PÖYRY POINT OF VIEW:
SHAPING THE NEXT FUTURE

Europe's energy future – the shape of the beast

How can we meet the decarbonisation challenge?

Decarbonisation requires large scale investment by European energy companies, but threatens their existing revenue streams. Financial investors are becoming wary of the power sector, and new sources of capital are urgently required. Meanwhile, Europe faces a policy dilemma; whether to rely on markets and a strong CO_2 regime, or to build national solutions with government-channelled investment. Whichever way this dilemma is resolved, the traditional role of the electricity companies must adapt: embracing innovation is the first necessary step to the future world.

On our path to decarbonisation, the following questions will need to be addressed:

- What certainty is there that the longer term decarbonisation agenda will not be derailed? Will first-mover countries and companies be left stranded?
  - Will government policies continue supporting renewables in the face of cost concerns?
  - Will energy security objectives override decarbonisation in the development of national energy policy?
  - Can decarbonisation policies deal with economic and political transfers between European countries?
  - Without global agreement on the climate change agenda, can a decarbonisation policy framework credibly be delivered in Europe in the near term?
- Will fragmented (and diverging) market rules fatally undermine the objective of a single energy market?
- How can investors manage the level of policy risk which accumulates under a decarbonisation regime?
- Will the markets provide utilities with even a fraction of the unprecedented amount of finance they require?
- Could new long term investors emerge to provide equity and, consequently, end up becoming asset owners?
- Can innovation and deployment of the more advanced technologies blossom without a long term policy framework?

GROWING INVESTMENT REQUIREMENTS ARE CHALLENGED BY ESCALATING RISKS

The electricity systems of Europe must go through a sharp transition in the coming years to meet ambitious policy targets for renewable energy and decarbonisation. Grand scale investment at unprecedented levels is required, with a need for immediate and sustained action. The European Commission flags that investment of around €1 trillion will be needed by 2020 alone 'to replace obsolete capacity, modernise and adapt infrastructures and cater for increasing and changing demand for low-carbon energy'[1]. By 2035, the IEA estimates a total investment expenditure of around €2.5 trillion in the European electricity system, half of which is in renewable generation[2].

Investment is needed right across the traditional 'value chain', including generation, transmission and distribution, as well as 'smart' energy systems to influence consumer behaviour. The need for investment of such scale has been accelerated by the

DECARBONISATION:

The EU has committed to reduce greenhouse gas emissions to 80-95% below 1990 levels by 2050 and to a 20% share of renewables in energy consumption by 2020. Some Member States have opted to supplement the EU targets with national goals. For example, the UK Government has committed to an 80% reduction in CO_2 emissions by 2050 (from 1990 levels). The Committee on Climate Change highlights that this relies on substantial decarbonisation of the power sector by 2030, meaning that emissions from the power sector need to be reduced by around 40% by 2020, and by around 90% by 2030.

"Europe faces a policy dilemma; whether to rely on markets and a strong CO_2 regime, or to build national solutions with government-channelled investment."

early closure of significant quantities of generation (oil, coal and nuclear) due to wider environmental and perceived safety issues. The challenge of attracting new sources of capital is heightened by the nature of the new investments and the level of uncertainty that potential investors now face. This arises from a combination of market, technology and policy risks, each of which is at a historically high level. Low carbon generation technologies tend to have high capital cost, long lead times and higher up-front development costs compared with conventional technologies, and most (e.g. nuclear, wind, PV) have low marginal operating costs which in turn contributes to increased market volatility.

In the current climate, spurred by the Eurozone crisis, equity investors require comparatively higher compensation for risks. This trend has driven a shift towards debt finance for utilities. Many utilities have been pressured into a sale of network assets to maintain their credit ratings. However, this has resulted in greater exposure to the more risky generation and retail sides of their business. The investment needed to deliver a decarbonised electricity industry cannot be accommodated on the balance sheets of the existing utilities under existing gearing arrangements. The industry will need access to significant new sources of capital to deliver on these expectations.

