RESPONSE OF THE CLIMATE BONDS INITIATIVE TO THE EUROPEAN INVESTMENT BANK CONSULTATION ON ENERGY SECTOR LENDING POLICY

General energy and economic context

- Particularly in the current economic climate, is there a trade-off between promoting a competitive and secure energy supply and one which is environmentally sustainable? Where should the balance lie and what implications does this have for energy sector investments?

No, there is no trade-off. In fact, recognising the rising costs of severe and disruptive weather events; high and volatile fossil fuel import prices; and the external costs of greenhouse gas (GHG) pollution can lead to a conclusion that the only competitive and secure energy supply is an environmentally sustainable one.

The European Commission’s Roadmap to a Low Carbon Economy identifies required investment of €8.6 trillion to 2020 across the power, transport, industry and residential sectors. This is a 5% increase to the amount of investment required in a high carbon, business as usual scenario of €8.2 trillion. In the current economic climate, where any such trade-off exists it is within this 5% difference, a difference that is marginal in the context of the cost and benefits inherent in the low carbon scenario for two reasons.

Firstly, the EC impact assessment is highly dependent on an expected 2030 oil price of $88/barrel compared to current prices of $111/barrel in 2012 that is likely to remain at elevated levels in 2013. The IEA applied a $125/barrel price for 2035 in its recent World Energy Outlook 2012. A higher price will result in significantly more cost savings derived from the low carbon scenario than the business-as-usual scenario.

Secondly, the costs of inaction on climate change are becoming ever more clearer. The Stern Review noted failure to take action could cost the global economy 5-20% of global GDP each year. These costs have begun to be realised in recent years. Munich RE has labelled this trend of increased weather disasters as representing a climate change footprint. The US experienced eleven multi-billion dollar weather disaster events in 2012, preceded by fourteen events in 2011. Estimated damages of these events in 2012 total over $120 billion in economic losses, with Hurricane Sandy responsible for approximately $62 billion demonstrating the effects of extreme weather on urban areas. In Europe, weather related events in 2012 were estimated to result in a minimum of approximately $6.5 billion in damages.

These costs are part of the current economic climate, are increasing in frequency and extremity, and have a direct link with an environmentally unsustainable energy sector. Therefore, it is increasingly difficult to justify investment in a competitive and secure energy supply that would not be environmentally sustainable. The costs associated with the climate impacts and fossil import prices of an environmentally unsustainable energy sector would render energy supply both non-competitive and insecure. Only an environmentally sustainable energy supply can be both competitive and secure in a global economy impacted by climate change.

- How does investment in the energy sector contribute to growth and employment? Are investments in all energy sub-sectors equally valuable? And how does investment in the energy sector rank relative to other investments in the economy which support growth and employment?

On the supply side, investment in renewable energy technologies have been estimated to result in increased growth and employment prospects than high carbon investments. A study for the EC, released in 2009 by Fraunhofer Institute, pointed to a net employment increase of approximately 400,000 jobs across Europe from focusing on RE deployment of 20% by 2020 compared to a fossil fuel and nuclear policy scenario. Since, this study deployment of

3 thoughtleadership.aonbenfield.com/Documents/201212_if_monthly_cat_recap_november.pdf
renewables have been on track or exceeded such targets which could result in in the RE sector employing 2.8 million across Europe in 2020.4 In the UK, a recent study on behalf of WWF indicated that GDP would be 0.8% better off with an additional 70,000 jobs in a power sector with high wind generation compared to a high gas generation mix.5

On the demand-side, investment in energy efficiency improvements provides substantial and diverse job creation potential. The EU Energy Efficiency Plan states that 2 million jobs will be created in the EU buildings sector by 2020 if EU targets are achieved6. An analysis by the European Trade Union Confederation estimates that up to 2.59 million jobs could be created in the EU buildings sector by 20307. These estimates include the direct employment effects – those blue-collar jobs created within the buildings retrofit installation sector – as well as the indirect employment effects – those manufacturing and white-collar jobs created along the buildings retrofit supply chain.

As our collaborator E3G has pointed out, energy efficiency improvements have, in addition, the potential to reduce ‘frictional unemployment’ (i.e. temporary unemployment as workers move between jobs8) because energy efficiency improvements can be implemented with a wide geographic spread and jobs tend to be localised9. Given that one of the key factors determining the length of time that people are between jobs is the ability/inability of individuals to search for jobs that match their skills and geographic location10, energy efficiency improvement programmes increase the likelihood that blue-collar (construction/installation workers, electricians, plumbers and so on) and white-collar (engineers, surveyors and so on) workers will be able to find work.

