# Submission on proposed Regional Policy Statement for the Wellington region, 2009

Pursuant to Clause 6 of the first Schedule and Section 79 of the Resource Management Act 1991

**Submission can be:**

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Proposed Regional Policy Statement
Greater Wellington Regional Council
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**Submissions need to be received by 25 May 2009 at 4pm**

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……..……..……..……...

## Submission

1. The specific parts of the proposed Regional Policy Statement that our submission relates to are as follows:

3.3 Energy, Infrastructure and Waste,
Policy 6,
Policy 38 and
Method 32

(Clearly indicate which parts of the document you support or oppose, or wish to have amendments made to. Please continue on separate sheet(s), if necessary)

2. Our submission is that:

The particular wording that is being addressed in each of these sections is reproduced in our submission, with general comments to start.

**General Comments**

Since wind is the only renewable resource in the Wellington region that is currently available for large scale electricity generation, the majority of our submission is related to wind based generation.

Although there is a proposed National Policy Statement for renewable energy generation, this has not been formally agreed and is likely to be amended as a result of the new Government's energy priorities, which unlike the previous Government's approach, emphasises security of supply. We also expect that 'value' and cost to the consumer will assume more significance.

So it seems that there is currently no statutory requirement for the Regional Council to introduce policies that address renewable energy generation. Since electricity generation is a national issue rather than a regional one, we can see no good reason for the Regional Council to be effectively taking on a responsibility in this area at all, other than from an environmental protection perspective.

Of course the Regional Council could believe that supporting renewable energy generation projects will be of major benefit to the region. In this latter respect the one sided assumptions about benefits cited in the proposed policy statement indicate that the Regional Council is either unaware of the true facts about wind generation, doesn't understand the facts, or wishes to promote wind generation projects in this region for financial gain.

In this respect we are concerned that the Regional Council has an existing vested interest in making money directly from wind energy projects, e.g. by land leasing, and is therefore promoting policies to enable this, irrespective of the drawbacks of such schemes, including adverse impacts on the local environment and amenity values.

There are some simple facts that largely negate the described 'benefits' of large scale generation of electricity from wind as a renewable resource. These are discussed in our comments. We urge the Regional Council to become familiar with these facts, corroborate them as necessary, and account for them properly in any policies on renewable energy generation.

In summary:

Advantages of large scale wind generation:

- In some countries wind is the only currently available, realistic possibility for large scale renewable electricity generation – not so in New Zealand of course, which already has more than 65% of renewable energy generation, predominantly from hydro and a few geo-thermal plants.

- *Wind generation results in net reductions in $CO^2$ emissions*: Although this will be much less than might be thought due to the requirements for backup generation that is provided by fossil fuelled plants running in a very inefficient mode. It can be shown that combined cycle gas turbine plants running at base supply efficiency will output about the same amounts of $CO^2$ as wind farms together with their backup generators.
- *Less fossil fuel will be required so there is less dependency on imports*: Again the backup requirements significantly reduce the net savings, as backup generators burn fuel less efficiently.
- *Public image enhancement:* It is still largely the case that wind turbines, irrespective of the drawbacks of large industrial wind farms, are environmental protection icons. In some countries (e.g. Denmark and the United Kingdom) with large numbers of wind turbines this image is being rapidly eroded as the adverse effects become apparent, including visual, audible, and wild life impacts, together with minimal emission reductions and expensive electricity.

Drawbacks of large scale wind generation:

Some of the 'benefits' mentioned in the draft Regional Policy are actually drawbacks of wind generation.

- *Security of supply*: Wind generation can reduce security of supply, due to its intermittent and unpredictable nature, and because there is currently no practical, affordable means to store the energy that is generated. These characteristics mean that there has to be a similar quantity of reliable backup capacity available to take over instantly when the wind dies. So if 100 MW of power is currently being generated by wind farms in NZ, there has to be 100 MW of 'spinning' reserve available. Consequently the security value placed on wind generation by Transpower is zero percent. [sourced directly from Transpower]

- *Security by Diversity*: In New Zealand there is a high correlation between wind and precipitation. When the weather is wet it also tends to be windy and when the weather is dry it tends to be calm. Consequently in dry periods when our hydro lakes are low there is very little wind generation capacity, whilst when it is windy, the wind farms are largely redundant as we typically have plenty of water available to generate electricity. This is the opposite of what is needed. Furthermore, at times of the day when there is a high demand for electricity, around 5:30 to 6:30 pm, conditions are less windy and wind generation does not help to meet peak demand. There are readily available figures to prove the above statements**.** What this means is that whilst generation diversity can generally be expected to increase security of supply, this is not the case for wind energy in New Zealand.

