6 for 2016: Global Energy Market Trends

Today’s energy landscape is evolving, and it’s becoming increasingly more difficult for organizations to know what will actually impact their business. A few key themes that could affect the way you purchase and use energy in 2016 are worth watching. Continue reading to prepare for a year of critical energy decisions.

Introduction

Today's energy landscape is evolving and it's becoming increasingly more difficult for organizations to know which variables will actually impact their business. Furthermore, many people within a typical enterprise have an opinion on how energy and environmental issues impact the bottom line. In today's multinational corporations, energy is important to not only energy managers and procurement professionals, but also sustainability officers, finance directors and even public relations teams. Having a view of the market everywhere your organization has operations is critical to the way you purchase, use and track energy.

The convergence of various energy and environmental disciplines, together with the ever-changing global market dynamics, makes 2016 an interesting year. A few key themes are important to watch, and this paper explores each of them in more detail to prepare you for a year of critical energy decisions.

1. Tomorrow's Carbon Goals are Shaping Today's Energy Supply
2. The United States is the New OPEC
3. Europe Pushes for Power Interconnectivity to Reduce Price Uncertainty
4. Brazil's Alternating Current and the Global Cyclical Climate
5. China Transforms Energy Markets with Coal, Currency and Crude
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Tomorrow's Carbon Goals are Shaping Today's Energy Supply

The recent COP21 summit signaled a major change – the desire of almost every nation to pursue a path of global carbon reduction and sustainability. Today, carbon markets are structured so that organizations can attain their sustainability goals, and this is redefining the economics of energy supply.

In December of 2015, representatives from almost every nation gathered in Paris for the 21st conference of parties, better known as COP21. Signatures from countries throughout the globe symbolized the emergence of a worldwide commitment to addressing climate change through carbon reduction. Officially, COP21's stated goal was to balance carbon emissions by the latter half of the century[1]. While carbon goals often target 2030, 2050, or beyond, those goals are pursued by making changes today. One of the most direct ways we see this shift is through the growing emergence of carbon markets. A carbon market essentially places a market-driven price on the emitting of carbon in a way that allows less carbon-intensive activity to become economically beneficial. As we approach a point where nearly half the world's population lives in jurisdictions with active carbon markets, carbon reduction has moved beyond the realm of politics and science, and into the economics of supply and demand.

"Carbon permits don't only mean added costs for carbon emissions. They can also represent a revenue opportunity for those ahead of the renewable curve."

For example, coal has traditionally proven to be a cost-effective means of generating electric power; however, it also emits a great deal of carbon compared to alternative sources. In an area where a carbon market exists, the price of carbon may be high enough to make consuming other sources of energy more cost effective. It may be beneficial to convert to a fully renewable option like wind or solar, or it could mean a switch to a less carbon-intensive option like natural gas, which generally requires only half the carbon permits of comparable coal generation, is more attractive. Depending on the framework of the particular market, a heavy user of coal not only has to pay more to acquire carbon permits, they may also have to purchase them from the excess permits allotted to their renewable-focused competitor. Thus, carbon permits don't only mean added costs for carbon emissions. They can also represent a revenue opportunity for those ahead of the renewable curve.

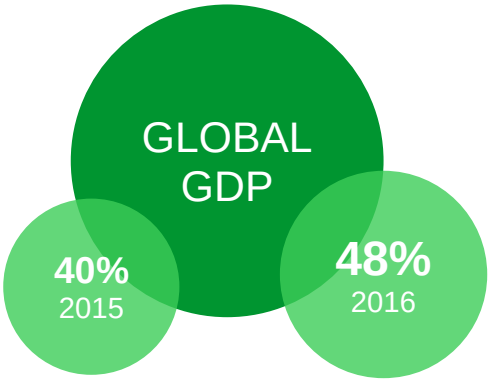
[1] http://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf

Importantly, carbon permits have no inherent "supply", so the relevant governing body can alter the supply of permits to alter the real-world energy supply. This means that with carbon targets in place for countries around the world, it is not a question of *if* carbon markets will impact the supply of energy, but *when*. The short answer: it's already happening.

From the original framework of the 1997 United Nations' Kyoto Protocol, a number of global carbon markets have emerged and adapted to meet the environmental challenges of the 21st century. While carbon markets are still in their infancy, they occupy an increasingly larger space in the global marketplace. By the beginning of 2015 the world boasted 17 separate emissions trading systems (ETS) which covered 35 countries, 13 states and provinces, and a number of major cities throughout the world. Even more impressively, areas participating in an ETS in 2015 accounted for more than 40% of the overall global gross domestic product (GDP). At current projections, that number is set to grow to nearly 50% of the world's GDP over the next year.

