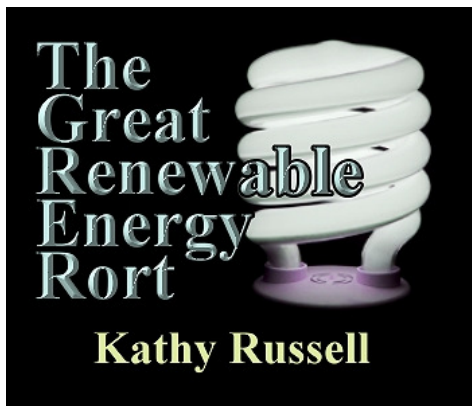


The Great Renewable Energy Rort

Kathy Russell

I thought the message was loud and clear on the Emissions Trading Scheme (ETS) decision: we don't want one! So why is this same logic not being applied to the Renewable Energy Target (RET) legislation? The proposed Carbon Pollution Reduction Scheme (CPRS) legislation (which incorporated the ETS) was defeated twice in federal parliament, on August 13 and December 2, 2009. After the Opposition blocked attempts to further debate the legislation in February this year, the government announced on April 27 that the implementation of its proposed CPRS would be delayed until at least 2013.

The ETS aimed to create a price penalty for carbon with the overriding objective being to promote carbon abatement. It was effectively a new tax which would artificially inflate our cost of living and most importantly our manufacturing cost base, reduce any shred of international competitive advantage any industry had in this country and essentially ruin a perfectly good economy for no real gain.



On August 20, 2009, the Renewable Energy Target (RET) legislation was passed, requiring electricity retailers and large industrial users to purchase at least 20 per cent of their electricity from renewable energy sources by 2020.

In much the same way as the ETS created a price penalty for carbon, the RET creates a price penalty for electricity in the form of Renewable Energy Certificates (RECs) with the same overriding objective being to promote carbon abatement. The RET is effectively a tax, as was the proposed ETS. By creating a political environment which guarantees uptake of inefficient and very expensive energy forms—for example wind energy—again it artificially inflates our cost of living and most importantly our manufacturing cost base and reduces significantly the international competitive advantage any industry has in this country and essentially ruins a perfectly good economy for no real gain.

Worse still, unlike a normal tax which provides revenue into government coffers for the general provision of infrastructure and welfare to the country as a whole, the RET singularly provides benefit to a select few—renewable energy companies. There is no offset for those forced to bear the cost.

So why the “disconnect” between the ETS and the RET? Aren't they the same thing? They both have similar objectives with questionable outcomes. Both create artificial markets and costs. Why does the Opposition reject the ETS yet support the RET?

There was a huge public outcry during the ETS debate which motivated the Opposition to act and block the government's proposed legislation. Is it a lack of public understanding which is allowing the amended RET legislation introduced into parliament in May this year to proceed unhindered? In the interest of greater public awareness, let me expand the concept further with my wind energy example and demonstrate what damage the RET is actually doing in real terms.

Of intermittent nature, wind energy needs 100 per cent backup capacity and the requirement for the market to purchase substitute power when this energy form needs to be shut down due to excessive wind speeds or when the wind dies down. This happens regularly, and details within the live generation data prove it^[1]. These "loss of load" incidents have the ability to occur on a grand scale and require intervention from backup facilities at a premium—up to the current market cap of \$10,000/MW. Who pays for the added cost of this unnecessary electricity spot market volatility? Yes—you guessed it—individuals (that is, voters) and industry.

In addition, wind energy cannot be substituted for base load, nor can it be relied upon for peak requirements and is classified as self-dispatching. This wind energy supply has a zero bid price into the market, unlike other generators who must compete via price nomination for the opportunity to supply their product. Wind energy drives out the highest price generators first and, as it doesn't bid into the market, receives the next highest generator's bid. During periods of low demand, some generators bid a negative price in order to guarantee the uptake of their supply (some energy generators can't just be switched off). The Australian Energy Market Operator (AEMO) is looking to introduce a floor price into the market in order to accommodate wind energy in this mix. Wind energy does not compete in a free market environment. Its sale and revenue are guaranteed. Who pays for this artificially high price acting over and above normal market forces? Yes—you guessed it—individuals (that is, voters) and industry.

But wait, there's more. The Renewable Energy Certificates (RECs) which go with the RET are like gold. From a high of approximately \$46/MW in March this year, wholesale certificate prices were trading at \$38/MW at the end of May^[2]. This is the subsidy component which makes the business plan viable and is received *on top* of the price paid per MW in the dispatch market. Current planning approvals and applications for over 2000MW in western Victoria alone attest to the bonanza to be had. Foreign companies are leading the charge. Profits shift offshore and the underlying cost of the RECs are born by whom? Yes—you guessed it again—individuals (that is, voters) and industry.