COMMODITY PRICE UNCERTAINTY ADDS DOUBT TO ECONOMIC DECISIONS

There has always been uncertainty over future fuel prices, but today this is at extraordinarily high levels. For example, credible future scenarios range from worlds with gas prices linked to (peak) oil to worlds with abundant shale gas supplies[3] and oil price de-linking which dramatically lowers the market price. Both scenarios can be justified, and the divergence in anticipated gas prices between these scenarios is considerable. This uncertainty is especially important for generation technologies which are not reliant on conventional fossil fuels, bringing the danger of fuel price movements stranding investments. **Can generation investments transcend this level of commodity price uncertainty?**

[1] 'Energy 2020: a strategy for competitive, sustainable and secure energy', European Commission, November 2010.
[2] In its 2011 World Energy Outlook, the IEA forecasts that OECD-Europe will need to invest US$2.892 trillion (around €2.5 trillion) in power generation, transmission and distribution by 2035.
[3] The effect of shale gas in reducing US gas prices has been dramatic, and the consequent shift from coal to gas generation has reduced US CO_2 emissions sharply. Shale gas in Europe is fraught with concerns over public acceptability. The resulting political dilemma exacerbates European gas price uncertainty.

Conventional wisdom no longer applies

TECHNICAL AND ECONOMIC DELIVERY OF LOW CARBON TECHNOLOGIES AND SUPPORTING INFRASTRUCTURE IS NOT ASSURED

The pace of technical and economic development of low carbon technologies is uncertain, but the decarbonisation vision demands a more rapid development across a wider range of technologies than has ever previously been delivered. Politics aside, there are real questions over the future of new build nuclear energy as a (relatively) cheap means of generating electricity, and little progress has been made in demonstrating carbon capture and storage at scale in power generation. Costs are expected to reduce as technologies mature and learning benefits are captured. **But will these benefits be realised and at what rate? Which technologies will fail to deliver the expected advances?**

Wind is one of the main renewable technologies being installed at scale[4]. It is typically sited in remote areas away from centres of population and demand, and requires large scale investment in distribution, transmission and interconnection. Without supporting network investments, wind generation faces delayed connection, reduced market 'capture' prices and constrained levels of production:

- EURELECTRIC has identified that a lack of investment in network infrastructure is a significant barrier to renewable investment[5]; and
- ENTSO-E in its latest ten year network development plan has identified a need for €104 billion of investment in new or refurbished extra high voltage transmission lines[6].

Despite the promise of €9 billion from the EU's 'Connecting Europe Facility' by 2020, the limited degree of international cooperation and the weak political commitment to overcome local opposition to network projects threaten delivery. **Will delayed delivery of critical network infrastructure prevent the build of wind generation, in the long- as well as the short term?**

The anticipated transition from high to low carbon generation technologies is being accompanied by an increase in small scale, decentralised generation such as solar PV installed on house rooftops. Although individual installations are small and commercially isolated from the market, cumulatively they have reached a material scale with significance for the energy mix and the operation and even funding for the shared networks. **What scale will decentralised generation achieve in the future and what impact will it have on the market and on networks?**

NOT AT ALL CLEAR WHAT THE NATURE AND SCALE OF DEMAND WILL BE

Future demand is a critical input into the assessment of potential investment in electricity generation; an expectation of continued demand growth is at the heart of the price formation in the electricity market. But the evolution of electricity demand is highly uncertain: on one hand, drivers such as the Energy Efficiency Directive and on-going depressed economic conditions have a downward effect on demand, while the widely-discussed future electrification of heating and transport would sharply increase demand. **Where does the balance between these drivers lie?**

The role of the demand side in the energy market is also changing. The traditional paradigm treats demand as being inelastic, with generation flexing to meet it. This model is increasingly outmoded with 'smart' energy solutions offering the promise of flexible and responsive demand to balance autonomous sources of generation. Smart meters are being rolled out to premises across Europe. But the potential flexibility that smart energy offers can only be unlocked if the market provides incentives to deploy it. **How much demand side flexibility can smart solutions provide? Will demand compete effectively with generation?**

MISSING MONEY:

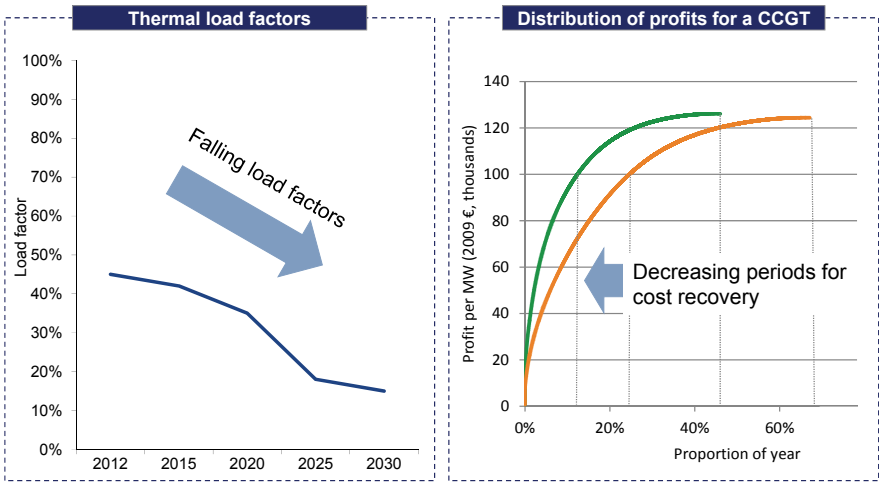
To be financially viable, expected revenue from a potential generation project must, at least, allow recovery of fixed and operational costs and also provide an adequate return on the investment. At times when new capacity is needed for security of supply but expected revenue is inadequate, there is a 'missing money' problem. There is debate about whether this is a real phenomenon in effective energy-only electricity markets, and the causes are also disputed. Capacity mechanisms are sometimes proposed as an option for plugging the 'missing money' gap for investors in thermal capacity.