**Investments in both the renewables and energy efficiency sectors therefore have the potential to reduce current EU unemployment by 20%**.11 This is a vital benefit given the high levels of unemployment current in many parts of Europe.

- **What impact do you consider the current economic crisis will have on the energy sector (demand, policies, supply)?**

The current prolonged economic crisis has depressed energy demand across the EU below any level over the previous decade.12. This has created huge uncertainty with respect to forward investment in the energy sector.

Fiscal austerity combined with concerns about overly generous technology support in the face of falling costs means that in many Member States support for renewable technologies has been lowered – sometimes retroactively, which is especially damaging to investor confidence. The unconventional gas revolution in the US has sparked re-evaluation of policies in Europe, creating an additional level of uncertainty as to the low carbon nature of long-term government support in the energy sector.

Moving to a low carbon energy system is the ultimate insurance policy for Europe’s economic future. It should not be seen solely as an economic cost but as an investment in public infrastructure, energy security and future competitiveness. Economic analysis by Ecofys and others shows that moving to a 30 percent target now will lead to GDP gains of about 10 percent by 205013. It is therefore a false economy to reduce expenditure in these areas while high fossil fuel prices continue to cost the European economy hundreds of billions of US dollars per year. In 2010, the EU spent a total of $297 billion on crude oil imported from outside the EU. If the same level of consumption

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8 There are many reasons why workers may look for new jobs, including redundancy, the desire for higher wages, the desire to simply do something different. The length of time that people are between jobs is broadly a shaped by their ability to match their skills and geographic location to available jobs – but it can also be related to the amount of unemployment benefits that can be claimed, emotional or physical problems and so on
10 Many European economies are extensively driven by the services sector – retail, financial, consultancy, management and so on – which are geographically concentrated within urban and semi-urban areas. This can isolate employment opportunities in such sectors to urban- and semi-urban-dwelling segments of the population
11 Based on Eurostat data of 25 million unemployed Sept 2012
12 What impact do you consider the current economic crisis will have on the energy sector (demand, policies, supply)?
continues at the current oil price of $115/bbl, the oil import bill would rise to $433 billion – or 2.6 percent of EU GDP.14

Thus the focus of governments now needs to turn to how to design and deploy policies and targeted financial instruments that are effective at driving the necessary low carbon investment at lowest cost to taxpayers and consumers. In turn this will generate financial returns, create jobs, deliver tax receipts to Finance Ministries and create growth, without materially increasing risks to countries’ financial stability or placing additional burdens onto the public finances.

The damage done to investor confidence through retroactive adjustment of FiTs etc will have to be effectively addressed going forward – and makes pari passu public co-investment ever more important in the process of rebuilding confidence. But in addition, multilateral development banks such as the EIB also have a critical role in achieving the scale of finance needed – the majority of which must come from the private sector.

Thus at the current time, public banks such as the EIB should be prioritising lending to low carbon projects and business – which are finding it more difficult to secure affordable debt – than high carbon projects and businesses.

Renewable Energy

- The Bank’s economic justification for supporting emerging renewable energy technologies, whose cost is significantly above that of conventional and mature renewable energy technologies, is that continued investments in these technologies will eventually lead to cost reductions and will ultimately be the least-cost approach to meeting the EU’s renewable energy targets. Do you agree with this approach? Is there an alternative approach to the economic justification of these technologies which you consider more appropriate?

- What evidence is there that the cost of emerging renewable technology is falling?

- What level of investment in RE do you expect in the short and medium term?

- What are the barriers to investment in renewable energy outside Europe? How might these be overcome?

- Do you agree that there is significant scope for investment in renewable heating and cooling? What are the barriers to investments in this sector and how might these be overcome?

Renewable technologies are at a comparatively early stage in the learning process, but have already shown considerable potential for learning as demonstrated by the 22% price reduction per doubling of sales achieved by solar photovoltaic since 1979. Onshore wind in certain countries is now almost cost-competitive with CCGT on a levelised cost basis. In addition, research by the UK Energy Research Centre shows that the costs of renewables including offshore wind will overlap with gas-fired CCGT from approximately 2025.15

As a policy-driven bank, the EIB is correct in adopting the approach on learning rate justification for supporting renewable technologies, given the clear results and pathways identified.