Then there are the newly created opportunities to manipulate the electricity market. Destabilise the grid with wind energy and then compensate with fast-acting gas generation at peak prices. Now here's one for the ACCC to watch. Did anyone notice the most recent capital investments of Origin and AGL to place Open Cycle Gas Turbines (OCGT) in strategic alignment with wind energy investment? Take note of the choice of generator. Combined Cycle Gas Turbines (CCGT—0.4 tCO₂/MW) are much more efficient than OCGTs (0.7 tCO₂/MW) from an emissions perspective, but unlike OCGTs, they do not have the ability to ramp up and down as quickly. If their investment strategy was to produce gas-generated electricity with the lowest carbon emissions possible, then CCGT would be the choice. If their investment strategy was to produce gas-generated electricity which could take advantage of opportunities in the market via its flexibility in ramping up and down on demand to satisfy grid instability issues, then OCGT would be the choice. Who pays for this fast-acting, shadowing capacity at peak prices? Yes—you guessed it again—individuals (that is, voters) and industry.

And what about the claim of jobs? Australia's economic recovery on the back of a brave new environmentally friendly world? Construction jobs at the start-up of a wind farm are a given—this is so with the construction of any new plant or industrial facility (including a gas-

generating plant) or public infrastructure project. The number of jobs long-term in the wind industry is rather less than ideal. Wind farm control is both electronic/automatic and remotely monitored. Maintenance positions are highly specialised and are not generally filled by local regional communities. Families attached to these specialised technicians don't tend to relocate to these regional communities as they are moved around different wind farm locations on a rotational basis. The Spanish experience has been that each new green job created cost one million euros and caused 2.2 jobs to be lost in power-consuming industries[3]. Net job losses on the back of reduced economic activity from cost increases in the electricity market—no surprise on this one. Who pays for this unnecessary burden to Australia's welfare obligations? Right again—individuals (that is, voters) and industry.

And all this for no tangible benefit. Emissions will not be reduced. Not one coal-fired power station will be switched off. Additional back-up capacity will have to be built. Artificially-based capital development of this scale and nature also has the effect of pushing up the cost of borrowing money. An increase in the cost of living and of the manufacturing cost base sends jobs offshore—to the smart countries who don't entertain fantasies such as RETs and ETSs. Not to mention the vast tracts of land occupied by wind turbines and the destructive effect they have on communities forced to reside with them. This technology type is far from benign. Just ask the communities at Waubra, near Ballarat (and those at Toora, Cape Bridgewater, Capital, Cullerin, Hallet and Crookwell) who are suffering health effects and have started abandoning their homes, creating a new form of epidemic to add to the already struggling health and community support infrastructure. All of this would not be happening if it weren't for the RET.

But don't take my word for it. Take the time to listen to other market participants and commentators.

Origin Energy has been doing its best to blow the whistle on the same issues for years. But at what point do they join the rort, given that no one is listening?

In an important speech to the Committee for Economic Development of Australia (CEDA) in Sydney on April 13, Grant King, the CEO of Origin Energy, predicted massive increases in electricity prices driven

largely by the current policy environment, large amounts of renewables being forced into the system, uncosted charges for those renewables given current policy settings and substantial increases in transmission and distribution costs.[4]

In February 2006, Origin Energy submitted a technical paper to the Victorian government entitled "Driving Investment in Renewable Energy in Victoria—Options for a Victorian market-based measure, Submission by Origin Energy in response to the Issues Paper released by Department of Infrastructure and Department of Sustainability and Environment, December 2005". The reason I mention the detail here rather than in a footnote is because there is a story to tell with regard to this document's mysterious disappearance from the public domain. Submissions were recorded on the Department of Primary Industries (DPI) website for some years. A Google search now using the key words "Origin Driving Investment in Renewable Energy in Victoria" will produce a number of links to the DPI website. But guess what? When you follow these links, the site opens and a message appears stating that this document has been deleted. Sounds like the "Climategate" response to FOI requests: delete the required information.

But all is not lost. Copies were downloaded when the report was first made available. And their contents make for sensational reading. Some incredibly damning statements are made about the technical viability of policies which promote wind energy (because of its industry maturity) ahead of other developing technologies because of their inability to "step up" and be commercially viable within the time frames demanded.

The following excerpts are important because of their relevance to the argument, and important to acknowledge because so many people either ignore these inconvenient truths and irresponsibly plough on regardless or simply aren't aware of these basic limitations in the first place.

