Chapter 4

The renewable energy target as a complement to emissions trading

The RET and an ETS

4.1 It is commonly argued that an effective emissions trading scheme will provide emissions mitigation at lower cost than a RET with a binding target. If the RET is non-binding, then it just results in wasted administrative and compliance costs:

> …reductions in emissions of greenhouse gases should be achieved at the lowest possible cost. Ai Group therefore supports a broad-based market approach in the form of a well-designed ETS to drive lowest-cost emissions abatement across the whole economy. If the proposed CPRS is passed, with appropriate amendments to assist affected industries during the transition, there will be no need for the RET at all.[1]
>
> If you were comfortable with all of the parameters of an ETS and you thought that the targets were right and other dimensions of the scheme were right, I do not think you could make a case for the renewable energy target. It would be redundant. Any case for the renewable energy target depends on your not thinking that the ETS is defined in a way that will do the job. You do not think the targets are ambitious enough or you think something else is wrong with it…Is the renewable energy scheme an economically efficient way of reducing emissions? No, the emissions trading scheme is more efficient.[2]
>
> An MRET operating in conjunction with an ETS would not encourage any additional abatement, but still impose additional administration and monitoring costs. To the extent that the MRET is binding (which is its purpose) it would constrain how emission reductions are achieved — electricity prices would be higher than otherwise and market coordination about the appropriate time to introduce low-emissions energy technologies would be overridden. If it was non-binding, it would simply increase administrative, compliance and monitoring costs. Moreover, it would also help to foster a perception that governments are amenable to interfering with the least cost abatement objective of the ETS. This could encourage

1 Australian Industry Group, *Submission 64*, p 2.

2 Professor Ross Garnaut, *Proof Select Committee on Climate Policy Hansard*, 16 April 2009, pp 55-6.

> other potential beneficiaries to seek special programs that neither increase abatement nor reduce its cost.[3]

4.2 The bill amends the existing act so that instead of aiming 'to reduce emissions of greenhouse gases', the goal is now 'to reduce emissions of greenhouse gases in the electricity sector'. This may be an acknowledgement that under the CPRS it will be the targets set in the CPRS that determine total emissions and reducing them in the electricity sector 'frees up' permits for other sectors to increase their emissions.

4.3 One submitter wanted this interaction made more explicit:

> The Committee should recommend that this Bill mandate full disclosure in RECs transactions such that householders are properly advised that when they sign across RECs or Solar Credits they are displacing other renewables already required by law, achieving zero additional renewable energy and zero reduced emissions for Australia.[4]

4.4 Whether the RET will be binding will depend on how strict is the target under the CPRS. Treasury told the Committee that if the CPRS target for 2020 emissions is a five per cent reduction from 2000 levels, then renewable energy accounts for only about 10 per cent of total electricity sources in 2020.[5] Under this modest CPRS, the RET doubles the usage of renewable energy.

4.5 With a more ambitious target of a 25 per cent reduction in emissions, it is projected that the CPRS would lead to almost 25 per cent of Australian electricity generation coming from renewable energy in 2020.[6] This would exceed the proportion set by the RET, so in this sense the RET might be regarded as redundant.

4.6 Some witnesses did not believe the case had been made for any RET:

> …the proposed expansion of the renewable energy target is occurring without the evidence of market failure.[7]

4.7 The Clean Energy Council responded:

> …we do not have a full carbon price globally which would make these investments unequivocally beneficial… We are trying to discover what these technologies can do and at what scale. We know that they can do a lot; it is just a question of how much, and how much they will cost and how

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3 Productivity Commission, 'What Role for Policies to Supplement an Emissions Trading Scheme?': Submission to the Garnaut Climate Change Review, May 2008, p. xvii. A similar comment by the PC was cited by Mr Michael Hitchens, CEO, Australian Industry Greenhouse Network, *Proof Committee Hansard*, 5 August 2009, p 43.

