energy Update: Navigating the Energy Sector Transformation

Wednesday 2 October, 8.30 – 10:00

Key points

- Many believe the Oil and Gas industry is experiencing significant change in its narrative, which has shifted from one of inorganic growth during the era of supermajors and mergers, to one of more organic growth, driven mainly by non-conventionals and new market entrants.
- While recent conditions for sectors across the energy value chain have been poor, signs are beginning to emerge for a much brighter future.
- The renewable energy sector in particular is getting healthier, with consolidation strengthening companies' balance sheets and growth in new markets; however, more stable policies on the national and local levels are needed to unlock longer-term financing.
- Subsidies in the R&D phase accelerate innovation and adoption of new technologies, bringing higher returns and less market distortions than subsidies in deployment policies.

Synopsis

Changing dynamics of the energy sector

Many participants expressed a belief that the Energy industry is going through a significant transformation, while others feel that we have even reached an inflection point. The dynamics in particular for oil&gas players has shifted from one of inorganic growth during the era of supermajors and mergers, to one of more organic growth, driven mainly by non-conventional players. About a decade ago, there was a rush among supermajors to leave North America and pursue instead megaprojects in emerging markets, many of which are now behind schedule and over budget. Some participants characterized this as "sloppiness" driven by high oil prices. This created a vacuum for smaller independent players to build up and steer the U.S. shale gas revolution, as evidenced by the fact that total growth from non-OPEC production has come 100% from non-conventional in recent years. However, many supermajors have now returned to the U.S. to reclaim the market, and since 2007, supermajors have doubled capital budgets worldwide to $140 billion.

Supermajors must now "get back to the basics" and their challenge is therefore threefold: (1) Channel resources to monetizing capital that is "unfructified"; (2) Better manage large projects where inflation is an obstacle; and (3) Execute better by bringing not-in-service capital into service.

Another key question around the energy sector transformation, especially oil and gas, concerns mergers v. demergers – where is the trend going? In the past, "scale was beautiful" and companies often focused on merger synergies that streamlined costs. However, participants questioned whether this allowed for companies to be flexible enough to adapt to changing markets dynamics, and warned of the "curse of megaprojects" that put companies over budget and behind schedule. The next 7-10 years will show whether the "supermajor model" – founded on cost and scale advantage – is successful. This is largely in the hands of the industry itself.

Unlike the oil and gas industry, the future of utilities and renewables sectors is more dependent on policies. Policies that create good market designs, predictable emissions trading and sound renewable integration were highlighted as 3 core issues for utilities, particularly in Europe. In a largely policy driven environment, what many find that current policies fail to balance security of supply with

economic and environmental considerations and therefore undermine the current business model and value of base-load power generation.

The renewable energy sector also has had to change its narrative around subsidies and in particular work to remove politics and promote policy. This sector is viable and getting healthier, with consolidation strengthening the balance sheets of companies (in China there were 400 companies and now there are 150), and growth in new segments (emerging markets and distributed generation). However, national and local policy have been an obstacle, with one participant describing solar policy as being a "football" tossed around by different political parties and governments, and in turn has led to significant market distortion. More stable policies are needed to unlock longer-term financing, which is critical for renewables given that capital investment is the vast majority of the total cost

Key to the changing narrative of the energy sector across the value chain is also the question of subsidies, which in many cases have become a question of politics, not policy. This has especially affected the utilities sector, particularly in Europe. Subsidies have too much been skewed on supply and deployment, and instead should be more focused on the R&D side to accelerate innovation and the adoption of new technologies. The unit impact would be greater. Industry should leverage more private financing in lieu of public financing.

Energy transitions in regional contexts

Germany: The whole spectrum of Euro energy mix is 50 GW, with the lion's share in Germany, yet Germany's energy transition policy *Energiewende* distorts the German energy market with skewed renewable subsidies. Industry in Europe need to advance from the "old world" way of doing business and rather embrace and promote renewables; but this must be done with sound market design, and a viable emissions trading scheme (ETS) for renewables.
There is nothing wrong with renewable start-up subsidies, but Germany is an example (with 30-40 GW capacity of solar capacity) where subsidies were not stopped in time, so that production is unnaturally beyond capacity.