Furthermore, geographical dispersion of wind farms in New Zealand will not improve security as our prevailing winds tend to affect all wind farms similarly. German research involving 7,000 geographically dispersed wind turbines clearly showed that there is no averaging effect due to dispersion. The generated output was as erratic as if all of the turbines had been located in one place. [see E.ON Netz Wind Report 2005, available as a pdf document from http://www.wind-watch.org/documents/?p=104

Also see commentary at:

http://www.ecolo.org/documents/documents_in_english/wind-German-eon.2005.pdf]

- *Environmental impacts* : The environment is always adversely affected by the kind of large industrial wind farms that are constructed these days:

- They render large expanses of real-estate uninhabitable by both people and wild life. Dangers from mechanical failure of such large rotating blades mean that there is a people exclusion zone of around 400 metres around each turbine (manufacturer's recommendation). Wildlife typically vacates areas where wind farms are installed, e.g. bird life disappears.
- The huge earthworks most often required can cause sedimentation damage to nearby lakes, rivers, and streams. Visual scarring and erosion caused by roading 'cuts'and pad construction can take many years to refoliate and blend back into the landscape.
- Local amenity value is significantly reduced by visual and auditory impacts, which can of course be the cause of social issues if wind farms are built near residential communities.
- Economic impacts - Wind is an expensive source of electricity due to several factors but largely due to its unreliability. A recent article by Bryan Leyland (a consulting engineer in electricity generation and transmission) says 'I have calculated the cost of power generated by new wind farms such as Makara in Wellington which cost $440 million for 143 MW ($3100 per kW), to be about 12 cents per kWh at the station gate. Geothermal power costs about 8 cents. Generation from hydro power, gas or coal costs 8 - 10 cents.'

The draft policy statement describes renewable generation as though it was a regional issue, which is misleading.

Large scale wind developments, irrespective of where they are sited, generate electricity into the national grid (or effectively so) where it can be utilised by most of the country. Consequently there can be no specific advantages to the region in building generation plants here, other than a few local jobs to run the operations and provision of local resources such as land leasing. There will be no local protection from power outages if there are national shortfalls in generation capacity, nor any economic benefits from lower electricity costs, as we have shown, the generation costs are high, and in any case price is driven by the national electricity market.

In the following sections with comments on specific sections, quotes from the draft Regional Policy are written in italics

**3.3 Energy, Infrastructure and Waste (page 27)**

'*Traditional energy sources will not be able to meet increasing energy demand.*'

This isn't true. New combined cycle gas turbine plants could easily meet demands for the foreseeable future.

*'The region faces several major long-term energy challenges, including responding to climate change and tackling carbon emissions, especially from transportation.'*

Climate change is a potential issue. However, the question is what significant climate change does the regional council believe we are facing such that it becomes a regional policy issue. What are the likely impacts and when, and therefore what, does the council propose to do to mitigate those impacts? E.g. if we believe that the weather is likely to become more extreme does this imply different building regulations and perhaps additional civil defence measures? If the Regional Council believes that significant impacts from climate changes are imminent then we would expect to see more specific policies to deal with them.

Given the infinitesimally small impact that $CO^2$ emissions from the Wellington region could realistically have on global carbon dioxide emission (even assuming that humans as a whole can have any material impact on the changing climate) this ought to be a relatively minor concern.

*'Other challenges are securing clean energy at affordable prices and using it efficiently, as well as responding to impacts on the region from oil depletion and the rising costs of oil. This means looking to make better use of existing energy resources through energy conservation and efficiency, better utilising the region's renewable energy resources, and looking at ways that the impacts from oil price increases and oil depletion can be mitigated.'*

We disagree that 'securing clean energy at affordable prices and using it efficiently' should be stated as though they were regional challenges requiring regional policies. The region is of course responsible for making prudent energy purchases for running the local operations for which the regional and other councils are responsible, and for ensuring that energy is used efficiently for those purposes. However it is central government and the NZ electricity market that determines prices and viable generation technologies.

In any case we do not accept that 'securing clean energy at affordable prices' by 'better utilising the region's renewable energy resources' currently offers any viable solution.