Figure 1

Areas participating in emissions trading systems will increase from accounting for 40% of the overall global GDP to nearly 50% in 2016.



Until recently, Europe largely overshadowed other parts of the world when it came to carbon markets; however, carbon markets continue to grow around the world. Today, carbon markets have become an important component of economies that would have seemed unlikely adopters not long ago. China, the world's leading emerging market and heaviest user of coal, is in the process of converting the existing carbon markets of its largest cities into a nationwide framework. In crude-rich Kazakhstan, carbon markets are viewed as a way to prepare the country's delicate economy for a future that may demand less of its oil. Furthermore, cities, states, and nations with quite different backgrounds are finding common ground on carbon trading, as Brazil, Russia, Thailand, and others all look to adopt a policy of their own.

In the United States, one of the potential impacts of the Clean Power Plan (CPP) is the expansion of carbon markets. This could mean the expansion of the Regional Greenhouse Gas Initiative (RGGI) which operates as a multi-state carbon market in the Northeastern US. For US states considering joining this coalition, the impacts of carbon markets and RGGI, in particular, are already apparent – in 2012, RGGI states reduced the emission of greenhouse gases by 40% from 2005 levels, even as the economy of those states expanded by 7%[2].

Broadly speaking, the ongoing expansion of carbon markets means looking at the traditional supply and demand picture of energy commodities is no longer sufficient. Carbon markets are specifically designed to reshape the market's balance and change the supply of energy. For those that refuse to adapt, this may translate into considerably higher costs. However, for others, the expansion of carbon markets will represent an opportunity in this new world in which renewable generation will be both economically and altruistically beneficial.

[2] https://icapcarbonaction.com/en/status-report-2015

The United States is the New OPEC

After playing a central role in the steep decline of oil prices over the past year, US oil production is preparing to once again redefine its role in the global crude market. Due to the responsiveness and resilience of unconventional oil producers, the US is poised to replace OPEC as the world's swing producer guiding global prices.

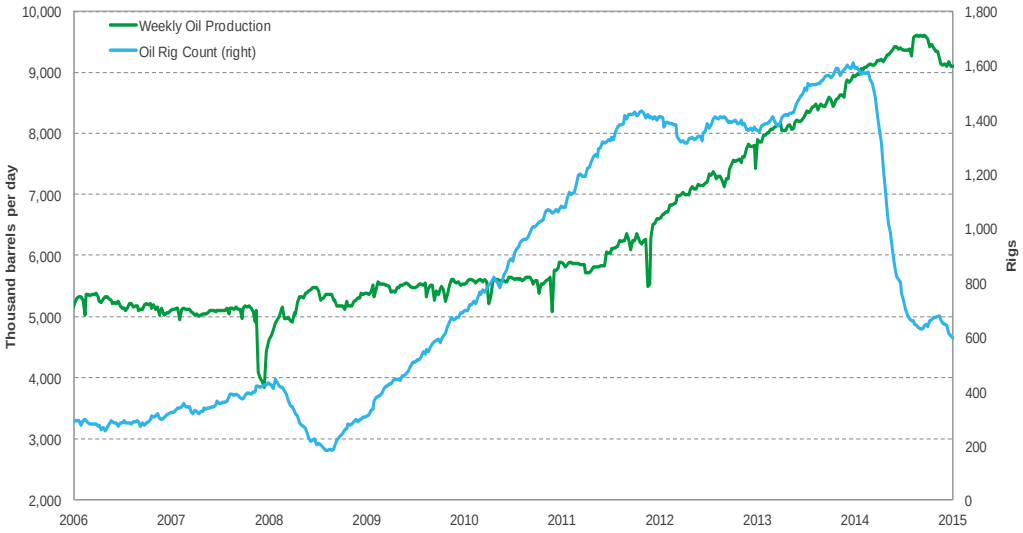
In November of 2014 a highly anticipated OPEC summit in Vienna concluded with a Saudi-led strategy to "defend market share" – a plan not so subtly designed to challenge a wave of non-OPEC production growth led by the United States and largely driven by unconventional oil (i.e. shale). A little more than a year later, there are increasing signs that the Saudi strategy is working. After peaking at 9.6 million barrels a day (mmbbl/d) in mid-2015, the most recent US Energy Information Association (EIA) data indicates current US production levels are just over 9.0 mmbbl/d, and have ventured dangerously close to negative year-on-year growth in the final months of 2015.

Meanwhile, layoffs, mounting debt, and plummeting oil rig counts have become standard fare for the nation's once-booming shale industry. A similar story can be seen among a number of non-OPEC oil producers throughout the world, with 2016 expected to show production declines from Mexico, Norway, Russia, and Oman, among others. While these global production declines are the logical outcome of OPEC's strategy, 2015 offered a key lesson to global oil markets – betting against the innovation and resilience of America's oil producers is often a losing wager. As such, American production (and not OPEC's) is uniquely situated to act as the world's new swing producer in setting global oil prices in the year ahead.