Mexico: The current Mexican administration had to submit 15-year energy strategy to its Congress, which must create the conditions and framework for a market to happen. In oil & gas, these regulations must make stakeholders responsible for projects, and in electricity, they must level the playing field by promoting a carbon tax to halt distortions.

U.S. Current US administration is pushing industry-led tech innovation, liberal markets that foster entrepreneurship, and sound policy to address market failures – coal to gas, phase out carbon subsidies, doubled wind, promote energy efficiencies, natural gas bridge.

The Future of the Electricity System

Wednesday 2 October, 10:15 – 11:45

Key points

- A number of disruptive challenges are radically testing the traditional electricity value chain, questioning the long term viability of utilities' current business model and the need to adapt it.
- There is a general shift of value towards the downstream of the value chain, driven by distributed generation and storage, demand side management and a growing role of the consumer.
- Utilities will struggle to capture the new value pools, constricted by regulation and by the long-term investments made; in any case, these disruptive challenges have to yet prove their potential to reduce the overall system cost.

Synopsis

A number of disruptive challenges are radically testing the traditional electricity value chain, which previously had only a few state-owned national champions that ensured electricity delivery to end users under a centralized grid. The pace of this change is increasing, resulting in a need to coordinate the intersection of regulatory and technologies evolution. This increasing pace is highlighting the evolution of business models in the electricity sector. Particularly, participants highlighted the impact of technological innovations and regulatory and societal changes in the utilities business model.

Distribution energy resources (both in generation and in storage) are seen as one of the biggest disruptors to transform the grid. In locations with high electricity costs, the risk of utilities' assets becoming obsolete could happen sooner than expected, thanks to the rapid pace of cost reduction of distributed technologies. High Voltage lines on the other side enable to connect "homogenize markets", as it connects distant consumption points enabling regional prices to converge.

Innovations as well as new entrants in the downstream part of the value chain are creating value pools away from the traditional centralized power generation where utilities excel. Intelligent grids and Demand Side Management technologies that enable load management play a key role in empowering the consumer. In the past, consumer was considered to be the "metering point," but now what is happening on the other side of the meter is changing, and utilities have to understand the growing flexibility of its residential, commercial and industrial customers.

Regardless of the direction of change, a new business model would have to prove an overall reduction of the system cost. Stakeholders have to take into account that change might not be driven uniquely by economic rationale but also by societal and regulatory trends. This is key, as in the traditional model, the state had the perspective of the total system cost and optimized accordingly. But the challenge now is no one unique stakeholder has that view – rather responsibilities are decentralized across the electricity value chain.

The key question participants raised was whether utilities had the capacity and flexibility to adapt to these disruptive challenges, and whether they would play an active role or rather block the process. Although there was no clear agreement, it seems clear that the human capital profile has to evolve from an engineer mind-set to a customer oriented model. Utilities have to be careful to make long-term investments in technologies that could quickly become obsolete. Furthermore, a regulatory framework that does not enable utilities to make a return under new technologies will most likely be blocked.

When asked about “game changers” for the future of the electricity system, participants named demand-side management, cyber security, retirements of coal-fired generation capacity, micro-generation (including micro hydro or mini CHP), non-traditional nuclear power and international processes on climate change and emissions. It was also noted that a growing amount of non-utility players are starting to buy their own capacity (e.g. IKEA or Walmart). All these trends would have different directions in reinforcing the role of a central utility.

Oil & Gas Roundtable

Wednesday 2 October, 10:15 – 11:45

Key points:

- Oil and Gas production is becoming more complex and riskier. Addressing these challenges make responsible and efficient project execution critical for successful industry development.
- Shortage of skilled labour puts at risk the industry's ability to execute increasingly complex and demanding projects, and limits the potential for the unconventional revolution to spread outside North America. Industry must invest in education, capitalize on synergies with public sector and tap local human resources.
- The Oil and Gas industry is held to the highest public perception standards among industries and in turn needs to further engage stakeholders. A clearer definition of the pre-competitive space and relevant collaboration areas (like environment and safety protocols) would support that engagement.