Unreliable capacity requires additional generation support. Additional wind capacity will require two forms of generation support because of the intermittent nature of the underlying energy source:

variability outside 5 minute dispatch intervals—gas turbine generation, which can take between 15 and 30 minutes to reach maximum output, is either required to run to adjust for wind generation variability or to stand idle as back up support; and

variability inside 5 minute dispatch intervals—ancillary services generation is required, sometimes at significant extra cost, to cater for wind generation variability. [5]

Keep in mind that grid-supplied electricity is a unique commodity; its production for and consumption from the grid must be matched instantaneously and continuously, day and night. Not averaged out over days, hours or even half-hourly intervals. The grid is not like some large lake into which electricity might be dumped. This is an unchanging law about grid operation.

The Origin document goes on:

The costs of both forms of generation support are ultimately borne by energy consumers. Moreover, these costs are magnified as greater amounts of wind generation are connected to the system and more generation support is required. This is compounded by inter-connector constraints from time to time as more generation support is required from other regions in the NEM ... 6

The intermittent nature of wind generation translates into higher electricity spot price volatility. Modelling of the impact of 1000 MW of wind generation on the South Australian electricity market indicates that 1 per cent of the time 250 MW of supply could be lost within the half hour and 390 MW within the hour which, in Origin's view, would significantly increase electricity spot price volatility. Preliminary modelling by Origin indicates that Victorian electricity spot prices could increase by between \$2 and \$5/MWh (average flat price impact) as a result of a similar level of variability occurring in Victoria. The cost of additional financial risk associated with greater electricity spot price volatility will ultimately be borne by energy consumers. [6]

The fact that wind energy supply can be lost in such a short period is no joke. Commentators who make assertions to the contrary appear blissfully unaware that the performance data of all major wind farms connected to the eastern Australian grid is readily available in the public domain[7].

To demonstrate that a widespread loss of wind generation can and will occur, the night of August 18, 2009, provides a perfect example. Very strong prevailing winds of a weather system covering the Cullerin and Capital wind farms in New South Wales (about 40 kilometres apart) caused the control systems of both wind farms to shut down the wind turbines for their own protection. Each wind farm had been operating near its rated full capacity of approximately 120 MW combined, which fell to zero within two minutes, starting at 5.19 p.m. This is a very significant loss that had to be replaced immediately.

The Origin document continues in its criticism of policy which promotes renewable energy such as wind over more economic forms of greenhouse gas abatement:

The economic cost of gas-fired generation is lower than wind generation—the combined capital and running costs of a gas-fired power station are approximately half that of a

wind turbine (adjusted for the intermittency of wind and including higher running costs of running a gas-fired power station);

Gas-fired generation is a more cost-effective source of greenhouse gas abatement than wind generation—at approximately half the economic cost, a gas-fired power station reduces emissions up to twice as much as a wind turbine, because of the better utilisation of the gas-fired power station and the relatively low emission intensity of gas-fired electricity (which makes gas at least 4 times more cost-effective on a \$/tCO₂ basis than wind);

Gas-fired generation is more reliable than wind generation which is reliant on the vagaries of nature—gas-fired generation can be turned off and on to meet demand requirements while wind generation is regarded as firm for about only 8 per cent of the time (according to ESIPC in South Australia);

Gas-fired generation can provide much larger increments to generation capacity to satisfy growing demand—a large scale gas-fired power station may be up to 1000MW which is all available to generate on average 95 per cent of the time compared to a 1000MW of wind generation which is available to generate on average 33 per cent of the time; and

Diversity and security of supply are improved by gas-fired generation and diminished by wind generation—gas-fired power stations stimulate gas supply sources (potentially expanding the range of viable gas production in regional Victoria available for other uses) and connect to the transmission system (potentially in more remote areas) without lowering supply security (as would be the case with wind)[8]

Pretty damning isn't it? So why isn't the government listening?

A lack of transparency coupled with an absence of any analysis of live performance data in assessing the effects of policy in real terms from the highest levels down are contributing to these enormous mistakes.

