Senate Standing Committee on Economics

ANSWER TO QUESTION ON NOTICE

Inquiry into the Renewable Energy (Electricity) Amendment Bill and a related Bill – 5 August 2009

Question: (Senator)

Number of green jobs estimated to be created by the RET?

Answer:

The Treasury modelling estimated changes in employment levels across the economy over the next four decades. This modelling does not separately identify the employment directly attributable to the RET. A May 2009 paper to the Climate Institute, *Regional Employment and Income Opportunities Provided by Renewable Energy Generation* based on modelling undertaken by McLennan Magasanik Associates (MMA), found that the Australian electricity industry is gearing up to meet the 20 per cent Renewable Energy Target (RET).

The paper estimated that these renewable energy projects could create more than 25,000 jobs including 15,000 construction jobs, 2,500 new permanent positions and 8,600 indirect jobs in supporting sectors. The significant proportion of these jobs would be in rural and regional Australia.

Question: (Senator)

Costs of different forms of renewable energy?

Answer:

Cost estimates are provided on page 27 of the report prepared by McLennan Magasanik Associates (MMA) for the Department of Climate Change (DCC), *Benefits and Costs of the Expanded National Renewable Energy Target January 2009* (available on DCC's website).

Question: (Senator)

R&D support for renewable energy in Australia & overseas?

Answer:

The International Energy Agency maintains a database of Global Renewable Energy Policies and Measures. This database is available on the IEA website at http://www.iea.org/textbase/pm/grindex.aspx

The Renewable Energy Policy Network for the 21st Century (REN21) *Renewables Global Status Report 2009 Update* contains an international comparison of policy targets for renewable energy. The Report is available on the REN21 website at http://www.ren21.net/pdf/RE_GSR_2009_Update.pdf

Clearing Officer: (SES Officer) Action Officer:
Phone:

Question: (Senator)
Where are the specific sites for geothermal projects in Australia?

Answer:
A publication released by the Department of Resources, Energy and Tourism (DRET) – *Australian Geothermal Industry Technology Roadmap* – contains detailed information on geothermal projects in Australia which have entered the drilling phase, located in South Australia.

The publication is available on the DRET website at http://www.ret.gov.au/energy/clean_energy_technologies/energy_technology_framework_and_roadmaps/hydrogen_technology_roadmap/Documents/GEOTHERMAL%20ROADMAP.pdf

Question: (Senator)
How much does it cost to build and run a geothermal plant? How much will it cost to connect to the electricity network? How do these costs compare with nuclear power?

Answer:
The MMA report prepared for the Department of Climate Change (DCC), *Benefits and Costs of the Expanded National Renewable Energy Target January 2009* (available on DCC's website), states that the capital cost in 2010 of geothermal is $4,400 per kilowatt (kW). Connection costs will vary depending on the location of the geothermal resource. DCC has not estimated the cost of nuclear power.

Question: (Senator)
How was the 20 per cent target selected?

Answer:
As part of its election platform, the Government committed to a 20 per cent Renewable Energy Target (RET) by significantly increasing the Mandatory Renewable Energy Target to a legislated target of 45,000 gigawatt-hours (GWh) in 2020. This would ensure that together with the existing renewable capacity, Australia reaches its 20 per cent target.

Question: (Senator)
Can the Department explain how the expanded RET meets the COAG test for a 'complementary measure'? What is the market failure it is trying to correct?

Answer:
Electricity generation accounts for more than one-third of Australia's current greenhouse gas emissions, so Australia's transition to a low pollution future will require a significant transformation in this sector.

While the Carbon Pollution Reduction Scheme (CPRS) will help bring renewable energy technologies into the market over time, the Renewable Energy Target (RET) will accelerate their uptake, helping to transition the energy sector to lower carbon production earlier than would otherwise occur. The RET scheme has been designed to operate in parallel with the CPRS. As a transitional measure, the RET will conclude

in 2030, at which time the CPRS is expected to be the primary driver of renewable energy.

