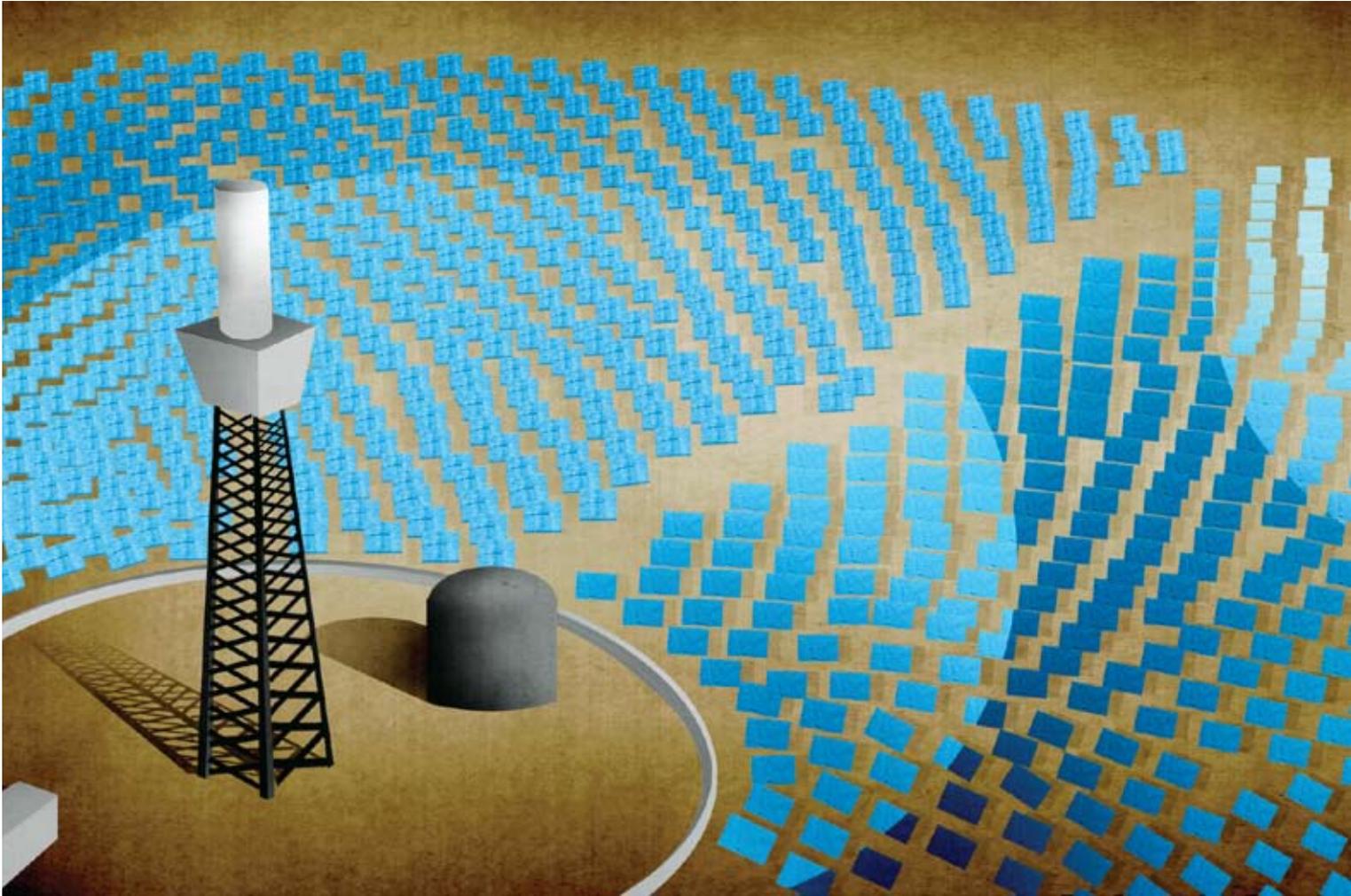




Illustrations by Black Coffee Project

Emission statement

As chief executive of BP, John Browne was a fierce advocate of green issues, openly urging oil companies to address the impact that producing fossil fuels may have on global warming. On the eve of the United Nations Climate Change Conference in Copenhagen, Browne tells Optima why honesty, political leadership and a truly universal environmental agreement are critical for low-carbon growth.



W

hen the Bali Roadmap was agreed nearly two years ago, 2009 was selected as a watershed date in the battle against climate change. The Copenhagen Conference was intended to be the culmination of negotiations to replace the Kyoto Treaty – due for expiry in 2012 – with a brand-new agreement on climate change.