Synopsis

Complexity, risk and execution

Exploration and production from both conventional and unconventional resources are becoming more complex and riskier as traditional easy-to-access resources are not enough to meet the demand over the longer term. Environmental, technological and managerial risks are significantly inflating the costs of execution. Currently, major global E&P projects are roughly 50% over budget and 70% behind schedule with 60-80% efficiencies. Addressing these risk and challenges makes responsible and efficient project execution and management critical for successful industry development.

Capability

The industry faces a shortage in availability of skilled labour force, notably experienced engineers and qualified project managers, which puts in risk not only the industry' ability to execute increasingly complex and demanding projects, but can also undermine unconventional revolution spread outside North America. The Oil and Gas sector worldwide must invest in education, but also create and capitalize on synergies with the public sector. The good news is that graduation of geologists is at all-time peak, but to realize this potential, industry must manage the talent pool better. Additionally, taping local human resources to develop competencies is mutually beneficial for both industry and society. This can help to build the labour force while at the same time improve local social acceptance.

Social acceptance

The Oil and Gas industry is held to the highest public perception standards among industries. Some participants claimed that the industry needs to apply highest attention to address society concerns and secure a license to operate. Delegates expressed that the industry is not able to satisfy growing and unrealistic expectations of the society and policy-makers. To address this challenge, the industry needs to better engage its stakeholders. In this regard, the role of social media will be increasingly

important. A key question is how to get society to give the industry an opportunity to communicate this message. It was widely expressed that transparency is a central point of successful communication.

Learning from other industries which face similar challenges can be useful. A participant highlighted as an example the financial industry which managed to create its public image as a not perfect, however indispensable industry in today's world.

Collaboration

The industry needs to intensify collaboration in the pre-competitive space to address key challenges. This will require companies to examine and define areas where they do not directly compete – these areas provide the biggest potential for mutually beneficial collaboration that achieves objectives and optimises on cost. Moreover, some challenges exceed the ability of any single company and can only be addressed collaboratively. One model example can be the initiative undertaken by several major companies operating in Canada, which up to date resulted in sharing of $800 million in intellectual property to improve the sustainability performance of Canadian oil sands.

US Leadership in Climate Change: What next?

Wednesday 2 October, 12:00 - 13:30

Key points

- Various recent trends and events have put Climate Change back on top of the US and global agenda
- Political gridlock and economic competitiveness concerns are the key obstacles to Obama's climate change plan
- China is adopting a gradual approach on climate change, with significant progress in various fronts

Synopsis

Climate change is back on top of the global agenda, and many recent events point in this direction. The Intergovernmental Panel on Climate Change issued its 5th assessment report on climate change. The panel is convinced the climate is undergoing exceptional changes, extremely likely caused by human influence. On June 25 this year, President Obama announced a new national climate action plan in one of the most relevant speeches of recent US history. As many as 650 corporations including GM, Microsoft, Unilever, Nike and others have joined the Climate Declaration, calling on policymakers to seize the economic opportunity of addressing climate change. Internationally, momentum is picking up yet again on climate change, and 2014 and 2015 will be crucial milestones for the international community to agree on a new binding agreement. The two largest emitters (US and China) are entering into specific bilateral collaborations on climate and energy.

Globally the energy sector accounts for roughly two thirds of greenhouse gas emissions. Boosted by its switch from coal to gas, the United States has succeeded in reducing its CO^2 emissions to the levels of mid 1990s. The shale gas revolution will facilitate the transition towards a lower carbon economy. Recovery rate in the shale gas basins is currently at 3.5% and will most likely increase in the future. It is however in the own interest of the natural gas industry to take a leadership stance in developing environmental responsible standards to ensure societal license to operate and long term economic viability. In this line, minimizing methane leakages will be one of the key challenges faced by the industry.

