



Business must evolve to thrive in a high-cost fuel world

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In the century leading up to the first oil crisis in the early 1970s, the price of oil had declined by more than 50 per cent in real terms. Over the same period, and partly because of this, western countries enjoyed massive real growth in gross domestic product. They prospered in a world in which energy was cheap and became steadily cheaper. It is hardly surprising, therefore, that their infrastructures evolved in ways that adapted to this.

Today things are different. Oil prices are near record highs and there is growing consensus that, short of a big world recession, they are unlikely to drop greatly. They are maintained by limitations of both current and prospective supply, and by steadily increasing demand, particularly from China and other developing countries. It looks as though the era of cheap fossil fuel is coming to an end and that energy will remain expensive for at least the next 50 years.

In addition, two other concerns are influencing attitudes to energy, namely security of supply and environmental damage caused by fossil fuels. Security of supply is a concern to those who need to import much of their energy in what they perceive as an uncertain geopolitical climate. Environmental concerns relate to the accumulation of carbon dioxide in the atmosphere from the burning of fossil fuels.

These have been predicted to cause global warming and climate change with both an increased incidence of extreme climatic events and a melting of ice sheets. This indeed appears to be what we are now observing. Furthermore, if the climatic models are to be believed, things are going to get worse - a lot worse, in fact - if we do not bring carbon emissions under control in the next 20 to 30 years.

As many have recognised, these costs and concerns point to a strategy of less dependence on fossil fuel, less waste of energy and more efficient and cleaner use of what fossil fuel is burned: all easier said than done. The problem is that not only is our infrastructure, such as transport, buildings and manufacturing, optimised to cheap fossil fuel but that it is renewed very slowly. Life cycles range from about 12 years (cars) to 40 years (industrial plants) and much more for buildings. This imposes a practical limit on the rate of change and means there is no time to be lost if climate change is to be managed effectively.

How is business responding to this? It has become increasingly clear that there is new business to be done. An important milestone was the opening of the European Emissions Trading Scheme earlier this year. This, and the earlier UK schemes, gave a cash value to audited CO2 reductions in a number of heavy industries. There is now a vigorous international market and some industries have found welcome but unexpected reductions in running costs by being obliged to pay careful attention to fuel use.

Carbon trading also strengthens the market for various carbon reduction technologies: improvements in process efficiency, making liquid fuels from organic wastes, renewable electricity generation and efficiency improvements in vehicles, domestic appliances and buildings, to name only a few. In all these areas there are openings for new products, among which, for example, will be sensors to detect and measure emissions reliably and cheaply. There are also opportunities for the assessment and mitigation of the more frequent storms, floods and droughts to which we shall be exposed, at best for some decades.

In the city a number of private capital funds have been set up to specialise in companies developing "clean" technologies. However, for earlier-stage, smaller entrepreneurs there will be a new opportunity this week when Shell launches Shell Springboard, a programme to provide seed grants to support ideas for "clean" energy products. There are also charitable and/or quasi-governmental bodies providing advice and assistance in various ways.

Perhaps the most important change to the business environment is simply that ideas or technologies that made no economic sense at oil prices of less than \$30 per barrel may now look very attractive. Research and development will be needed across a range of scientific and engineering disciplines, often in unfamiliar combinations.

This looks like an ideal commercial opportunity for businesses in a range of fields - a domestic market that needs these products and, for those that are successful, a world market that is already growing rapidly. Let us hope that this is a market in which we succeed - we ought to.

Lord Oxburgh retired as chairman of Shell Trading and Transport in July

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