To that end, Figure 2 illustrates the ability of US oil to defy basic production logic. As prices plummeted beginning in 2014, US oil rig counts dropped accordingly. However, through the use of enhanced drilling techniques and increased efficiency, American production continually increased despite a 60% drop in operational rigs.

Of course, increased efficiency, however impressive, is not infinite. In recent months, the US oil rig count has resumed its decline – this time dragging US oil production along for the ride. As West Texas Intermediate (WTI) crude, the US oil benchmark, touched a low of $37.75/bbl in August. Many in the industry had long estimated a breakeven price for much of the American shale industry of more than $60/bbl. When American production finally began to noticeably decline, bullish speculators hailed the emergence of a long-overdue inevitability. Mounting debt, expiring hedges, and an oil price poised to trade in apparently unprofitable territory for the foreseeable future ultimately prepared to drag the US-led shale boom back to normality.

Figure 2
US Oil defies basic production logic with prices plummeting in 2014 and oil rigs dropping accordingly.



Just as US production defied fundamentals in rocketing higher, it is now set to defy the expectations of many calling for a prolonged production plunge. Certainly, the US oil industry is under intense pressure in the current climate. Producers forced to devote greater than 80%

of their operating cash flow just to debt service obligations now account for millions of barrels a day in current production[3]. But, as with most innovative conquests, in difficulty there is also opportunity.

While OPEC is uniquely suited to act as a global swing producer when prices move higher than the market might want to accept, the independent producers behind America's oil boom are the ideal candidate to pick up the swing role when prices are uncommonly low. Iranian oil minister Bijan Zanganeh highlighted the issues facing the once-coordinated OPEC, calling for production cuts designed to lift oil to $70-80/bbl, while reiterating that Iran had no intention of making production cuts of its own[4].

"OPEC's oil-focused economies are struggling, with even the traditionally stable Saudi economy burning through foreign reserves."

A somewhat similar sentiment can be seen in other OPEC members such as Algeria and Venezuela, as well as leading non-OPEC producers like Russia. OPEC's oil-focused economies are struggling, with even the traditionally stable Saudi economy burning through foreign reserves[5]. Countries desperately attempting to balance budgets through oil sales are hardly interested in slashing that already limited income even further in order to lift prices sometime in the future.

Compare that to the US where production cuts are much less political and much more a matter of simple economics. Production is declining because it is unprofitable at current prices. Once enough production moves offline – whether in the US or elsewhere – prices will claw their way higher. Once those prices reach a sufficient level – the much discussed $60/bbl breakeven point or perhaps even lower – some of that production will return, eventually sending prices lower once more. Simply put, despite boasting less than 1/3 of OPEC's output at its peak, US production is poised to act as the world's new swing producer, while OPEC's market share strategy continues to divide its members.

Illustration 1
Vertical oil rig on a prarie in the western United States.

In the US, vertical rigs are capable of moving from idle to operation in less than a month[6]. With nearly 250 vertical rigs taken offline in 2015, the potential for a rapid production swing is substantial. Old wells can be combined with new techniques to cut costs and quickly respond to more favorable prices. In the same way that America's shale boom pulled the floor out from the crude complex last year, it is uniquely situated to provide a ceiling in the year ahead. While shale economics can't wholly eliminate price spikes and geopolitical exposure, they have already proven ably suited to redefine OPEC's role in the global market at the same time that they redefine their own.

[3] http://www.eia.gov/todayinenergy/detail.cfm?id=22992
[4] http://fuelfix.com/blog/2015/10/19/iran-pushes-opec-to-curb-production-to-raise-prices/#34003101=0
[5] http://www.bloomberg.com/news/articles/2015-10-04/saudi-foreign-reserves-drop-to-the-lowest-level-in-32-months
[6] http://www.reuters.com/article/2015/09/16/us-oil-usa-fracking-idUSKCN0RG0UR20150916

Europe Pushes for Power Inter-connectivity to Reduce Price Uncertainty

Today's European power markets are evolving as they work to achieve the European Union's vision of interconnectivity. This newly formed interconnectivity will change the way markets are analyzed, going beyond standard fundamentals, to also consider the rate at which these power markets can adapt and change.