The support of the bank is even more crucial for renewable technologies due to the disproportionate effect that costs of capital have on renewable energy projects compared to fossil fuel competitors. High capex, low opex projects are more at risk to costs of capital increases than gas plants that can pass-on volatile fuel prices to the wholesale electricity market hedge price risks.

Current lending policy requires, “projects to demonstrate that their economic cost is equal to or below those of the least cost alternative”. This would typically be a CCGT in continental Europe for projects in the power sector or an individual gas boiler for heating projects.

However, such an additonality approach to lending does not take into account how the costs of CCGT gas plants would increase due to the achievement of renewable energy policies in Europe as many plants would not be running at optimal times. The least cost alternative should be evaluated against the requirements of the long term commitment to a low carbon economy and a decarbonised energy sector.

15 http://www.wwf.org.uk/wwf_articles.cfm?unewsid=6263
In addition, current analysis suggests that the level of investment required to reach renewable energy targets cannot be supported on the balance sheets of existing companies and banks alone\textsuperscript{16}. This indicates a need for new financial products and mechanisms for shifting liabilities off balance sheet and recycling this capital (for example through low carbon asset-backed securities). In the US, the project bond market for wind and solar projects has taken off with over ten investment-grade bonds over $500m issued in recent years. The EIB should play a role, for example through the Project Bonds 2020 Initiative, in supporting the development of an investment-grade project bond market for renewable energy projects in Europe to attract large-scale institutional investor capital.

However, even with the Project Bonds 2020 model, smaller projects will face challenges. A large part of the development of renewables and energy efficiency in Europe involves smaller scale projects; the lack of aggregation of these projects makes it difficult to access debt capital markets, where scale of issuance is important to both low transaction costs and required liquidity.

Bank lending remains the primary source of project lending for these smaller renewable energy and energy efficiency investments. However, recapitalisation of banks has, and will continue to squeeze business lending.

Historically banks have used securitization of loans - pooling assets and using the cash flows to back securities - to efficiently recycle limited capital and to lend more. When they can’t do this they have to cut back lending. This system worked well for many years to unlock the value of illiquid assets, drive down the cost of finance and increase access to finance. It worked well until a toxic mix of misguided deregulation, excess liquidity and opaque and complex financial instruments led to the financial crash. Our regulatory and market reaction has been to throw out the baby with the bathwater: securitization has stalled, with damaging consequences for lending, just as Europe’s need for capital investment in energy transition is growing.

Financing the transition to a low carbon economy requires increasing, not cutting back, business lending. This will not be possible without securitization.

In the context of the stalled European securities market, pro-active steps will be needed to develop securitization platforms that allow fragmented and sub-investment grade loans to be collected, packaged and re-financed through debt capital markets.

The EIB has the potential to play a pivotal role in the supporting securitization platforms. The involvement of the EIB would reduce financing costs and provide critical confidence needed to attract institutional investors back into the primary and secondary market for such securities. It would “kickstart” a market that is vital in facilitating bank lending to renewable energy and energy efficiency projects.

### Energy Efficiency

- **What do you think are the main barriers to energy efficiency investments? What might be done to overcome these?**
- **What role can Energy Service Companies (ESCOs) play in developing energy efficiency investments?**
- **What is the potential for energy efficiency outside Europe?**

The high level barriers to energy efficiency investment are numerous and have been well-documented. For a good summary refer to the IEA’s report “Mind the Gap\textsuperscript{17}”. Many of the barriers are most effectively addressed within a national political/legislative context – for example provision of information on energy use/management and technology choices; split incentives (which can be addressed through regulation); the opportunity cost of capital (which can be addressed through the use of incentives and/or regulation); weak price signals (which can be addressed through the removal of fossil fuel subsidies and a stronger carbon price).

However, as our colleagues at E3G have written about, the EIB has got a significant role to play in one very significant market barrier: access to affordable capital to address high upfront costs. It can also, with an ongoing...

\textsuperscript{16} For example Green Investment Bank analysis of the UK’s Round 3 offshore wind investment requirements shows that he two biggest projects – Dogger Bank and Norfolk Bank – are bigger than the market cap of the UK’s largest energy company Centrica. Similarly the top 7 projects by capital requirement are bigger than the FTSE 100 market cap threshold.