INTERMITTENCY CAUSES A CONTINUED NEED FOR CONVENTIONAL GENERATION BUT CHALLENGES THE ECONOMICS OF INVESTMENT IN RESIDUAL CAPACITY

With increased penetration of intermittent generation, the system needs flexible capacity to operate when output from intermittent sources is low. But the existence of intermittent generation with low marginal costs (supplemented by priority dispatch and production-based support schemes) reduces the load factor for conventional plants. This contributes to heightened price volatility and volume risk, with financial returns potentially squeezed into a few hours with very high prices, as shown in Figure 1. The option contracts which could be used to hedge these risks do not exist widely. Truncated hours of operation and increased exposure to price and volume volatility are not conducive to investment in the residual capacity that the system needs.

Is investment in conventional generation capacity viable in this context?

FIGURE 1 – INTERMITTENCY REDUCES CCGT LOAD FACTORS AND PERIODS FOR COST RECOVERY



[4] On 27 September 2012, the European Wind Energy Association (EWEA) issued a press release reporting that EU countries have installed more than 100GW of wind generation capacity.
[5] "20% Renewables By 2020 A EURELECTRIC Action Plan", page 21. EURELECTRIC October 2011.
[6] "10-Year Network Development Plan", page 17. ENTSO-E 5 July 2012.

Policy risk is increasing

POLICY RISKS ARE BECOMING PARAMOUNT

Whilst market risks can be hedged to varying degrees, the same does not apply to policy or regulatory risk, which continues to increase as policy makers intervene in investment decisions. Investors are moving into a situation where exposure to market risks is increasingly being replaced by exposure to unhedgeable regulatory risks. This is not a comfortable swap. **Can investors accept high levels of policy risk which accumulate under increasingly interventionist regulatory regimes?**

LOW CARBON SUPPORT POLICIES ARE BEING QUESTIONED

The interaction between policy objectives around security, sustainability and affordability is a perpetual balancing act. Renewable energy policy gained credence across Europe and beyond, as its advocates succeeded in forging an alignment between these three objectives; promoting renewables as:

- a sustainable energy source;
- reducing reliance on imported fuels and thereby increasing diversity and security of supply; and
- mitigating exposure to volatile (and by implication increasing) fossil fuel prices.

However, the renewable technologies deployed at scale continue to receive significant subsidies. For example, German electricity consumers faced charges of around €13.5bn in 2011 linked to renewable subsidies, which equated to 3.5ct/kWh surcharge from an average household bill of 25.2ct/kWh[7], with widespread expectation of increase to a rate of ~5ct/kWh surcharge for 2013. Governments continue to offer widely different renewable support policies (some are thinly-disguised industrial policy). These regimes distort investment decisions, leading to deployment of renewables in poor locations, inflating the total cost of renewable deployment. **Can national support regimes deliver efficient deployment of renewables?** The affordability of renewable energy sources has been strongly challenged in the face of economic recession and government austerity measures. Even for existing projects, the escalating cost of renewable support (see recent Pöyry modelling shown in Figure 2) at time of fiscal austerity has brought the threat of retrospective changes in renewable tariffs (or new taxes) to what would previously looked like low risk projects. In many European countries the level of financial support for renewables has already been reduced sharply