The Obama administration recently unveiled its plan on climate change, and it has become one of the key pieces of many of Obama's recent speeches. Energy efficiency will be a central part of that plan, even if remarkable progress has been already made in the past decades (for example in the progress of standards on the refrigeration segment). The plan also foresees a further increase of gas production and coal switch. The shale gas revolution has not been fortuitous; there was regulatory support behind its surge (tax credits, R&D support). The most controversial element of the plan is the restrictions of CO^2 emissions for coal-fired power plants. Even though it is likely that the regulation will end up in courts, if no stable legislation is enacted to achieve the emission targets the (17% CO2 reduction by 2020), the EPA legislation of carbon emissions for coal power generation will probably take place.

One of the main arguments against the plan is its economic viability and impact on US competitiveness. Yet, California has been able to decrease power demand and emissions while its economy grew. Furthermore, some participants argued that if we are not able to restrict emissions, climate change consequences will severely hamper economic growth. On the other hand, the environmental community has a great interest in minimizing costs while reducing emissions. California cap and trade system will be an example of states where costs of reducing emissions are minimized. The Obama plan has to balance the trade-offs between energy security, economic growth and environmental sustainability. However, the fact that energy demand is flat deters the trade-offs between the economics and environmental sustainability.

Polarization of politics is also having an impact in the implementation of climate plan. The political gridlock is impeding federal legislation from being approved. There is very limited support in the US congress for a national carbon tax, and it is unlikely it will happen in the short term. Action however is happening at state level, and the Obama climate plan puts up building blocks for States to implement market mechanisms. On the international agenda, the US will have to make climate commitments to other countries, but due to the national gridlock this will prove to be challenging. US political parties will have to take into consideration a growing societal concern towards climate change, especially among the younger generations or university endowments.

The rapid growth of China is having a global impact in the world. Half of the coal global consumption comes from China, and a shale gas revolution is unlikely in the short term due to price controls and industrial competitiveness limitations. However, China has shown to take a wide range of climate actions, such as cap and trade pilots in cities, air pollution plans, investments in renewable energies or the recent agreement to limit consumption of hydrofluorcarbons. The latter is an example of a bilateral agreement between China and US in the climate change agenda.

Risk and Resilience in Urban Power Systems

Wednesday 2 October, 14:00 - 15:30

Key points

- Recent events ranging from natural disasters to cyber attacks have challenged the reliability of urban power grids, as especially seen in New York City and Japan, and this in turn has compelled authorities to seek innovative ways to strengthen the resilience of their respective energy systems.
- New models and technologies for electricity systems, including distributed generation and mini-grids, have provided cities with a range of solutions for increasing the resilience of the grid, as well as for increasing customers' independence from the grid.
- Overcoming competing interests and scaling-up new technologies through good market design will require collaboration among players across the electricity system.

Synopsis

Recent events like Hurricane Sandy in the U.S. or the Fukushima accident in Japan have tested the resilience of urban power grids. In the U.S., Hurricane Sandy set an unprecedented challenge to local power grids, which resulted in a quarter of the population losing electricity. Estimates of New York City's power outage set economic losses as high as 1 billion USD per day. It is therefore critical to include power infrastructure design into the overall urban planning.

Smaller countries with significant urban sprawls like Switzerland have done extensive simulations to test the resilience of their national power grids. After a large scale simulation of cyber-attacks to power generation facilities and its vulnerability, Swiss authorities identified cyber security as one of the greatest risks to the power grid. In Japan, the blackout that followed the tsunami and Fukushima accident had dramatic consequences on a scale never seen before.

As a result of these shocks, national and local authorities are starting to devise the introduction of modular options and innovative technologies into urban grids to increase their resilience. Furthermore, society, government and companies are devising stand-alone solutions to increase independence from the grid. As one speaker noted, "To survive to evolving changes, future customers might cut the ties to the grid."