The only current, industrial scale renewable energy resource in the region is wind, and wind generation is significantly more costly than 'traditional' generation methods when the total cost of energy supply is calculated (i.e. including the cost of infrastructure and fuel needed to ensure a secure supply). Consequently, right now, when it comes to energy generation from local resources in the greater Wellington region, 'clean' and 'affordable' are mutually exclusive. In any case as electricity from local generators goes straight into the national grid, there would be

no direct local economic or utility advantage, other than income from local provisioning, including labour and real-estate, required to support generation operations.

*The region contains significantly greater renewable energy resources than are currently used. Wind, biofuels and solar (for hot water systems), have been identified as possible renewable energy generation sources for the region.'*

This statement is overly simplistic and in that sense misleading. It implies that there are regional renewable energy resources that we are underutilising, which is a truism (e.g. solar energy is all around us) but can only have a useful effect if those resources can be harnessed economically and without damaging the environment.

Furthermore the statement 'identified as possible renewable energy generation sources for the region' implies that the electricity generated would be utilised in the region and that therefore there would be some regional advantage, e.g. lower costs to consumers and regional security. Whereas in practice large scale electricity generation would be input to the national grid and there would be no direct local advantage.

*'There is also the potential for small scale renewable energy generation including small-scale hydro in the region. Tidal currents in Cook Strait and, to a lesser extent, wave action in Cook Strait and off the Wairarapa coast are also significant renewable energy resources, but technological advances are required to realise this potential.'*

We certainly support the region encouraging research efforts to explore the potential for using local resources for generating electricity, such as harnessing tidal power. We have also undoubtedly failed to make sufficient use of some technologies such as solar water heating, although significant deployment comes down to affordability, which would probably require major central government expenditure or direct incentives of some kind. However we are doubtful about the potential for affordable electricity generation from small-scale renewable energy plants in the region, such as small-scale hydro, other than for direct local use by e.g. individual farms and homes.

The bottom line is that although the quest for renewable energy sources appears attractive, it is a highly complex area where a lot of regional resources could be consumed and environmental disruption caused with ineffective results, and potentially negative results such as increased electricity costs, damage to the environment, and disruption to peoples' lives. So although the region should not discourage activities in this area, it should be wary about expending resources and compromising environmental assets and amenity. A knowledgeable, realistic outlook is needed on renewable energy generation.

*'The National Policy Statement on Electricity Transmission (2008) sets out objectives and policies to enable the management of effects on the electricity transmission network under the Resource Management Act. The Statement recognises that efficient and secure electricity transmission plays a vital role in the well-being of New Zealand and makes it explicit that electricity transmission is to be considered a matter of national significance.'*

We fully support a goal of ensuring that electricity is able to be distributed securely to and around the region, whilst minimising the impact on the environment, including private property and amenity.

*'The regionally significant resource management issues for energy, infrastructure and waste are:*

*1. Energy*
*The Wellington region is dependant on externally generated electricity and overseas-sourced fossil fuels and is therefore vulnerable to supply disruptions and energy shortages. However, significant renewable energy resources exist within the region.'*

This statement is misleading, as all regions of New Zealand are dependent on electricity that is pumped into the national grid, and which may therefore be generated outside of the region.

Providing the transmission network is secure and effective the actual site of generation within New Zealand is largely irrelevant.

Again it is misleading to say that the Wellington region is dependent on overseas-sourced fossil fuels, as this is true of the nation as a whole. However there are still huge coal reserves in the South Island (some of which is being exported) and untapped gas fields off our shores. It is a commercial decision whether to make better use of these resources, at least until we can find a more affordable method of renewable generation.

It is also misleading in its implications to say that 'significant renewable energy resources exist within the region'. The issue is not whether potential resources exist but whether they can be harnessed affordably, relative to other generation techniques. The sun is a massive renewable resource within the region but the difficulty is harnessing its power affordably!

A concern is that many of the sweeping assumptions stated in the current document imply a lack of knowledge and understanding that does not inspire confidence that the Regional Council has the ability to actively engage in such complex matters as renewable energy generation.

***Policy 6:***

*Recognising the benefits from regionally significant infrastructure and renewable energy - regional and district plans*

*(b) the social, economic, cultural and environmental benefits of energy generated from renewable energy resources including:*

*(i) security of supply and diversification of our energy sources;*

*(ii) reducing dependency on imported energy resources; and*

*(iii) reducing greenhouse gas emissions.'*

This appears to have been taken from the proposed national policy statement for renewable energy generation, which we suggest is likely to be amended with security of supply (and possibly value) as a priority, before it becomes effective. Our comments here are similar to those that we submitted on the proposed national policy statement.

