



The Energy Federation of New Zealand's submission

to

The Draft New Zealand Energy Strategy to 2050 Powering our future: Towards a Sustainable Low Emissions Energy System

30 March 2007

The Energy Federation of New Zealand (EFNZ) is a non-profit, membership-based, professional and independent energy industry association which promotes the sustainable development and use of energy resources in New Zealand and globally. The EFNZ runs an active programme of seminars, conferences, submissions and research projects, both independently and in collaboration with other energy sector organisations. EFNZ has 13 Full Corporate Members, 23 Associate and Individual Members. The EFNZ is the New Zealand member of the World Energy Council.

On 16th February 2007, EFNZ together with the Sustainable Energy Forum organised a Workshop in Wellington to facilitate debate and information sharing on the draft NZ Energy Strategy (NZES) as well as the climate change policy and other documents issued by the government. The workshop also assessed the pros and cons of setting targets, and the pace or rate of change in the energy sector.

The World Energy Council has just published the WEC 2007 Statement “The Energy Industry Blueprint for Tackling Climate Change” (see attached copy) and see <http://www.worldenergy.org/wec-geis/publications/statements/stat2007.pdf>. The EFNZ believes the broad message from the WEC 2007 Statement is very appropriate, timely, and should be considered for the NZES. The WEC 2007 statement is based on the work of the WEC Energy and Climate Change Study to be published in April.

The WEC 2007 Statement warns that we face a triple global challenge:

- To provide every household with access to affordable modern energy services,
- To make energy services available to meet a sharply rising demand,
- To rein in greenhouse gas emissions at the same time.

It sets out the points for consideration:

Galloping population growth

Every three years, the world’s population is increasing by 300 million, mainly in developing countries. WEC expects demand for electricity and transportation to grow rapidly in all regions of the world until at least 2030. Fossil fuels will remain the largest energy source for the first half of the century, supplying 85% of the world’s primary energy needs. Electricity and transportation will continue to depend on fossil fuels for many years to come.

Global CO₂ emissions poised to double if no action is taken

Globally, CO₂ emissions will double to 46 billion tonnes a year in 2050. Electricity and transportation now account for 66% of total CO₂ emissions in the energy sector. Since 1971, CO₂ emissions have more than doubled in the transportation sector, and risen by 80% in the electricity sector.

Power sector needs US\$10 trillion investment

A massive US\$20 trillion (or a total of US\$800 billion a year) is needed to invest in energy infrastructure through to 2030 to meet rising world energy demand. Farsighted and consistent policies are necessary to promote this investment.

Bold and swift action on climate change is needed

Ambitious government energy policies and regulations with an eye towards the long- term are needed to stabilise or reduce emissions locally and regionally, and to rein in the growth of greenhouse gas emissions globally. Curbing greenhouse emissions requires global accord and

cooperation and a massive increase in public-private partnerships. All fuel source and technology options must be considered if we are to remain steadfast in our goal of a low carbon world.

Global CO₂ costs will drive clean energy investment

The value for carbon will dictate the pace of investments in clean technologies. The global carbon price will be determined by the extent to which national and regional policies or emissions trading systems are linked. The costs of these global negotiations must be taken into consideration.

WEC's three-phase plan to reduce emissions

With the right policies and technologies in place, the rise in greenhouse gas emissions can be tempered in the short-term, their absolute level can be stabilised in the medium-term and reduced in the longer-term. It sees the need for a massive increase in public-private partnerships to develop these energy technologies to achieve the triple challenge. This requires a world wide commitment by governments and regulators, in tandem with energy companies.

Slowing growth in greenhouse gas emissions by 2015

- By large, capital-intensive investments in clean energy technologies.
- Efficiency measures (boosting power plant productivity; improving building methods, such as better insulation and energy-efficient lighting; tackling gas and electric transmission and distribution leaks or losses; district heating and cooling; heat pumps; solar water heating; and bringing online combined heat and power plants).
- Increased energy production from biomass and other green energy sources (geothermal, wind and hydropower), increased capture and sale of natural gas, use of alternative fuels for the internal combustion engines.
- Use of more carbon-neutral technologies.
- Step up investments in energy infrastructure and accelerate the transfer to clean technologies
- Governments in must develop legal policies on copyright, intellectual property and dispute settlement and provide new incentives for private investment.
- Policies on regional energy market integration, an important driver of competition and greater efficiency, and for connecting national and regional emissions trading systems.

Holding greenhouse gas emissions constant by 2030

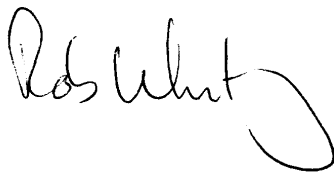
- Deployment of new technologies including zero emissions power plants and 2nd generation biofuels.
- Other emissions-stabilising strategies (energy generated from biomass for electric heating and as liquid fuels for transport; 3rd generation nuclear power; micro combined-heat and power plants; advanced heat pumps; and active and passive solar heating).
- Energy storage technologies (use of hydrogen, compressed air, pumped water for generating hydroelectricity, next-generation batteries, flywheels and ultra-capacitors).
- More energy-efficient building technologies (vacuum insulation, light-emitting diodes and advanced energy management systems).
- Entry of new engines and new vehicles, including plug-in hybrids and low carbon transport fuels.

Reducing emissions from 2030 onwards

- Establishment of new public-private partnerships to coordinate investment internationally and lower the costs of promising technologies.
- Application of carbon capture and storage to the gasification and combustion of coal and the production of synthetic fuels, and to combined-cycle gas turbines.
- Use of fuel-cell vehicles and fuels made from compressed or liquid hydrogen.
- New solar photovoltaic technology, waves and ocean tides technology.
- 4th generation nuclear technologies

The EFNZ urges the NZ Government to encourage energy efficiency the increased use of renewable energy sources and the sustainable use of New Zealand fossil energy resources. The Energy Federation believes that NZ needs low cost GHG reduction options that can be adopted in a manner and timeliness which does not make NZ energy prices uncompetitive. We need to understand future emissions pathways for NZ on a sector by sector basis. We need to consider a wide range of options, and understand the current and future cost of implementing them. We need to target the lowest cost options and test that our policy responses favour these lowest cost options.

The Energy Federation suggests that the New Zealand Government adopts a three phase plan to reduce emissions while ensuring New Zealand retains secure and internationally competitive energy. With a plan such as that proposed by WEC New Zealand could achieve the emission reductions in the NZES as illustrated in Figure 4.3 in the draft NZES.



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