Aussie blues as green policy chaos persists

AS PRESSURE BUILDS ON AUSTRALIA’S FEDERAL COALITION GOVERNMENT TO GET ITS CLIMATE CHANGE POLICY INTO SHAPE ONCE AND FOR ALL, GAIL RAJGOR REPORTS ON THE STATE OF THE COUNTRY’S RENEWABLE ENERGY MARKET.

Existing policies that are well intentioned but misguided now seem to be imploding in spectacular fashion.

Continued dithering about future policy has succeeded only in deterring local investment and driving domestic energy development giants to pump their cash into other markets. Increasing calls for carbon pricing are now coming thick and fast – from far and wide.

Welcome to Australia’s renewable energy market.

“There is plenty of renewable energy available in Australia – we have abundant geothermal, solar and tidal potential – but they don’t become economically viable while pollution is free,” says Michael O’Sullivan, president of the Australian Council of Superannuation Investors (ACSI). ACSI’s fund management members are responsible for around
A$250 billion of assets, including ownership of energy firms like Pacific Hydro, one of the country's leading renewable energy developers.

Pacific Hydro's executive director Rob Grant, meanwhile, believes that 'current policy uncertainty in Australia around the market for wind farms and renewable energy makes it easier to be investing in Chile than Australia at this point in time'. In fact to back this point up, Pacific Hydro is spending three times more money in Latin America than in Australia for precisely that reason (according to an interview with Business Day).

Grant and his firm are far from alone in not putting as much of their money into their home market as they would ideally like. And the views expressed by him and O'Sullivan are echoed by many in Australia, a country with a hefty mountain to climb if it plans on meeting its carbon emission reduction target of 5 percent below 2000 levels by 2020; as in other countries an increase in renewable energy use, combined with greater energy efficiency is seen as the key to bringing down emissions.

The 12.03 GW of renewable energy plants operating (or under construction) in Australia by the end of August 2010 may sound a lot to many people. And with a recent burst of significant project approvals totalling hundreds of megawatts – including Origin Energy's Stockhill wind farm near Ballarat, Victoria, which could end up with an installed capacity of 471 MW – many may think renewable energy development is forging ahead in Australia, and may therefore wonder what the fuss is all about.

But in reality the capacity operating, approved and under construction right now is insufficient to meet emission reduction goals, and scarcely scratches the surface of the country's green energy potential, industry says.

This is particularly relevant when one considers Australia's massive wind and solar power resources: Of the 10.86 GW of renewable energy that was operating at the end of August, wind and solar accounted for around 2 GW (wind – 1.86 GW and solar just – 0.18 GW). More than 8 GW comprised of hydro power projects. And of the additional 878.3 MW that was under construction, wind projects accounted for 99.25% (871.7 MW).

According to the Government, renewable energy accounts for 5 percent of Australia's total energy consumption, contributes around 7 percent to Australian electricity generation, with 4.5 percent sourced from hydro. Wind energy now represents around 1.5 percent of total electricity generation. With the long-awaited approval of an expanded renewable energy target (RET) in August 2009 and the launch of initiatives such as the Solar Flagships Scheme, which aims to support construction of large commercial scale solar power plants, the country hopes to have at least 20 percent of its electricity supply (or 45 TWh) coming from renewable energy by 2020.

Towards this end, a specific target for large-scale renewable energy projects was announced in March this year. This sets goals for 10.4 TWh of electricity generation to come from large-scale renewables by 2011, with the target increasing gradually each year to 18 TWh by 2015 and 41 TWh by 2020. A separate scheme for small-scale renewables – aimed largely at projects like solar hot water installations and rooftop PV panels and wind turbines for electricity generation for households – was also announced.

Meeting these targets requires a doubling of the country's current renewables capacity, with around 10 GW of new generating capacity needing to be installed in the coming decade. Wind power is expected to meet the bulk of this. But last year just four new wind farms total-

ling 406 MW became fully operational, including Acciona's 192 MW Waubra project and Infigen Energy's 141 MW Capital wind farm.

