



Project Discovery: Options for delivering secure and sustainable energy supplies

The TUC welcomes the opportunity to respond to Project Discovery. The TUC is the voice of Britain at work. With member unions representing over six and a half million working people, with substantial membership across the power generation and supply and mining sectors, we campaign for a fair deal at work and for social justice at home and abroad.

CHAPTER THREE

Question 1: Do you agree with our assessment of the current arrangements?

Yes. The TUC supports the development of a balanced low carbon energy supply, involving nuclear new build, renewables (both small and large-scale) and both coal and gas with CCS.

However, we have long held that the UK's energy market should operate first and foremost in the national interest. The existing market arrangements alone will not secure low carbon, low cost and secure electricity supply in line with the strategy outlined by the Committee on Climate Change. The options for reform suggest a clear leadership role for Government, with the energy market underpinned by a minimum price for CO₂ set in a long-term CO₂ price framework, with new capacity tendered within defined parameters best suited to secure a low carbon, low cost energy future.

Question 2: Are there other aspects of the current arrangements which could have a negative impact on secure and sustainable energy supplies, or costs to customers?

Skills challenges

Project Discovery doesn't provide an analysis of the massive skills challenges implicit in a £200bn energy investment programme. The TUC believes that this strategic issue needs to be addressed, including a commentary on Ofgem's role in helping to meet any skills gaps identified.

The report notes (para 3.50), that the UK is *"gearing up for an unprecedented deployment of new technologies within a very short space of time. Additional barriers to rapid deployment of low carbon technologies are availability of skills and the establishment of supply chains."*

The DECC consultation, *Meeting the Low Carbon Skills Challenge* (2010) suggests that the power industry in the UK faces three major skills challenges:

- An ageing workforce: 80% of today's power industry workforce retire by 2024, meaning that the industry will need to find in excess of 28,000 new skilled employees.

- Significant new build: all nuclear power stations except for Sizewell B are set to close by 2023, while some 20 Gigawatts of new renewable generating capacity is already planned or under construction. Building replacement capacity will create demand for engineering and construction skills, and on a number of technical skills specific to new nuclear power stations.
- New skills for new technologies: increasing demand for skills to deliver and operate new technologies, including large-scale renewables, infrastructure for CCS and a modernised electricity network.

Clearly, Ofgem needs to integrate skills developments into its strategic assessment. The DECC consultation highlights a number of specific sector skills concerns, including:

- In the nuclear sector, Cogent's report, *Skills for New Build Nuclear* predicts peak employment of 14,000 jobs in 2021. In construction (including mechanical and electrical) the peak employment is estimated at 12,000 in 2021, in manufacturing at 1000, and in operation at 5,000 in 2025. The report contains recommendations on meeting these requirements, notably industry supporting the sector skills bodies in expanding employer-driven foundation degree programmes, such as the nuclear strand in the Cogent Working Higher initiative, alongside HEFCE. Government and its funding councils to maintain funding support for such foundation degrees; and sector skills bodies and industry aligning skills accreditation schemes to ensure safe working.
- On CCS, many of the technical skills needed for CCS are similar to existing industry skills in sectors such as power generation, chemicals or oil and gas. But the detailed skills breakdown is uncertain and there are no specific occupational standards or training routes. The technology overlap with other sectors means that CCS is exposed to competition for resources and skills.
- On renewables, the collaborative action taken by employers and skills partners in the nuclear, wind and marine energy sectors will be applicable to accelerating skills development in decarbonising other parts of the economy. For example, DECC is supporting EU Skills to lead a wider consortium of SSCs to review skills and training provision for renewable energy.

CCS for coal and gas

The first report of the Committee on Climate Change, *Building a low carbon economy*, noted that, "Expenditure on CCS demonstration projects is a priority." Delivering on this central priority should be an integral part of the Project Discovery strategy.

The assumption for CCS plant under the "Green stimulus" option (page 87) is for three 400MW demonstration plant by 2020 and 2 x 1.6GW stations with 400MW fitted with CCS. The TUC's Clean Coal Task Group has argued elsewhere¹ for substantially more coal with CCS in the UK and EU energy mix.

Current policy is driving a dash for gas. The TUC strongly supports the Government's objective of securing four CCS demonstration plant for coal, but we remain concerned over the scale and pace of the overall CCS strategy for coal and gas. Leaving gas out of the CCS equation is an energy "luxury" we cannot afford.

The absence of parallel CCS obligations for gas sends a strong signal to build unabated gas, with no obligation to future abatement. We fear that this will not only weaken the UK's indigenous coal industry, but lead to gas dependency and the lock-in of higher carbon emissions than would obtain with a CCS obligation for fossil fuels generally.

Under current scenarios, four new coal-fired plants will be constructed to replace the existing 28GW of coal-fired plant likely to close as a result of the Industrial Emissions Directive (IED). Coal-fired generation will therefore fall dramatically and the UK will become highly dependent on gas, particularly on a cold, still winter's day. As a consequence a secure, diverse, moderately priced electricity generation portfolio will be replaced by one subject to serious security of supply and price risks.