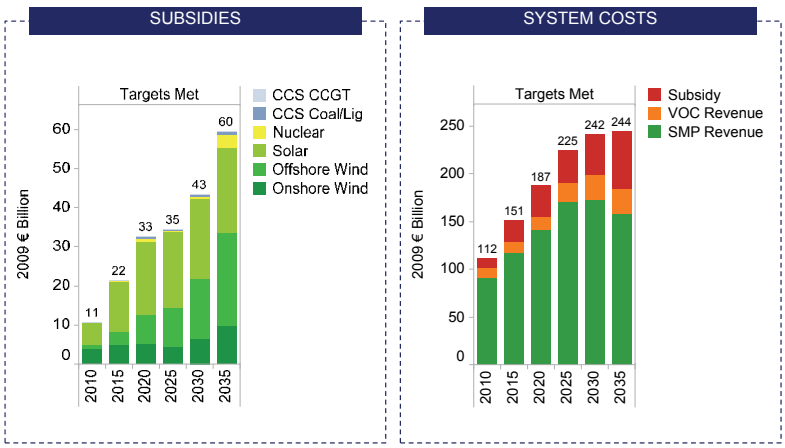
and unexpectedly, which sets a dangerous precedent. If the state has acted once, there is no reason why it would not do so again. **Will government policies supporting renewables continue in the face of economic recession and austerity measures? Will support for higher cost technologies be available in future?**

The impact of renewables on energy security is already being challenged in many European markets, with questions on how to maintain enough reliable capacity and over the ability of TSOs to balance the system in shorter timescales in the face of intermittency. Security of supply is a politically sensitive and highly charged matter, and responsibility is taken at the national level. Looking forward, **will energy security objectives override decarbonisation in the development of national energy policy? Can a European approach be adopted?**

FUTURE POLICY SUPPORT REGIMES ARE NOT SOUNDLY BASED

In recent years, decarbonisation (as opposed to renewable policy) has become a central plank of European policy aspirations. However, given the reliance on immature technologies and the hugely uncertain cost of the decarbonised future, governments have been unable to demonstrate a credible path to delivery. At the European level there is no agreement between governments to

FIGURE 2 – TOTAL ANNUAL SUBSIDIES PAID EACH YEAR TO LOW CARBON TECHNOLOGIES ARE EXPECTED TO INCREASE SIGNIFICANTLY OVER TIME AS THE EXTENT OF GOVERNMENT SUPPORTED INVESTMENT IN LOW CARBON GENERATION RISES. OVERALL COSTS TO CONSUMERS ARE ALSO EXPECTED TO INCREASE SUBSTANTIALLY IN FUTURE. THE CHARTS BELOW PRESENT ANALYSIS COVERING GB, FRANCE, THE NETHERLANDS, GERMANY, SWITZERLAND, AUSTRIA, THE CZECH REPUBLIC, POLAND, DENMARK, SWEDEN, NORWAY AND FINLAND.



deliver the long term decarbonisation target. **What certainty is there that the longer term decarbonisation agenda will not be derailed? Will first-mover countries and companies be left stranded?**

Beyond existing renewable support schemes, further market interventions are being proposed to support low carbon generation, such as the UK's Electricity Market Reform (EMR)[8]. Under this regime (which also includes a capacity payment), most new-build generation for the foreseeable future will not be market-based; but instead will be underpinned by government policy support, with government (or appointed agencies) taking responsibility for key decisions on the total quantity, the technology choice and the price paid. **Will this deliver overall cost reductions? Or will the inefficiencies that are normally expected to result from centralist planning policies outweigh the savings arising from reduced risk for individual projects?**

The EMR and similar programmes may be considered either as necessary steps for countries to move in the direction of their longer term decarbonisation goals, or as temporary sticking plasters which will make it harder to build the necessary long term solutions at a European level. **Do such local solutions introduce a higher risk of policy intervention in future, e.g. at European level?**

The development of new technologies is highly dependent on continued policy support which may be withdrawn at any time. This hampers the development of the supply chain, and limits the ability of the electricity companies themselves to form robust future strategies [9]. **Can innovation and deployment of the more advanced technologies blossom without a long term policy framework?**

"Exposure to market risks is increasingly being replaced by exposure to unhedgeable regulatory risks."

THE POLITICS OF IMPORTING GAS THREATEN THE DECARBONISATION AGENDA

In the near term, decarbonisation means reducing the use of higher carbon content fossil fuels in favour of gas. This has raised energy security concerns, especially as European gas supplies diminish and greater reliance is placed on imports. Many governments (in particular those where domestic coal and lignite are abundant) believe that they are being asked to pay a disproportionate share of the cost of decarbonisation, finding it hard to accept that they should leave their own lignite in the ground and instead rely on imported fuels. **Can decarbonisation policies deal with these economic transfers between European countries?**

While the EU is seeking to centralise negotiations with Russia on gas import terms through a series of measures including competition policy, individual countries and companies continue to negotiate individual deals with Gazprom. Russia is treating these as political rather than commercial discussions, and is striving to maintain control of its gas exports and of the pipeline infrastructure. The reliance on Russian gas (especially in Eastern European countries) threatens the decarbonisation agenda. **Will the political overtones of imported Russian gas derail the decarbonisation agenda?**

