

# SUBMISSION

## ***Greenpeace Submission to the Australian Senate Inquiry: The Social and Economic Impact of Rural Wind Farms***

### **Introduction**

Greenpeace is pleased to be able to make a submission into the Senate Community Affairs Committee inquiry: *The Social and Economic Impacts of Rural Wind Farms*. We welcome the opportunity to highlight some of the many benefits that wind farms provide rural communities, as well as the economy and society at large.

### **About Greenpeace**

Greenpeace is an independent organisation campaigning to ensure a peaceful and sustainable world for future generations. Established in 1971, we now have a presence in more than 40 countries and around 2.8 million supporters worldwide. Greenpeace Australia was founded in 1977 and joined with the Pacific region in 1998. Today, Greenpeace Australia Pacific has over 100,000 supporters.

Greenpeace's goal is to ensure the ability of the earth to nurture life in all its diversity.

Greenpeace has worked extensively on climate change and energy issues for several decades. Our Energy [R]evolution reports, available at [www.energyblueprint.info](http://www.energyblueprint.info) provide the basis of our educational material on these issues and our staff have assisted the development of research by bodies such as the Intergovernmental Panel on Climate Change and the International Energy Agency.

### **Summary of key points**

- Wind power has a track record of sustaining large workforces, and has the potential to provide over 19,000 jobs in Australia by 2020.
- Wind power offers opportunities for community owned and/or administered power generation, placing power into the hands of local communities.
- The Renewable Energy Target, filled largely by wind power, could attract 20 billion of investment into the Australian economy.
- Wind power carries a range of economic advantages that can make wholesale electricity cheaper.
- Wind power helps avoid greenhouse gas pollution from fossil fuel combustion as well as local impacts of fossil fuel extraction.
- For wind power to develop, strong and stable policy is required to provide clarity and certainty to the industry.

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## The social impact of wind farms

### Job creation

Wind power employs 600,000 people worldwide<sup>1</sup>, concentrated largely in countries that pioneered the development of wind power industries. Germany is one such example, where over 100,000 people work in the wind industry<sup>2</sup>.

The wind industry in Australia employs 2,184 people, more than one-quarter of the total renewable energy workforce. This is projected to increase to 19,139 employees by 2020, driven by policies such as the Large-scale Renewable Energy Target<sup>3</sup>. As wind farms are typically installed in rural areas, it can be expected that most of the anticipated jobs will be created in rural and regional Australia.

### Community power

While it is unrealistic for a rural community to exclusively own or manage a large conventional power station, the relative size of wind projects creates opportunities for community access and ownership. By being an active stakeholder in their own wind energy project, local communities can have an enhanced appreciation for wind power, and be better placed to educate the community on its benefits. An excellent example of a community wind project is the Hepburn Wind project, located near Daylesford, Victoria<sup>4</sup>.

## The economic impact of wind farms

### Stimulating Investment

As a result of the Renewable Energy Target, which will be filled largely by wind power, \$20 billion is to be invested into the Australian economy over the coming decade<sup>5</sup>. Rural and regional Australia – home to much of Australia's future wind power – should expect to enjoy the bulk of this economic gain. It makes sense to locate manufacturing of wind farm components in regions close to where farms are expected to be built making for a more steady, long-term investment in regional Australian communities where the best prospects exist for building wind.

### Suppressing wholesale electricity costs

Evidence is mounting that developed renewable energy technologies such as wind can play a beneficial role in reducing the wholesale electricity price. A 2010 study of wind energy in three European countries where wind power had become sufficiently developed (Belgium, Germany and Denmark) showed that on average the effect of wind power was to reduce the wholesale cost to produce electricity by €3 and €23 per Megawatt-hour. In the United States over the past five years, the average wind farm has been producing power at or below the lowest end of the wholesale cost range, thus acting to reduce the overall wholesale price. The only exception to this was 2009, where the global financial crisis caused a drop in US power demand and, consequently, wholesale prices<sup>7</sup>.

<sup>1</sup> Global Wind Energy Council, 2010, *Global Wind Energy Outlook*

<http://www.gwec.net/fileadmin/documents/Publications/GWEO%202010%20final.pdf>

<sup>2</sup> Exact figure 102,100 employees in 2009. German Environment Ministry, 2010, (in German) [http://www.bmu.de/files/pdfs/allgemein/application/pdf/broschuere\\_erneuerbar\\_beschaeftigt\\_bf.pdf](http://www.bmu.de/files/pdfs/allgemein/application/pdf/broschuere_erneuerbar_beschaeftigt_bf.pdf)

<sup>3</sup> Clean Energy Council, 2010, *Clean Energy Australia 2010*.