This year, total newly-installed capacity is expected to be low, around 260 MW, with another 330 MW added in 2011, to take Australia's cumulative wind capacity to 2.3 GW – 2.5 GW by 2012.

And yet according to the CEC, wind developers have plans in the pipeline for nearly 13 GW more. While 6.15 GW of this is still at the feasibility study stage, just under 6.8 GW is firmly proposed for development (and has either received planning and environmental approvals, or is in the planning queue). Whether the developers behind these projects can – or are willing to – proceed with them however, depends very much on whether or not it makes financial sense.

Currently under the existing support systems, the sums don't add up for the majority of projects. Indeed, in the past year or so several firms have scrapped project plans or put them on the backburner. This includes the likes of AGL Energy which, while some of its projects are moving ahead (the 420 MW Macarthur wind farm in Victoria for example), a further A$1 billion of its planned Australian wind investments remain firmly on the shelf until policy improves.

AGL and, for that matter, Pacific Hydro, are part of a growing army of frustrated potential renewable energy investors chomping at the bit to plough more money into the large projects that would help meet the country's clean energy targets. Collectively this investor army is ready and waiting to unleash A$20-A$30 billion into clean energy projects and create 26,000 jobs, the CEC points out. But before this can happen the Government needs to get its policy act into shape, it cautions.
This means some significant revision of existing legislation not to mention some serious additional “polluter-pays” energy and climate change action, to help wean Australia off its addiction to cheap coal, which is still available in abundant supply.

Solar policy flaw

In terms of existing renewables support policy, the national pricing system linked to the expanded RET, based on renewable energy certificates (REC) trading, has been heavily criticised for being overly-generous to small scale solar.

For example, a Solar Credits mechanism means those installing small-scale rooftop solar photovoltaic systems get five times as many RECs as other generators. While the solar sector needed a major boost, the generous REC conditions afforded it, has led to an inevitable and much-forewarned rush on the heavily-subsidised technology.

This has flooded the credit trading market with an over-supply of RECs, which companies buy to ensure compliance with their renewables obligation targets, and prices for them have been pushed right down as a result. For large-scale projects in particular, such as wind farms, REC prices need to hit a reasonably high level for a project to be financially viable (project revenue comes from both the sale of RECs, as well as the electricity).

So this flooding of the REC market has brought project investment in non-solar renewables technology to a virtual halt.

From January, RECs gained from small scale projects such as those typically using solar will not be able to be traded alongside certificates created from large-scale projects, so this should help eventually, although any certificates banked before then will be tradable. But the problem caused by the generosity towards solar has also been compounded, thanks to policies in some states.

A number of states offer additional incentives, such as high feed-in tariffs, to boost solar uptake, and these can be claimed alongside the incentives offered under the federal system. So heady days indeed if you’re a small scale solar and PV system supplier.

NSW: a case in point

This has been particularly true in states such as New South Wales, which has operated a feed-in tariff-based solar bonus scheme since January this year. Paying a guaranteed gross rate of $0.60/kWh for rooftop solar panels and wind turbines, the scheme has quickly attracted subscribers, already supporting the installation of over 100 MW in the State.

Fearing unsustainable hikes in consumer electricity bills to support the scheme, and recognising the problems in terms of its impact on the general renewables market, the NSW state Government has taken what many view as overly-drastic action to resolve the issue.

In late October, it announced that the tariff offered under the scheme is to be cut by two thirds. While the programme will continue to run to its planned end date of 31 December 2016, new customers joining it after 27 October 2010 are to get just $0.20/kWh. The scheme is also being capped at 300 MW.

“This change reflects the substantial fall in PV system purchase costs over the past 12 months, and also takes account of the generous support provided through the Commonwealth’s Renewable Energy Target scheme," the State says. Since 2009, solar PV system prices have more than halved, meaning that payback of a 1.5 kilowatt (kW) system now occurs around two years after purchase, compared to 8 years when the NSW scheme was first announced.

