

ENERGY, FUEL AND EFFICIENCY **WALT PATTERSON**

Loft Insulation as Foreign Policy

Forget fighting wars to protect oil and gas supplies, worry less about unsavoury leaders who extract a price for access to these precious products. Instead, order some loft insulation for homes, offices and especially government buildings. While we are at it, add energy saving light bulbs and those clever new boilers which generate electricity while heating houses.

FOR NEARLY FOUR DECADES we have been persuaded to call oil and natural gas, coal and electricity, all 'energy', as if they were more or less equivalent and interchangeable. What was once fuel and power policy has become 'energy policy'.

For nearly two decades, moreover, we have come to consider all this energy, so defined, as an international commodity. It has also become an international issue of rapidly increasing potency.

But energy is not an international issue. Oil is and so is natural gas. Sometimes, in some places, electricity can be. Energy, properly construed, is not. If policymakers can get to grips with this crucial realisation, we may at last be able to deal effectively with both climate and energy security.

Since the 1970s, the Organization of Petroleum Exporting Countries (OPEC) has manipulated the price of oil to suit its own agenda. Although the rest of the world has learned to live with OPEC, oil has long been a major factor in international relations and conflicts. As China, India and other rapidly developing countries become major oil importers, tensions are already increasing.

Natural gas, meanwhile, has now become as internationally controversial

as oil, with Russia the most aggressive player. All around its borders, from the Shtokman gas field in the Barents Sea, to the Sakhalin Islands, to the Caspian Sea, to the proposed Nordstream gas pipeline in the Baltic Sea, President Vladimir Putin's Russia is demonstrating ruthless determination to get maximum political advantage from its oil and gas.

In May, British Prime Minister Tony Blair conceded in *The Times*: 'We are now faced with countries, like Russia, who are prepared to use their energy resources as an instrument of policy'. In fact, other nations, such as Saudi Arabia and Venezuela, have long done so. As international demand for hydrocarbons expands, more will join them.

For importing countries the consequence is rapidly mounting concern about what they call 'energy security'. They should, however, call it fuel security; and it is not a single problem but several, separate and distinct. What is at

issue is the ability of people in importing countries to maintain comfort, illumination, motive power and other energy services, without interruption and at acceptable cost.

In the short term that means access to reliable, affordable and appropriate fuels and electricity to run existing buildings, lamps, motors and electronics. Note the 'appropriate': each technology needs not just 'energy' but the fuel or electricity that meets its precise requirements: high-octane unleaded petrol or 50Hz 240V AC electricity, for example.

In the longer term, however, an obvious trade-off emerges.

Instead of indefinitely trying to secure supplies of the specified fuels to run the same technologies, we can shift focus. Over time we can explicitly upgrade the performance of buildings and other end-use assets, to deliver the desired



services while requiring less fuel or electricity of any kind.

We have long known how to do this, but have not bothered, even when the upgrade would save money. Now, however, as fuel security rockets up the agenda, a significant factor comes into play. Although fuels are an international issue, the buildings, lamps, motors and electronics that actually deliver energy services are not. This infrastructure lies mainly within national borders, under the jurisdiction of individual governments. Indeed a significant proportion may actually belong to the government, or be its direct responsibility, everything from schools to prisons. Governments that recognise this can now take active advantage of it, for reasons not just of domestic but also of foreign policy.

They can start by discarding the misleading phrase 'energy efficiency'. If it means anything, it means how well buildings and consumer technologies use fuels or electricity - not how well they deliver the desired services. Some governments have already made the appropriate substitution, referring now to 'energy performance'. The next step is to identify the real policy options available to governments, to upgrade the performance of the energy service infrastructure within their own borders, for all the services their citizens use. The crucial shift is from commodity policy to investment policy.

Traditional energy policy treats fuels and electricity as commodities, whose unit price is their most important attribute. From this viewpoint, the key to so-called energy efficiency is higher prices for these commodities, to make people want to use less of them. But the prices of oil and gas are determined internationally. National governments seeking to raise unit prices artificially can intervene within their own borders only by taxing sales of these fuels.