[7 Source: "Erneuerbare Energien in Zahlen – Nationale und international Entwicklung", Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, July 2012.
[8]The EMR will introduce a UK-only carbon price support for the power sector, an emissions performance standard which effectively prevents new build of unabated coal plant, and a new feed-in-tariff regime for renewables, nuclear and CCS generation. In addition it will introduce a capacity payment regime for GB.
[9] For example, seven major "multinational technology leaders for the supply of low carbon power generation power generation equipment and associated services" recently (October 2012) wrote a public letter to the UK Secretary of State warning that significant further investment is "critically dependent on a long term stable policy framework", looking to 2030 and beyond.

Is re-regulation inevitable?

INCREASING NATIONAL ENERGY MARKET INTERVENTIONS LEAD TO MARKET FRAGMENTATION RATHER THAN THE PROMISED 'SINGLE MARKET', WITH THE THREAT OF EUROPEAN 'CORRECTION'

Existing energy-only markets do not pay the full value for reliability and therefore market interventions (e.g. centralised capacity mechanisms) are often sought to bridge the 'missing money' gap that investors in thermal capacity are perceived to face. National governments across Europe[10] are proposing new measures to address security of supply concerns. However, many capacity mechanisms typically replace market risks with regulatory risks, with the potential for (near) direct regulatory intervention in the revenue paid to generators. **Are capacity mechanisms required to underpin investment decisions, or do their flaws outweigh their benefits?**

The EC is evaluating the merits of common European requirements on national capacity support mechanisms, and their coordination in this area of work is ongoing. **Will European regulations overrule the proposed national capacity mechanisms, and are such schemes credible to investors for anything other than the short term?**

Investors repeatedly plead for 'policy stability', and the prospect of a pan-European electricity market with a common set of rules reduces the scope for (and impact of) national policy interventions. However, despite European moves to harmonise energy markets, energy policies are becoming increasingly national. The EU is introducing legally-binding network codes (valid from end-2014) to enhance cross-border trading, but at the same time the detailed market rules in each country are being altered to reflect local considerations. **Will fragmented (and diverging) market rules fatally undermine the objective of a single energy market?**

[10] For example, new capacity mechanisms are being proposed by governments in UK, France and Belgium, each with little regard for the impact on cross-border trading or the benefits of adopting a regional approach to security of supply.

CAN THE INVESTMENT CONUNDRUM BE CRACKED?

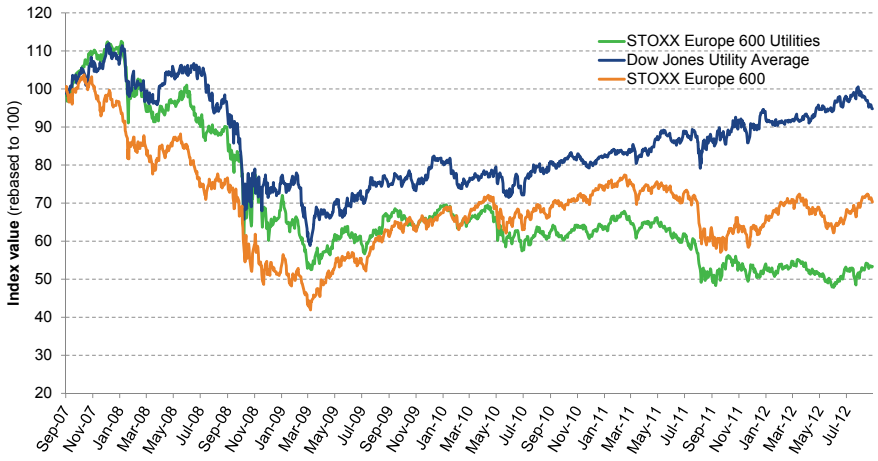
Traditionally, the major utilities have been asset-heavy with stable and predictable cash flows, and strong balance sheets have been able to secure debt finance with low yields. Recently, thermal generation asset values have fallen and many companies are divesting networks, reducing their asset base. In addition, increased market volatility, with the continuing stream of government interventions, threats to existing revenue streams and reliance on support for future investments has weakened utilities' credibility in the eyes of both equity and debt markets, and thus has made the companies themselves less creditworthy. As evidence of this, the stock prices of European utilities have performed badly relative to comparators (e.g. US utility stocks and, more recently against a broader basket of European stocks), as illustrated in Figure 3. In response, European utilities are divesting assets, trimming costs, focusing on low risk projects wherever possible, and seeking opportunities outside Europe. **Will European utilities manage to catch up? What is required to reverse their downward performance trend?**

