

**Submission – Wind Farm Developments, PO Box 10905, Wellington.**

#	Question	Comment
1	<i>Do you agree with the approach taken to developing the aggregate wind generation penetration scenarios? Do you consider the aggregate quantities determined for the Very High, High and Low penetration scenarios to be reasonable? If you answer no to either of these questions, please explain your reasons and provide alternative rationale /scenarios.</i>	We agree the aggregate scenarios are reasonable. We do note that the scenario which may be the most representative will be heavily influenced by thermal fuel availability at known prices, the Government policy direction on emissions from the energy sector, and reasonable connections costs at a regional level.
2	<i>Do you have any comments to make with regard to the Correlations analysis and conclusions?</i>	We have reviewed the GH report and while noting their reservations with respect to some of the wind data provided, the overall outcome being the independence of wind farm outputs regionally (excluding possibly Northland, Auckland & Waikato) and even in the same regions where the wind farms are dispersed, is what would be expected given the frontal system and complex terrain of NZ wind farms.
3	<i>Do you agree that the factors outlined above are the relevant factors to consider in developing regional wind generation penetration scenarios? Do you agree with the high level regional assessment? If not, please explain your reasoning.</i>	The high level regional assessment is representative for scenarios purposes but it does however possibly underweight consent-ability and connections issues.
4	<i>Do you have any comments to make with regard to the identified limiting and causing factors? Do you believe this list is complete or should other factors also be considered?</i>	We would refer the Commission to the News Release from the EWEA which is attached. It notes that the issues on the upper limit for wind penetration is economic and political rather than a technical one. It is not clear that the European experience is directly applicable to New Zealand but then neither is it potentially completely ignorable either.
5	<i>Do you agree with the Common Assumptions listed above and consider the list to be complete? If not, what additions, amendments or deletions would you recommend? Please explain your reasoning.</i>	The assumptions appear reasonable – the one area of possible reflection would be whether ignoring transmission constraints such as the Central North Island is going to lead to a practical outcome given their significant influence on market behaviour to date.
6	<i>Do you believe that the scenarios outlined above reflect the</i>	See the comment in 1 above.

	<i>information used to develop them? If no, how would you change the Scenarios and why?</i>	
7	<i>Do you agree that the four scenarios outlined above are sufficient to enable consideration of all necessary power system and market impacts? If not, what additions, amendments or deletions do you recommend in order to develop a complete set of scenarios for the intended purpose?</i>	It is unlikely that the scenarios will be sufficient to enable consideration of all necessary system and market impacts. This would require taking a view on the availability of thermal fuel and cost, emissions policy, connection- ability and consent-ability to solve for a most likely scenario to determine whether the market and power system will be a constraint and or conflict with each other.
8	<i>General comments</i>	It is acknowledge the purpose of the WGIP is not to solve for the amount of wind power that the New Zealand system can absorb, it does however remain difficult to cover off all power system and market impacts without a “most likely” or “best guess” scenario to rank the significance and relevance of any identified impacts. If for example thermal fuel is to be plentiful at a low known cost without an emission effect then wind powers contribution will be at the lower end so thereby may be its impacts. If the reverse is true, then knowing where to get the wind power development to get the best “national good” outcome and minimise negative impacts is important. The reality will be somewhere in between of course.

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