The TUC's *Clean Coal Task Group*ⁱⁱ has argued that the UK has a unique combination of advantages to develop CCS technology, and in regions such as the Aire Valley, opportunities to reap economies of scale: "The economics of CO₂ transport improve dramatically with scale, hence there is a need to develop a plan for a CO₂ gathering network and trunk pipelines to the major storage/use areas – linking both power generation and energy-intensive industries to the network."

We should therefore be maximising opportunities to develop these technologies, not least in order to maintain a market for indigenous coal. A strong CCS industry would greatly benefit the UK economy, and is of global importance in the challenge of climate change. We would urge Ofgem to integrate these concerns into its strategic approach to securing our low carbon energy future.

CHAPTER FOUR – POSSIBLE POLICY RESPONSES

Question 5: Do you believe that our policy packages cover a sufficient range of possible policy measures?

The policy packages provide a helpful framework of options for energy market reform, recognising that the secure and sustainable energy supply is not achievable without strong Government leadership.

Government therefore needs to define the optimum mix of generation which will deliver our low carbon goals at the minimum cost to the consumer, whilst maintaining a diverse and secure energy mix.

The creation of a clear carbon price signal within the EU ETS is a vital tool in driving electricity sector emission reductions. But additional policy levers will be required, including financial support and non-financial policy measures, including planning reforms; the extension of the EU ETS beyond 2020; expenditure on CCS demonstration projects; and ensuring that new fossil fuel power stations should only be built on the clear expectation that they will be retrofitted with CCS capability.

Question 7: What other policy measures do you believe should be considered, and why?

An option worthy of further detailed work is the creation of a *Low Carbon Obligation*, open to all technologies, which could help to deliver the lowest cost, low carbon electricity to industrial and domestic consumers, whilst meeting the UK's low carbon electricity targets.

CHAPTER 5 – ASSESSMENT OF THE FIVE PACKAGES

Question 9: Do you have any comments on our initial assessment of each of the packages?

The strategy should specify the generation mix best suited to meeting the rolling five-year carbon budgets set by the Committee on Climate Change. It would encourage investment, provide greater certainty over future workforce requirements, and, as **Prospect** points out in its submission to Project Discovery, could facilitate a greater focus on R&D to deliver the most efficient technologies within the specified framework.

Providing a minimum carbon price will enhance investor confidence, provided that a clear direction for the minimum price were signalled over the longer-term, multi-decade time periods involved. As the CCC noted, “The creation of a clear carbon price signal within the EU ETS is a vital tool in driving electricity sector emission reductions.”

Question 10: Do you agree with our summary of the key benefits and key risks of each policy package?

We remain concerned that each option tends to support a dash for unabated gas, with higher dependence on imported gas to provide backup generation for intermittent renewables. We would urge Ofgem to review this policy anomaly, preferably ensuring a greater role for CCS for coal and gas.

Question 11: Do you have a view on which package is preferable, or alternative policy measures or packages that you would advocate? We are particularly interested in any analysis you may have to support your views.

The notion of Capacity Tenders with the introduction of a low carbon obligation would tend to give investors the necessary confidence, help ensure project finance and deliver carbon reductions at optimal cost to consumers.

Question 13: Do you believe that early actions should be considered?

As noted above, it is vital to accelerate the development and deployment of CCS technology for coal and gas.

The TUC welcomes the creation of the Office of Carbon Capture and Storage (OCCS), tasked with facilitating the delivery of CCS in the UK, and helping to promote its rapid deployment globally. The Office will set the strategic path for the use of CCS, facilitate the delivery of the demonstration programme, create the policy and support arrangements to stimulate private sector investment, and work with stakeholders to remove barriers to investment and development in the UK and globally. It will also look to maximise the domestic and global opportunities for UK businesses and the economy to benefit.

The International Energy Agency’s (IEA) CCS roadmapⁱⁱⁱ foresees a massive requirement for capital investment in CO₂ capture, transport and storage equipment, estimated at almost USD 100bn between 2010 and 2020, increasing to over USD 5,000bn between 2010 and 2050.

Alongside the Government’s strategy for CCS deployment^{iv}, the Government created the first Low Carbon Economic Area (LCEA) for CCS, led by Yorkshire Forward in the Yorkshire and Humber region. Our primary concern is to support the rapid development of CCS, both for the power sector and heavy industry. We would therefore encourage Ofgem to integrate into its thinking the wider role for CCS for both coal and gas power and UK industry more generally, particularly in ensuring the development of regional CCS infrastructure networks.

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- ⁱ *A framework for clean coal in Europe*, TUC Clean Coal Task Group, 2007.
- ⁱⁱ *A framework for clean coal in Britain*, TUC Clean Coal Task Group, June 2006.
- ⁱⁱⁱ *IEA Technology Roadmap Carbon Capture and Storage*, OECD/IEA, 2009
- ^{iv} *Clean coal: an industrial strategy for the development of carbon capture and storage across the UK*, DECC, 2010.