The roadmap was agreed with good intentions, but its designers could not have foreseen that the world was soon

to enter its worst recession since the Great Depression. The International Monetary Fund expects the global economy to contract by 1.1 per cent in 2009, ensuring that expensive measures to tackle climate change have become much less popular.

Even now, with arguably the most important conference on climate change just around the corner, politicians are still struggling to induce citizens to make further economic sacrifices for the sake of the environment. Their task is made all the more complicated by widespread concerns that developed countries are expected to make the biggest sacrifice, while large developing countries, who are increasingly responsible for global emissions,

are seen to take a free ride on their hard work.

Of course, such reasoning is very crude – it lends no weight to mismatched levels of social development or to historical emissions – but it is politically powerful. In 1997, the US Senate, worried about America’s competitiveness in a carbon-constrained world, unanimously adopted the Byrd-Hagel resolution, in which America refused to sign up to binding emissions targets unless developing countries did so as well. That event scuppered America’s ratification of the Kyoto Treaty and stands as a benchmark against which a new agreement will be measured.

If the international community is to be more successful in the Copenhagen



process than it was with Kyoto, it is crucial that politicians start making the case for low-carbon growth. Since the industrial revolution, economic growth and greenhouse gas emissions – particularly carbon dioxide emissions associated with the combustion of coal, oil and gas – have been intricately linked. Indeed, the recent recession has shown that emissions tend to fall only when economic activity slows down significantly. According to the International Energy Agency, global emissions are expected to fall by three per cent in 2009 – the largest annual drop for 40 years. Now governments must prove, to both their citizens and international partners, that lower emissions will not stand in the way of continued economic growth.

This is a tough challenge and we should start by being honest: so long as economic activity continues to rely on fossil fuels – a situation likely to persist for some time to come – there is, *prima facie*, a tension between reducing emissions and promoting economic growth. But there are many things that can be done to turn low-carbon growth from a dream into a reality. Four imperatives spring to mind.

1. Don't exaggerate costs

The time has come for policymakers to be frank. The costs of deploying more

low-carbon energy will be reflected in higher household bills. But the impact will not be as large as most people are led to believe. The controversial cap-and-trade bill under consideration by the US Congress will cost the average consumer less than 50 cents per day – the price of a postage stamp – according to the independent Congressional Budget Office. Such a price increase would be significantly less than the double-digit increases caused by the oil price spike in 2008, when a barrel reached over \$147.

At present, many sources of renewable energy incur greater technology costs than conventional fuels, but the situation is not static. As low-carbon technologies are developed and deployed, their costs tend to decrease dramatically, meaning that the high-cost energy sources of today are fast becoming the low-cost options of tomorrow. In the past year, for example, the cost of solar photovoltaic modules has fallen by more than 40 per cent.

Politicians should also be upfront with industry – making businesses pay for their emissions will impose additional costs on fossil-fuel-intensive industries. But the effect of pricing carbon on industrial competitiveness should not be overstated. In the 1980s, several European fuel companies opposed the phasing out of leaded petrol, yet the impact of that policy was far less dramatic than was initially feared. In my experience, as long as all players in an industrial sector are eventually treated equally, such concerns nearly always turn out to be exaggerated.

2. Implement sensible policies

A stronger carbon-pricing signal is critical to ensure that emission-

reduction efforts occur at the lowest cost and highest benefit to society. In theory, this is best achieved through full auctioning of carbon credits in a cap-and-trade carbon scheme. In practice, politicians must continue to strengthen and knit together the web of low-carbon energy incentives and regulations already in place.

Promoting international trade in low-carbon energy would also help cut the costs of reducing emissions. The Kyoto Treaty's Joint Implementation mechanism, in which emissions targets can be met through energy projects developed abroad, is a good start, but politicians must seek deeper integration of energy markets where possible. In Europe, the progressive liberalisation of energy markets and enhanced transmission linkages between EU member states should be brought to completion.

In the long term, regional groups should work together on cross-border energy infrastructure – examples include an offshore wind grid in the North Sea and a solar hub in the Sahara Desert – which would help create a genuinely international market for renewable power.

3. Emphasise the opportunity

The low-carbon revolution presents as much an economic opportunity as it does a threat. With a growing number of governments enacting environmental policies, now is the moment for countries to join the race to build new low-carbon industries.

In energy, the new opportunities are numerous, whether it is solar in the Mediterranean, wind power on the great plains of America and China, or marine renewables in northern Europe. As millions of people

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continue to lose their jobs all over the world, politicians are waking up to the benefits of 'green jobs' in the low-carbon industries of tomorrow, promising government support for renewable and alternative energy.