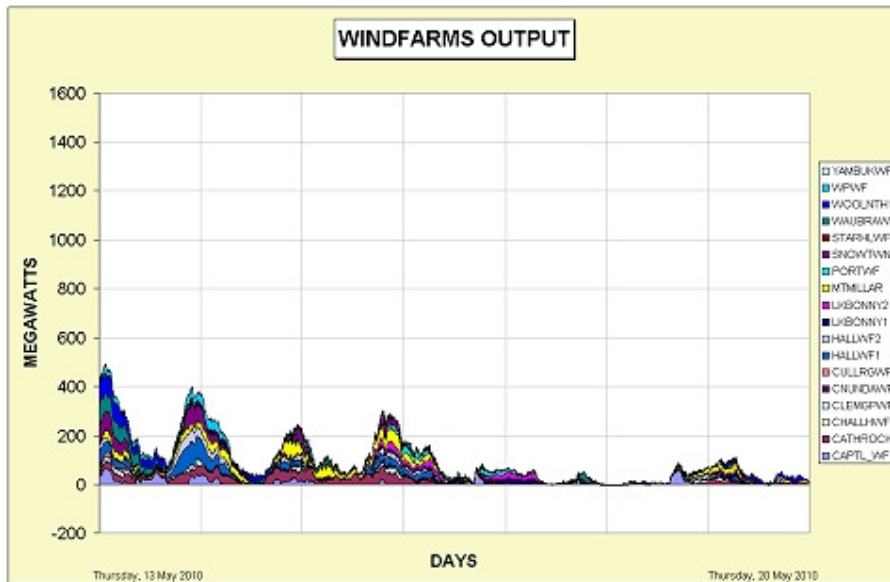
In an effort to combat the lack of transparency and non-availability of live performance data, Andrew Miskelly has, of his own initiative, developed a way to make electricity generation data more freely available and user friendly (see the [website](#)). Why has this task been left for unpaid “privateers” to complete?

The electricity provided to the national grid by every connected generator of greater than 30 MW installed capacity is published daily on its website by the AEMO, the operator of the eastern Australian grid. It is a statutory requirement that the data is made available in the public domain. At www.aemo.com.au there is the statement “under Clause 3.13.4(r) of the National Electricity Rules AEMO is also required to publish such data to Registered Participants, in a daily file covering all intervals of the previous trading day”. In fact, the data is supplied to the website as the average output at five-minute intervals for each full day, midnight to midnight, at about 4 a.m. the following morning, every morning. Andrew has created a method which captures this information release.

On the back of this original information breakthrough, Andrew and Dr Tom Quirk teamed up to write a paper which debunked the myth of geographical dispersion[9]—the myth being that wind farms can be a reliable source of electricity if they are dispersed over a sufficiently wide area[10]. The wind will be “blowing somewhere”, it is claimed. Given the real production output of wind farms in South Australia, New South Wales, Victoria and Tasmania, Andrew and Dr Quirk analysed the data and were able to determine that wind farms in south-eastern Australia are unlikely to supply any significant power output that system operators can rely on. Using five-minute power measurements for the month of June 2009, it was determined that the one benefit of grouping wind farms is that the 90 per cent reliability point is increased from 6 per cent for South Australia, 5 per cent for Victoria, to 10 per cent overall. This figure

should be expected to vary from month to month and from year to year as a result of changing weather patterns with no marked improvement as a result of saturation of wind turbines within respective states.

Since the Miskelly/Quirk paper was written, there have been a number of sustained meteorological events which highlight even further the obvious fallacy of geographical dispersion. The period November 1 to 21, 2009, was of particularly low output across the whole eastern Australian grid. More recently, May 13 to 20 paints a terrible output generation picture if you're a wind farmer. The operational data originally posted on the AEMO website for these date ranges is available via Andrew's www.landscapeguardians.org.au/data/aemo database. Also, go to <http://windfarmperformance.info/> and alter the "change date" tab and flick through the May date range provided to confirm the graph below.



The above combined wind farm output incorporates all of the wind farms over 30 MW capacity which are connected to the eastern Australian grid and are listed to the right of this graph. This equates to a total installed capacity of 1611 MW. If this maximum potential output were to be demonstrated on the above graph, it would appear just above the 1600. As previously mentioned, not a good week if you're a wind farmer. So much for the certainty of geographic dispersion improving wind farm reliability.

Wind farms on the eastern Australian grid have a geographic spread of over 1100 kilometres east-west and over 500 kilometres north-south. This grid has the largest geographic dispersal of any interconnected grid in the world. Weather systems can occupy and influence large if not whole areas within this geographic spread^[11]. Further, no matter how many turbines are erected throughout this geographic area, wind energy will always require instantaneous reserves equal to the total installed wind farm capacity to be kept operational at all times. This reserve requirement is in addition to any reserves presently required to cover the loss of any large controllable generation unit, simply because the scenario that a large generation unit (such as a coal power station) might fail remains a separate, independent probability to that of wind farms' frequent "failures".