\textsuperscript{17} [http://www.iea.org/publications/freepublications/publication/name.3747.en.html](http://www.iea.org/publications/freepublications/publication/name.3747.en.html)
source of donor funds, play a role in addressing information barriers through the provision of subsidised energy audits.

With the passing of the Energy Efficiency Directive there is now a stronger focus on delivering energy efficiency across Europe and this should be reflected in EIB priorities and capital allocation to this sector.

ESCOs, as providers of energy management services and systems, have the potential to address barriers around access to information about the most appropriate technology solutions. Through providing energy service contracts they can also address concerns about energy cost savings being delivered. They have been very successful providers in the US market and their use is growing in the EU market. However they are not a ‘silver bullet’ for solving all delivery and financing issues. When considering their ability to deliver in the European context, the following points should be borne in mind.

- **Access to a pipeline of large projects that can be transacted on the reasonably standardised basis** – A large majority (>80%) of the projects implemented in the US by ESCOs occur in the municipality-university-school-hospital (MUSH) market. This is because of the lower transaction costs stemming from larger deal size (typically greater than $5 million) and more standardized procurement procedures that MUSH institutions have used for decades compared to companies occupying commercial properties and/or industrial facilities. Thus they are likely to be most useful for improving the energy efficiency of public buildings compared to other building stock.

- **Financing does not need to be provided as part of the package** – One of the primary reasons ESCOs have been so eager to engage with this sector has been the capacity and willingness of customers to self-finance the capital investments without the ESCOs needing to risk their own funds. Institutions in the US MUSH market can frequently draw on their endowments, capital budgets or operating budgets to pay for such capital investments or even tap funds for deferred maintenance or additional reserve accounts slated for energy efficiency projects. In so doing, the institution essentially takes equity ownership in the project—ownership that may be either complete or partial and supplemented by an additional external financing strategy such as a capital lease or debt mechanism provided by a financial institution familiar with ESCO contracting in the MUSH market. An alternative self-financing approach used in the MUSH market is a revolving fund structure. In this model, the institution earmarks a specific sum of money for a capital pool that is lent out to different groups and/or building occupants applying for energy efficiency project funding. As the projects begin to recover operational cost-savings, those resources return to the capital pool and can be redeployed to fund new projects.

There is currently (for the most part) not a culture of creating revolving funds that can be drawn down to support ESCO-led investment in the EU. The scale of ESCO success will depend on whether and how this is addressed. The EIB will continue to have a role to play (for example through provision of facilities such as JESSICA) but scaling the market will rely on new capital providers emerging – both national public banks and private sector investors. In addition, because of the long-term nature of the investments, steps will need to be taken by governments and public institutions such as the EIB to kick-start secondary markets for such loans to catalyse the recycling of capital into new investments (through loan securitisation for example).

The Energy Efficiency Directive coming into force on 4 December 2012 may well accelerate this process: Article 5 requires 3% refurbishment of the publicly owned and occupied national building stock in all Member States. This will be a challenging target – but one that would seem to well suit the ESCO market, providing that governments can help develop sources of capital to underpin those investment requirements, and that policy banks such as the EIB can help develop the aggregation platforms required to achieve economies of scale in deal size.

- **Do you consider the criteria used by the Bank to categorise projects as Energy Efficiency projects appropriate (see Annex 1)? What alternative would you propose?**

The current criteria notes, “energy efficiency has been “mainstreamed” with all projects financed by the Bank assessed against the extent to which their design takes into account the potential for energy savings. For projects to be considered for financing by the Bank as energy efficiency projects, they must demonstrate that they will reduce energy consumption by at least 20% compared to the situation before their implementation, or ensure that the energy savings resulting from the project account for at least 50% of the investment cost over the project’s life.”

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In this approach, there is a danger of locking-in inefficient investment in energy efficiency given the transaction costs of improving energy savings 20% per investment until the required cost-optimal savings are achieved. For example, given the age and poor current energy efficiency performance of many buildings in Europe, for some building retrofits (e.g. residential property in the UK, public buildings in Easter Europe) a 20% improvement would not be significant enough for Europe to meet its 2050 targets. And yet, improvements made to reach 20% efficiency improvements may be substantial enough that further investment in a building is not made for another 20 years and thus inefficient technology is ‘locked in’.