4 Mr Tim Kelly, *Submission 6*, p 4.

5 Ms Meghan Quinn, Treasury, *Proof Committee Hansard*, 5 August 2009, p 6.

6 Department of Climate Change, Answers to questions on notice, August 2009.

7 Ms Maria Tarrant, Business Council of Australia, *Proof Committee Hansard*, 5 August 2009, p 27.

> quickly and how big they can deploy. You can wait for the market to do that but, without signals, the market may take a generation to actually start answering those questions. There is a time imperative in the current advice on climate science,[8]

The RET as an industry development measure

4.8 A RET may be justified as a complement to an emissions trading scheme if there is an industry development objective. The Department of Climate Change explained it as follows:

> The expanded RET scheme is a key transitional measure accompanying the proposed CPRS. Whereas the CPRS will help bring renewable technologies into the market over time, the national RET scheme will accelerate deployment of renewable energy technologies by providing a guaranteed market for renewable energy. The RET will conclude in 2030, at which time the CPRS is expected to be the primary driver of renewable energy deployment…As the carbon price increases, you would not need a renewable energy target to make the renewable energy cost competitive because the pure carbon price itself from the CPRS makes it competitive. That is why the RET is explicitly a transitional measure...[9]

4.9 This is how many witnesses and submitters see the RET:

> The idea of a renewable energy target is an industry development measure to drive and accelerate deployment and development of these technologies ahead of any carbon price…[10]
>
> …the purpose of a renewable energy target is…to provide for industry development.[11]
>
> …we view the RET as a transitionary measure which is one part of a package of policies that will stimulate investment in renewable technologies.[12]
>
> While the objective of the CPRS is to bring down Australia's emissions, the purpose of the RET is to build the energy industries Australia requires to deliver this sustainably.[13]

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8 Mr Matthew Warren, Chief Executive Officer, Clean Energy Council, *Proof Committee Hansard*, 5 August 2009, p 70.

9 Mr Blair Comley, Deputy Secretary, Department of Climate Change, *Proof Committee Hansard*, 5 August 2009, pp 4 and 6.

10 Mr Matthew Warren, Chief Executive Officer, Clean Energy Council, *Proof Committee Hansard*, 5 August 2009, p 67.

11 Professor Ray Wills, Chief Executive Officer, Western Australian Sustainable Energy Association, *Committee Hansard*, 2 July 2009, p 2.

12 Origin Energy, *Submission 53*, p 1.

13 Pacific Hydro, *Submission 8*, p 1.

4.10 The Minister has explained the rationale for the RET in the following terms:

> The policy point of the renewable energy target is to bring on investment into renewable technologies earlier than would otherwise have been. It is the case that there are a number of technologies that have not yet been commercially deployed. There are technologies which are already being utilised. This is a substantial ramp-up in the target, in part to provide a market incentive for the private sector to invest in renewable energies.[14]

4.11 The argument for industry development is that renewable energy is an industry of the future and Australia is lagging behind. Greenpeace suggest:

> There is not a single wind turbine anywhere in Europe that was built as a result of their emissions trading scheme—not one. They were built as a result of the renewable energy targets and feed-in tariffs and other direct regulatory policies.[15]

4.12 Another perspective is that the RET seeks to accelerate the take-up of renewable power rather than prop it up artificially indefinitely. Professor Wills offers this comparison:

> …the IT industry in the 1980s started without government intervention. It started because there was a perceived demand for the technology, and businesses paid at the very expensive end of the technology curve in the eighties for IT equipment that over the last 25 years has become very affordable and very mainstream. I have no doubt that the renewable energy industry, if left alone, would do the same thing over the next 25 to 30 years. But the challenge for us here, today, in 2009, is that we want technologies that will reduce emissions today and not in 20 or 30 years time. So the problem for us is that we actually have to pay the premium price for a service that cannot really be delivered in any other way at this point—that is, emissions-free energy.[16]

Encouraging diversity of renewable energies

4.13 A concern with the RET is that it may not encourage development of a diverse range of renewable energies, but lead to a concentration on whichever is viewed as currently the cheapest, probably wind:

> The Bill needs to provide support for new and emerging technologies which may be less competitive against the mature lowest-cost offering today but which offer longer term potential in the market. This point was made in the Stern Report and expressed as "While markets will tend to deliver the least-cost short-term option, it is possible they may ignore technologies that

14 Hon Penny Wong, *F&PA Estimates Hansard,* 29 May 2009, p 28.

15 Mr John Hepburn, Greenpeace Australia Pacific, *Select Committee on Climate Policy Hansard,* 21 April 2009, p 58.

16 Professor Ray Wills, Chief Executive Officer, Western Australian Sustainable Energy Association, *Committee Hansard*, 2 July 2009, p 4.