Such interventions are inevitably both arbitrary and short-term, as well as controversial. At best they give unpredictable and volatile signals to investors. Upgrading buildings, lighting, motors and so on requires not only investment but also time. Improving energy performance is not a short-term commodity transaction.

POWERFUL POLICY LEVERS

Fortunately, however, shifting focus from international fuels to national infrastructure, and from commodities to investments, reveals a rich array of additional policy levers that national governments can use. They include financial incentives such as grants and

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loans; favourable tax treatment of asset investments; minimum standards of performance; building and other regulations; and government provision of its own energy-service assets.

To be sure, governments do already use many of these measures. But they do so on a short-term, incoherent ad hoc basis that fails to take advantage of the available potential. Instead this should become an integrated and coherent portfolio of national energy policy options.

Moreover, unlike blanket increases in fuel prices, this portfolio allows governments to select the services they wish to see upgraded. They can tackle the easy problems first, winning time in which to deal with the more intractable later. Of all the energy services we use, comfort and illumination are two of the most essential, and two of the easiest to upgrade. The buildings and lighting that deliver these also offer an abundant shopping list of attractive improvement possibilities.

In 2003, the European Union (EU) enacted a Directive on the Energy Performance of Buildings. However, member governments are implementing it at a relaxed, even leisurely pace that falls far short of the urgency it deserves. Enforcement, for instance of building regulations, has been similarly relaxed. It should become a priority.

Last year's International Energy Agency report, *Light's Labour's Lost: Policies for Energy-Efficient Lighting*, identified another vast opportunity. Recent official moves by Australia and the EU to phase out the absurdly inefficient century-old incandescent light bulb are welcome, but only a start. Lighting also illustrates what can be a perverse international dimension to energy services, the cross-border trade in consumer technologies. Until recently, for instance, the EU imposed tariffs on imports of high-performance lamps from China, to protect manufacturers from competition.

GENERATING ANYWHERE

One policy move above all is obvious, and entirely within the control of governments. Every government has its own estate of buildings; in prosperous countries this can number tens, even hundreds of thousands. These usually

offer copious room for improvement.

In Britain, for instance, the government's own Sustainable Development Commission's report for last year, revealed that fourteen government departments are running buildings whose energy performance was poorer than six years earlier. The National Audit Office reported that four out of five government building projects failed to meet the government's own official standards.

If Britain is serious about reducing vulnerability to disruption of international fuel supplies, the government can start on its own premises, with contracts to prime the pump for energy service companies, creating skilled jobs all over the country. Other fuel-importing countries can do likewise.

As they do, they can also recognise another crucial distinction. Fuel such as oil or natural gas comes out of a hole in the ground. If you want to use it somewhere else you have to transport it there, sometimes halfway around the world.

Electricity, by contrast, can be generated anywhere, in a remarkable variety of ways, at any scale from enormous to minute. In particular, it can be produced within national borders. This can be done without imported fuel, using wind, microhydro, marine energy, photovoltaics or biomass power. Alternatively, and even more easily, cogeneration or combined heat and power can be used. With a cogeneration unit instead of a simple gas boiler, for instance, you can get not just heat but electricity, from the same amount of fuel. In effect the electricity comes as a bonus, and the electricity can be generated where it is to be used, even in the same building.

This arrangement, perhaps installed and managed by energy service companies, would also encourage optimal upgrades to entire local systems, including buildings, fittings and appliances, to deliver all the desired services more reliably and conveniently.

Conventional wisdom may say that such activities are uneconomic, that if they made economic sense they would be happening already. Others, however, point to the catalogue of barriers that have long impeded energy performance upgrades. The onus is on governments to take the lead. As fuel security rises up the agenda, improving national energy-service infrastructure can give importing governments essential leverage internationally. The time has come to make loft insulation a key element of foreign policy.