We would propose an alternative approach of defining performance requirements per type of project e.g. in buildings and industry to which any project deemed energy efficient would have to meet. The level of performance requirement would be based on best available technology approaches, 2050 requirements for given sectors, along with the implementation of energy management system approaches in order to lock-in deep energy savings of approximately 75% for the long-term.

The Climate Bonds Initiative is currently working with a wide group of investors, industry, academics and policy think-tanks such as the International Energy Agency and the Buildings Performance Institute of Europe, to develop such criteria to be related to fixed income investments for buildings. The criteria will seek to provide clarity to asset managers as to how money raised from bonds can be put to work in order to ensure the building, either new construction or retrofit of existing buildings, will fit a 2050 low carbon economy. Only if the end goal of low carbon asset performance, be it commercial buildings or cement plants, are stated clearly can the right investment decisions and incentives be put in place through the investment chain and across portfolios, to create a global market for energy-efficient assets. Although developed in aid of Climate Bond certification, the methodology and criteria, may be adapted for other financial instruments including lending policies.

Security of Supply

- Is the traditional model for electricity transmission and distribution changing? What implications does this have for future investments in electricity networks?
- What is the future role of smart grids, offshore grids and energy storage solutions?

The role of electricity networks is changing substantially as a result both of the transition towards a low carbon power system and of new European market arrangements. This places new demands on transmission and distribution systems: investments in networks are sought not only to ensure security of supply, but also to enable European power market integration and to serve as a system flexibility resource in response to the integration of variable renewable power sources. This can occur both by linking neighbouring markets (in the case of transmission) and by enabling demand-side participation through ‘smart grid’ distribution-level investments.

As our colleagues at E3G have reported, large quantities of electricity network investment are, as a result, foreseen across Europe in coming years. The DG Clima Roadmap 2050 suggests that rates of overall grid investment would need to double by 2025 and triple by 2040. Electricity TSOs are currently planning to increase their rate of investment by 70% out to 2020.21

‘Smart grid’ investments at the distribution level are particularly important for enabling decentralised generation. Investments requirements for distribution grids are several times larger than transmission grids and could exceed €700bn by 2030 and €1.4trn by 2050.22

‘Offshore grids’ are needed both to connect offshore wind farms to shore and to help to manage variability through interconnecting power markets around the North and Baltic Seas region, and there may be particular value from integrated projects that can fulfil both of these functions. A 2010 assessment by KEMA for the European Commission suggested that €32.8bn of investment in ‘offshore wind power network infrastructure’ would be required by 2020 and up to €99.8bn by 2030 in the high RES case. ENTSO-E projects up to 8000 km of high voltage offshore transmission lines in the North seas region over the next 10 years.

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20 IEA ‘Harnessing Variable Renewables’
21 Roland Berger 2010
22 DG ENER Roadmap 2050

Climate Bonds

December 2012 | www.climatebonds.net
However such investments will need to take place in the context of challenging new financial, regulatory, operational and delivery environment and major changes are needed. Most existing regulatory regimes for electricity network investment were designed in a different era in which infrastructure investment was predominantly national rather than European; grid technologies were less flexible; power flows were more predictable and unidirectional; and transmission was expected to be developed incrementally rather than rapidly.

By contrast, the new regulatory environment will need to address new specific challenges including:

- **Scale, speed, deliverability**: The pace of electricity infrastructure development foreseen considerably outstrips recent build rates and puts pressure on delivery systems. This is particularly challenging for new infrastructure types such as smart grids, electricity highways and integrated offshore grids, where new infrastructure systems will need to be created over relatively short timeframes – an issue not only of physical construction but also of developing governance and system planning regimes and delivery frameworks.

- **Predictability and uncertainty**: While the overall importance of infrastructure is clear, there are large differences in infrastructure requirements between different decarbonisation pathways, and major risks and uncertainties facing investment in specific projects. However electricity networks often take longer to develop than generation assets, often requiring a degree of anticipatory investment.

- **Consistency**: Differences in approach between jurisdictions (e.g. EU vs member states, or between member states) and between infrastructure types (e.g. electricity vs gas vs CO2) further clouds the picture of what infrastructure is needed and forms a potential barrier to delivery.

There is a role for public finance sources and institutions such as the EIB in managing each of these challenges. These include:

- Using public sources of funding to leverage higher volumes of private capital into this space, thereby addressing market capacity limits, for example through the use of EU Project Bonds;

- Helping to address future uncertainty triggered by policy risk through co-investment; and

- Working as an ‘honest broker’ to overcome the specific risks and challenges associated with cross-border collaboration, for example through instruments such as the Connecting Europe Facility providing incentives to projects where the benefits are primarily regional rather than national.