> could ultimately deliver huge cost savings in the long term". "Policy should be aimed at bringing a portfolio of low-emission technology options to commercial viability."[17]
>
> …the value of the RECs to the business case of projects built in the first few years of the scheme may result in projects offering an early and extended return getting off the ground against projects ready for development in the middle of the scheme with higher up front development costs ultimately producing cheaper or, overall, a more cost effective energy over the lifetime of the project.[18]

4.14 In particular, the geothermal industry is concerned that the RET will encourage the more mature renewable energy industry, such as wind, and be phased out before it can assist emerging renewable energies:

> …the incentives offered under the scheme might not be available by the time geothermal generation projects and other emerging renewable energy technology projects were ready to come onstream… the RET scheme will in fact defer the development of geothermal energy projects in Australia, as the incentives it provides will encourage the development of the existing technologies at a level that will effectively lock out geothermal energy projects.[19]

4.15 This criticism may be overstated. The Department of Climate Change pointed out:

> …the modelling indicates a reasonable diversity of renewable energy at 2020 including a substantial amount of geothermal.[20]

Banding

4.16 A desire to ensure diversity of renewable energy sources has led to some calls for requiring minimum contributions from particular renewable sources, sometimes referred to as 'banding', 'tranches' or 'carve-outs':

> …amending the legislation to create specific carve-outs for emerging technology…would essentially ensure that a sufficient proportion of the RET would be reserved for emerging renewable technologies when they are expected to be developed.[21]

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17 Solar Systems, *Submission 97*, p 1. The quotation from the *Stern Review* is from section 16.4.

18 Emerging Technologies, *Submission 113*, p 2.

19 Ms Susan Jeanes, Chief Executive Officer, Australian Geothermal Energy Association, *Proof Committee Hansard*, p 51.

20 Mr Blair Comley, Department of Climate Change, *Proof Committee Hansard*, 5 August 2009, p 16. See Table 2.2.

21 Geodynamics, *Submission 45*, p 5.

4.17 Professor Andrew Blakers calls for a specific tranche of 15,000 GWh for solar energy (photovoltaics and solar thermal energy) which he argues has the most long-run potential:

> Solar energy will eventually dominate clean energy markets – its immense advantages are clear. However, another decade will be required to get the cost of solar energy down to the 12c/kWh mark where it will successfully compete at large scale with wind.[22]

4.18 It has been pointed out that the scheme proposed in the United Kingdom encourages a diversity of sources:

> …the United Kingdom's banded scheme, which proposes awarding the equivalent of a quarter of a Renewable Energy Certificate per megawatt hour of electricity to established technologies such as landfill gas, one Certificate for wind and two for an emerging technology like solar thermal.[23]

4.19 A variant of this approach has been suggested by the Australian Geothermal Energy Association:

> …it is quite a good proposal that merging technologies have to generate 0.75 per cent of a megawatt hour to get a REC and that existing technologies have to generate 1.25 megawatts to get their REC, and that way you end up with basically the same cost across the scheme.[24]

4.20 Another approach to the same end is the use of 'boosters':

> For instance a "Solar Booster" would provide additional value above both the market energy cost and the REC market value for energy produced by certified and contracted solar technology. A Booster would be a fixed, designated payment per Megawatt-hour provided as an 'after market' payment. The Government would have the control and ability to establish Boosters tailored to the specific needs of a new emerging technology…[25]

4.21 These approaches have been rejected by many submitters, notably including those involved with wind energy, as 'picking winners' rather than relying on market forces:[26]

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22 Professor Andrew Blakers, *Submission 2*, pp 1-3.