Convergence of the Electricity and Information and Communications Technology (ICT) sectors is accelerating technological innovation and opening opportunities for existing and new players. Cities are now considering a wide range of technologies available to increase the resilience of their grids, including distributed energy, mini-grids, Central Heat and Power, digital grids, demand side management, advanced metering infrastructure and others. In the Swiss case, the integration of new technologies into urban frameworks follows a consensus process. It is difficult to choose a winner among the wide range of solutions, so the Swiss government is financing a number of demonstration medium scale pilots. The goal is not to demonstrate the technological viability but also the societal acceptance by users.

The challenge that cities are facing is how to scale up the introduction of these new technologies in their urban planning. Questions arise around how to build incentives and finance mechanisms, without creating significant market distortion. Cities are struggling to grasp what are the fundamental market design standards, and the allocation of responsibilities among involved stakeholders (i.e. who pays for the new infrastructure). Consumer behaviour is another key factor: In the Japan example, a combination of endogenous and exogenous events (e.g. natural disasters) eased the adoption of

behaviour modifications. Furthermore, in the case of emerging markets, cities with no existing infrastructure have further potential to optimize their urban planning and incorporate technological innovations.

Building resilience in urban energy planning has to balance a number of opposing trends. One of these junctures is the need to balance district modular mini-grids with a centralized power grid. A solution is to have mini grids that are interconnected to each other but that can enable modular solutions in the event of a disruption. In the Swiss case, regional interconnectivity is critical to improve security of supply at an economic viable way. For New York, the risk of not investing in resilience of urban outweighs its costs.

On the other hand, cities will have to weigh the benefits of an “intelligent” grid with the cyber-risks derived from it. A resilient urban grid requires robustness to face challenges, but also flexibility and responsiveness. The more intelligence (ICT technologies) the system has, the easier it is to build robustness and flexibility. But the smarter the system is, the higher the risk for cyber-attacks. Cross industry platforms to promote collaboration on security will be critical to successfully deploy new technologies.

The Gas Demand: Evolution or Revolution?

Wednesday 2 October, 14:00 - 15:30

Key points:

- Low gas prices have given a competitive edge to American industries vis-à-vis Asian and European competitors, and although precise data is difficult to gather, there is a revival of energy-intensive industries in the United States.
- Cheap energy has impacted the U.S. economy as a whole increasing personal disposable income and job creation beyond the oil&gas industry.
- The biggest hurdles for developing gas resources outside North America are “above ground” factors.

Synopsis:

This session focused on the changing nature of gas demand in the U.S., with the premise that the shale gas revolution in supply has caused a revolution in natural gas demand, driven by low prices. But how long this situation will last and how regulation will impact supply still were key questions up for debate. It is also still unknown if and how quickly the rise in supply of unconventional hydrocarbons will spread outside North America.

One major theme was competitiveness, as the significant increase in supply and resulting low prices have impacted energy intensive industries’ (gas users) competitiveness quite significantly in the United States. Some analysts describe this process as the beginning of re-industrialization. Participants acknowledged that it is very hard to get hard data on how much re-industrialization is actually taking place, but the general belief was that the anecdotal evidence does confirm the trend.

One of the industries that has benefitted greatly from low gas prices is the North American chemicals industry. In this regard, delegates expressed it was difficult to tell how much longer this benefit will last. However, they stressed that their competitiveness vis-à-vis their peers in other parts of the world (namely Europe and Asia) has been significantly enhanced as the price gas differential across regions is large. Furthermore, one of the participants mentioned that gas for transportation could be a big “game changer” since the potential is quite larger than for industrial use.

It was mentioned that reindustrialization in the United States is not a consequence of public policy efforts, but one that has been allowed by market conditions. However, participants discussed that there have been political effects in the United States and elsewhere (for different reasons) as a consequence of this process. For example, in countries experiencing high gas prices, industry associations (of energy-intensive industries) are putting pressure on governments to reduce renewable energy subsidies and foster unconventional hydrocarbon production. Furthermore, some countries, are undertaking huge reforms to make the energy sector, and the economy as a whole more competitive.