Although the majority of European economies adopted a single currency thirteen years ago, European power markets remain disconnected. With a goal of increasing the grid's connectivity, European countries are pursuing both physical and digital interconnections that will reshape traditional power pricing. Thus, any effective forecast of European power prices must first acknowledge the changing landscape of European power interconnectivity, and then determine how to apply those changes to regional prices. While this process can quickly become complicated, the bigger picture is actually quite clear – interconnectivity in the European power grid will continue to increase in the coming years. The result will be increased liquidity, decreased volatility, and lower average prices compared to the current grid.

Before further exploring just what these trends will mean for European power budgets, it is useful to first describe exactly what interconnectivity in power markets means. Essentially, there are two different types of interconnectivity. The first type is a physical connection (e.g., long-distance transmission lines), while the second is the digital trading platform (e.g., the recently-adopted, flow-based coupling system). While a physical connection is fairly straightforward, the digital trading mechanisms can initially seem quite complex.

In terms of physical connections, the European Union has a 2020 target for all countries to have 10% of total power capacity connected via physical networks to neighboring states[7]. While some countries such as Spain and the UK must accelerate existing infrastructure to meet this goal, many nations, particularly in the Nordic region, already far exceed these requirements.

Illustration 2
Power lines stretching across the plains of the United Kingdom.

A particularly relevant example of a physical connection is a planned interconnector between the UK and Norway. The project has achieved final financial approval and the ownership agreement has already been signed. The plan calls for the installation of a 730 km cable, set to be complete in 2021, which will be the world's longest undersea electricity cable. Because the UK has some of the highest electricity prices in the continent, the physical connection with Norway's market, which is often the lowest priced electricity in Europe, will serve to converge the currently disparate prices.

Of course the Norway-UK interconnection is just one of many current projects set to transform the physical transfer of energy throughout the region. In February of 2015, the UK and Belgium signed the final agreement for the 1 GW Nemo interconnector between the two countries, and the 200 MW Sorgente Rizziconi interconnector between Sicily and mainland Italy is expected to be operational by the beginning of 2016. Further, Italy's 1.2 GW Piossasco-Grand'Ile line with France and the 1.0 GW Italy-Montenegro line will likely be

[7] http://www.bloomberg.com/news/articles/2015-02-20/france-spain-inaugurate-power-link-doubling-connection-capacity

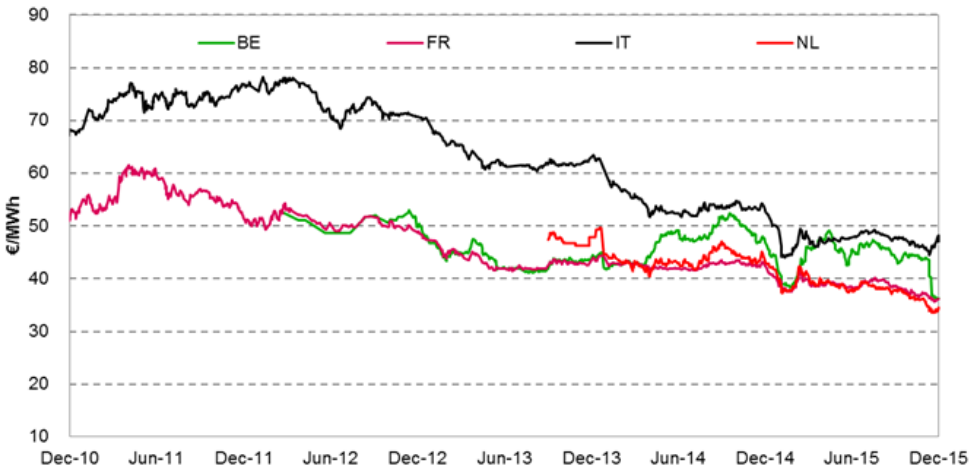
commissioned in 2019. Simply put, there is a growing continental trend towards adding substantial physical connections in order to link European power markets and achieve the stated goals of the EU.

Amid the ongoing effort to increase the physical connections between European countries, there is now a growing push to boost those effects through the implementation of a shared digital trading platform. For example, Central Western Europe has recently become better connected through the adoption of flow-based coupling (FBC). FBC refers to a new and more efficient approach for cross-border power transmission. Traditionally, capacity between two countries or areas was auctioned to market participants. While this method should be market-driven, it suffered from a lack of complete information in terms of power flows across the broader region. With FBC, transmission connections are implicitly available and necessarily direct the flow of power in the most efficient manner[8]. Ideally, all parties are able to benefit from a process that eliminates the need to acquire transmission capacity once an arbitrage opportunity is identified.

Ultimately, the combination of this strategy alongside the necessary physical framework is a powerful force enabling stable prices throughout the European power market. Disparities in prices are minimized due to the ease with which buyers and sellers can engage in short and long-term transactions. Purchases and sales will be conducted with more confidence fostered by increased liquidity and reduced volatility. Outages, while not irrelevant, will have their effect greatly reduced as the impact of any generation loss is spread throughout the continent rather than focused within a specific country or region.