23 Ausra, *Submission 91*, p 10.

24 Ms Susan Jeanes, Chief Executive Officer, Australian Geothermal Energy Association, *Proof Committee Hansard*, 5 August 2009, p 51. Once a technology reaches, say, 500 megawatts capacity, it is reclassified from emerging to established; Mr Alan Knights, Australian Geothermal Energy Association, *Proof Committee Hansard*, 5 August 2009, p 56.

25 Solar Systems, *Submission 97*, p 2.

26 As well as those cited below, banding was criticised by the Clean Energy Council, *Submission 112*, p 3. See also the comments by their CEO, *Proof Committee Hansard*, 5 August 2009, p 74. Banding has also been criticised by Mr Michael Costello, Managing Director, ActewAGL, *Select Committee on Climate Policy Hansard*, 30 April 2009.

> The carve outs have been used internationally in a number of schemes, for instance in the UK, and they have not really worked very well.[27]
>
> …we cannot support technology carve outs as proposed by some organisations for emerging technologies. Our view is that the commercialisation path for those technologies, geothermal, solar thermal etcetera should be advanced through appropriate and targeted policy mechanisms so that in time they can operate under a renewable energy target framework or indeed a CPRS in the longer term.[28]
>
> …introducing banding into the RET will reduce the efficient operation of the market by bringing forward more expensive technologies, adding to the overall cost of the measure; and risk constraining the development of industries that are close to commercially viable.[29]
>
> …there will be stakeholders who want to micro-manage the energy market in an attempt to gain some advantage for the most fashionable and exciting form of power generation, even though it might be many years away from being ready for commercial-scale deployment. Their proposal…is a recipe for endless government involvement in a market that performs best without it.[30]

Impact of banking

4.22 The banking of RECs (described in paragraph 2.9) may also hamper the development of a range of technologies by encouraging overproduction early on using the currently cheapest technology rather than technologies which may become cheaper in later years:

> …this banking distorts the market. It allows you to sit on RECs that you have created and acquit them later…there is a huge incentive to start doing that from 2010, when you get RECs, therefore, from your first project, for 20 years of the scheme.[31]
>
> Unlimited banking creates an incentive to stockpile Renewable Energy Certificates by investing in wind power and more mature renewable energy sources potentially at the expense of solar thermal.[32]

Feed-in tariffs

4.23 Another way of allowing differentiated tariffs for different technologies is to have a gross feed-in tariff (FIT).

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27 Dr Muriel Watt, IT Power, *Proof Committee Hansard*, 6 August 2009, p 61.

28 Ms Andrea Gaffney, BP Solar, *Proof Committee Hansard*, 6 August 2009, p 61.

29 Suzlon Energy, *Submission 107*, p 3.

30 Vestas, *Submission 129*, p 3.

31 Ms Susan Jeanes, Chief Executive Officer, Australian Geothermal Energy Association, *Proof Committee Hansard*, 5 August 2009, p 53.

32 Ausra, *Submission 91*, p 2.

4.24 A 'feed-in tariff' refers to a premium rate paid for electricity fed back into the electricity grid from a renewable electricity generation source. The most commonly discussed source is a solar panel on the roof of a home which may generate more power than is consumed within the home. However, FITs can also be applied to large scale commercial projects. A *net* feed in tariff, also known as export metering, pays the provider only for surplus energy they produce; whereas a *gross* feed-in tariff pays for each kilowatt hour produced by a grid connected system, whether it is consumed by the producer or fed into the grid.

4.25 State governments currently have or have planned such tariffs (Table 4.1).

Table 4.1: Feed-in tariff schemes (as at June 2009)

State/territory	*Commencement date*	*Maximum size*	*Rate/kWh*	*Duration*	*Net or Gross*	*Technology covered*
Victoria	2009	5kW	60c	15 years	Net	Solar PV
South Australia	July 2008	10kW	44c	20 years	Net	Solar PV
ACT	March 2009	10kW for premium price, 30kW for non premium rate	Premium: 50.05c Non-premium: 40.04c	20 years	Gross	All renewable energy types
Tasmania	2009	To be confirmed	20c	To be confirmed	Net	Solar PV
Northern Territory	2008	To be confirmed	Alice Springs: 50.05c up to $5/day then 23.11c Elsewhere in NT: 14.38	To be confirmed	Net	Solar PV
Western Australia	July 2010	Household only: to be confirmed	60c	To be confirmed	Net	Solar PV
Queensland	July 2008	10kW	44c	20 years	Net	Solar PV
New South Wales	January 2010	10kW	60c	20 years	Net	Solar PV

Source: Greg Buckman, *Submission 21*, p 12.