**Fossil Fuel**

- **Gas is an important bridging fuel source in the transition to a low carbon economy: to what extent and under what conditions should gas-fired generation be supported?**

In order to mitigate the catastrophic impacts of climate change, the IEA has stated that no fossil fuel energy infrastructure should be developed beyond 2017 since 80% of emissions allowable by 2035 is already locked-in to existing plants, factories, services and buildings. At the EU level, the EC roadmap for a low carbon economy identified the requirement of the total decarbonisation of the power sector by 2050.

Given the limited resources available to the EIB, and as the EU’s policy driven bank, it is important that the bank prioritises clean, low carbon energy generation over fossil fuel power considering the larger role such infrastructure will play in the low carbon energy system beyond 2020, the lock-in of new infrastructure, and the existing barriers for investment in these areas.

- **What role will coal and lignite fired generation have in the EU power system in the medium term, with or without CCS, and how is this consistent with the EU’s Climate Action goals and its security of supply objectives?**

- **What will be the role of local coal supplies as input for highly efficient CHPs?**

- **What evaluation criteria should the Bank use to assess the economic, environmental and financial viability of coal and lignite fired generation?**

23 IEA World Energy Outlook 2011
In the European Union coal is predominantly an imported fossil fuel. In 2010 24 out of 27 EU Member States (including Poland) have been net importers of coal\(^\text{24}\). The total EU-27 coal consumption exceeded 725 million tones and outstripped the production of EU Member States by over 175 million adding additional pressure on the already strained national accounts and increasing energy insecurity related to the fossil fuel dependence of the EU-27. Thirteen EU Member States have no coal production of their own and thus are fully dependent on coal imports from abroad. Furthermore out of the bloc’s 27 countries, 18 have no plans to build new coal power stations\(^\text{25}\).

As our colleagues at Bankwatch CEE have pointed out, coal has also enormous external costs. Air pollution generated by coal imposes significant costs on human health and the environment. Black lung disease, for example, is caused by inhaling coal dust during mining activities. The National Academy of Sciences calculated the non-climate-related external costs associated with coal electricity generation in the United States at US$62 billion for 2005\(^\text{26}\). Similarly, the European Environment Agency concluded that air pollution from coal plants cost Europe €112 billion in 2009. A study of China estimated that the external costs of all the coal used in 2007 totaled RMB 1.7 trillion, or 7.1 percent of China’s gross domestic production for the same year\(^\text{27}\). Indeed, coal is much more expensive when all the externalities are factored into the equation.

Phasing out lending to coal mining companies and coal-fired generation units by the EIB would also help to achieve the European goals of improving air quality and water quality enshrined in the Water Framework Directive -Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy” and CAFE Directive - Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe. Both of these are difficult to achieve if more polluting sources of energy generation such as coal or lignite-based units are financed. One of the main anthropogenic sources of mercury ending in the European rivers is coal-based energy production and even with existing coal generation fleet it will be hard to fulfill the requirements of the Water Framework Directive. New coal-based generation sources would make it harder still.

Private banks such as HSBC already have more stringent rules on coal-fired power plant financing than the EIB. HSBC energy sector policy technical criteria are the most stringent ones and exclude any new CFPPs deal in developed countries by requiring emission intensity of no more than 550g CO₂/kWh. West LB, another bank with such rules, also requires its clients “to ensure that there is no feasible less GHG-intensive alternative/fuel/energy source” and to have “GHG reduction targets (to) be in place, monitored and audited in accordance with the 2 degrees Celsius target of the EU and UNFCCC”\(^\text{28}\). It is important to mention that both of these institutions are private banks and unlike EIB they are not supposed to follow the European Union challenging policy objectives. Also some US financial institutions have mainstreamed climate requirements into their lending.

The US Overseas Private Investment Corporation (OPIC) has a greenhouse gas cap\(^\text{29}\) that limits the emissions it can have ‘on its books’ for any fiscal year. Policy requires a 30% reduction in portfolio GHG emissions by 2018 and 50% by 2023. The OPIC must account for the direct GHG impact of any project it finances and count it against their target. Given legacy emissions from past projects the OPIC now does not have enough cap space to finance new large fossil fuel projects. In 2011 it has financed $1.3 billion in clean energy and no fossil fuel projects.