“There is plenty of renewable energy available in Australia...but it doesn’t become economically viable while pollution is free”
– Michael O’Sullivan, ACSI

Some have said the State’s action could now bring the local solar industry to its knees, and have lambasted the policies as ill thought out in the first place:

“A year ago we welcomed the NSW Solar Bonus Scheme, but warned the Government it was too generous,” says CEC’s chief executive Matthew Warren. “More recently we advised that the best way to fix this was to ease the scheme down, and provide more long-term certainty. Instead they have compounded their first problem with an even bigger problem.”

The CEC recommended a lower gross feed-in tariff of $0.45/kWh, with the programme extended over a longer time period to provide certainty to consumers and to installers. “Reducing the gross tariff to 20 cents per kWh makes NSW one of the lowest rates in Australia,” Warren adds. “We just needed to get that funding balance right, not effectively shut the scheme down.”

Meanwhile, for anyone looking to invest in other renewables, hopes of a bright future in the era of the expanded RET have yet to be fulfilled. So as well as a long-term and robust commitment to clean energy initiatives, including the expanded RET and Solar Flagships Scheme, the CEC suggests there needs to be “nationally consistent gross feed-in tariffs for solar PV and other small, medium and large scale renewable energy generators”.

_Solar Bonus Scheme_

_Albany Wind Farm, near the town of the same name in Western Australia._
The key to really giving potential renewable energy investors, like ACSI's members, greater confidence for the longer term— and with it a big positive push for the industry— is to put a price on carbon as soon as possible, believes O'Sullivan, Grant and the CEC alike.

Indeed, ACSI released a report in October supporting the idea. "The single big-picture thing we need in Australia is a price on carbon because without it people can't invest profitably in most of the renewable energy that's available," insists O'Sullivan.

The CEC agrees: "A price on carbon is the critical success factor in attracting investment in clean energy," it says in its submission to a Senate Select Committee inquiry on carbon tax pricing mechanisms. "Without the right price signals, investors and business will not be afforded the degree of market predictability they require."

Instead, they will continue to defer low-carbon investment decisions and focus their attention on other countries with strong policies in place. "The emissions trading scheme and taxes already in place in countries such as Japan, South Korea, and the UK indicate that a direct price on carbon is the most efficient means of lowering abatement levels."

While there has been much rhetoric in favour of carbon pricing from the coalition federal government, led by new Prime Minister Julia Gillard, policy decisions have been put on hold until the senate inquiry is complete. In fact, according to previous statements from Gillard, nothing will be decided until 2012. That, says the renewables industry, is woefully late and Australia is lagging far behind the global community in taking decisive and effective action.

The CEC and its members, along with many in the business community, have grown more and more critical of the coalition Government for leaving a policy vacuum on climate change. "Business accepts the need to act on climate change, and wants certainty to invest in clean energy and create jobs," writes the CEC in an open letter published in September.

Some 22 leading member companies of the CEC lent their voices to the letter, including heavy hitters like AGL, Pacific Hydro, TruEnergy, Hydro Tasmania, GE, Suzlon, RES, Vestas, Alstom, Siemens and Wind Prospect. A price on carbon, they all insist, will drive the process of decarbonising Australia's energy market, and is "the most prudent way for Australia to manage the risk of dangerous climate change".

It will "create jobs, growth, greater economic diversity, help drought-proof farms and build sustainable regions", it adds. And it will help ensure Australia meets its 20 percent by 2020 renewable energy supply goals.