4.26 A number of witnesses and submissions called for a national gross feed-in tariff.[33]

> … BP Solar certainly has been advocating and lobbying hard for the adoption of a gross feed in tariff across all of Australia's jurisdictions with the inclusion of the commercial and industrial sectors…Gross feed in tariffs have now been adopted in more than 45 countries and over 18 states and provinces around the world…Feed in tariffs have been proven as the cheapest and the fastest way of deploying solar PV into the marketplace and

33 As well as the those quoted below, supporters include Solar-Wind-Systems, *Submission 1*, p 1; Modern Solar, *Submission 121*, p 3; Environment Business Australia, *Submission 126*, p 17; Margaret Blakers, *Submission 25*, p 2; Sean Manners, *Submission 32*, p 1; Conergy, *Submission 44* and CSR, *Submission 47*, p 3; and Moreland Energy Foundation, *Submission 19*, p 5.

> we would certainly want to see a gross national feed in tariff in place before the solar credit scheme winds up by the year 2015.[34]
>
> Finally, with almost 30 years of experience directly within the Solar PV industry, RFI believe that the implementation of a Gross National Feed-in Tariff (FIT) is the natural and required market stimulation model to provide certainty, value and benefits to all parties within the renewable energy sector. This is a proven and well known model internationally and one which has been described in detail to government and proven to provide the positive benefits of renewable energy over the short to medium term. The Gross FIT has turned several European countries into world leaders in the field of Renewable Energy and we believe the time has come for Australia to adopt this initiative as a significant tool in the drive for greater adoption of renewable energy in our country.[35]
>
> A common factor amongst the world's strongest renewable energy markets is the use of "Feed-in Tariffs" for driving the uptake of renewable energy.[36]

4.27 Some submissions want business to be able to participate:

> In stark contrast to Australia, solar power is being successfully promoted in many countries to business through gross feed-in tariff mechanisms. Feed-in tariffs in virtually every country are open to businesses to participate and profit from investing in solar power production.[37]

4.28 The Clean Energy Council preferred a RET over a feed-in tariff using arguments reminiscent of those for preferring an emissions trading scheme over a carbon tax:

> A feed-in tariff…sets the price and then the volume is set by the market, whereas a renewable energy target sets the volume and then lets the market set the price.[38]

4.29 The Department of Climate Change noted:

> 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

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34 Ms Andrea Gaffney, BP Solar, *Proof Committee Hansard*, 6 August 2009, p 61.

35 RF Industries, *Submission 106*, p 2.

36 Greenpeace Australia, *Submission 43*, p 3.

37 Solar Guys, *Submission 52*, p 2.

38 Mr Matthew Warren, Chief Executive Officer, Clean Energy Council, *Proof Committee Hansard*, 5 August 2009, p 72.

> 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.[39]

4.30 Concerns have been expressed about equity aspects of feed-in tariffs aimed at households:

> It is deeply inequitable, because the people who can afford it tend to be people with some reasonable amount of money. Here [in the ACT] it is a gross tariff of 50c a kilowatt hour, which is pretty good. It is about four times what we sell our retail tariff for normal energy. That cost, of course, has to be borne by the whole of the community, including the poorer people of the community who spend 15 per cent of their budget on energy as against the better off people who spend five per cent of their budget on energy. There is an equity issue there and, also, it is very expensive.[40]

4.31 There was also claims that it provides less incentive for innovation:

> …if you are too generous with the feed-in tariff, you build fat into the technology and the technology becomes lazy and does not strive to continually improve its performance and, if you underset the rate of the feed-in tariff, then you do not get any project development.[41]

4.32 One submitter suggested that only households buying 100 per cent green power should be eligible to be paid a high price under a feed-in tariff.[42]

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

Sunset clauses

4.34 Another means of encouraging diversity is to restrict the period for which projects can earn RECs:

> ...sunset clauses so that projects can only earn renewable energy certificates for a period of years. That will also help us address issues of promising but still emerging renewable technologies such as hot rock, which might be coming into play later than some of the early technologies.[43]

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39 Department of Climate Change, Answers to questions on notice, August 2009.