Question: (Senator)
The RET is designed to be a national scheme that replaces state schemes. When does the agreement with the states to drop their schemes come into force? What steps will the Government take if the states fail to wind-up their schemes within a reasonable timeframe?

Answer:
On 30 April 2009, the Council of Australian Governments agreed to the design of the expanded national RET scheme to expand on the existing Mandatory Renewable Energy Target (MRET) and absorb state and territory renewable energy targets into a single national scheme.

The Australian Government has worked closely with the Victorian Government to develop appropriate transition arrangements (for the only state-based RET scheme currently in operation) and to ensure that developments already approved under the Victorian scheme will not be disadvantaged. The Government is making provisions to allow power stations accredited under the Victorian Government scheme to be transferred to the national RET scheme, and for national RET scheme certificates to be created in exchange for Victorian scheme certificates on a one-for-one basis.

The RET legislation includes provisions to facilitate the smooth transition of existing state schemes into the national scheme over a period to mid-2011.

The Bill contains a provision that clarifies that a corporation need not comply with any other law of a state that substantially corresponds to the main RET Act.

Question: (Senator)
What is the process for ensuring that the shortfall charge is a rarely applied penalty, rather than a ceiling on the price of renewable energy certificates? Should it be indexed to the CPI or to certificate prices in the previous year?

Answer:
The shortfall charge encourages compliance with the Renewable Energy Target (RET) scheme, as liable parties who do not meet their obligations to purchase Renewable Energy Certificates (RECs) will need to pay this charge.

According to data published by the Office of the Renewable Energy Regulator, there has to date been a consistently high level of compliance with the Mandatory Renewable Energy Target since the scheme began in 2001, which means that very few liable parties have paid the shortfall charge. The new shortfall charge seeks to encourage affordable deployment of renewable energy through continued high levels of compliance, while taking into account the significant increase in annual targets under the expanded scheme.

The McLennan Magasanik Associates (MMA) report for the Department of Climate Change, *Benefits and Costs of the Expanded Renewable Energy Target January 2009,* indicates that REC prices are expected to peak at close to $70 in the early years of the

expanded RET scheme but decline over time as the carbon price delivered through the CPRS increases. As such, the shortfall charge will not need to be indexed over time.

The level of the shortfall penalty will be monitored to ensure it remains effective as an incentive for investment in renewable energy.

Question: (Senator)
How does Australia's renewable energy target compare to current targets, likely targets and actual usage of renewable energy in Australia's peers, trading partners and competitors?

Answer:
Australia's 20 per cent by 2020 target is broadly comparable with the renewable energy commitments made by other advanced economies. Renewable energy targets set by countries are influenced by the available renewable energy resources and the level of existing renewable energy generation.

In the United States, many state governments have adopted renewable energy targets, including California's target for 33 per cent of its electricity to come from renewable sources by 2020. The Waxman-Markey Bill includes a Combined Efficiency and Renewable Electricity Standard for the United States as a whole which incorporates a target of 20 per cent by 2020, but also includes energy efficiency measures. In practice, the renewable component of this target can be as low as 12 per cent for some states.

The EU-wide renewable energy target is for 20 per cent of final energy consumption to come from renewable energy sources by 2020, which includes transport, electricity and heating and cooling. No specific target for the share of renewable energy in electricity generation has been set.

The United Kingdom has set a target to source 15 per cent of their energy from renewable sources by 2020.

Japan has set a target for an additional 16,000 GWh of renewable energy in 2014. Japan already sources approximately 10 per cent of its electricity generation from renewable energy sources. Japan has set a target for an additional 16,000 GWh of renewable energy in 2014, equivalent to around 2 per cent of total electricity generation.

Canada has set a target of 14,300 GWh of additional renewable generation by 2011. Canada already sources approximately 60 per cent of its electricity generation from renewable energy sources, primarily from large-scale hydroelectricity. Canada's existing annual generation from hydroelectricity is more than Australia's total annual electricity generation. The 14,300 GWh extra generation represents around 3 per cent of electricity.

In addition, China has set a target for 15 per cent of its primary energy supply to come from renewable sources by 2020.