It is therefore puzzling to consider that a policy-driven bank such as the EIB should lend to a fuel source that increases EU energy import dependence; results in significant external costs and difficulties in achieving EU Directives; as well as an area that is shunned by many private sector banks.

Given the urgency of climate change and the need for investment into the recourse-efficient renewables-based economy there is no space for new coal and lignite fired generation in the EU power system in the medium term and in the medium term CCS technology is very unlikely to be economically available as a competitive energy option. Thus the role of coal and lignite generation in Europe will be diminishing with time constituting an ever declining portion of the EU energy mix. This will be especially visible with the effects of EU’s Large Plant Combustion Directive that will lead to the closure of approximately 20GW of coal plants by the end of 2015, which have decided not to install pollution control equipment\(^\text{30}\).

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\(^{30}\) Ibid.
- What is the scope for the development of shale gas resources in the EU?
- Do you expect the share of natural gas in EU primary energy consumption to grow further?
- What would be the best approach to increase security of gas supply and reduce import dependency?
- Given the large uncertainty on future gas demand, what is the risk that investment in natural gas infrastructure may be stranded?

Gas infrastructure has many dimensions. New transmission pipes may be required to meet perceived increases in bulk gas consumption. Local gas networks might need to be reinforced to cope with increases in local gas usage – say for space heating in residential properties. Investments to improve the ability of the network to cope with fluctuating demand for gas, such as storage, might also be required.

All of these investments might be required but it is difficult to imagine scenarios in which they are all utilised efficiently. This infrastructure challenge is common to power networks as well. Policy makers and regulators will need to decide whether to pick a narrow band of possible futures and invest to facilitate these outcomes or cover a wider range of scenarios and risk stranding assets. Note, however, that in most circumstances, the regulatory framework would mean that it is the customer, rather than the investor, that bears the majority of the costs of stranding.

One interesting scenario relates to the potential increase in the role of gas for power generation and the associated need for new delivery infrastructure. It is often argued that the development of carbon capture and storage (CCS) technology will ensure that this infrastructure does not risk being stranded since gas power plant, appropriately retrofitted, can continue generating as part of a low carbon energy mix. Apart from the obvious risk that CCS may not be proven commercially at scale in the required timescales, this infrastructure remains at risk of high gas prices. In these circumstances, it would be cheaper to build or retrofit coal plant with CCS (or build other low carbon plant) and the unabated gas plant would no longer be required. The EIB should support the development of local or regional approaches to the development of renewable gas or hydrogen supplies, as a means of extending the lifetimes of existing assets, in preference to investments in long-distance gas pipeline infrastructure which would lock-in high carbon assets for a longer timeframe than would be consistent with decarbonisation objectives.

Nuclear

- What role do you expect nuclear power to play in the European energy market?
- As nuclear power stations are ageing, should their life be extended (where possible) or should they be replaced with other generation sources?
- What will be the impact on electricity generation and climate action of the reconsideration of nuclear policies within EU member states, in particular after the Fukushima accident?

The role for nuclear power remains highly uncertain. Costs on recent projects in Finland have escalated beyond budget and the same cost reduction pathways have not been evident as in the renewables sector. It is likely that new nuclear build or extension will require significant government support which should be provided financially by individual member-state governments rather than a community policy bank such as the EIB, given the different member-state approaches to nuclear energy.
RDI

- Which are the key innovative energy technologies under development? The development of which key innovative low-carbon energy technologies should receive most financial support?
- Which barrier(s) are hindering the deployment of innovative, low-carbon energy technologies most significantly?
- Should financial support be spread across a large number of small research projects or be selective and concentrated on a few promising large research projects?

Financial support from the EIB should be selective and concentrate on near-commercialised projects, particularly in energy storage and CCS, which have significant short to medium term potential to alter energy infrastructure investments and achieve policy objectives.

EIB external and Contonou mandates

- In a developing market context, where should the balance lie between meeting local energy needs at least cost and reducing global greenhouse gas emissions – the trade-off between affordable energy for all and sustainable energy for all?
- What should be the role of the EIB in promoting new technology and helping to transfer existing technologies to new markets?
- Where can sources of low-cost finance be more effectively used by the private sector to develop energy projects?
- What are the main barriers to developing sustainable energy sources in developing markets?

No response.