40 Mr Michael Costello, Managing Director, ActewAGL, *Select Committee on Climate Policy Hansard*, 30 April 2009, p 146. See also the discussion in Senate Standing Committee on Environment, Communications and the Arts, *Renewable Energy (Electricity) Amendment (Feed-in-Tariff) Bill 2008*, November 2008, pp 10-11.

41 Ms Susan Jeanes, Chief Executive Officer, Australian Geothermal Energy Association, *Proof Committee Hansard*, 5 August 2009, p 55.

42 Ian Gittus, *Submission 27*, p 1.

43 Dr Iain MacGill, Joint Director, Centre for Energy and Environmental Markets, *Proof Committee Hansard*, 6 August 2009, p 84.

Other measures supporting diversity of renewable energy

4.35 In the 2009-10 Budget, the Government announced the $4.5 billion Clean Energy Initiative. This includes;

- Australian Solar Institute to support research into solar technologies ($0.1 billion);
- Solar Flagships programme to create an additional 1,000 megawatts of solar generation capacity ($1.5 billion);
- Australian Centre for Renewable Energy to promote the development, commercialisation and deployment of renewable technologies ($0.5 billion);
- Renewables Australia to support technological research and bringing it to market ($0.5 billion); and
- National Solar Schools programme ($0.5 billion).[44]

4.36 Some of these programmes complement the RET to develop renewable technologies that may not be viable in the short term but have long term promise:

> …the renewable energy target effectively deploys the lowest cost renewable energy currently available at the time it is rolled out. The government expenditure based programs are targeted at areas that would be likely to be more expensive than the current ones picked up on the renewable energy target, but you would expect there would be more novel or innovation benefits from assisting those technologies so that you have a broader suite of renewable energy technologies.[45]

Committee view

4.37 The Committee would like to see a range of renewable technologies develop. Renewable Energy Targets have been adopted internationally to provide transitional assistance to renewable energy technologies, where a purely market based approach would not result in sufficient investment and take up in the short term. However the committee is not attracted to the idea of 'banding', which it regards as excessively prescriptive. It welcomes the support for diverse renewable technologies contained in the programmes under the Clean Energy Initiative.

4.38 The Committee understands the geothermal industry's concerns about the impact of unlimited banking of RECs, but also sees the merit in terms of flexibility of allowing for some banking.

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44 2009-10 Budget Papers, and Mr Blair Comley, Department of Climate Change, *Proof Committee Hansard*, 5 August 2009, p 4.

45 Mr Blair Comley, Department of Climate Change, *Proof Committee Hansard*, 5 August 2009, p 6.

Recommendation 3

4.39 The Committee recommends that the banking of renewable energy certificates be assessed as a part of the 2014 review.

The Spanish experience

4.40 A paper on the Spanish experience by Dr Alvarez concludes that promoting renewable energy is 'terribly economically counterproductive', and that:

> …since 2000 Spain spent €571,138 to create each "green job", including subsidies of more than €1 million per wind industry job.…2.2 jobs destroyed for every "green job" created…Principally, the high cost of electricity affects costs of production and employment levels in metallurgy, non-metallic mining and food processing, beverage and tobacco industries.[46]

4.41 There seem to be quite a few important differences between the Spanish scheme of subsidy payments to nominated renewable industries and the more flexible RET in Australia. Alvarez points to some design flaws, such as arbitrary limits on eligible plant size that increased costs and are not part of the Australian scheme. He also refers to low interest rates sparking a speculative boom in the economy as a whole, not just in the renewable energy sector. Also as a member of the eurozone, Spain effectively has a fixed exchange rate.