The upcoming Basel III regulations will impose

CAPACITY MECHANISMS:

Some electricity markets include capacity mechanisms, which treat capacity as a distinct product, separate from the provision of energy, with an explicit value and potential revenue stream attached. The explicit capacity price signals the need for existing plant to remain on the system and/or for additional capacity to be developed. In theory, the availability of a capacity related revenue stream changes the risk profile for investors by reducing income volatility for new capacity investments. The introduction of a capacity mechanism can complement a competitive energy market, and need not be considered as a market intervention. However, most capacity mechanisms are highly centralised in nature and can subject market participants and investors to significant regulatory risk. There is also a tendency, under many capacity mechanisms, to focus on the delivery of generation capacity rather than calling on other options such as interconnection, demand flexibility and storage.

FIGURE 3 –EUROPEAN UTILITY EQUITY PRICES HAVE PERFORMED POORLY OVER RECENT YEARS COMPARED TO EUROPEAN STOCKS MORE GENERALLY AND US UTILITIES



more stringent capital adequacy rules for financial institutions. Consequently, banks will be less able to provide credit to individual energy projects and utilities alike. Other capital market investors will be needed to fill the gap left by the banks, but debt capital markets may be unwilling to provide the level of finance required. A utility operating in such an environment would have to endure a higher cost of debt and face greater restrictions on borrowing. **Are these the conditions in which the required massive levels of capital expenditure are likely to be undertaken?**

In the longer term, the prospects for capital growth look dim given the regulatory risk hanging over European utilities, especially the policy dependence of their future investment plans. Equity investors are becoming nervous about the degree of reliance in Europe on government support for generation investment (including renewable support schemes as well as capacity payments for conventional generation), especially due to the scale of policy and regulatory risk overshadowing their future development plans. Debt providers are becoming increasingly selective about the projects which they finance. **Will the markets provide utilities with even a fraction of the unprecedented amount of finance they require?**

ALTERNATIVE WAYS FORWARD – MARKETS OR RE-REGULATION?

Ideally, risks should be borne by the party best able to manage them. The energy industry is accustomed to dealing with a combination of technical, environmental and economic risk. Although policy risk has always been present in some form, the degree of policy risk overshadowing the future of the industry is far higher now than previously, while the appetite for companies and their financiers to accommodate risk is shrinking.

To minimise policy risks, Governments need to create a stable and credible environment which is capable of delivering immediate and sustained investment in low-carbon technologies. **Can a policy framework which supports this credibly be delivered in Europe in the near term?**

Companies and governments, therefore, face a dilemma between short- and long-term policy frameworks:

- **market based environment** for low carbon investments, in which a strong CO_2 pricing regime is applied, technology subsidies are removed, and investors manage the residual market and policy risks; or
- **re-regulation of investment**, continuing with technology-specific policy support for low carbon investments, with governments taking key decisions, underwriting projects and socialising market risks.

Benefits of re-regulation?

