



**Submission to:  
Economic Regulation Authority  
Inquiry into Microeconomic Reform in Western Australia**

20 September 2013

## Introduction and background

Vestas Australian Wind Technology Pty Ltd is the local subsidiary of Vestas Wind Systems A/S, the world's largest manufacturer of wind turbines.

Vestas is the world's leading supplier of wind power solutions, having installed more than 49,000 wind turbines across the globe. Worldwide, Vestas employs more than 17,000 people in the design, manufacture, sales, installation, operation and maintenance of wind turbines. While the home country of Vestas is Denmark, we have significant operations all across the world and we are experienced in comparing policies and regulations in all our markets.

In Australia we have been responsible for the supply of more than half of the wind energy capacity to date, including the Collgar, Emu Downs and Alinta (Walkaway) wind farms in Western Australia (**WA**). However Vestas is not a developer or owner of wind farms or wind energy projects, so is not a participant in any of WA's energy markets.

Over the past decade in Australia, the wind energy industry has grown substantially in almost all states and territories, to the point where almost 3000 megawatts of installed wind capacity is now operating. More than 8000 megawatts of new wind energy projects are currently being investigated or are in the planning stages, many of them in WA.

Part of the reason for the industry's growth has been the Federal Government's 20% Renewable Energy Target (**RET**) scheme, which has driven most of the investments in wind energy in Australia since 2001. The decision in 2009 by the Australian parliament to lift that target to 20% by 2020 will continue that growth over the next decade.

The other key driver behind this growth has been the policy imperative for all nations around the world to cut greenhouse emissions in an effort to reduce the impact of climate change. Wind power is the most cost-effective form of renewable energy, and is forecast to retain this status for many years to come.

The continued growth of the wind energy industry will hopefully attract a number of significant investments to WA, and will also create many new jobs in the planning, design, construction and operation of wind farms in WA.

Vestas staff would be pleased to meet with the ERA to discuss this submission. Contact details are on the covering email that attaches this submission.

## A problem and a solution

The submission contains a proposal for significant energy reforms for Western Australia, predominantly in the electricity sector.

Our proposal is aimed at making the WA economy more resilient by reducing WA's exposure to the costs, risks and volatility of fossil fuels.

These were most keenly felt when Varanus Island gas pipeline exploded in 2008, costing the state economy \$3 billion.

But subsequent examples such as \$331 million of taxpayer funds involved in the refurbishment of a 47 year old coal-fired power station, Muja AB underline this point.

The difficult months during 2011 and 2012 when the coal supply of Bluewaters power station was endangered was another example of the economic risks of relying too heavily on fossil fuels.

These risks never appear in economic modelling reports that claim on a Long Run Marginal Cost basis coal and gas are a better bet than renewables.

But those costs are real. And they are paid for by WA families, businesses and taxpayers.

Perhaps WA has just had a lot of bad luck with fossil fuels in recent times? Maybe they were all just one-off abnormal events?

Rather than relying on luck, perhaps a better path is to take active steps to reduce this exposure to the risks involved with fossil fuels, and take advantage of the business case certainty of renewable energy?

Most forms of renewable energy involve:

- No fuel supply issues
- No fuel price volatility
- No water supply issues
- No carbon risk

Unlike a coal-fired or gas-fired power station, if one turbine at a wind farm goes out of action, 3 megawatts of capacity at most is lost, rather than the entire South West Interconnected System (**SWIS**).

Worldwide, the wind energy industry has lots of experience and excellent forecasting software to enable system operators to plan a power system around a significant percentage of variable power.

The truth is that fossil fuels are more expensive than most people understand.

And the cost reductions and business case certainty of renewables are here to stay.

WA might have an island grid, but it is not an island economy. The rest of the world [has headed towards renewables in a big way](#) over the past decade and it would be folly to ignore this or resist such a trend.

WA should take active steps now to protect its economy and hedge against the horrendous and often unforeseen costs of being so reliant on fossil fuels.