4.42 The study has a short-term focus, basing its conclusions on employment outcomes in a period of global recession. It does not refer to the long-term employment benefits of Spain having installed energy sources with low marginal costs. Not is there any reference to the benefits of accelerating investment in renewables to fight climate change effectively. The company he cites as having been driven away from Spain by the higher energy prices, Acerinox, opened a new plant in the US, which is of course now introducing its own measures which will increase the relative price of power.

4.43 The Alvarez study has been critiqued within Spain by Portillo et al, of the Reference Centre for Renewable Energies and Employment, who claim it misrepresents the Spanish system, ignores relevant influences such as past subsidies for fossil fuels, and omits the beneficial effect wind energy has had on electricity prices.[47]

4.44 The Spanish Government is scathing about the study, describing it as:

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46 Dr Gabriel Calzada Alvarez, 'Study of the effects on employment of public aid to renewable energy sources', March 2009.

47 GA Portillo et al, 'Critical review of 'Study of the effects on employment of public aid to renewable energy sources', May 2009; Australian Conservation Foundation, Answers to questions on notice, August 2009.

> …based on a simplistic, reductionist and short-term view…[which] contradicts most of the previous studies carried out by different researches…[48]

4.45 Alvarez's estimates of 'green jobs' created are much lower than other, credible, estimates.[49]

4.46 The Department of Climate Change drew the Committee's attention to how the Spanish Government:

> …questions the economic methodology employed by the study, and…the focus on short-term economic outcomes at the expense of the medium to long-term impacts of lowering the carbon intensity of electricity production.[50]

4.47 The Department's own views are also critical:

> From preliminary analysis of the Alvarez report by DCC, the report uses a simplistic equation to estimate the amount of jobs that would otherwise have been created if the 'green job' was not created. This is measured through a simplified equation that compares the subsidy to renewables against the average productivity of a worker.[51]

4.48 The Australian Conservation Foundation has also critiqued the article and concluded:

> The study relies on a flawed methodology, unsourced data and use of secondary sources that are often not cited. The study is an advocacy document, written in English, which was primarily directed at influencing the US political debate.[52]

4.49 There are doubts about the objectivity of the author:

> …he has affiliations with a number of climate sceptic conservative organisations—including the Centre for the New Europe which has accepted funding from Exxon Mobil—has spoken to the Heartland Institute on many occasions, heads up a small Spanish free-trade think tank and is a climate sceptic himself...[53]

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48 Letter from Spanish Secretary of State of Climate Change to Henry Waxman, 20 May 2009, provided by Pacific Hydro, Answers to questions on notice, August 2009.

49 Spanish Climate Change Minister, cited by Giles Parkinson, *The Australian*, 6 July 2009, p 25; Australian Conservation Foundation, Answers to questions on notice, August 2009.

50 Department of Climate Change, Answers to questions on notice, August 2009.

51 Department of Climate Change, Answers to questions on notice, August 2009.

52 Australian Conservation Foundation, Answers to questions on notice, August 2009.

53 Mr Freeman, Australian Conservation Foundation, *Proof Committee Hansard*, 5 August 2009, p 80; Australian Conservation Foundation, Answers to questions on notice, August 2009.

4.50 The Institute of Public Affairs cites Alvarez' work, but then makes a more extreme point than Alvarez himself. Dr Moran says that Spain's promotion of renewable energy 'has contributed to an economic disaster' and was 'a significant factor' in Spanish unemployment rising from around the OECD average to the highest rate – 18 per cent.[54]

4.51 Mr Comley from the Department of Climate Change is sceptical about drawing a link between use of renewable energy and high unemployment in Spain:

> I would find it quite implausible that those sorts of policies would have any sort of correlation of that type with unemployment. I suspect in the Spanish case that the ending of a construction boom, associated with a range of factors within Europe, is likely to be of greater significance.[55]

4.52 It has also been pointed out that the Spanish unemployment rate was 25 per cent before the renewable energy policy was introduced.[56]

54 Dr Alan Moran, Institute of Public Affairs, *Submission 16*, p 9.

55 Mr Blair Comley, Department of Climate Change, *Proof Committee Hansard*, 5 August 2009, p 7.

56 Giles Parkinson, *The Australian*, 6 July 2009, p 25.