But it is not for government policymakers to determine the future energy mix. There are simply too many options beyond their scope of expertise. Instead, there is an essential role for policy in guiding the low-carbon transition towards its ultimate goal. Despite the harsh lessons of the financial crisis, the regulated free market remains the most effective delivery unit available to society. But the market will not deliver new, low-carbon infrastructure at the scale and pace required unless governments take a more proactive approach.

The prize is clear: as well as reducing emissions, nations can benefit from enhanced energy security and the creation of new jobs. The development of the UK offshore oil and gas industry in the 1970s shows how successful such intervention can be. The British government's helping hand to the offshore industry – sharing the costs of building new infrastructure and providing fiscal incentives – allowed North Sea oil to compete with the cheaper supplies coming from the Middle East at that time.

To kick-start a new green-energy revolution, similar political leadership is required. In the short term, governments can help to alleviate the current shortage of debt finance. Although not to be generally encouraged, governments should use recently acquired stakes in bailed-out banks to direct lending to low-carbon infrastructure projects. They should

also continue to work with multilateral development banks to speed up their ambitious green-lending programmes. In the long term, policymakers should make strategic interventions in energy-supply chains, helping small businesses cater to changing demands and prioritising the delivery of new capacity over maintaining competition.

4. Engage the developing world

Low-carbon growth will be impossible to achieve unless developing countries are locked in to a global climate-change agreement. Taken collectively, these countries are now the world's largest source of greenhouse gas emissions. They also contain the majority of low-cost opportunities to reduce emissions in the near term – by some calculations, two-thirds of the global potential for cuts can be delivered with half the necessary capital expenditure.

Put simply, the world will not be able to stabilise the concentration of greenhouse gases in the atmosphere – and certainly will not be able to do so at low cost – without unlocking these opportunities. But bringing the large emerging economies* on board a new climate deal at Copenhagen will not be easy. These countries must agree to some immediate action, focusing on areas such as energy efficiency, as well as accepting that they too must be bound by emissions targets in the not-too-distant future. In return, developed countries must agree to significant transfers of wealth and resources to the poorest nations to help them pay for reducing their emissions.

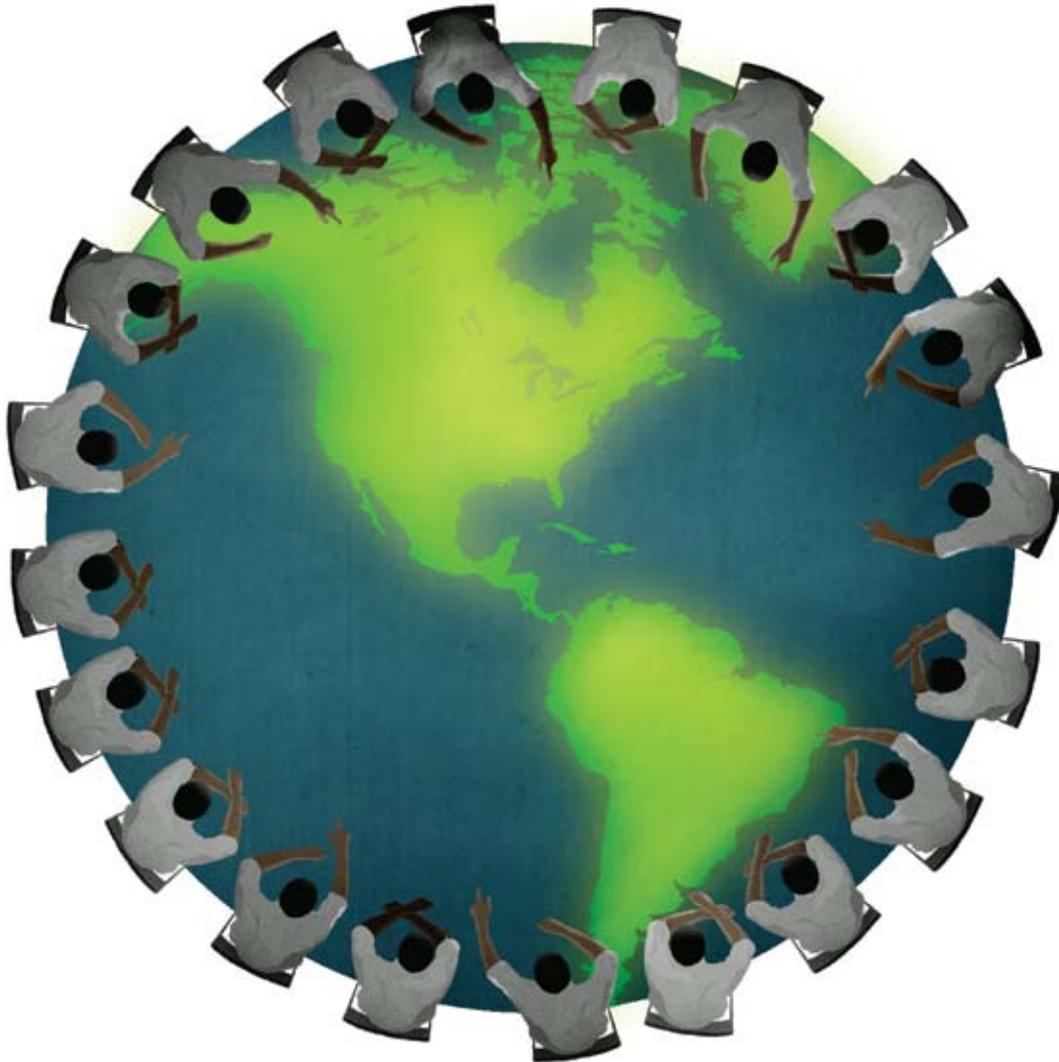
Making these transfers a reality means harnessing the power of the global carbon market – a potential barely begun to be realised – by