Our microeconomic reform proposal is as follows:

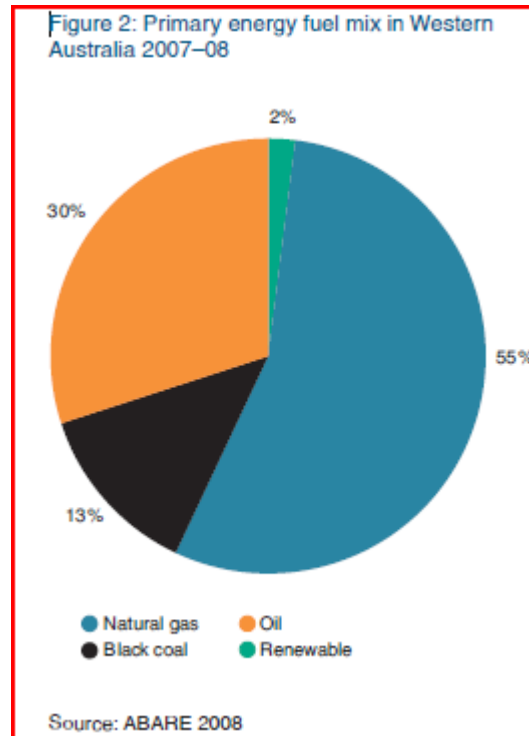
- Do a proper cost/benefit analysis of WA moving towards its own target of 30% renewables by 2020 and exiting from coal-fired power as soon as possible.
- Work with industry to secure access to state-of-the-art and proven weather forecasting software to maximise the predictive capacity of the Independent Market Operator (**IMO**) and System Management to integrate renewables at a low cost.
- The WA state government should fully write down its investments in its oldest coal-fired plants and shut them by 2016.
- Give renewable energy generators priority access to the grid, forcing other generators to adjust their output accordingly.

There will be immediate and significant exposure for taxpayers, mainly through their holdings in Verve Energy's coal-fired generation assets. But those assets have already been a financial disaster, and an unplanned one at that. It makes little sense to plunge further into government-owned coal-fired power in 2013, even though it looks like the carbon price is set to be removed.

## **The current state of play**

WA currently relies upon coal and gas to provide most of its electricity supply, and has done so for many years.

Electricity supply in WA remains dominated by coal and gas-fired generation, approximately half of it owned by the state government.



During the previous century, this heavy reliance on fossil fuels was not a big issue. However, the global move towards greenhouse gas emission reduction means that WA has a significant “carbon risk” and would do well to diversify into other forms of electricity generation before this becomes a forced choice.

Even in the absence of greenhouse gas emission reduction targets, the fact that coal and gas have provided low-cost electricity during the previous century does not mean that this is likely to continue in this century. Labor costs, extraction costs and pollution costs are all relevant factors to consider in moving away from such a heavy reliance upon coal and gas.

### **Abnormal items? Three examples of the hidden costs of relying on fossil fuels**

West Australian families and businesses suffered [a total of \\$3 billion of economic damage](#) in the weeks and months following the Varanus Island gas pipeline explosion in 2008.

With a lack of diversity of energy supplies exposed, one of the responses at the time was a decision to refurbish the Muja coal-fired power station, even though it was well over 40 years old at the time.

The Muja refurbishment has also been a financial disaster, this time for taxpayers. The initial estimated \$150 million cost has blown out, [and now is estimated to be more than \\$330 million.](#)

Despite this, the state government [recently announced](#) it would continue to invest in the 47 year old project, and is hopeful of selling part of it to the private sector.

During the same period, the plight of the Bluewaters power station showed that even relatively new coal-fired power stations have major issues. In the case of Bluewaters, the past couple of years have illustrated how coal-fired power stations face [an ongoing fuel supply risk](#) as well as a fuel price risk.

While coal and gas continue to dominate WA's energy supplies to such a large extent, the risks illustrated above remain present and a strategy to mitigate the exposure of the WA economy to them is required.