Even as the broader goal of full interconnectivity remains a work-in-progress, the areas that have seen it implemented highlight the impact on the flow of power and the corresponding prices. After France, Germany, Belgium and the Netherlands implemented FBC, power flows from Germany to Belgium increased immediately. Even more substantial was the jump in power transmission from Germany to the Netherlands - The average export to the Netherlands the first week of FBC was 3.6 GW, which was an increase of more than 50% from the prior weeks. Furthermore, the Belgium day-ahead price settled below the comparable Dutch for the first time since the beginning of March, recording a €1.84/MWh drop to €37.56/MWh. In Figure 3, the convergence of Dutch, French, and Belgian power prices illustrates the potential impact of interconnectivity. Eventually, plans to further connect the Italian grid to the broader continent, including a French-Italian interconnection, could prompt Italian prices to converge with Central Western European prices.

Figure 3
The convergence of Dutch, French and Belgian power illustrates the potential impact of interconnectivity.



The question of course is, “what does this mean for future prices?” Undoubtedly, Europe is eagerly pressing towards a more interconnected future which will reduce uncertainty and lead

[8] https://www.belpex.be/services/market-coupling/about-market-coupling/

to a general flattening of prices among participating nations. With that understanding, the key element in the forecasting process is accurately determining the exact timeline and degree of effect each physical and trading interconnection will have. It means going beyond the standard fundamentals of power pricing and monitoring the progress of physical projects as well as the commitment to politically-based changes such as flow-based coupling. Ultimately, it means changing the way we analyze power markets to account for a reality in which power markets can actually adapt.

Brazil's Alternating Current and the Global Cyclical Climate

The El Niño climate event, which has returned in force, alters temperatures and rainfall patterns on a global scale. El Niño's presence has brought much needed rainfall to Brazil, which relies heavily on hydroelectricity to meet national power demand.

In Brazil's electricity sector, one of the primary short-term price determinants is the availability of hydroelectricity. With unmatched access to the Amazon rainforest's massive waterways and ~45 GW of hydroelectricity consumed every hour, Brazilian utilities have the ability to bring another 41 GW of hydroelectric capacity online in the next five years. However, the past four years brought one of Brazil's worst-recorded droughts, which severely impacted the country's most sensitive hydroelectric regions. Because of the drought, the amount of fossil fuels burned for electricity and prices had skyrocketed. Yet over the past several months, we have seen enough rainfall to ease drought conditions and lower prices to the legal floor (~8 USD/MWh).

Before the drought began in 2012, hydroelectricity met more than 75% of the country's total electricity demand and fossil fuels made up ~7% of the generation mix. Between 2012 and 2014, the drought conditions grew so intense that water levels behind the hydro dams fell to one third their typical seasonal levels. Because the power grid is so dramatically tied to the electricity generated from these dams, power continued to be produced and in turn the dams continued to drain. In 2014, fossil fuel generation provided more than 20% of the country's electricity demand (in the heaviest demand region, this was a sevenfold increase) and hydro generation fell to providing 70%, even as Brazil's economy and power demand was growing.

Figure 4 illustrates the inverse relationship between the spot price of electricity (Reais per megawatt hour) and the amount of hydroelectric resources available (measured in percentage of reservoir fullness). With normal rainfall patterns, power prices averaged below R$ 50/MWh with occasional spikes. Yet as the drought began in 2012 and intensified, prices reacted by climbing as storage levels fell. With easing demand at the end of 2015 and moderate rain relief seen in early 2016, prices returned rapidly to pre-drought levels.

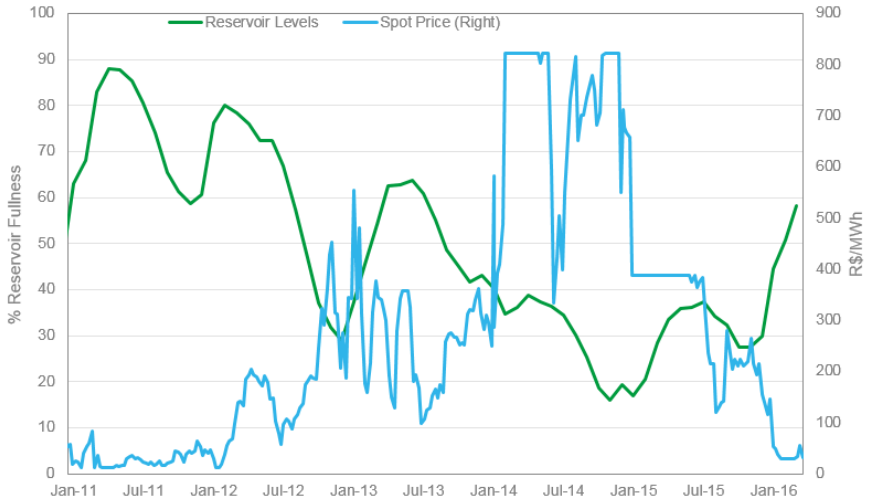


Figure 4
As the drought began in 2012 and intensified, prices reacted by climbing as storage levels fell. Following increased Rainfalls, prices returned to normal levels.

