Photo: Brooks Kraft/Corbis

They can do it - but it won't be easy

Barack Obama has assembled a powerful policy team in the area of energy and the environment. Two complementary policies appear to be emerging. The first is to reduce America's dependence on foreign oil imports. The second is to significantly reduce the country's carbon footprint. Yet the new administration will face tremendous hurdles, such as the sorry state of the electricity grid.

by Chris Cragg

The first thing that must be said about Obama's energy policy is that its two major objectives – climate protection and reduced dependence on foreign sources – are a million miles away from those of President Bush and Vice-President Cheney. It could perhaps be said that under their administration, the environment stood just about nowhere, climate change was perceived as a myth and oil dependency was a matter of geopolitical control.

It is very difficult to imagine either of these two men writing the following: 'Our dependence on oil doesn't just affect our economy. A large proportion of the $800 million we spend on foreign oil every day goes to some of the world's most volatile regimes – Saudi Arabia, Nigeria, Venezuela and, indirectly, Iran. It doesn't matter whether they are despotic regimes with nuclear intentions or havens for madrassas that plant the seeds of terror in young minds – they get our money because we need their oil.' President Bush, unlike Obama who wrote this, never remotely made such a connection. He was after all an oil-man.

As a result there has been some fully justified euphoria in the environmental movement at Obama's arrival and his new team. The promise of $150 billion in Federal expenditure on renewable energy to create five million jobs as part of a $1 trillion infrastructure investment package has certainly got solar cell makers delighted, not to mention the wind turbine makers. Likewise, the biofuel people have noted that Obama comes from Illinois, the second largest corn producer in the Union and that the young Senator once proposed tax credits for gasoline stations that installed pumps for E85 or the 85% ethanol fuel mix, while demanding that automakers shift towards the development of hybrid cars in return for federal aid.

Euphoria

Yet there are a number of issues that should at least partially dampen this euphoria. They relate to three specific but inter-related areas: the national power grid, the automakers and the DOE itself.

Back in June, the National Electric Reliability Council (NERC) surveyed its membership on whether the grid was capable of dealing with new state laws across the country demanding 20+% renewable electricity. The answers came back from some 50 related entities and were a resounding No! The grid, or more accurately the grids, were – surprisingly – having the most difficulty dealing with a transition from coal to gas fuel as base-load, let alone the wind and solar suppliers. It is not that NERC are not in favour of renewables. But while they applaud the expansion of US wind capacity to 28,500 MW, they do point out that it has 9-24% peak demand availability. NERC members reported that: 'existing transmission infrastructure is inadequate to reliably integrate new renewable resources to demand centres', 'the system is not designed for long-distance continental transport of power', 'import and export capabilities only represent a fraction of the actual load within a balancing area.'

This might be dismissed as special pleading by old dinosaurs, with the familiar demand for "regulatory certainty", who refuse to believe that electricity production should be localised. But while it may be the case that, according to the DOE, only 9% of

Security needs vs green dreams

In addition to Obama's green dream team, there is another appointment in the new administration that is bound to have major consequences for US energy policy, namely that of former Marine General James Jones as the new National Security Adviser. Jones, after he left the marines, set up and became the ceo of the Institute for 21st Century Energy, a subsidiary of the US Chamber of Commerce. Jones's views in many ways clash with those of the "green" supporters of Obama's dream team. Energy security to his mind is a matter of national security. The fundamental need, in his view, is for the US to reduce its dependence on foreign oil imports, by any means necessary, whether it is more solar, wind, or biofuels – or by expanding nuclear power, expanding domestic oil and gas production, and investing in carbon capture and storage to allow for the continued use of coal-fired power.
Just before Obama took office, the Institute for 21st Century Energy published a policy proposal, called "A Transition Plan for Securing America's Energy Future", in which Jones set out his energy views in detail. The "Transition Plan" proposes to expand US domestic oil and gas exploration and production and to sweep away all existing exploration moratoria. It wants the military to be allowed to use non-traditional fuels from coal-to-liquids. It supports carbon capture and storage and also tar sands. Above all, it wants an expansion of nuclear power, not excluding using the Department of Energy's Loan Guarantee Program to guarantee the full cost of new nuclear stations. It even suggests finally finishing the detested Yucca Mountain long-term high-level nuclear waste repository; something guaranteed to give the green lobby near apoplexy. Add in a reduction in regulation relating to refineries, the siting of gas pipelines, and a review of the Clean Air Act for existing facilities to avoid "frivolous litigation", and it is clear that Jones's ideas are a far cry from what the green lobby in the US dreams about.

Nevada needs to be covered in solar panels to supply the whole of America, Nevada is a long way from anywhere. The same applies to the EPRI calculation that half of the power needed by the US could be from wave power; or 2,100 TWh to be precise. Meanwhile, the National Interest Electricity Transmission Corridors (NIETCs) already identified for construction under the 2005 Energy Policy Act have provoked furious opposition from Congress right on down. People do not like pylons across areas of natural beauty.

In short the US does not have an integrated grid remotely as sophisticated as that of Western Europe, nor a large system of electricity trading. For those who suggest that renewable production should be localised and preferably off-grid, this could be an opportunity in Nevada, but it is likely to be tough in Chicago.

Opec

This naturally relates to another statistic coming out. According to the Institute for the Analysis of Global Security (IAGS), the Washington-based think tank on energy, if all US cars were hybrids of some sort and half were plug-in hybrid electric vehicles (PHEVS) then the US oil imports would be reduced by 8 mbd, or right on target for a severe crisis in Opec. And of course, if all those hybrids were using E85, then the reduction could be astonishing. Even without Opec's problems, which could have a major destabilising effect on the world, given that the current extent of America's conventional biofuel production growth has already seen food prices globally gyrate disastrously and reduced US food aid stocks, the dislocation of the global economy involved would be enormous.

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These are just two of the major issues soon to be passing across the desks of the new administration and particularly that of Steve Chu at the DOE. And here is the third major problem. Chu will find an existing budget that he may find difficult to believe. He will naturally be pleased that the amount allocated for the financial year 2009 will be $241.1 million for solar, geothermal, wind and water energy, plus $592 million for biomass and hydrogen vehicle fuels; both his areas of expertise. And that $186 million has been allocated for improved efficiency in buildings.
Yet with an overall budget of $25 billion, he may be less than impressed by the fact that $15.95 billion has been allocated to "atomic defence administration", around $9.1 billion going directly to arms, largely unconnected with civilian nuclear power production. There is $853 million for a "civil nuclear renaissance". Around $1.8 billion is to go to the search for Weapons of Mass Destruction and $5.5 billion to radioactive waste issues, with about $1.8 billion on high-energy physics, fusion and nuclear physics in general. Back in the real world, $1.1 billion goes to research of some kind into fossil fuels.
In short, Professor Chu's department will be spending 64% of its budget on the military applications of energy, while spending around 4% on what the greens call renewable energy and energy efficiency. Welcome to the DOE Professor. Perhaps FY2010 will be better. ■