<http://www.cleanenergycouncil.org.au/dms/cec/reports/clean-energy-australia/B--Clean-Energy-Australia-Report-2010/Clean%20Energy%20Australia%20Report%202010-C.pdf>

<sup>4</sup> Details of the Hepburn Wind Project can be found at <http://www.hepburnwind.com.au>

<sup>5</sup> Clean Energy Council website

<http://www.cleanenergycouncil.org.au/cec/policyadvocacy/eRET.html>

<sup>6</sup> Wind Energy and Electricity Prices: exploring the 'merit order effect', Póry for the European Wind Energy Association, April 2010.

[http://www.ewea.org/fileadmin/ewea\\_documents/documents/publications/reports/MeritOrder.pdf](http://www.ewea.org/fileadmin/ewea_documents/documents/publications/reports/MeritOrder.pdf)

<sup>7</sup> US Department of Energy, 2009 Wind Technologies Market Report, August 2010.

[www1.eere.energy.gov/windandhydro/.../2009\\_wind\\_technologies\\_market\\_report.pdf](http://www1.eere.energy.gov/windandhydro/.../2009_wind_technologies_market_report.pdf)

As the economy recovers, the benefits of wind power as a cheap source of electricity are expected to re-emerge.

The same can be expected in Australia. Studies for the Business Council of Australia<sup>8</sup> and National Generators forum<sup>9</sup> indicate a drop in wholesale price of electricity due to the Renewable Energy Target, relative to if there was no RET in place. As many agree that the RET will largely be met with wind power, it is reasonable to expect that wind power in Australia will also be reducing the wholesale cost of electricity here.

A range of factors contribute to the economic advantages of wind power, including an absence of fuel costs, simpler and easier to maintain mechanics, and the fact that wind energy is a distributed power source, allowing more points of power supply to the grid, enhancing it's stability. This last factor also helps alleviate the need for large-scale upgrades of our network, the cost of our present-day electricity price hikes.

### **The environmental benefits of wind farms**

A reasonable output from a 1.5 Megawatt wind turbine is 4,000 Megawatt-hours per year. To produce this amount of power using coal would generate about 3,600 tonnes of carbon dioxide per year<sup>10</sup>. Carbon dioxide and other greenhouse gases represent the greatest threat to our environment, as drivers of global warming and threatening to destabilise the climate. Each wind turbine is another few thousand tonnes of carbon dioxide avoided and another step closer to avoiding catastrophic climate change.

Fossil fuels carry significant environmental risks before they are even combusted. Mining coal leads to air and water pollution, through means such as particulates from open-cut coalmines and leaching of toxic metals into water resources. Avoiding fossil fuels lessens the impact on people in terms of clean air and water, as well as reducing the competition between fossil fuel extraction and arable land. While the expansion of coal and gas is threatening Australia's prime agricultural land<sup>11</sup>, wind power has a track record of operating on and in tandem with productive farmland.

### **Developing wind power in Australia**

The potential for wind power in Australia is enormous. According to research developed for Greenpeace Australia Pacific (*Steps to an Energy [R]evolution*, attached to this submission), by 2020, wind power could provide 21% of Australia's electricity needs and enough to substitute for 8.5 Gigawatts of polluting coal-fired power plant<sup>12</sup>.

This will only happen with sensible, stable policy support that ensures certainty for the wind industry in Australia. Greenpeace is hopeful that after several years of stagnation due to uncertainty over the Renewable Energy Target, recent changes to the policy will help clear the path for greater wind industry development. However, this should be monitored closely and in the event that the wind energy industry does not develop as expected, additional measures should be explored to ensure the industry meets its full potential.

### **For further information**

Jeremy Tager, Head of Political Unit,

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<sup>8</sup> Modelling Success: designing an ETS that works. How emissions trading can work for the environment and the economy. Port Jackson Partners for the Business Council of Australia, 2008. <http://www.bca.com.au/Content/101485.aspx>

<sup>9</sup> CRA International, 2008. Market Modelling to Assess Generator Revenue Impact of Alternative GHG policies, prepared for the National Generators Forum.

<sup>10</sup> Assuming a 35% capacity factor and a greenhouse gas intensity of 0.9 tonnes per MWh.

<sup>11</sup> See, for example the campaign by farmers in Caroonna to protect their lands from coal exploration ([www.ccag.org.au](http://www.ccag.org.au)) or in Queensland, where the Darling Downs agricultural region is under threat from coal seam gas exploration.

<sup>12</sup> The Energy [R]evolution materials can be found at <http://www.greenpeace.org.au/climate/GI-ER-Report2010.php>