Furthermore, Andrew's data base provides conclusive evidence that wind farm output does suddenly start and stop on a regular basis, and does so in a totally unpredictable fashion. This

data cannot be averaged out for the purpose of analysing wind farm performance and its ability to supply a secure, reliable, efficient energy source into the grid. To do so completely ignores that unchanging law of grid operation, where supply and demand must be matched instantaneously and continuously, all the time. Not averaged out over days, hours or even half hourly intervals. This unpredictability may well have serious impacts on the controllability and stability of the eastern Australian grid.

It is impossible to forecast wind speeds and wind speed variation over timeframes of seconds to minutes, or to provide any sort of accurate estimate of wind speed variation across the meteorological micro-scale of any given wind farm location. It is possible to forecast some sort of regional mean wind speed (that is, average value) over timeframes of hours. But again, averages are not good enough when it comes to managing the grid second by second. Thus the flow-on effects such as market volatility, higher electricity prices, grid instability, security and efficiency issues become an everyday reality if the current RET policy promoting wind energy remains unchallenged.

And how is this totally unacceptable risk being justified by our incumbent governments? At a state level in Victoria I received a letter on the subject from the Office of the Minister for Energy and Resources, signed by the Chief of Staff, Ms Susanne Legana, dated November 17, 2009:

Regarding the intermittency of wind, this is partially mitigated by the installation of multiple wind farms, as together these smooth out individual variability. In 2007, there was a period of only about 4 hours where the combined output of wind farms in Victoria was zero.

God love her! This was November 2009, mind you, and Susanne was quoting 2007 data. Not only this, but Victoria, South Australia and New South Wales were at that exact moment in the grip of extremely calm weather. In the first three weeks of November there was a total of 5.5 hours in which the combined output of wind farms in Victoria was zero or below (important fact: sometimes turbines are net *users* of electricity because at all times they require energy to initiate and maintain blade spin, cooling of motors, remote monitoring, turning of blades to face the wind, flashing lights, and so on). In addition, for a further 5.67 hours the combined output of wind farms in Victoria in this period was between zero and 1 MW. This is just as bad. What good is 1 MW of power from all that capacity? On top of this again, for a further 26.25 hours the combined output of wind farms in Victoria in this same time frame was between 1 and 5 MW.

That's a total of 37.42 hours of less than 5 MW Victorian combined wind farm energy generation during a three-week period from a combined maximum generating capacity of 439 MW. So for a day and a half in a three-week period, all the wind farms in Victoria combined produced less than 1 per cent of their capacity. How is this smoothing out intermittency? How is this energy security? How is this timely analysis of live data? The Office of the Minister for Energy and Resources is two years behind!

In total, the system produced at less than 50 MW for the equivalent of eight days. It produced at less than 100MW for the equivalent of thirteen days. The average output for the whole Victorian system for the three-week period was 86.32 MW. It peaked at 341 MW at 11.05 a.m. on November 3 during one of two days of elevated activity. I must reiterate that it is very important not to rely on averages alone when analysing this data. Big movements from minute to minute are not the exception, but the rule. On November 3 at 4.10 p.m. the combined system was producing 306.07 MW; at 4.15 it was producing 290.445 MW; at 4.20 it was producing 274.28 MW; at 4.25 it was producing 258.21 MW. This was a loss of 47.86 MW within fifteen minutes. This is not an isolated incident.

Now imagine a further 2000 MW installed capacity within this Victorian system as per approved and planned applications. Assuming a total capacity of 2439 MW, a variance of 11

per cent capacity in fifteen minutes would translate to a loss of 268 MW from the system. This type of event will occur regularly.

On the same day at 03:05 a.m., 77.27 MW was lost in ten minutes; at 4.50 a.m., 80.43 MW was lost in twenty-five minutes; on a further six instances on the same day 10 per cent or greater capacity was lost within minutes. And this isn't counting the equivalent increases being forced *into* the grid. Multiply this out against a larger installed capacity as is intended for the state and this is the equivalent of a large gas-fired generator being switched on and off regularly. The operator of a gas-fired generator would be fined hundreds and thousands of dollars if it were to perform in this manner. The wind generators get away with this behaviour.

So can you now see why backup generation must not only be built, but kept running at all times? What's the point of installing two systems when one alone will suffice? Where are the savings?

Frightening isn't it? And the people managing and governing our country are not analysing this data and therefore do not have a clue what effects their policies are having in real terms. The ignorance gets worse. Note the following paragraph from the same letter:

Wind farms are private sector investments which derive income from two sources, the sale of electricity and the sale of Renewable Energy Certificates (REC). Private investors would not continue to develop wind energy projects if they were not commercial in competitive electricity and REC markets.

