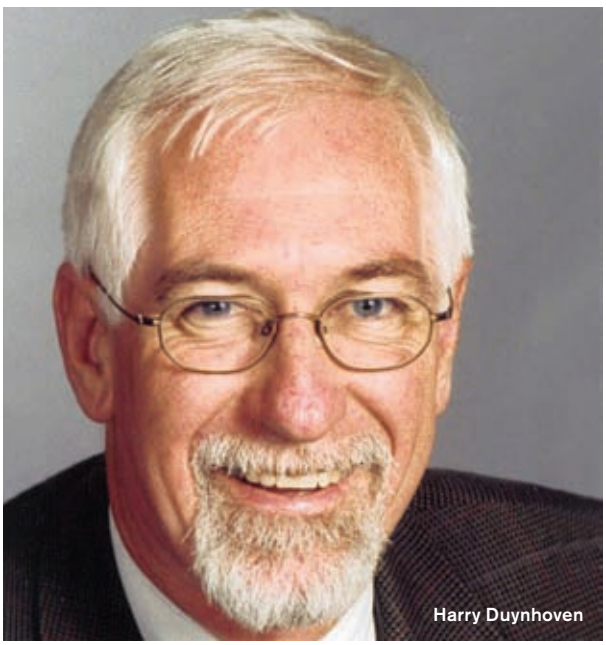
Building on Hydro Riches

KIWIS SET AMBITIOUS RENEWABLES TARGET

BY HARRY DUYNHOVEN


Harry Duynhoven

NEW ZEALAND, LIKE THE REST OF the world, faces two major energy challenges. The first is to respond to the risks of climate change by reducing the greenhouse gases caused by the production and use of energy. The second is to deliver clean, affordable energy while treating the environment responsibly.

New Zealand is lucky in its abundant sources of renewable energy sources, and indeed, already around two-thirds of the country's energy comes from renewables, mainly hydro dams. Specifically, in 2007, 57 percent of electricity generated came from hydro. A further 12 percent came from other renewable and waste heat sources, mainly geothermal, with the rest made up from wind, biomass and biogas. The remainder came from fossil-fueled plants. New Zealand's electricity generation system is thus a mixed hydro-thermal system, in which hydro energy is used as much as possible, depending on lake levels, and thermal power stations run as necessary to make up the rest of the required supply. Wind energy plays a small, but increasing, role in supplying New Zealand's electricity needs. New Zealand remains a nuclear-free country.

In October, the government released the New Zealand Energy Strategy, which outlines New Zealand's vision of a sustainable, low-emissions energy system. Along with the New Zealand emissions trading scheme, an all-sectors all-gases scheme that imposes on the New Zealand economy an economic signal to reflect the cost of greenhouse gas emissions, the energy strategy signals a strong preference for investment in the electricity sector to be in renewable generation options.

A key target in the strategy is for 90 percent of electricity to be generated from renewable sources by 2025. Although this sounds ambitious, it's estimated that around 175 megawatts of new renewable energy is needed each year to reach the target. Given that this year alone we are building around 300 megawatts of renewable energy, I expect it to be very achievable.

It's also affordable. We know, from recent investment in wind and geothermal generation by some of our major energy companies, that many of the already known renewable projects are cost-competitive with fossil fuel alternatives.

Our energy modelling shows that in New Zealand sufficient cost-competitive renewable energy generation is available such that no major fossil-fueled thermal generation will be needed for 20 years. In this time, there will also be technological advances in other renewables generation – such as solar and marine energy systems – that the world, and New Zealand, could then deploy.

New Zealand recognizes that our emission trading system alone would not preclude growth in fossil-fueled thermal generation if gas prices were to drop below the cost of renewables. Hence, to support the target, and in addition to the emission trading scheme, New Zealand is also introducing into legislation a renewables preference that includes provisions to restrict new baseload fossil-fueled generation over the next 10 years, except to the extent necessary for security of supply.

To smooth the planning consent processes for renewable energy projects the government is providing local authorities with planning guidance on the

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Areva will build a $2 billion uranium enrichment plant near Idaho Falls, Idaho, according to the *Associated Press*.

It is expected to be built by 2014 but first needs local, state and federal approvals.

importance of renewable energy through a national policy statement.

This does not mean renewables at any environmental cost. We do not need to dam every river or have wind turbines on every ridgeline. But for New Zealand, as with other countries, a commitment to renewable electricity, and to reducing energy greenhouse gas emissions, requires a substantial increase in renewable capacity overall.

New Zealand recognizes the potential contribution from the development and deployment of renewable energy technologies. Although New Zealand may have renewable resources, the application of new low-emissions technologies is critical for progress toward a low-emissions energy sector. In this regard we support the international focus on this technology. Much work is under way to ensure New Zealand is well placed to take advantage of new technologies as they become available, cost effective and applicable.

Key technology areas of focus for New Zealand include geothermal and marine energy technologies and biomass conversion. All of these fit well within our abundant renewable resources. Hence, the government has established a contestable grant fund of $12 million in N.Z. currency, or about $9 million in U.S. currency, over three years beginning in July to support new low-carbon energy technologies and a Marine Energy Deployment contestable fund of $8 million in N.Z. currency, or $6 million, over four years.

For New Zealand, and the world, the dual challenges of climate change and energy security and the rise in oil prices add urgency to initiatives to move to a more sustainable renewables-based energy system.

As a small country, New Zealand needs to work collaboratively with other countries using international linkages with organizations, such as the International Energy Agency, Asia Pacific Economic Council, and the East Asia Summit, on the research and development of renewables technology. It is important to build on existing institutions to further promote the global uptake of renewable energy. Nevertheless, New Zealand is proud to be on the front foot and leading the way with a clear plan for achieving a low-emissions, affordable and secure energy system.

Harry Duynhoven is New Zealand's associate minister of energy.

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