Regulating for Innovation: Response to the DECC OGA Consultation on ensuring regulation encourages innovation:

Reference 15D/554

Submission from the Chartered Institution of Building Services Engineers (CIBSE)

Name:	Dr Hywel Davies
Position:	Technical Director
Name of organisation:	Chartered Institution of Building Services Engineers
Address:	222 Balham High Road, London, SW12 9BS
Email address:	hdavies@cibse.org
Telephone number:	020 8772 3629

About the Chartered Institution of Building Services Engineers (CIBSE)

CIBSE is the primary professional body and learned society for those who design, install, operate and maintain the energy using systems, both mechanical and electrical, which are used in buildings. Our members therefore have a pervasive involvement in the use of energy in all types of buildings the UK. Our focus is on adopting a co-ordinated approach at all stages of the life cycle of buildings, including conception, briefing, design, procurement, construction, operation, maintenance and ultimate disposal.

CIBSE is one of the leading global professional organisations for building performance related knowledge. The Institution and its members are the primary source of professional guidance for the building services sector on the design and installation of energy efficient building services systems to deliver healthy, comfortable and effective building performance.

Response

Unfortunately it was not possible to copy the questions from the consultation PDF, so they are referred to here by their numbers only, and it is assumed that the readers are familiar with the questions.

1. Encouraging Growth.

One of the most important policy, legislation and enforcement actions to support innovation is certainty. Businesses need certainty in order to plan. Policies that aim to support innovation, whether in products, or in novel processes that deliver new market services, need a stable policy base, consistency in delivery and then effective enforcement of policy.

In the energy efficiency sector investors have seen numerous twists and turns in policy relating to the insulation of domestic properties, especially those that are hard to heat. Capital intensive businesses need a degree of stability in the policy landscape over a period of years. They are rarely operating only in the UK – the leading insulation manufacturers, for example, operate across Europe. Unstable policy in the UK makes it more likely that these businesses will invest in manufacturing elsewhere in the EU or even outside Europe altogether. This does not encourage growth in the UK economy.

Unfortunately the Green Deal provides plentiful evidence of the effect of a policy which was developed amid great fanfare, but was not then delivered. Many organisations invested in building the capacity to be a part of the Green Deal, based on a plethora of statements and predicted size of market over a period of two or three years, only to find that the policy ultimately failed. It is vital to appreciate that the point here is not in any way to assess the reasons for the failure of the Green Deal, but to understand what the impact of that failure will be on investment in innovation in the energy sector.

A final example of the long term impact of lack of certainty is the feed in tariff. Whilst the changes to FiTs were understandable due to the excessive values set in the beginning, the speed with which rates were cut and the total lack of engagement with industry are likely to have been hugely damaging. Who would wish to invest in the energy sector in an innovation that depended on trusting a current policy position? The track record of change in policy makes innovation in the sector hugely risky.

Enforcement poses a similar challenge. Although it is not a DECC policy, enforcement of the Energy Performance of Buildings Regulations, which implement the Energy Performance of Buildings Directive, is a useful example. In 2007 the government let a contract to Landmark Information Group to run a national register of energy performance certificates. Due to inadequate lodgement of energy certificates, the government ended up having to pay £5.7m to Landmark due to the shortfall. Landmark were perhaps fortunate – their lawyers had ensured that if the government did not make adequate provision for enforcement of these regulations, they had legal recourse to require taxpayers to make good their loss. This enabled them to bid for the contract with certainty, and also insured them against failure of enforcement.

Unfortunately the many people who were induced to train as domestic energy assessors on the promise of a significant volume of work, and those who invested in delivering the energy assessor certification schemes to train and supervise these assessors were not so fortunate. Many found that the return on their investment fell far short of the promises. If a financial institution had made the promises about future returns that were made to those entering the energy assessor market, and then delivered the real returns, regulators would have been quick to investigate, encouraged no doubt by vigorous pronouncements from politicians. Yet when it is the politicians who promise much and deliver or enforce little, then only those like Landmark with clever and insightful lawyers have any recourse to remedy.

If the success of a policy in the energy sector is predicated on effective enforcement, then it is in jeopardy, as there is little confidence, or even trust, in the willingness of government to adopt effective enforcement policies.

This is a difficult position to reverse quickly, since confidence and trust take time to build, and can be destroyed instantly. But growth through innovation requires confidence, stability and a degree of certainty in policy positions.