If the Office of the Minister for Energy and Resources were private enterprise, the Board and the CEO would be sacked. Where is the accountability of the Australian government? Wind energy does *not* compete in the electricity market. It drops in and takes the next available bid price. And no, the private sector wind farm investor is not happy with the current competitive nature of wind versus solar in the REC market, and that's why they have lobbied Penny Wong, federal Minister for Climate Change, Energy Efficiency and Water so intensively to have their own market in which they do not have to compete. Thus the new RET legislation currently before the parliament. New wind energy gets electricity price plus REC value with no requirement to compete. New gas energy gets electricity price only plus has to compete for opportunity to supply. Hello? Who's driving this bus?

Contrary to the belief of the Minister for Energy and Resources that wind farms would not be built if they weren't able to compete in the electricity and REC market is the unavoidable fact that private investors are applying in their droves for new wind farm developments due to current friendly policy which removes the risk of competition and guarantees cash windfalls. And it's our money the government is using as bait to achieve their political objective of being "seen to be green".

Departments such as the Energy and Resources Department quite clearly do not have a clue. They lack a basic understanding of industry dynamics, with no level of accountability or responsibility, and there is no intelligent, transparent analysis or debate behind their decision making.

A blind faith in RET legislation and an ETS being able to solve all of these issues is driving this madness. A blind faith in a Green utopia which decrees "in theory" (confirmed by computer modelling?) that we must have a generous mix of all energy types with a magical "20 per cent renewable" falling out at the end of the equation. And an even blinder faith which assumes we can acquire all of these different energy types off the shelf and simply plug them into our current electricity grid, ready to use. In Australia, we are not connected to any neighbouring countries which have the luxury of fast-acting secure conventional backup generation capacity (such as nuclear, hydro, gas and coal) as is the European experience. Why are these basic facts being ignored? If the system is going to be forced to work in an

inefficient manner for no gain (and that includes little if any carbon abatement), we have a right to know: “At what cost?”

The damage does not end here. Environmental costs of equal if not greater significance must also be included in this analysis. The most significant of all is the human cost.

Human health is an issue of major concern for those forced to reside near turbines and for good reason. I know because I speak and correspond with these people every day. I know because I am invited into their homes and for the relatively brief length of my stay, I experience their symptoms. Luckily for me, I am able to leave, and in doing so my symptoms disappear. Not so lucky the people who can't leave and are forced to endure long-term exposure with significant long-term consequences. Some have been fortunate enough to have the means to leave their homes. The majority are not so lucky, having lost the ability to sell their most valuable asset, their farm or home.

Symptoms range in strength and severity and include sleep disturbance, motion sickness and nausea, inner ear symptoms, headaches and migraines, excessive tiredness, palpitations, high blood pressure, eye symptoms, and cognitive as well as gastrointestinal problems. The residents of some homes experience more problems than others, and sometimes certain family members within these homes are affected more than others. Explanations for these differences include a combination of an individual's physical predisposition, distance from the wind farm and climatic conditions which affect the operation of the turbines at the time.

In a rather clever analogy, a Waubra resident recently compared her experiences of ocean racing with those of living next door to a wind farm. She said in ocean racing, some of those on board the same boat would fall ill to seasickness immediately and be totally incapable of moving for the remainder of the journey, some would be ill yet could still function, while others felt no ill effects at all. Much the same happens around a wind farm, although the biggest concentration of people affected in Australia appears to be at the Waubra wind farm site, north-west of Ballarat. Unlike ocean racing, where a seasickness sufferer is given sympathy and accommodated in their reduced capacity, those suffering wind farm sickness are ridiculed by wind company managing directors^[12] and their genuine concerns are ignored by those who are supposed to at the very least initiate investigations, support and protection—the government and its delegated agencies.

Sound familiar? Parallels with the tobacco and asbestos histories come to mind—misrepresenting data, hiring PR firms, attacking the detractors. Remember, there is a great deal of money and green votes at stake here.

In response to a Legislative Council adjournment debate issue raised by Peter Kavanagh MLC in the Victorian parliament on September 2, 2009, in relation to the possible health effects of wind farm generators, on October 14 the Minister for Workcover Tim Holding announced: “WorkSafe has commenced work with the Department of Human Services (DHS) and the Environment Protection Authority, and will work with local government and relevant individuals to identify potential hazards related to the issues raised by Mr Kavanagh.”

In January, Mr Holding announced the conclusion of his investigation with the finding that after examining both peer reviewed and validated scientific research, no correlation could be found between direct health effects and the operation of wind turbines. However, not one resident who had raised their concerns with the wind company was interviewed or even approached as part of this investigation.