A typical El Niño season brings lots of rainfall, specifically in the South and Southeast regions. While the weather patterns affect disparate regions differently, the general pattern bodes well for hydro reserves. As a result of the El Niño phenomenon, the regions with over 70% of the country's reservoirs have seen drought relief and we have seen enough rainfall so far this year to fill most reservoirs above their five-year average levels.

While there are a variety of important elements in determining Brazilian electricity prices, including demand loads, generation additions, global LNG and crude oil prices, the relationship between hydroelectric reservoir levels and price is clear. As long as these normal weather conditions persist, prices across most of Brazil will remain reasonable.

China Transforms Energy Markets with Coal, Currency and Crude

In recent years, China has been a global demand growth leader for a range of energy commodities. As markets nervously assess the potential slowdown of the world's leading emerging market, China's once reliable demand growth is uncertain, and the outcome could single-handedly prevent or encourage a recovery in global crude and commodity prices.

In the current economic climate, it is hardly a secret that the future of the Chinese economy is a big deal. China has been a global growth leader throughout the 21st century, with official GDP growth rates often hitting double digits. Of course, that type of growth demands a great deal of energy – meaning that China's modern-day industrial revolution has made the country a global leader in demand growth across a broad spectrum of commodities.

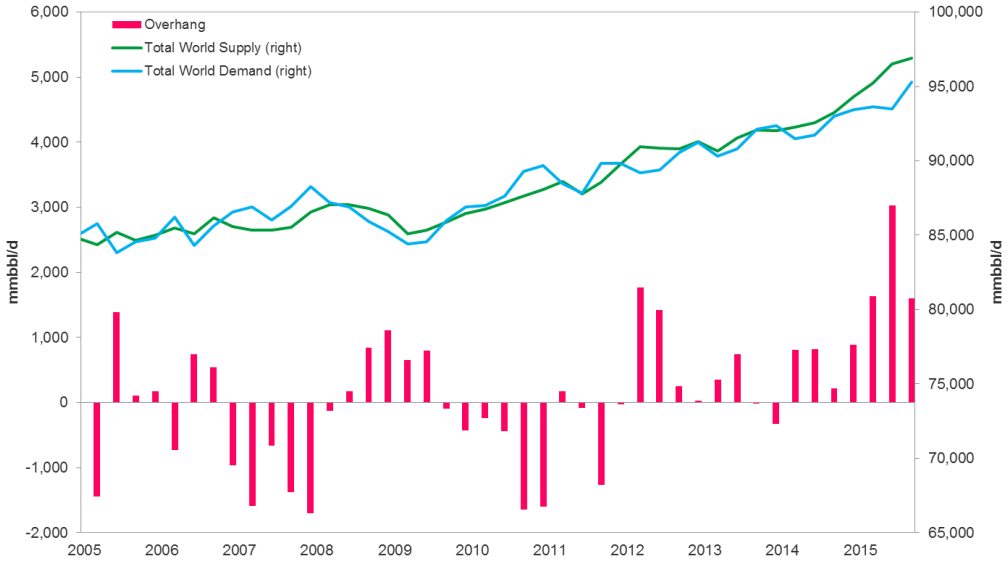
However, as we examine the Chinese market of the present day, the world's second-largest economy is mired in uncertainty. Official growth rates have dropped below 7%, with many western economists concluding that actual growth could be in the 4-5% range[9]. Furthermore, Chinese currency devaluation in August of 2015 set the stage for a complex but critical impact on the nation's energy imports. Moreover, in the 10 trading days following the devaluation, Brent crude's prompt price fell nearly 15%, and a September hike for US interest rates went from probable to near impossible as economists wondered whether China had fired the opening round in a global currency war.

