Insight INVESTMENT
HBOS plc

Inspired thinking

Addressing uncertainty in climate change policy: a dialogue between institutional investors, companies and policy-makers

Introduction

On 22 March 2006, Insight hosted a seminar at the Royal Institute of International Affairs – Chatham House – to discuss how climate and energy policy uncertainty, at both the UK and EU levels, affects investment decision-making in the electricity (power generation) industry. As power generators are amongst the biggest emitters of greenhouse gases (GHGs) they are among the most exposed companies with respect to regulatory risk and policy uncertainties.

The characteristics of power sector investments – capital-intensive, long-lived and involving technologies likely to be strongly impacted by future emissions controls – mean that uncertainties relating to the extent, timing and cost of any controls on emissions of GHGs may hinder electricity utilities' ability to design and implement optimum investment strategies. From a public policy perspective, these investment decisions can have long-term impacts on the sectors' GHGs emissions. Policy uncertainty may lead to electricity companies making sub-optimal investment decisions, i.e, investing in technologies that potentially run counter to climate policy goals.

As long-term investors, we aim both to support public policy efforts to significantly reduce GHGs emissions over time, to ensure that the adverse impacts on our investments are minimised and that climate policy is designed and implemented so as to maximise economic efficiency.

Aims of the seminar

The seminar brought together institutional investors, key climate policy-makers and companies with the aims of:

- Developing a common understanding of how climate change policy uncertainty affects investment decision-making in the electricity industry.
- Assessing the implications of policy uncertainty and the resulting investment decisions for climate policy makers, companies and investors.
- Discussing the potential contributions of institutional investors, companies and policy makers in responding to these uncertainties.

Findings

What are the sources of uncertainty?

There are many uncertainties in climate policy, such as the political context within which climate policy is developed (e.g. the level of government support for climate policy measures, wider economic/energy security concerns), the policy instruments chosen and the manner in which they are implemented, and perceptions of the credibility of the different actors (e.g. is government seen as committed to climate policy, are companies committed to minimising greenhouse gas emissions).

Some of the specific sources of uncertainty faced by electricity utilities include:

- The degree of government support for policy action on climate change, over the short and long-term.
- Whether there will be a post-Kyoto international regime, and the form the regime will take.
- The specific policy instruments used and the timing of policy responses.
- Differences in implementation between different countries.
- The future price of carbon.
- Carbon credit allocation rules.
- Subsidy levels for specific technologies.
- The response of other companies to specific policy measures.
- The response of other sectors of the economy (i.e. how much burden will be borne by electricity utilities vis-à-vis other sectors?).
- The relationship between climate policy goals and other policy goals such as energy security.

How do these uncertainties affect electricity companies? The value of waiting…

The types of new investments that might be considered by electricity companies are presented in Box 1.

Power generators tend to use standard project appraisal processes based on a discounted cash flow (DCF) model (comprising elements such as electricity prices, fuel prices, environmental charges, taxes, tax credits and other fixed and variable operating costs) to determine whether to invest in new power generation facilities or projects. These models estimate the present value of a project's future income and compare that to the initial capital outlay.

The simple investment rule is that if the present value of the DCF is greater than the initial capital outlay for the project (such that the 'net present value' – NPV – is positive), then the project should go ahead. If not, the project should not go ahead.

However, in situations of uncertainty, there may be value in waiting, even if NPVs are positive. Because these investments are more or less irreversible and the plant generally cannot be re-sold without losing considerable value, a greater financial return on the project may be achieved by waiting until the uncertainty has been resolved (or reduced), than by investing immediately.

Hence, in order to stimulate immediate investment, the project would not only need to achieve a positive NPV, but would need to achieve an additional return on investment sufficient to exceed the cost of waiting caused by the uncertainty. This could mean that prices (e.g. electricity or carbon prices) required to stimulate investment in low-carbon technology may be higher than expected based on normal DCF analysis assuming perfect certainty. That is, companies faced with a risky irreversible decisions will probably wait for new information about what the future might bring. In this case, their response may take a number of different forms, such as delaying investment, delaying plant closure/replacement, giving greater preference given to phased investment (e.g. preferring flexible/modular plant over economies of scale) or requiring greater project cash flow for immediate investment (leading to higher prices).

From a public policy perspective, if investments in new technologies are deferred as a result of policy uncertainty, the emission reductions path of the sector could be affected, while higher-than-expected carbon prices could have wider economic implications both for the power sector and for consumers.

Box 1: Investment options for electricity companies

The investment choices facing existing fossil-fuel (coal, gas and oil) fired plant include:

- Converting coal plant to gas firing.
- Converting oil plant to coal or gas.
- Heat rate improvements.
- Biomass co-firing.
- Early abandonment.
- Plant life extension.

The investment choices for new build include:

- Combined-cycle gas turbines.
- Ultra-super-critical coal plant with flue gas desulphurisation (FGD) and selective catalytic reduction (SCR) with or without carbon capture and storage.
- Nuclear.
- IGCC (coal gasification), with or without carbon capture and storage (CCS).
- Renewables (wind, solar, etc)

Possible policy solutions

The meeting identified a number of measures that could be considered by policy-makers to overcome the negative environmental effects of policy uncertainty while also enabling companies to make optimal investment decisions. These included:

- Extending the allocation period for carbon permits from a 5-year to a 10-year trading/allocation period could significantly reduce the required investment return in the early years of the allocation period. However, it was noted that any periodic allocation could encourage undesirable cyclical investment patterns. A possible solution might be to explore setting allocations on a rolling 10-year basis.
- Considering projects that allow companies to hedge carbon risks: for example, the ability to retrofit CCS at a later date acts as a good hedge for coal plants against higher than expected carbon prices. CCS as a retrofit investment option makes investment in new coal plant less risky (reducing the investment threshold in the face of uncertainty), and could accelerate investment in coal. However, investment in the CCS plant itself is very sensitive to the price of carbon, so there is an incentive to wait to gain more information about future prices before retrofitting the technology.
- Strengthening/improving government communications on climate change, in particular by signalling commitment to longer-term policy in this area.

Next Steps

One of our key motivations for holding this seminar was that institutional investors – despite the work of organisations such as the Institutional Investors Group on Climate Change – have not been included in many of the policy debates around climate change to date. With both the UK Government and the EU starting to consider the longer term (i.e. post-2012) climate policy framework, we see this as an opportune time to initiate discussions with policy-makers and to signal institutional investors' interest in actively participating in these discussions.

In early summer 2006, Insight, together with Chatham House, will publish a more detailed report on the seminar's findings. In addition to our ongoing engagement with companies, we intend to hold meetings with key policy-makers to communicate our views on how climate change policy can be designed, communicated and implemented so as to allow companies to make investment decisions that are both economically efficient and environmentally effective, while also providing sufficient flexibility to policy-makers to adapt policy in response to changing circumstances.

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