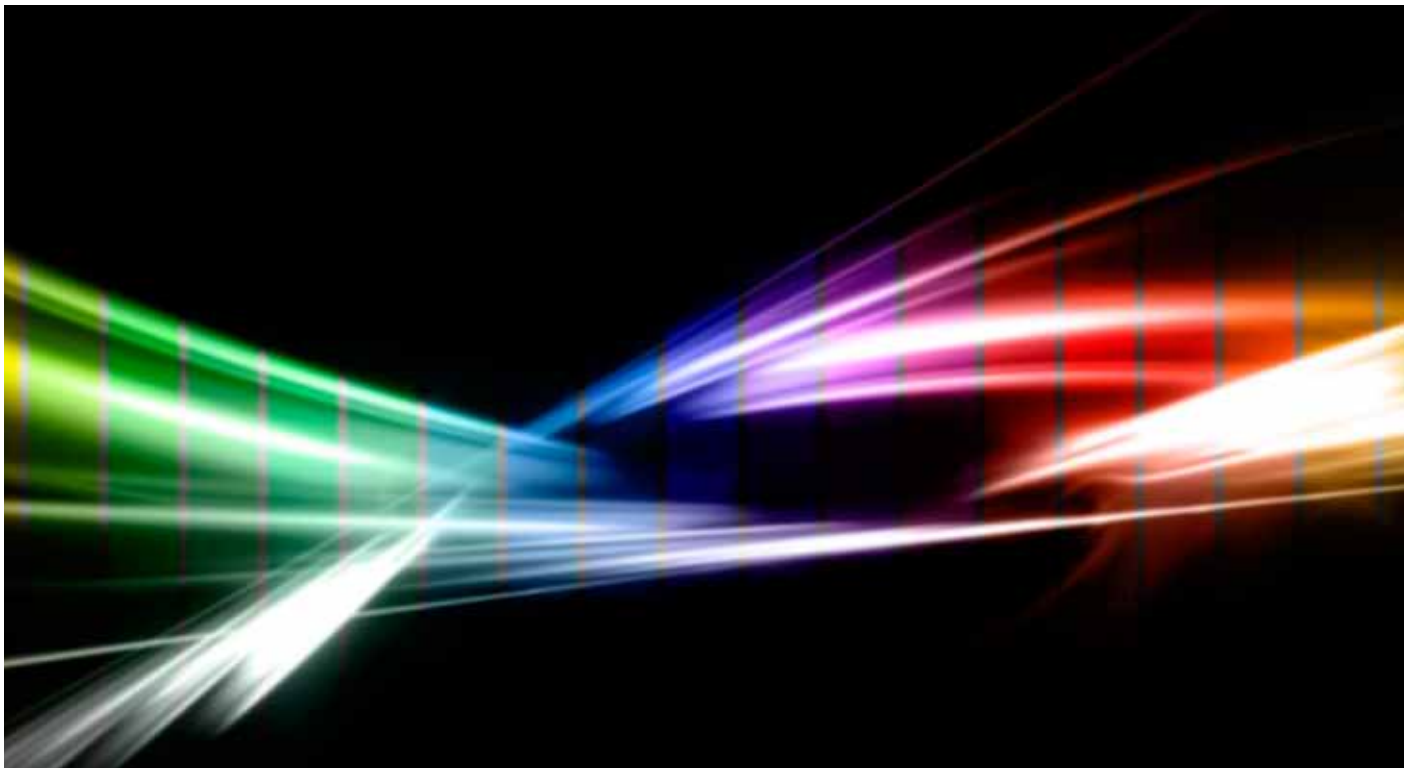
A PURE MARKET-BASED REGIME FOR LOW CARBON GENERATION INVESTMENT STRETCHES CREDIBILITY

Influential bodies such as the European Commission and EURELECTRIC advocate a transition to a market-based investment regime for electricity generation. As a 'straw man' proposal, technology-specific subsidies would be phased out (including for fossil fuels) and instead a strong CO_2-regime would be introduced to support low carbon investment. Energy-only spot and forward markets would be accompanied by supporting markets for intra-day and balancing services which reward flexibility, and all participants (including intermittent renewables) would face the costs that their balancing actions impose on the system. Higher risks would be balanced by higher rewards to investors, but the result would be a self-sustaining investment regime including market value for reliability and flexibility, encouraging demand side contribution.

This outline market design sounds immediately attractive with many positive points, but raises some important questions of credibility:

- How high (and how fast) would CO_2 prices need to rise to deliver the necessary low carbon investment without other support mechanisms, and could Governments plausibly commit to such a regime for the future?
- How high would electricity prices rise under such a regime, and would revenues to existing low-carbon generators be politically acceptable? Will there be new taxation of 'windfall gains'?
- As CO_2-emitting generation is removed from the fleet over time, what impact would the CO_2 price have on wholesale electricity market prices?
- Could the investment dilemma be resolved without capacity payment regimes, or will these be imposed later?
- In this high risk world, could companies credibly expect their low carbon investments to attract high rates of return to offset policy risk, in the face of increasing costs to consumers? Would this be permitted by market regulators?

Ultimately the market based future set out above is still characterised by policy risk, and this must be recognised by policy-makers and industry alike. At present it is not clear if (or when) when this vision can be realised.



"The future of market-led investment in electricity markets is in doubt."

RE-REGULATION MAY PERMIT ALTERNATIVE FUNDING OPTIONS

There are alternative policy futures ahead, and it is far from certain that a decarbonised electricity system will be delivered within a framework of market-led investment. Increasingly, policies are moving towards centralised planning at a national level, with Government-sponsored policies (such as direct financial support, or more indirect support such as organised mechanisms for capacity or reserve) to deliver the "required" mix of generation. In this world, decisions on the nature of investment and the prices paid will be highly coordinated.

At first, this sounds like an alarming future, both for the electricity industry and to those policy makers which profess to believe in markets. However, the re-regulated future could lower the risk profile for individual projects, bringing opportunities to use sources of finance with a low appetite for market risk, containing the rates of return needed to fund investment.