On November 11, I participated in the National Wind Farm Development Guidelines: Stakeholder Reference Group (SRG) meeting. The meeting was called to discuss what the working group had planned for the consultation process for the draft National Wind Farm Development Guidelines, the timeframe for analysing the public comments and addressing those comments in the final version. It was expected that the SRG would provide a diverse

range of views and highlight issues that the Working Group could address during and after the public consultation period. It was an experience to say the least.

Of greatest concern to me was the stated purpose of the guidelines: “to support government renewable energy policy by providing a nationally consistent set of methods for addressing issues that are *unique or significant to wind farms*”^[13] (emphasis added). Beside the fact that the wind companies present at that meeting decreed that they would not follow guidelines which were not a legislative requirement (so what was the point of having a nationally consistent set of guidelines?), there was no mention of health effects in any of the chapters or appendices. As far as I and the hundreds I represented at that meeting were concerned, health was a major subject “unique or significant to wind farms”, yet there was no mention or recognition of it, let alone a guideline on the subject. How could potential safeguards be put in place if the problem itself was not recognised? By not acknowledging the problem, were we not condemned to more of the same mistakes?

This was quickly countered with the “no peer-reviewed evidence” excuse during the ensuing debate. But during a subsequent break, the convenors (from the Department of the Environment, Water, Heritage and the Arts, DEWHA) approached me and explained that until there was evidence of a conclusive scientific peer-reviewed nature, they couldn't act. But if I was to obtain something of significance, I should provide it to them and I would be assured of the subject's recognition. Yeah, right. Quite clearly, the state and federal governments had no intention of initiating the scientific studies required to investigate the causal links. Given this was a new frontier in scientific research, the cost, resources and expertise required to complete the task were extensive, so how was this the responsibility of ordinary Australians? Wasn't it the government's responsibility to at least send in an assessment team to interview and investigate the people affected?

Rather than rely on the assertions of DEWHA employees, I then moved on to Peter Garrett, federal Minister for the Environment, Water, Heritage and the Arts (the position he held at that time). I was beginning to understand in explicit detail how the pink-batts tragedy had evolved. On February 18, 2010, I met with Mr Garrett and took with me a Waubra resident who was suffering health effects and had been forced to move out of his home. I also took and provided to Mr Garrett a short documentary of the testimonials provided by other Waubra residents who were unable to attend the meeting. We also provided medical evidence and expert advice, some of which was personally addressed to Mr Garrett. On the issue of health and its omission from his National Guidelines, Mr Garrett contended that he had no jurisdiction in this area and it was the responsibility of the states. He stated he had jurisdiction only under the Environment Protection and Biodiversity Conservation Act (EPBC Act). When asked why he was writing National Guidelines which included subjects such as noise, shadow flicker, electromagnetic interference, aircraft safety, fire risk, if he had no jurisdiction in these areas, he would not respond.

I then introduced Mr Garrett to the Waubra resident who had been displaced from his home. I took the evidence to him. There was no show of concern on Mr Garrett's behalf, no request for this man to relay his story so that he could at least make his own assessment. Just an assistant next to Mr Garrett pointing out the necessary response in the response book: “there is no peer-reviewed scientific evidence to support the link”.

We left Mr Garrett with some very fundamental and damning evidence which at the very least would be grounds to commence an initial assessment. He promised to respond personally. To this date (June 1) we have not received any correspondence, let alone a response to the information we provided. Unlike the pink-batts scandal, he can't say he wasn't warned of the consequences to people's health on the wind farm issue.

Given Mr Garrett's perception that health was a state government responsibility, on March 15 I attended a Victorian State Community Cabinet meeting in Geelong. With me I took a

number of other Waubra residents as well as residents from other wind-farm-approved locations who would soon be affected by turbine operation near their homes. We all wanted answers. The ones we got were quite unexpected.

First, the Premier, John Brumby, had no idea that his wind farm policy mandated use of a New Zealand noise standard. Mr Brumby and Mr Batchelor (Minister for Energy and Resources) equally had no idea that any national standards or guidelines, if and when they were released, would have no jurisdictional power in Victoria over their mandated New Zealand standard.

The most telling answer of all was Mr Batchelor's response to Waubra residents when they relayed to him what was happening in their own homes: it was up to them to prove there was an issue with scientific peer-reviewed evidence to back up their claims, because the wind companies had been granted development approval through the proper channels and it was hardly fair that they should have to change their practices just because someone complained. When he was told that it wasn't just one person complaining and an investigation should be the government's responsibility, Mr Batchelor used the same old excuse, "there is no peer-reviewed scientific evidence to support such a study".

