

## **Energy Policy and Regulation: Future Challenges**

By Walt Patterson

Let me offer you a challenge you might not have thought of - not a future challenge but an immediate challenge, for today, for this afternoon. We're discussing energy policy, regulation and security. What do you mean by 'energy'? By 'policy'? By 'regulation'? By 'security'? If we are to discuss these concepts usefully, we'd better be clear about how we understand them. Start with 'energy'. Since the early 1970s we've been saying 'energy' when we really mean oil; or coal; or natural gas; or electricity. They are not the same. They are not interchangeable. But calling them all 'energy', smearing them all together, makes too many people, especially politicians, think one can substitute for another. We talk about 'energy supply', when we mean, perhaps, 'oil supply' - not the same as 'gas supply' or 'electricity supply'.

Why do we need these supplies? That's the key detail we so often ignore. We need fuels and electricity to *run stuff*. What matters is the *stuff* - the lamps and motors and electronics, the appliances and fittings and industrial plant, and especially the buildings. This stuff, this technology, provides what we want - the comfort, the illumination, the cooked food, the motive power, the refrigeration, the mobility, the information, communication and entertainment. The technology is what really matters. Oil by itself is almost useless. Natural gas by itself is downright dangerous. Electricity as we use it does not even exist by itself. It's a process taking place in technology. Fuels are only useful *because of technology*.

*Chambers 21st Century Dictionary* says 'policy' means 'a plan of action, usually based on certain principles, decided on by a body or individual'. What we call 'energy policy' today still means a plan of action focused on supplies of commodity fuels and electricity - what we used to call, correctly, 'fuel and power policy'. Fuel and power policy takes user-technology for granted, and ignores it, except as aggregates and averages of so-called 'energy demand'. Real 'energy policy', by contrast, will recognize that we *do not have* 'energy demand', or an 'energy problem'. We have an assortment of quite specific and distinct problems with various energy services, from an endless variety of specific user-technology and infrastructure, that may or may not require specific fuel or electricity to run. Real energy policy will include user-technology and infrastructure not merely as an afterthought but as an explicit priority focus for action, decision-making and business.

The 'certain principles' involved will cover not only cost and reliability of the services, but also the social and environmental implications of the processes that provide them. 'Regulation', in turn, will likewise undertake to assure compliance not only with the traditional economic ground-rules for buying and selling commodity fuels and electricity, but also with the broader social and

environmental requirements for delivering energy services equitably and sustainably. Regulation as presently practiced takes as its central premise the role of competition as a way to ensure the optimum service to users of energy services. Regulators presume that the key competition is between different suppliers of a particular fuel or electricity, and that the objective of competition is to make the price of a unit of, say, gas or electricity as low as possible, to benefit users. In my experience, however, most users - certainly domestic users - have *no idea* of the unit price of their gas or electricity. What matters to them is the *bill*. What they want is a *low bill*. Low prices may not lead to low bills - on the contrary.

That is because the real competition, the competition that really matters, is between *fuel and technology*. Real energy policy will recognize that better user-technology requires *less fuel* to deliver the same or better services. Fuel and user-technology compete directly with each other. Key competitors for ExxonMobil are not Shell nor BP but Honda and Volkswagen. Competitors for Gazprom are Europe's manufacturers and installers of thermal insulation. Competitors for EDF and E On are the manufacturers of compact fluorescent and LED lamps; and so on, across the entire range of user-technology and infrastructure, not only in the UK but around the world. Real energy policy, to address the urgent issues of energy security and climate security, will not be about commodities but about user-technology and infrastructure. Effective and constructive regulation must recognize and operate on this crucially important principle.

The 'security' that matters is not, as presently assumed, merely the secure provision of fuels and electricity. What society desires is the secure delivery of the many energy services we now rely on. The best way to reduce our vulnerability to disruption of fuel supplies, especially from beyond UK borders, is to reduce our dependence on them. Recent regulatory activities, such as the Certified Emission Reduction Targets demanded from fuel and electricity suppliers, are a step in the right direction. But what would really transform the picture would be a regulatory and business framework in which suppliers have genuine *business* incentives to upgrade the infrastructure and user-technology of their customers - not because the regulator imposes a mandate but because suppliers see such upgrading as good business in its own right.

That will, however, be a different kind of business - no longer a commodity business based on short-term batch transactions, but an investment business based on longer-term contractual relationships. For me, a convenient way to sum up the difference is to say that the traditional fuels-plus-electricity form of energy business is based on the economics of flow, whereas the innovative business based on physical assets, user-technology and infrastructure has to be based on economics of stock. Speaking here last year I mentioned the example of such a concept, advocated by my long-time friend and colleague Dr Tony White, ex-CEGB, ex-Kleinwort Benson, a co-founder of the rapidly expanding company Climate Change Capital. Tony has been working for some years to devise a way to make user-upgrades good business for suppliers. Suppliers are understandably reluctant to invest in customers' premises, because the customer might switch to another supplier, leaving the investment stranded. Tony has come up with a simple and ingenious remedy for this problem. When the supplier invests in a customer's premises, by installing insulation, better lighting, better doors or windows, better controls, microgeneration or some other performance upgrade, the supplier receives a return on the investment by a suitable surcharge on the bill. But the upgrade reduces the amount of fuel or electricity used, making the overall bill no higher, indeed probably lower.

The key is that the requisite contract is tied not to the property-owner but to the property itself. The relationship is akin to those for the incoming supply-pipes and wires. Even if a particular owner sells the property to a different owner, the contracted payments continue. The previous UK government endorsed Tony's concept; but it has yet to be taken up by the regulator or suppliers. This opportunity offers companies a whole new way to make guaranteed returns on their investments, while giving energy users more reliable, more economic services more sustainably. But it runs foul of the traditional commodity-based mindset. That is our main problem.

This seminar is intended 'to discuss how direct and indirect involvement of governments in the activities of the energy industries is evolving'. For me, the crucial leverage available to governments is their role as major energy users in their own right. Governments can change the ground-rules for the energy business in which they themselves participate. If the government is serious about energy security and climate security, it should immediately initiate - and publicize, continuously, as public education - programmes to upgrade the performance of its own facilities, as top priority. By contracting with fuel and electricity suppliers to carry out the investments and upgrades, the government could turn them from 'suppliers' into what we actually need - real 'energy service' companies. This is already happening in some enlightened parts of the world, notably California. It should be happening here in the UK, and globally. We keep hearing about 'green stimuli' and a 'green economy'. Direct government participation would be the most immediate and effective avenue into this essential direction. Governments should stop telling the rest of us what to do, and start showing us.

That would also send out the crucial message: that energy policy, regulation and security are not just about oil, gas, coal and electricity, but about technology and infrastructure - the technology and the infrastructure that you and I all use, today and every day. The energy future is not just a challenge but an opportunity. Let's seize it.

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