A nervous global economy is coming to the conclusion that China is set for growth at a continually slower rate. Ultimately, the degree to which Chinese demand exceeds or disappoints these expectations will move the prices of commodities throughout the world. Given the complexity surrounding China's impact on energy markets, examining China's role in shaping crude oil prices serves as useful case study. Today, China is the second-largest consumer of crude and crude products, and the largest in terms of net-imports[10]. In recent years, China's surging middle class has promoted a range of crude-friendly growth. A sharp uptick in individual auto sales has supported the growth of diesel and gasoline demand, while an increase in commercial and personal air travel has lifted jet fuel consumption. All told, the International Energy Agency (IEA) expects China to consume more than 11 million barrels a day (bbl/d) of crude products in 2015 – more than 10% of total global demand. Moreover, the agency estimates that Chinese oil demand will grow by more than 300,000 bbl/d in 2016 year-on-year[11].

The number is significant for reasons beyond China's own growth. Since peaking in mid-2014, the price of crude oil has been cut in half. US crude fell from more than $100/bbl in the summer of 2014 to barely above $40/bbl by the following spring. In headline after headline, one fundamental reason has been cited behind the drop – a global supply glut. In other words, the global supply of crude oil has outpaced demand, with the latest IEA estimates anticipating a 2.1 mmbbl/d oversupply gap for 2015, as illustrated in Figure 5.

[9] http://www.wsj.com/articles/chinas-better-than-expected-gdp-prompts-skepticism-from-economists-1445269199
[10] http://www.eia.gov/beta/international/analysis.cfm
[11] https://www.iea.org/media/omrreports/fullissues/2015-10-13.pdf

Figure 5
Global supply of crude oil has outpaced demand with the latest IEA estimates.



While declines in non-OPEC production will likely assist in closing that gap in the years ahead, China is undoubtedly the world's pivotal player on the demand side. Using IEA estimates, Chinese demand growth in 2016 could single-handedly cut the global supply glut by nearly 15%, and could offset more than 50% of Iran's anticipated production gains following the removal of international sanctions. Of course, whether such an increase in demand could sufficiently lift oil prices remains to be seen. What is much more certain is that should Chinese demand growth fail to materialize in the year ahead, a price recovery for the crude complex becomes highly unlikely under even the most bullish interpretation of the broader market.

"Chinese demand growth in 2016 could single-handedly cut the global supply glut by nearly 15%, and could offset more than 50% of Iran's anticipated production gains."

In terms of global energy markets, China moves more than just oil prices. The country's greatest impact is from an entirely different fossil fuel – coal. China has been, and will continue to be, the essential price mover in the coal market. It is the world's largest carbon emitter, and the world's largest coal consumer, burning ~4.2 billion short tons a year. That figure accounts for ~47% of total global consumption and is more than four times higher than levels seen in the United States[12]. As such, every data point regarding the Chinese coal market is analyzed and scrutinized in determining global coal prices.

A perfect example of China's impact can be seen through the effect of a recent EIA report. The EIA released a study finding that China's coal consumption and production was consistently underreported over the past decade[13]. Instead of boosting prices on the upward revisions, prices have since fallen due to lower import figures and the implications for broader Chinese demand trends. Essentially, upward revisions to past demand eventually translated to bearishness for the global coal market because it meant a steeper than expected drop in Chinese consumption in order to reach current levels. In other words, without any fundamental change, global coal prices sank because a nervous market continues to search for any sign that China's future demand growth could falter.

This decline in Chinese coal demand has been largely driven by urban centers' growing middle class demanding higher air quality: even though the country continues to increase electricity demand. Natural gas and the renewables infrastructure is making up the bulk of this new generation. With China leading the way, coal prices have fallen more than 60% from highs above $130/tonne in 2011 to ~$50/tonne today, resulting in similar price declines in Europe and North America, and causing repeated waves of coal company bankruptcies and high-cost mine closures. Simply put, the shifting dynamics of Chinese

[12] http://www.eia.gov/beta/international/
[13] http://www.eia.gov/todayinenergy/detail.cfm?id=22972

consumption have directly and indirectly led to job losses, market swings, and changes in generation mix throughout the emerging and western world.

Illustration 3
Coal ship sailing along the Yangtze river in China.

During the next three years, many aspects beyond China's own economy will change. The fact remains that Chinese economic growth is absolutely critical in estimating when oil prices could begin to recover, or whether coal prices have hit bottom. In the case of each commodity, any thorough analysis must move beyond the market at hand, and account for supply and demand trends throughout the world in order to anticipate future price movements. While China is hardly alone in driving crude or coal prices, the country's changing dynamics have already proven more than capable of single-handedly moving global markets. Whether or not Chinese growth continues, their importance in shaping energy prices across the world will undoubtedly persist.