With regards to the impact of low gas prices in the U.S. economy in general, it was mentioned that although it is hard to accurately quantify, some analysts suggest there has been important positive effects in both disposable income and job creation. This not only taken place in the oil&gas industry (as a result of increasing the exploration and production efforts), but has created a spill over effect and a good number of secondary jobs have been created.

Delegates highlighted that gas supply revolution faces some risks like compliance with environmental regulation (use of water, chemicals used in fracking) or community impact of densely populated areas, and that despite the rosy economic story, policy is lagging behind and should catch up to address two market failures: Environmental externalities and energy security concerns.

Looking outside North America, participants felt that, given the huge disparity of price across regions, there is a lot of room for experimentation in terms of expanding the gas revolution to other countries. Some mentioned that geology is not the key obstacle to tackle, but the "above ground" factors (i.e. mineral rights, infrastructure, etc.). Many believe the European Union, for example, does not have a specific policy addressing gas production, or energy for that matter, and that the energy policy debate has been polarized. Rather the focus is on other related policies (including climate policy) and this has created some obstacles for the development of gas. In contrast, it was expected to see more development of gas production in Asia, as the region struggles to keep up with demand.

Overall, there was optimism for the support of unconventional gas in the future, but with the caveat that sound energy policy and competitiveness should be an essential part of the conversation.

Energy for Society: Rebuilding the "Circle of Trust"

Wednesday 2 October, 16:00 – 17:30

Key points

- Energy companies increasingly suffer from a lack of trust among stakeholders in society, which poses a significant business risk in today's information age, where big corporations are increasingly coming under societal scrutiny.
- The energy industry's perceived issues with customer relations, transparency and sustainability were seen as factors undercutting public trust; the situation is further aggravated by the mass of often-conflicting information and insufficient levels of "energy literacy" among stakeholders.
- Advancing the issue will require individual company action combined with collaborative action among industry, government and civil society stakeholders, with a focus on concrete issues and geographies in non-competitive areas (such as environment, health and safety); efforts must be backed by trustworthy metrics and more transparency.

Synopsis

Participants debated if energy companies suffer from a lack of public trust, and if yes, what underlying causes and risks. The answer to this was not fully conclusive, as factors differ depending on geographies and sub-industries. Nevertheless, panelists agreed that there is a trust problem that poses a strategic risk since industry needs the trust of society to operate. This is especially so in today's information age, where misinformation/non-information is blended with correct information, and a high level of "energy literacy" is needed to navigate the layers of information.

Lack of deep customer understanding, transparency and sustainability were seen by some as factors underlying the poor public trust of energy companies. For example, when companies respond to events such as a natural disaster or an accident, messages are often competitive, not coordinated and defensive/narrow. In some sense energy companies are facing similar trust challenges as the financial services industry, which some argue has handled this rather well given the major public backlash following the financial crisis.

Some participants argued that the energy industry could benefit from more openness, transparency around assets and highlighting the critical role the energy industry plays in society. One way to lift the game collectively, pool knowledge and gain more trust is for industry to look at opportunities for working together in non-competitive areas such as environment, health and safety. Possible pathways included public commitments on sustainability, backed by action and measurable indices, e.g. qualifying to be listed on the Down Jones Sustainability Index, or partner with unbiased organizations to measure its emissions portfolio. Taking an integrated value chain/product lifecycle approach to this would further increase credibility.

The gas industry in North America has created some models for the rest of the energy industry to follow:

Industry leaders recognized the loss of trust that naturally follows the fall of an economic boom and tackled issues such as ground water contamination, wells in populated areas, and methane leakage head-on by publishing studies that used sound science and partnering with NGOs and the public

sector. Strategic coalitions among willing companies, the public sector, customers, and local communities can yield results.

Another question that was raised but not answered is how to engage with actors who are fundamentally against you.