How on earth can they make this determination when not one incumbent government minister or their representatives or agencies will even visit Waubra, let alone speak with the residents? After all this (and much more)—you have to ask yourself: Why?

There are only two possible answers to this question. Either it is true that there is no connection between health and wind turbines and the people I have personally surveyed in Waubra and the people making similar claims at other wind farms in Australia and throughout the world are imagining them, or ...

... the ramifications of undertaking such a study and finding a connection are too great from the perspective of either litigation (with the potential to destroy the wind industry in Australia and any chance of achieving the RET's 20 per cent renewable target by 2020) or planning scheme adjustments (which would recognise and prevent health issues and thus severely alter the locations at which wind turbines can be placed, again jeopardising the 20 per cent renewable target by 2020).

Either way, there is obviously a great deal at stake here, which the government and the wind industry are keen to keep a lid on. Ultimately a proper study which satisfies the current scientific peer-reviewed criteria is required to determine an outcome either way. The government has a duty of care and it should fulfil this obligation.

On May 20, we met with the state Liberal Opposition leader Ted Baillieu, who had the week before released a wind farm policy in the lead-up to the state election in November. Amongst other things, his policy mandates a two-kilometre setback of turbines from homes (currently there are no planning setback provisions, with homes unwillingly as close as 400 metres in some approved developments). We took this one step further with Mr Baillieu and sought his opinion on the necessity of an approved health study. His opinion was in the affirmative and he later confirmed this affirmation at the media conference on the steps of Parliament House in answer to a direct question on camera. A Ballan resident with turbines proposed within a kilometre of her home who was not part of the earlier meeting but was there to listen to Mr Baillieu speak, burst into tears on hearing this news. Such was her relief. Again I ask the question: "At what cost?" We have a right to know.

From the work I have undertaken on the health issue with experts to date I have a fair idea of what is contributing to the problem from a physical and planning perspective. I don't believe there is a single contributing factor or a single available solution. I do believe that what can't be acknowledged can't be changed. I do believe without a question of doubt that this is an avoidable problem. I do believe without a question of doubt that the same mistakes are being

made in current planning approvals via policy which will guarantee the displacement of hundreds more rural residents situated close to turbines through no fault of their own. I don't care if my hypotheses of contributing factors or suggested solutions are wrong, as long as someone determines what they should be and fixes the situation before more innocent rural families are subjected to the same form of torture as those currently suffering.

The moral high ground taken by those in government and those initially in favour of turbines is that they are doing their bit for the environment. People not wanting turbines in close proximity to their properties or homes are considered collateral damage by the very planning process established to protect them. Any risk or resulting damage is not costed in its assessment of "benefits to the greater community". And then these people discover that they are being sacrificed for no real gain—that their loss and harm will not contribute to saving the planet.

This is what the Renewable Energy Target is doing to real people in real terms, right now. Why is anyone of sound mind supporting this legislation?

Kathy Russell, a Member of the Institute of Chartered Accountants in Australia, is Vice-President of Australian Landscape Guardians Inc, whose website www.landscapeguardians.org.au contains some of the data referred to in this article. She lives in rural Victoria.

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[4] Terry McCrann, "Your power bills will triple", Herald Sun, 15 April 2010

[5] DRIVING INVESTMENT IN RENEWABLE ENERGY IN VICTORIA - Options for a Victorian market-based measure, Submission by Origin Energy in response to the Issues Paper released by Department of Infrastructure and Department of Sustainability and Environment, February 2006, page 10

[6] "DRIVING INVESTMENT IN RENEWABLE ENERGY IN VICTORIA", by Origin Energy, February 2006, page 11

[7] Data available via the Australian Landscape Guardians website;
www.landscapeguardians.org.au

[8] "DRIVING INVESTMENT IN RENEWABLE ENERGY IN VICTORIA", by Origin Energy, February 2006, page 13

[9] Miskelly A and Quirk T, "Wind Farming in South Eastern Australia", Energy and Environment, Volume 20 No.8 2009/Volume 21 No.1 2010, Multi Science Publishing Co. Ltd.

[10] Diesendorf M. The Base-Load Fallacy.
<http://www.sustainabilitycentre.com.au/BaseloadFallacy.pdf>

[11] Anon. 2009 *State of the Energy Market 2009*. Australian Energy Regulator, page 72, available for download at <http://www.accc.gov.au/content/index.phtml?itemId=904614>

[12] Brett Thomas, Managing Director, ACCIONA, letters to the editor, Geelong Advertiser, 14 September 2009.

[13] Draft National Wind Farm Development Guidelines, <http://www.ephc.gov.au/taxonomy/term/25>, page 7.