The Renewable Energy Policy Network for the 21st Century (REN21) *Renewables Global Status Report 2009 Update* contains an international comparison of policy targets for renewable energy.

The Report is available on the REN21 website at
http://www.ren21.net/pdf/RE_GSR_2009_Update.pdf

The International Energy Agency maintains a database of Global Renewable Energy Policies and Measures. This database is available on the IEA website at
http://www.iea.org/textbase/pm/grindex.aspx

Question: (Senator)
This morning you told us that in the absence of the RET, you would estimate that about 10 per cent of electricity would come from renewable sources in 2020 if a CPRS with a 5 per cent reduction target is introduced. What would be the corresponding proportion for a CPRS with a 25 per cent reduction target? A 40 per cent target?

Answer:
The Government's *Australia's Low Pollution Future: the Economics of Climate Change* report modelled the impacts of the climate change policies on the Australian economy, including on the electricity sector.

The CPRS -5 scenario modelled the impact of reducing Australian's allocated emissions by 5 per cent in 2020 relative to 2000 emission levels under CPRS policy assumptions as outlined in the CPRS Green Paper, which included the assumption of an expanded Renewable Energy target of 20 per cent of renewable energy in 2020. This scenario suggests around 20 per cent of total Australian electricity generation comes from renewable energy in 2020, as expected.

The CPRS only scenario modelled the impact of reducing Australian's allocated emissions by 5 per cent in 2020 relative to 2000 emission levels under CPRS policy assumptions as outlined in the CPRS Green Paper, with the exclusion of the Government's proposed expanded Renewable Energy target of 20% of renewable energy in 2020. This scenario suggests around 11 per cent of total Australian electricity generation comes from renewable energy in 2020.

The Garnaut -25 scenario modelled the impact of reducing Australian's allocated emissions by 25 per cent in 2020 relative to 2000 emission levels, under policy assumptions as determined by the Garnaut Climate Change Review. While these policy assumptions differ from the proposed CPRS policy assumption, this scenario is consistent with achieving a global reduction in emissions such that greenhouse gas concentration levels stabilise around 450 parts per million (ppm). As such, results from this simulation could be taken as broadly indicative of the impact of world carbon prices consistent with achieving 450 ppm, one of the conditions applied to a possible 25 per cent reduction target for Australia. This scenario suggests around 24 per cent of total Australian electricity generation comes from renewable energy in 2020.

Question: (Senator)
Is it desirable to develop a range of renewable energies, even if for example wind is clearly the cheapest at the moment? If so, how could this best be done? What do you think of proposals to require bands or tranches of particular renewable sources within the overall RET?

Answer:

Rather than 'picking winners' within the renewable sector, the RET scheme drives uptake of cost-competitive renewable technologies. However, the expanded RET target is very large - it increases the current MRET scheme target by over four times from 9,500 GWh to 45,000 GWh, and will pull through a range of technologies including solar, biomass and geothermal energy. As a relatively mature, cost-competitive renewable energy technology, wind power is expected to play an important role in achieving the RET target.

Providing support for research and development in connection with emerging technologies recognises the market failure associated with the 'positive spillovers', where the return to investors does not reflect the public good derived from the investment.

The RET is complemented by significant direct support targeted at basic research and development, as well as the commercialisation and deployment of emerging technologies. In combination with support under the RET, these policies will promote a diverse portfolio of renewable energy technologies.

Question: (Senator)
If the CPRS fails to pass the Senate, do you see the RET as part of a 'second-best' approach to reducing greenhouse gas emissions? Would the scheme need to be modified if it was to fulfil this role?

Answer:
The Government is committed to passing legislation currently before the Parliament to implement both the CPRS and the RET scheme.

Question: (Senator)
Assistance is proposed for major users of electricity, similar to that offered to EITEs under the CPRS. How much will this add to costs for companies and households not being assisted? Does it have overall efficiency costs?