Breakout groups on the 5 Principles

Within the energy for society initiative of the Forum's energy community, 23 CEOs of major energy companies, have developed and signed 5 general principles committing to:

1. Secure and affordable access to energy
2. Efficient energy systems
3. Responsible citizenship
4. Contributing to economic development
5. Promoting energy literacy

Some found the principles quite straight forward, focusing the attention rather in concrete application to ensure continued "social license to operate". This could for instance take the form of working best practices across company value chains, joint public and private action with civil society participation in specific geographies and industry segments or developing common metrics throughout an industry.

Energy Community Dinner

Wednesday 2 October, 19:00 – 21:00

Key points:

- The global economy has not yet recovered but has stabilized and is likely to strengthen slowly.
- The U.S. is on a growth path, but the government shutdown is casting a veil of uncertainty for consumers and financial actors, and a technical default cannot be ruled out.
- China is transitioning from a manufacturing and export-driven economy toward a domestic demand and service-driven economy. While the near term outlook is benign, the longer term is uncertain with key questions around housing and credit markets.

Synopsis:

Participants discussed the global economic outlook, focusing primarily on the U.S. and China.

The global economy's growth is still not robust, but has stabilized and is likely to strengthen gradually. As one speaker said, "Now we are in a normal economic crisis." Europe is seen to "have bottomed out" and significantly reduced the risks of Eurozone breakdown. Slow economic growth is expected going forward. In Japan there are signs of the country getting back to more stable growth. Emerging markets such as Brazil, Mexico and India have displayed signs of slowing economic growth.

The U.S. is on a growth path, but the government shutdown is casting a veil of uncertainty for consumers and financial actors with consumer confidence being a big issue. Some see the bipartisan gridlock in Congress as a constitutional move to "diminish" the presidency power of Obama. So far it has not backfired politically, but it creates huge uncertainty. Treasury and government debt have been increasing, and given the political gridlock, it cannot be ruled out that the U.S. could go in to technical default. If that happens, consequences are highly uncertain given the complex financial system and lack of procedures to cater for such a circumstance.

Speakers agreed that there are likely to be continued uncertainties for the U.S. economy while the overall longer-term U.S. economic outlook is positive, with the central forecast around two per cent growth. Interest rates are likely to stay low in coming years, although the ten years forecast is much more uncertain. Has quantitative easing in the U.S. been successful? One of the speakers argued it hasn't: If there is no market "hick-up", quantitative easing is not posing any problem. However, if interest rates go up, the Federal Reserve needs to decide what to do. Also, it is not clear how to get out of quantitative easing, as it could create a "deleveraging hangover."

Growing disparities in income and wealth are key challenges for the U.S. to avoid populism and a "voter's backlash" in years to come. Wealth has in recent decades trickled down to the middle class via the housing markets, which made the problem more acute when housing prices plummeted and unemployment rose. The housing market in the U.S. has now turned and is up 21 per cent in last 18 months.

The conversation then turned to China. As labour, capital and land costs rise, the country is trying to transition from a manufacturing-driven economy to a services-based economy. However, the unreliability of Chinese statistics hampers any GDP and other economic estimations. For instance, the national GDP number is 16% lower than the GDP addition of all provinces.

The public and private debt to GDP ratio has risen significantly. A major share of these investments is in infrastructure, as China has invested a lot in infrastructure and human capital. However, the economic viability of some of these investments jeopardizes the capacity of banks to recover their investment. The unwillingness of Chinese banks to recognize underperforming loans has created a large low credit quality loans portfolio. This in turn is creating uncertainty on banks and feeding a housing bubble that will ultimately burst. As a result, there is no mechanism to remove capital from sectors with overcapacity.

Talking about a soft landing of China, a speaker mentioned "What worries me most is that there appears to be no landing gear in China". For an economy that has displayed strong growth for the last 30 years, this could prove to become a problem with impacts in China and globally. He added, "The near term outlook for China is benign, the longer term more risky."

Disclosures
The views expressed are those of certain participants in the discussion and do not necessarily reflect the views of all participants or of the World Economic Forum.