New technology and, 2. the energy sector; & 3. the regulatory framework

It must be doubtful whether anyone who can answer the second question will be spending time responding to a DECC consultation, as they will be busy seeking ways to profit from their insights.

It is certain that technology will have a significant impact on the energy sector, indeed it is already doing so. The real challenge for regulators is to create an effective regulatory framework focussed on outcomes, avoiding prescription

wherever possible. This is not a new concept, and has been the basis for the Building Regulations in England (and Wales, even though the Regulations are now devolved). These regulations tend to require “reasonable provision” for a specific outcome. The regulations are then supported by statutory guidance, approved by the Secretary of State, which describe effective ways to make reasonable provision. Those who wish can just follow the guidance.

But it is only guidance. Those who need an innovative solution are free to deliver it. The Eden Project in Cornwall comprises three large biomes, huge greenhouses. They are buildings for the purposes of the Building Regulations, and under Part B the designers had to make “reasonable provision” for occupants to escape in the case of fire.

Following the solution given in the statutory guidance would have required tunnels in the rock behind the biomes. There would have been no Eden Project – it was unaffordable. But an innovative approach based on the established science of fire engineering allowed the designers to demonstrate that these buildings were unique, and that the densities and the potential rate of egress from them were significantly different from the assumptions on which the statutory guidance was based, and that with adequate emergency exits from the biomes into the quarry area, “reasonable provision” could be made affordably.

There are other examples in the fire engineering sector, which include hospitals and healthcare buildings, where performance or outcome based requirements allow innovation and, in turn enable other aspects of building design, such as the use of daylight, which is known to promote better treatment outcomes, to be adopted. For examples see, for example, http://www.ifsecglobal.com/fire-safety-engineering-creative-with-compartments/.

An example of prescription which is not so effective is the requirement to use products with a prescribed efficiency, for example, boilers. England and Wales introduced condensing boilers in 2005. This meant that it was a requirement to use higher efficiency boilers on new installations. The advantages of this approach were that it provided a regulatory impetus to the whole supply chain to take this technology seriously. From their introduction in 1990 to the regulation in 2005, market penetration had gone from 0 to 15%. In six months of regulation it jumped to 85%. If you want to get a new product adopted, that is pretty effective. It also, in relation to Q1, delivered total certainty to the whole supply chain, from manufacturers through to plumbers, together with the merchant chain.

However, for a condensing boiler to actually work in condensing mode, the temperature of the water returning to the boiler must be much lower than in a traditional heating system. And unless the system is modified to deliver that lower return temperature, then the boiler will not operate in condensing mode, and so will not deliver the theoretical efficiency of which they are capable (and any assumptions about the effectiveness of the policy in energy or carbon savings terms will be significantly over optimistic, too).

No provision was made to attempt to achieve any change in the operation of the overall heating system.

Performance or outcome based regulation is more open to innovation than prescriptive regulations, but it is more difficult to frame regulations in this way. One feature of the condensing boiler introduction was that the whole supply side was actively engaged by the regulators and consulted on the policy in full before implementation, and a full year lead in was given by early publication of the regulations with a clear coming into force date, to provide confidence and certainty.

The use of regulation to drive the uptake of new technology can, as shown above, be very effective. Indeed, sometimes regulation will be the most effective way to drive innovation, as it requires everyone to adopt a new approach, whilst a voluntary market approach runs the risk that nobody wants to run the risk of being the first adopter – especially where the innovation (as with condensing boilers) carries a cost premium in a highly competitive cost driven marketplace.

Another example is the absurd obsession of the retail sector with open shop doors in cold weather (and in some cases open doors in hot weather, with air conditioning running full blast to condition the open space inside!). Many retail energy managers will say privately that their chain understand the waste of money and energy, but it is driven by a fear of discouraging footfall and losing market share. Yet if shutting the doors was regulated, they would all willingly comply!! They just will not volunteer, however rational that would be.

Sometimes regulation is just the only way to drive innovation.

In conclusion, regulation can drive innovation, not hinder it. Consultation is a key factor in the design of performance or outcome based regulations, using the knowledge and expertise of the regulated sector and its clients to help design a regulatory framework by consensus. Effective innovation friendly regulation will rarely, if ever, be developed by isolated drafters working in a small group disconnected from the regulated market.