### Capacity of renewable electricity generation in Australia, 2009

<table>
<thead>
<tr>
<th>Biogas</th>
<th>Bagasse</th>
<th>Woodwaste</th>
<th>Hydro</th>
<th>Wind</th>
<th>Solar</th>
<th>Ocean and geothermal</th>
<th>Other (b)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
</tr>
<tr>
<td>New South Wales (a)</td>
<td>73.3</td>
<td>80.5</td>
<td>42.5</td>
<td>4 276.4</td>
<td>149.0</td>
<td>6.1</td>
<td>0.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Victoria</td>
<td>79.6</td>
<td>561.1</td>
<td>383.9</td>
<td>0.9</td>
<td>0.2</td>
<td>34.0</td>
<td>1 060</td>
<td></td>
</tr>
<tr>
<td>Queensland</td>
<td>18.9</td>
<td>377.5</td>
<td>15.0</td>
<td>659.4</td>
<td>12.5</td>
<td>0.6</td>
<td>0.1</td>
<td>3.5</td>
</tr>
<tr>
<td>South Australia</td>
<td>22.4</td>
<td>3</td>
<td>3.5</td>
<td>810.9</td>
<td>0.9</td>
<td>848</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Australia</td>
<td>27.0</td>
<td>6.0</td>
<td>6.0</td>
<td>32.1</td>
<td>202.7</td>
<td>0.8</td>
<td>0.1</td>
<td>275</td>
</tr>
<tr>
<td>Tasmania</td>
<td>4.0</td>
<td>2 273.7</td>
<td>143.9</td>
<td>0.1</td>
<td>2 424</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Territory</td>
<td>1.1</td>
<td>0.1</td>
<td>1.8</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (c)</td>
<td>93.4</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>226</td>
<td>464</td>
<td>73</td>
<td>7 808</td>
<td>1 703</td>
<td>105</td>
<td>1</td>
<td>41</td>
</tr>
</tbody>
</table>

(a) Includes the ACT. (b) Unspecified biomass and biodiesel. (c) Solar PV installations at unspecified locations, 2008 estimate.

Zero carbon potential

Matthew Wright, executive director of non-profit group Beyond Zero Emissions (BZE) is someone else who has been frustrated by the Government’s procrastination over carbon pricing and renewables policy. “There is a critical need for policies to ensure the construction of large-scale renewable energy projects and climate-friendly infrastructure,” he says. “These projects are the best way to secure Australia’s energy future and protect the nation from dangerous climate change.”

But Wright believes a 20% supply goal for renewables is aiming too low. Australia needs to be bolder, he says. Research by BZE, conducted in partnership with the University of Melbourne Energy Institute, suggests that a 100 percent renewable electricity supply system is technically feasible, affordable and can be implemented in Australia within 10 years.

Under what BZE calls a Zero Carbon Australia 2020 (ZCA2020) plan, outlined in a report launched earlier this year, Australia could replace fossil fuel base load electricity using renewable energy technology available today. The additional investment required, it says, is equal to about one cup of coffee per person per day or A$8 per household per week.

To fulfill the plan would require a combination of energy efficiency, fuel switching from gas and oil to electrified energy services, and then using a combination of commercially available renewable energy technologies. Wind and Concentrating Solar Thermal (CST) with Molten Salt Storage are the two primary technologies used under the ZCA2020 blueprint, along with small scale solar and minimal contingency backup from biomass and existing hydro (these two supplying about 2% of annual electricity only).

“Modelling on a half-hourly timescale shows that this combination can ensure 100% reliable supply,” says the report. “Implementing the proposed renewable infrastructure over a 10-year timescale would require a small percentage of Australia’s industrial capacity, in terms of resources and labour force. The required investment of A$37 billion/year is the equivalent of 3% of GDP.” The estimated funding cost, including generation and grid upgrades, it adds, would be equivalent to an additional A$0.065/kWh on delivered electricity.

Wright would particularly like to see greater use of concentrated solar thermal technology. This, he points out, is capable of generating renewable electricity 24 hours a day, unlike wind power. “Credible climate and energy policy will encourage the rapid deployment of the technology in Australia. This should be a priority for Australian Governments.”

Under the BZE plan, solar thermal would actually overtake wind power as the kingpin of the renewables sector. The plan calls for 60% of energy to come from base load CST facilities, to be built at 12 sites, with the remaining 40% to come from 8000 wind turbines at 23 sites. Total output would be 325 TWh of electricity a year, up from the current 228 TWh, assuming that energy use will halve by 2020 through greater energy efficiency.

“Our research shows that baseload renewable energy is now available and that Australia can get started building a renewable energy system, right now, today,” Wright says. “Australia needs a nation-building climate change project with the scale and vision of a Snowy Mountains Scheme for the 21st Century.”