## **Renewable energy for risk management purposes**

By contrast, renewable energy does not face the issues outlined above. Wind energy in particular is a great example. Barely any water is required for the operation of wind turbines. They cause no air or water pollution. There are no greenhouse gas emissions from wind turbines. And wind energy, unlike many other forms of electricity generation, does not have a fuel cost or a fuel supply risk.

[As noted by independent think tank the Grattan Institute](#), other alternatives such as nuclear power and so-called carbon capture and storage technology for coal-fired generators are unlikely to be built in Australia unless government takes on most of the material risks of the project. That is likely to be expensive and highly unpopular with taxpayers, particularly while lower-cost alternatives such as wind energy are ready to be built right now (the entire Grattan Institute report is worth reading, even though it does not have a specific focus on WA).

All of these factors above mean that an increase in wind energy generation in WA is an excellent strategic move.

Such a move will also act as [a significant hedge against any increase and/or volatility in the fuel costs of coal and gas-fired power stations](#).

## **Investment attraction and a conflict of interest**

Australia's electricity industry was largely designed, built and funded by state governments and later, state government-owned corporations. Over the past two decades this ownership structure has changed in many states, although WA has been slow to change and in the short to medium term looks like moving backwards in this respect (with the Verve-Synergy merger).

While WA has not developed its energy market as early and as quickly as some of the eastern states like Victoria, important steps have been taken and a number of private sector investors have now entered the WA energy industry.

The entrance and continued presence of new private sector players is one way of developing a more competitive energy sector in WA, and keeping costs down for energy users in that state.

However, it is important that the WA Government continues to make investment in WA's energy sector an attractive proposition for the private sector. Mixed messages from the Government about re-integration of the electricity sector in particular do not enhance confidence in the private sector. The review of Verve Energy by Peter Oates for the Government in 2008 did not help in this regard either.

How does government ownership of energy businesses make a difference to investment attraction? It does so due to an inherent conflict, namely that the WA Government not only expects to derive a return on its assets but it also has the power to set policy and take regulatory decisions that will not only have an impact on its own investments but will also affect the fortunes of those private sector investors who compete with government owned businesses or rely upon them for a service.

The conflict of interest is not simply a perceived one; it is a real one that has an impact on investment attraction in WA. ERA Chairman Lyndon Rowe gave some examples of this conflict [in a recent speech](#).

While the WA Government continues to own electricity assets while also setting policy in this area, private sector investors in WA face higher levels of regulatory risk and will accordingly seek a higher rate of return to match this or they will invest in other jurisdictions where this risk is lower.

### **Fuel cost savings: another way WA can benefit from wind power**

The reduction of electricity prices as a result of increased penetration of wind farms and other renewable energy generators is commonly known as the “merit order effect”. The name is drawn from the order in which wind farms bid into energy markets at a low price, thereby displacing fossil fuel generators such as gas and coal fired power stations.

Wind farms have this effect due to their Short Run Marginal Cost (**SRMC**). Primarily as a result of their zero fuel cost, wind farms have a very low SRMC and one that is substantially lower than power stations that use fossil fuels.

Increased penetration of wind energy tends to reduce wholesale pool prices in energy markets, providing cost savings to consumers. The extent of this

depends on not only the level of wind energy generation but also the extent to which the energy market is split between bilateral contracts and energy trading.

### **Integrating wind power: an off-the-shelf solution**

One of the best ways in which to diversify WA's energy supplies is to encourage the rapid deployment of wind energy and other forms of renewables.

WA could lower the costs of integrating a growing share of variable renewable energy by investing in a project that is equivalent to the Australian Wind Energy Forecasting System (**AWEFS**), which has been deployed and managed by the Australian Energy Market Operator at a low cost and has proven to be highly successful in forecasting wind energy generation as near as 5 minutes and as far as 24 hours ahead.

Proper forecasting of wind energy generation will finally enable WA to properly take advantage of its rich wind resources and reduce costs to energy users by avoiding the use of expensive and polluting fuels like coal and gas for power generation.