Wind farming - is it an option?

We were out land use capability mapping a hill country property the other week which has the potential for power generation from wind farming. This got us asking some basic questions; like what are the site requirements? What are the possible pitfalls? And what is it worth to the landowner? All important considerations when looking for alternative ways of supplementing the farm income.

When considering a suitable site for the potential development of a wind turbine, five key variables need to be assessed at an early stage.

1. The proximity to a suitable transmission line or substation is important. This can become less of an issue if the opportunity for a large number of turbines exists on a property or within an area.

2. Ease of establishing suitable road access to the site. Power generation companies will be looking for return on investment, and if the cost of access outweighs returns then there would need to be a major upward shift in commodity power prices to justify the investment.

3. Suitability of the site for building a wind farm. The sites for erecting the turbines need to be geologically stable. Topography is considered both for access, turbine sites and suitability of the wind runs.

4. Absence of significant resource consent issues. Wind turbines are considered visual pollution in some quarters and to undertake their erection generally requires the approval of neighbours and the community through the planning process.

5. The amount of wind at the site will dictate the amount of electricity that can be generated.

Many of the pitfalls for wind farming seem to occur in the initial negotiations and setup agreements. Often this is brought about by the typical kiwi mentality of not seeking professional or legal advice prior to signing an agreement document, only to discover the next knock at the door is a better offer or the agreement handbrakes you in some way. Hence, it is critical to obtain legal advice at the outset of negotiations. Most of the large power generation companies have legal representation on staff, and it is important that you are aware of the implications of signing. What seems to you as opening agreement document to start the process with a company may in fact also restrict some of the negotiating power that you have further down the process. The cost of legal representation is nearly always covered by the generation companies. It is generally a two step process, the initial investigation (including site assessment) and then establishment process.

In addition to this talk to your neighbours. Collectively you may offer a larger and potentially more profitable resource than as an individual landowner. This will provide greater negotiating power to achieve a good return from the energy you are selling.

So what are the returns to the landowner? There are three main categories of lease payment plans that developers may propose to compensate landowners for placement of wind turbines:

- Up front lump sum payment
- Fixed annual payment per turbine
- Variable payment based on actual generation (at a set price or related to actual revenue).

Total compensation is usually calculated on the basis of one or a mix of any of the above three options. Long term compensation is in the region of one to two per cent of the gross revenue of the wind farm or about $1,500-$5,000 per year for each megawatt installed. The level of payment obviously depends on the average wind speed at the site.

Also consider exactly what it is that you are selling. Is it the site of land, or is this leased? Is it the kilowatts of generated power, or is it hydrogen that can be generated and harvested by the wind turbines? In addition to this, consider the company that you want to enter into agreement with. There are several state owned, privately owned and internationally owned companies out there.

Establishing wind turbines is a lengthy process. Generally the initial investigation period can take several years. In addition to this the resource consent process that has to be undertaken will take time to be issued.

How much land is required? The density of turbines is dependent on site conditions and other potential constraints such as noise problems. Access tracks are also required between the individual turbines for maintenance. Power cables are generally always underground and sited in positions that minimise farming disruption.

Wind farming and traditional farming can co-exist. The impact on livestock farming is minimal. Some other farming activities, such as cropping may restricted, and pivot irrigators would struggle. There will be issues of aerial fertiliser spreading, however the pilots of today are skilled to cope with this. Extensive tree plantings may be prohibited as this will interfere with the wind run. Consequently those areas with an erosion issue that need a tree component for control to achieve pastoral farming, will not make good wind farm sites.

Wind farms give the landholder an opportunity to create income, with continued pastoral farming without actually outlaying lots of money or investing physical labour. If you think your property is suitable, it is imperative to do your homework first.