



The Sustainable Energy Forum Inc.

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Briefing to the Incoming Government

The Context

During its term of office, the incoming Government will need to confront the twin energy sector challenges of climate change and depleting oil supplies. At present, oil is comparatively cheap, and the effects of climate change are only beginning to be felt. Now is the right time for New Zealand to be planning ahead and investing in infrastructure — but that investment must be in infrastructure that meets the challenges of a carbon-constrained world.

Policy responses and infrastructure investment decisions favoured by traditional energy producers which deny or ignore these issues of climate change and depleting oil supplies will worsen New Zealand's chances of adapting to a world in which our present heavy reliance on fossil fuels is not appropriate, and in time will not be possible. As the real costs of energy rise, New Zealand must pay more attention than ever to balancing both the costs and risks of new energy supply, against those of reducing energy demand.

Oil and Transport

Global oil prices in recent years have reflected the increasingly tight balance between supply and demand. Over the past few months, as current and projected demand has fallen, prices have declined sharply from their July 2008 peaks — despite the fact that there have been no significant increases in world oil supplies, or discoveries of major new oil fields.

As the International Energy Agency's recently-released World Energy Outlook 2008 makes clear, the world is facing an increasing challenge simply to maintain current levels of oil production, let alone increase them. According to the IEA, even if world oil demand remains static till 2030, 45 million barrels per day of gross oil production capacity — four times the current capacity of Saudi Arabia — would need to be built worldwide just to offset the decline in existing oil fields. Even if this were possible, massive investment would be required to achieve it, and current world economic conditions make this investment increasingly less likely.

Therefore, it would be short-sighted to assume that oil prices will remain at or near their present comparatively low levels for long, especially as and when world economies recover from the present downturn. Transport and infrastructure policies should make it a high priority to reduce our present dependence on fossil oil, and reverse the 64% increase in domestic transport greenhouse gas emissions since 1990.

Climate Change

Alternatives must be found to oil, and other fossil fuels, not only because they are becoming scarce, but because the greenhouse gas emissions they produce have resulted in a rapid increase in greenhouse gas concentrations, and consequent warming. This is most severe at

present in polar regions, leading to the threat of sea level rises as land ice in these regions melt, and will increasingly come to affect other regions of the world as well.

Within your Government, there is a range of views on the science of climate change. For much of the rest of the world, however, and in particular for many of our key trading partners, that argument has already been settled. Other governments and international consumers are reacting to reward those countries that have strong policies to counteract climate change, and to punish those that do not. With the election of Prime Minister Kevin Rudd in Australia and President-elect Barack Obama in the United States, and their commitment to much stronger action on climate change than their predecessors, the argument that we must not get ahead of our major trading partners on climate change policy has lost any validity it may once have had.

New Zealand can no longer be regarded as a leader on climate change policy; now it must scramble to catch up. As long as we remain in this position, our international image, trade access and tourism potential will suffer. The reaction in the United Kingdom to your Government's proposed climate change policy changes, together with the harm this policy uncertainty has already done in the forestry sector, shows that this damage is already occurring.

Electricity

The incoming Government has already announced that it will lift the ten-year ban on building new baseload thermal electricity generation plants, and National's energy policy offers only lukewarm support for the previous Government's target of New Zealand having 90% of its energy generated from renewable sources by 2025: the policy says that National will "Support the 90% renewables target but not let it get in the way of security of supply".

Thus, it appears that the incoming NZ Government will follow a strategy that has been promoted by incumbent fossil fuel generators rather than that of the previous Government. While both energy pathways present challenges and difficulties, SEF contends that a reversion to a strategy more favourable to oil, gas or coal fired thermal generation would be a mistake, as such an approach will greatly worsen New Zealand's greenhouse gas emissions, and increase both our Kyoto liability and our exposure to international criticism on trade, environmental and tourism matters.

Figure 4 from a paper by energy analyst Steve Goldthorpe, "A Period of Consequences", shows the stark difference in CO₂ emissions between the two pathways; the assumptions underpinning this graph are listed in his paper.

The choice before the Government is stark: continue with an energy policy in which New Zealand's ample renewable resources are strongly favoured, even if this is modified somewhat from the policy mix favoured by the previous Government, or increase fossil-fired thermal generation and suffer the consequences of steeply rising greenhouse gas emissions from the stationary energy sector. Although National has claimed that reform of the RMA will make it easier to get renewable generation projects off the ground, the likely effect of favouring fossil-fired thermal generation projects will be to delay, or prevent entirely, new renewable energy generation projects. It is also highly likely that this pathway would result in New Zealand having to import LNG, raising major safety issues, making us dependent on another scarce imported fossil fuel, and exposing our electricity market (for the first time) to

international fuel commodity prices.

Heat

An important source of carbon emissions is the use of gas, and especially coal, for heat in industry and buildings – for example, schools and other educational institutions. Wood residues offer a nearly carbon-zero substitute, and in the past year, new technologies and strategies have been demonstrated which show that they can reduce air pollution as well as carbon emissions. The momentum of these developments needs to be maintained.

Household energy generates around 10% of New Zealand's energy greenhouse emissions, most of this from electricity consumption. Domestic electricity prices are rising so rapidly that the Reserve Bank wrote to the Electricity Commission expressing concern that household energy now represents 4% of the Consumer Price Index, fuelling inflation and making their policy settings more difficult. Much of the electricity is used for space and water heat, so improved insulation would go a long way to reducing energy bills and emissions.

Household retrofits are the most cost-effective means of reducing emissions and energy bills. SEF therefore welcomes the initiative by the New Zealand Business Council for Sustainable Development to promote insulation retrofits as part of the 80,000 house renovations each year. The NZBCSD points to public benefits including reduced hospitalisation and reduced greenhouse gas emissions, both of which will reduce the drain on taxpayers' funds.

Policy recommendations

The Sustainable Energy Forum recommends that the Government takes the following broad policy approaches in the stationary energy, transport energy and infrastructure fields:

- Establish a high-level task force to assess the effects on New Zealand of world oil production reaching its maximum level and subsequently declining, and initiate measures to prepare for these effects.
- Focus infrastructure development on areas which will reduce New Zealand's exposure to oil supply shortages and high oil prices, and increase New Zealand's resilience in the face of oil depletion and climate change. Such suitable developments include the roll-out of fast broadband, continuing increases in the extent, range, reliability and quality of public transport systems, and the electrification of the transport system where this is feasible.
- The uptake of electric vehicles of all classes offer the possibility of reducing both oil dependence and greenhouse gas emissions in transport. Other alternative fuel and engine technologies may also have a part to play. The Government needs to remove barriers, create incentives when necessary, and encourage the development of appropriate infrastructure to support the timely and effective deployment of these technologies where they can be shown to increase sustainability and resilience and decrease net greenhouse gas emissions.
- Avoid infrastructure development which makes us more dependent on fossil fuels and leads to further increases in New Zealand's greenhouse gas emissions. Such unsuitable developments include the increasing use of fossil fuels of electricity

generation; converting coal to liquid fuels; and continuing to spend money on building new arterial roads unless there is a clear and continuing safety argument for doing so.

- Support conversion of coal boilers to wood firing, and support household (and also commercial) retrofits, to reduce greenhouse emissions and realise public health benefits.

Comparison of CO₂ emissions from the New Zealand power generation sector under two electricity supply scenarios (from Steve Goldthorpe, "A Period of Consequences")