strengthening international carbon-finance mechanisms. The Clean Development Mechanism should be expanded, made less bureaucratic and enhanced with incentives to reduce emissions across entire industrial sectors. There also needs to be a new financial framework to prevent deforestation and encourage good land management. These activities alone could contribute half the necessary reduction in global emissions by 2020.

Beyond the carbon market, government-driven funding will be needed to encourage international transfer of low-carbon technologies; to help to build administrative and human capital; and to pay for adaptation efforts. Analysis suggests that a fund of around \$100 billion per year will be necessary for these activities, equivalent to the amount already expended on Official Development Assistance by the Organisation for Economic Co-operation and Development. That does not seem to be a sum which is too big to handle.

Growth and transition

So with these four elements in place, I believe we can deliver a low-cost, low-carbon revolution. We are on the verge of a great transition from a world of very few, dirty energy sources to a lower-carbon energy mix based on an increasingly diverse portfolio of clean energy sources. Renewable energy is growing fast – the sector has grown by 75 per cent in just the past four years – and the long-term potential is limited only by the amount of land needed to build generating plants and the technical challenges of managing intermittent supply.



But we cannot become a renewables-based economy overnight. Fossil fuels will continue to be important sources of energy, especially in the developing world, where demand is growing fastest and the technologies are already well embedded. The manner in which we handle our use of fossil fuels will be critical in the near term. The future of the conventional extractive industries depends on making oil, gas and coal acceptable in a low-carbon future.

Incentives must be put in place to encourage fuel swapping between carbon-intensive, yet cheap, coal plants and cleaner, more efficient nuclear

and gas-fired plants. Gas in particular will be a natural transition fuel in the gradual shift to a low-carbon economy, emitting only half the carbon dioxide of coal per unit of power generated and found in abundance in key markets such as North America.

Coal-fired power plants can remain an acceptable part of the energy mix with carbon capture and storage (CCS) technology. Governments must do more to accelerate the commercialisation of CCS, leveraging private investment in demonstration projects and incentivising power generators to retrofit the technology through robust carbon pricing.

Finally, given that transport fuels are still 95 per cent reliant on oil, diversification will take much longer. Biofuels will provide part of the answer, but I believe electric vehicles will become increasingly prevalent on our roads and rails. Electric automobiles create no emissions at the point of use and convert energy more efficiently than traditional engines, emitting less carbon dioxide per mile than an equivalent oil-based fuel, even when electricity is supplied from fossil fuels. With more emissions centralised upstream in the electricity-generating process, it will be much easier to reduce emissions from fossil fuels using CCS technology.

Whatever choices are made during the low-carbon transition, it is clear that the relationship between government and business is set to change. Delivering low-carbon growth will require a keen political focus on the four areas mentioned above, along with a delicate balancing of interests between winners and losers.

Our economy must change – we can no longer deny this. But the manner of that change is not set in stone. We have before us a period of economic transition as great as, if not greater than, the Industrial Revolution – and few could have predicted how that would have turned out. All we know for sure is that climate change is, and will increasingly prove itself to be, the great strategic issue of the 21st century and no business can afford to get left behind. ①

**As Optima went to press, China announced that it aims to reduce its carbon intensity (the amount of CO₂ emitted per unit of GDP) by 40-45% by 2020 compared with 2005 levels; at the same time, the US declared its intention of cutting its greenhouse gas emissions by 17% by 2020.*