Answer:
The RET scheme design, as agreed by the Council of Australian Governments on 30 April 2009, includes the provision of assistance under the RET for activities defined under the CPRS legislation as emissions-intensive, trade-exposed (EITE). The provision of assistance recognises the impact of the RET on trade-exposed industries in the context of the CPRS being introduced and the additional pressures these firms are experiencing as a result of the global recession.

The RET assistance will only apply in respect of the expanded portion of the target, namely the liability above the 9,500 gigawatt-hours (GWh) under the existing

Mandatory Renewable Energy Target. Partial exemptions will apply for either 90 per cent or 60 per cent of liability that relates to the portion of the target above 9,500 GWh, corresponding to whether the EITEs entity is identified as eligible for CPRS assistance in the 90 per cent or 60 per cent categories. Accordingly, all electricity users will continue to contribute to supporting renewable energy as the partial exemptions will only apply in respect of the expanded portion of the target.

The provision of assistance to trade-exposed industries under the RET is expected to increase the retail price impacts from 3.5 per cent to around 4.2 per cent in the period 2010 to 2015 and from 2.6 per cent to 3.1 per cent in the period 2016 to 2020 above the reference scenarios.

Question: (Senator)
Will the global recession buffer applying to EITEs assistance under the CPRS also apply to assistance under the RET? Are exemptions intended to "decay" in the same way as CPRS permit allocations?

Answer:
The global recession buffer and the decay rate that apply to EITE industries as part of the assistance under the CPRS will not be replicated for EITE industries as part of the RET assistance. While the CPRS is an ongoing initiative, the RET scheme is a transitional measure, with legislated targets and therefore, RET liability ending in 2030.

Question: (Senator)
Is the case for assistance weaker for the RET than the CPRS as more countries have some form of RET?

Answer:
The RET scheme design, as agreed by the Council of Australian Governments on 30 April 2009, includes the provision of assistance under the RET for activities defined under the CPRS legislation as emissions-intensive, trade-exposed (EITE). The provision of assistance recognises the impact of the RET on trade-exposed industries in the context of the CPRS being introduced.

Question: (Senator)
There has been criticism that the 'multiple credits' under the solar credits scheme will lead to 'phantom certificates'. What do you think of the suggestion by AGL Energy that 'a formula should be considered for the legislation to increase the quantity of RECs required in each year to ensure that 'phantom RECs' do not result in actual renewable generation being lower than that specified in the legislated target'?

Answer:
Solar credits will commence from 9 June 2009 and be phased out by 2015-16, recognising that technology costs are going down and the role of CPRS in providing incentives for renewable technologies. The timing of the phase-out by 2015-16 means that Solar Credits will not adversely affect reaching the 20 per cent target by 2020.

Question: (Senator)
What are the arguments for and against a national gross feed-in tariff?

Answer:
A Renewable Energy Target (RET) and feed-in tariff are alternative policy mechanisms for promoting renewable energy uptake often designed to meet similar objectives. A RET sets the quantity of renewable energy and allows for a range of cost-effective technologies to be deployed. A RET does not specify the precise rate of support required for each technology.

In contrast, a feed-in tariff provides a certain amount of support for specified technologies which is set in advance for a future period of time. Given the uncertainty and complexity in setting prices for each technology, feed-in tariffs could lead to more or less of certain technologies being deployed if the price set does not accurately reflect the amount of support required by that technology.

COAG decided in November 2008 not to implement a national feed-in tariff.

Question: (Senator)
The Select Committee on Climate Policy heard from Treasury and the Department of Climate Change that the RET would increase retail electricity prices by less than 5 per cent, and the combined impact of the RET and CPRS would be about 20 per cent. However the Committee was concerned that some industry sources were talking about the RET alone adding 10 or over 20 per cent and the combined impact being 50 per cent to 100 per cent. Have the departments done any more work in this area?

Answer:

Electricity price increases of this magnitude appear implausible. The Treasury and DCC modelling is that contained:

Australia's Low Pollution Future – The Economics of Climate Change Mitigation Treasury.

Benefits and Costs of the Expanded National Renewable Energy Target January 2009 McLennan Magasanik Associates.