Europe's utilities could shift some of the funding burden off their balance sheets if investors could be persuaded to finance individual projects directly. In particular, pension funds and other long-term investors have the capacity to extend significant debt funding to projects, provided that the bonds are of suitable credit quality[11]. **Can new long term investors emerge to provide equity and, consequently, end up becoming asset owners?**

As a result of possible future 're-regulation' policies, market exposure would be removed from individual projects but instead the cumulative market risk would be passed to consumers under the control of regulators and policymakers. Such a future would lead to a real threat of regulatory intervention based on short-term political concerns (e.g. the total costs of subsidies to consumers). As the risk becomes more concentrated (e.g. as a greater share of investment is underwritten by market support policies), the incentive for political intervention and therefore the overall regulatory risk faced by investors would increase. There would also be significant technology-specific risk for projects under development, as corporate investment programmes would be increasingly dependent on continued government support for specific technologies. **Can these cumulative regulatory risks be dealt with?**

[11] The Europe 2020 Project Bond Initiative, a joint venture between the EU Commission and the EIB, is one possible model for providing credit enhancement to individual projects. However, the scheme relies on finance from the EIB, and as such should only be one of several approaches taken to ensure that project bonds are attractive to capital market investors.

Unlocking innovation

IMPLICATIONS FOR COMPANIES OF THE RE-REGULATED FUTURE – NOT ALL BAD NEWS?

To summarise, the future of market-led investment in electricity markets is in doubt, challenging the conventional wisdom that utilities will conduct their business largely within a liberalised market environment. The positioning of utilities faced with a possible move towards re-regulation will be crucial. Utility investors are already responding to the first steps of this move. If re-regulation is genuinely the investment paradigm for the coming decade, then companies need to fully adapt their strategy to suit. Although regulatory risk is increased in this interventionist world, project-specific risks would be lower than under a more market-based investment regime.

This permits a different balance of equity and debt finance to the current standards, and opens the door to new forms of finance for generation investments, such as increased involvement from pension and sovereign wealth funds.

The future utility in this world would have a rather different role than today. Instead of taking equity and market risk on generation investments, with non-recourse debt finance, the future utility model for generation could move towards one of project developer, with a mandate to build and operate, with the capital risk faced by third party investors.

In this possible future, the value of vertical integration would be diminished. Suppliers would have strong incentives to seek out sources of flexibility including from the demand side, and there would remain a powerful emphasis on trading to ensure efficient generation dispatch, interconnection flows and deployment of demand resources around a core of trading activities. If this future is characterised by reduced concentration in asset ownership, then the day-to-day regulatory oversight in the traded markets could be lightened.

EMBRACING THE POWER OF INNOVATION IS ESSENTIAL

The European electricity sector is being transformed in response to the climate change agenda. Europe has a highly educated population and has expertise in the pre-development of technology in all relevant areas, with a strong willingness to fund innovation (as witnessed by the deployment of renewable generation technologies and innovation funding programmes such as NER300). Current policies offer large sums of money to the sector to deliver new technologies, to foster innovation and accelerate decarbonisation, and there is widespread acceptance of the need to electrify heating and transport which could sharply increase total electricity demand. This supportive policy climate presents a golden opportunity for the sector to embrace innovation, and to establish a world-leading position which could support expansion beyond Europe for the industry and its suppliers.

However, existing revenue streams are being threatened by the current crop of 'innovative' technologies, and the business models of the future are not clear. Despite the scale of the opportunity, the industry and its financiers have not fully embraced the positive power of innovation. It is hard to discern a coherent European vision for innovation in the sector, and R&D and investment policy is fragmented. As a result, the leading role of the power sector to deliver innovation is downplayed by the policy makers and Europe's 'smart' energy future risks being bypassed.

European energy players face increasing global competition – for resources, for the share of commercial value, for the brightest people, for finance and ultimately for relevance in the technology-led 21st Century. Irrespective of the reliance on market- or regulated investment decisions, the industry needs to work together to create an innovative vision for the future and to persuade policy makers of its role in bringing this vision to fruition: innovation is the key to success.

About the Pöyry Point of View

Staying on top of your game means keeping up with the latest thinking, trends and developments. We know that this can sometimes be tough as the pace of change continues to accelerate.
At Pöyry, we encourage our global network of experts to actively contribute to the debate - generating fresh insight and challenging the status quo. The Pöyry Point of View is our practical, accessible and issues-based approach to sharing our latest thinking.
We invite you to take a look – please let us know your thoughts.

Notes

Notes

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