*b) the social, economic, cultural and environmental benefits of energy generated from renewable energy resources'*

This is a one sided statement. There are advantages and disadvantages with all methods of power generation. Depending on the method, the drawbacks of renewable generation may outweigh the benefits, for example when it is too costly and therefore disadvantages some sectors of the community. It is also difficult to identify any linkage to 'cultural benefits' from energy generation.

*(i) security of supply and diversification of our energy sources;'*

As described in our general comments, diversifying into wind generated electricity doesn't improve security of supply.

*(ii) reducing dependency on imported energy resources; and'*

Again this needs qualification. For example it has been demonstrated globally that the construction of naturally unreliable sources of energy such as wind farms doesn't enable traditional power plants to be closed down, as these are still required for security purposes. Such naturally unpredictable and intermittent sources of power may enable some reduction in fossil fuel consumption, but this is likely to be relatively small. Furthermore there are huge fossil fuel energy resources in New Zealand that if properly exploited could last us many years until more economic, renewable generation technologies are developed.

*'(iii) reducing greenhouse gas emissions.'*

Again, as described in our general comments, the net $CO^2$ output by wind generation plus fossil fuelled backup generation is about the same as modern combined cycle gas turbine plants generating base power, which are also much cheaper to build and operate.

In summary, the points from Policy 6 are really a one sided 'business case'. We suggest that renewable energy generation in the region is currently difficult to justify when the true benefits and drawbacks are considered.

*'Explanation*
*Energy generated from renewable energy and regionally significant infrastructure can provide benefits both within and outside the region. Renewable energy benefits are not only generated by large scale renewable energy projects but also smaller scale projects. Renewable energy means energy produced from solar, wind, hydro, geothermal, biomass, tidal wave and ocean current sources. Imported energy resources include as oil, natural gas and coal.'*

Again, at the risk of repeating the arguments, the economics of currently available renewable energy technologies that make use of local resources are doubtful, and we urge a more cautious, and rational view of renewable energy initiatives, which can also have the ability to damage the environment and add to the economic burden. So we would prefer the policy descriptions talk in terms of 'potential to be explored' rather than assuming that the renewable sources described would be able to deliver on the benefits described.

*'When considering the benefits from renewable energy generation the contribution towards national goals in the New Zealand Energy Strategy (2007) and the National Energy Efficiency and Conservation Strategy (2007) will also need to be given regard.'*

These are strategies that were largely driven by the previous Government's priorities which focused on $CO^2$ reduction. We suggest that the Regional Council consults with the current government to determine whether the strategies are likely to change, given the greater focus now on security of supply and economics.

A careful analysis based on facts will show that at the current time there can be no clear net benefits to be gained by the region from renewable energy generation in the region. Consequently we request that the parts of proposed Policy 6 that apply to renewable energy generation are removed.

***Policy 38:***

*Recognising the benefits from regionally significant infrastructure and renewable energy - consideration*

*When considering an application for a resource consent, notice of requirement or a change, variation or replacement to a district or regional plan, particular regard shall be given to:*

*(a) the social, economic, cultural and environmental benefits of regionally significant infrastructure and/or energy generated from renewable energy resources; and*

*(b) the nationally significant wind and marine renewable energy resources within the region and the need for electricity generation facilities to locate where these resources exist.*

*Explanation*

*The benefits of energy generated from renewable energy resources include:*

- *security of and the diversification of our energy sources*
- *reducing our dependency on imported energy resources - such as oil, natural gas and coal*
- *reducing greenhouse gas emissions.*

Again, much of what we have already said has to be reiterated here.

Policy 38 is based on unproven and largely incorrect assumptions that energy generated from wind resources will bring social, economic, cultural, and environmental benefits. There is a strong case that the opposite is closer to the truth, certainly with regards wind generation.

Drawbacks of energy generated from wind as a renewable resource include:

- Wind energy is expensive relative to other current generation methods. Consequently it will result in increases in the cost of electricity to consumers, which will have detrimental economic and social impacts.

- Industrial scale wind energy developments sited close to residential areas, have negative impacts on the environment including local amenity, and people's health, well being.

- Reduction on the need for imported fuels will be marginal due to the need to fuel backup generation, and in any case depends on policies for better utilisation of NZ's non-renewable energy resources. In addition, there will be a dependency on imported spare components to keep turbines running.

- Similarly, the net reduction in greenhouse gas emissions will be minimal due to the need for (or at least the reality of) fossil fuel backup generation.