Global LNG Export Capacity Expands

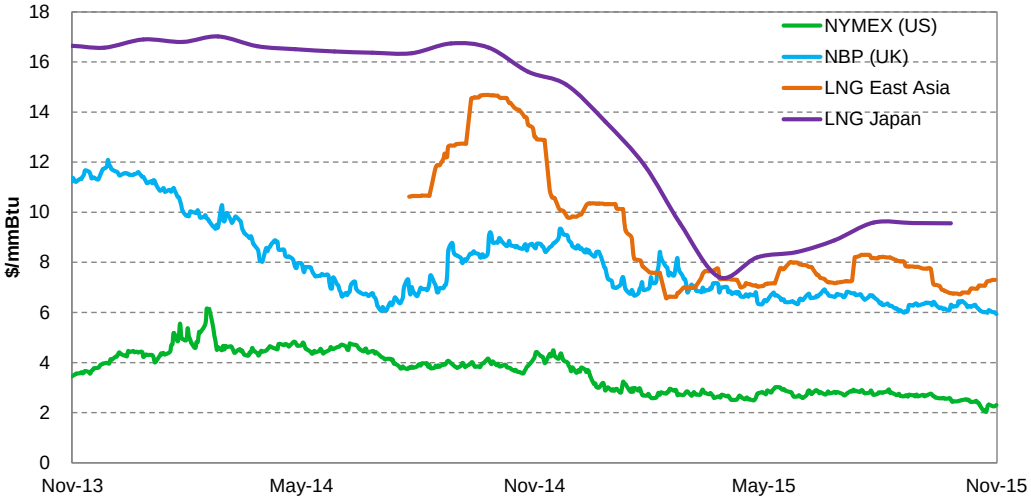
Over the next few years, global LNG export capacity is set to increase dramatically. However, the demand outlook for key markets is sluggish, and should result in limited risk to the US gas market in the near-term leaving questions about long-term global supply and demand variables.

Low Brent crude prices and declining demand in key countries contributed to a deflated LNG market in 2015, as illustrated in Figure 6. Japan and Korea collectively represented nearly half of the LNG market in 2014, but the return of nuclear power generation in Japan and increased coal consumption in Korea has left the market flooded with LNG. Cargoes originally due for Northeast Asia are now landing on Europe's shores, contributing to depressed prices in the region. There does not appear to be an end in sight for LNG demand either, as even China is turning away shipments due to an economy that is growing less than expected.

In addition to weakening demand, a plethora of export facilities set to come online globally over the next few years will only worsen the gap. Australia is looking to expand its presence in the market, adding nearly 14 Bcf/d by 2018, while cargoes have already been freed up from existing facilities in Malaysia, Australia and Qatar. With many projects having received final investment decisions and regulatory approval, supply could outweigh demand until 2025 by some estimates.

In the first quarter of 2016, Cheniere Energy will become the first LNG exporter in the US after their facility at Sabine Pass, Louisiana enters into service. The inaugural shipment is just the first of many new export terminals in the gulf coast vying for a spot in the LNG market. However, considering all the attention LNG has received in the media – no doubt amplified by opposite positions taken by activist investor billionaires Jim Chanos and Carl Icahn – the actual impact on the domestic gas market will likely be much less significant than the attention it recieves in the media.

Figure 6
Low Brent crude prices and declining demand in key countries contributed to a deflated LNG market in 2015.



Currently, five export facilities are expected to be built in the US by 2020 touting a combined liquefaction capacity of just under 10 Bcf/d. Meanwhile, the amount of capacity set to come online by the end of 2016 is estimated to be around 3 Bcf/d, and exports are expected to be even lower, reaching 1 Bcf/d by December to average approximately 0.5 Bcf/d for the year. This figure represents just a fraction of the overall demand picture, and is further minimized when taking into account healthy production and storage levels heading into winter months. Considering the vast quantities of untapped wells in Marcellus and Utica, it could be a several years before LNG makes a meaningful dent in the US market.

United States gas dynamics are just half the picture when assessing the implications of a global commodity. Looking abroad, a shift in market fundamentals over the last year signals LNG exports from the US, even when completed, may not have a place to go. LNG certainly has the potential to change the natural gas landscape throughout the world – and already has in several ways – but those effects will take years to develop in the US gas market. In the near-term, LNG demand will not be significant enough to influence prices, while longer-term global supply and demand variables put export numbers in question for the next several years.

Conclusion

The energy markets throughout the world will continue to rely on and impact each other. Having a complete understanding of what those relationships mean to your enterprise could impact the way you secure energy supply and how you monitor consumption in 2016. Continue to watch the market dynamics closely as the landscape is sure to evolve and take new shape in the year to come.

About Energy & Sustainability Services

Schneider Electric Energy & Sustainability Services has an extensive global team with detailed expertise and experience in every energy market. Our focus is helping our clients to be more effective and act on opportunities across all areas of their organizations' energy and sustainability management program: supply, demand and sustainability.

If you have a specific question about a market that impacts you and your business, contact us at seESS.co/watch2016.

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