*The benefits are not only generated by large scale renewable energy projects but also smaller scale, distributed generation projects.*

Again we dispute this statement as it is one sided. Small scale renewable energy projects can result in even more costly energy than larger scale developments, as economies of scale are not available to smaller projects. The outcome is likely to be even more expensive electricity and consequent negative economic and social impacts.

*The benefits of regionally significant infrastructure include:*

- *people can efficiently move around the region, and to and from*
- *public health and safety is maintained through the provision of essential services - such as potable water and the collection and transfer of sewage or storm water*
- *people have access to energy to meet their needs*
- *people have access to telecommunication services.*

We agree with most of these statements. However, with regards 'people have access to energy to meet their needs', this is misleading as large scale electricity generation typically generates into the national grid, where it is available for nationwide consumption.

*Energy generation from renewable energy and regionally significant infrastructure can provide benefits both within and outside the region.*

As previously indicated, wind based renewable generation will push up costs to consumers and will therefore be an economic drain on both the region and the nation, with related negative social impacts. We will be at a disadvantage to every other country that has less expensive electricity, which will adversely impact the nation and the region. Furthermore the region will suffer from amenity devaluation and associated adverse social impact from wind farms sited close to residential areas.

*Regionally significant infrastructure includes:*

- *pipelines for the distribution or transmission of natural or manufactured gas or petroleum*
- *strategic telecommunications facilities, as defined in section 5 of the Telecommunications Act 2001*
- *strategic radio communications facilities, as defined in section 2(1) of the Radio Communications Act 1989*
- *the national electricity grid, as defined by the Electricity Governance Rules 2003*
- *facilities for the generation and transmission of electricity where it is supplied to the national electricity grid*
- *the local authority water supply network and water treatment plants*
- *the local authority wastewater and stormwater*
- *the Strategic Transport Network, as defined in the Wellington Regional Land Transport Strategy 2007-2016*
- *Wellington City bus terminal and Wellington Railway Station terminus*
- *Wellington International Airport*
- *Commercial Port Areas within Wellington Harbour (including Miramar, Burnham and Seaview wharves) and adjoining land and storage tanks for bulk liquids.*

*When considering the benefits from renewable energy generation, the contribution towards national goals in the New Zealand Energy Strategy (2007) and the National Energy Efficiency and Conservation Strategy (2007) will also need to be given regard.*

We urge the Regional Council (and district councils) to take advice from the current government on changes in policies and priorities since the above strategies were produced, as we have reason to believe that these will have shifted, even though those changes may not yet have been formally documented.

*The national significance of the Wellington region's marine and wind resources is identified in two reports. These reports are 'Marine Energy - Development of Marine Energy in New Zealand with particular reference to the Greater Wellington Region Case Study by Power Projects Ltd, June 2008' and, 'Wind Energy - Estimation of Wind Speed in the Greater Wellington Region, NIWA, January 2008'.*

These are reports from organisations that have vested commercial interests in exploitation of the regions natural resources.

*Policy 38(a) shall cease to have effect once policy 6 is given effect in a relevant district or regional plan.*

A careful, rhetoric free analysis, will show that at the current time there can be no clear net benefits to be gained by the region from renewable energy generation in the region. Consequently we request that the parts of proposed Policy 38 that apply to renewable energy generation are removed.

*'**Method 32:** Policy 65*

*Identify sustainable energy programmes*

*Identify sustainable energy programmes, to improve energy efficiency and conservation, reduce emissions of carbon dioxide and minimise the region's vulnerability to energy supply disruptions or shortages.'*

We would like to see a much clearer, more comprehensive statement of priorities and criteria. We suggest that security of supply should be put before reduction in carbon dioxide emissions. There is also no mention of affordability of the energy produced, which again should have a high priority. We do not want to be implementing renewable schemes that substantially increase the cost of power over more traditional generation techniques.

If a criterion is to minimise the regions vulnerability to energy supply disruptions or shortages (i.e. security of supply), this implies programmes that provide some energy independence to the region which is unrealistic except on a very small scale, such as electricity self-generation by individual properties, but again this is expensive and would certainly be beyond the financial means of the average family.

**Please tick applicable box(es)**

We do wish to be heard in support of our submission (This means that you wish to speak at the hearing)

Signature:  Date: …7/06/09……

(Person making submission, or person authorised to sign on behalf of person making submission)

Please note that under the Resource Management Act all submissions must be made available for public inspection.