



New Zealand
Historic Places Trust *Pouhere Taonga*

**SUSTAINABLE MANAGEMENT
OF
HISTORIC HERITAGE**

Discussion Paper No.7

**WINDFARMS AND HISTORIC
HERITAGE**



3 August 2007

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Sustainable Management of Historic Heritage Guidelines

Discussion Paper No.7

Wind farms and Historic Heritage

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This discussion paper was approved by the Board for public distribution on 3 August 2007.

While the NZHPT acknowledges the contribution of other agencies and organisations, the opinions and views expressed in this guide are those of the NZHPT only.

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Cover: Lammermoor Ranges and Old Dunstan Road (proposed Project Hayes Wind Farm area), February 2007. Photo, R McClean, NZHPT

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Introduction

The Earth's climate is changing. Average global temperatures are rising and the effects of recent warming can be seen in our weather extremes, the retreat of the polar ice caps and altered responses in plants and animals. The international scientific and political consensus is that this situation is the result of increased atmospheric concentrations of carbon dioxide and other greenhouse gases. The general agreement is that average temperatures are likely to rise even faster unless action is taken to limit and reduce greenhouse gas emissions. Under the terms of the Kyoto Protocol New Zealand pledged to reduce total greenhouse gas emissions to the level they were in 1990 by 2008-2012.

In New Zealand the harnessing of wind energy through wind turbine farms is intended to make a major contribution toward achieving this target. Wind energy does, however, have environmental effects, and issues surrounding construction of wind farms and their impact on landscapes and local communities have been the source of debate over major wind farm proposals in the Hawkes Bay, Wellington and Central Otago recently.¹ While issues have been aired over the potential impact of wind farms on the amenity values and natural character of landscapes, little has been reported on how historical and heritage sites in New Zealand may be affected.

This discussion paper examines the impact of current or proposed wind farm developments for New Zealand's historic places and areas. Historic places and areas are explored in terms of the landscape values they possess. Landscape values relate to the wider environment that heritage buildings and sites exist in. Heritage landscapes are large areas or places containing a number of interrelated places or sites with sometimes many layers of value and history. Recognising both the surroundings and associated historical context of historic places and areas is vitally important in assessing the potential impact of wind farms.

International case studies and legislation are explored to see whether these examples can provide New Zealand with appropriate guidance. In addition, a range of New Zealand legislative methods for the identification and protection of historic places and areas are investigated to see how adequately they provide for wind farm development. The New Zealand Historic Places Trust Pouhere Taonga (NZHPT) acknowledges that, for the most part, the current raft of legislation does not provide specifically for the impact on historic places and areas of wind farm development in New Zealand. However, the legislative tools also provide scope to enable improved identification and protection of historic places and areas by methods such as regional policy statements, district plans, covenants, structure plans, and guidelines.

This discussion paper is not designed to be the 'last word' on the impact of wind farms on New Zealand's historic places and areas by the NZHPT. It is, however, designed to stimulate dialogue among all stakeholders: central government, local authorities, professional organisations, iwi and hapu, farmers, and property owners. It is intended that the discussion paper will provide a basis for the development of guidance on wind farms and historic heritage as recommended by the Parliamentary Commissioner for the Environment.²

¹ Unison Network Ltd *Te Waka Stage II*, Te Pohu, Hawkes Bay; Meridian Energy *Project Westwind*, Makara, Wellington; and *Project Hayes*, Lamermoor Ranges, Central Otago

² Parliamentary Commissioner for the Environment, *Wind power, people, and place*, Parliamentary Commissioner for the Environment, Wellington, 2006

Trends in New Zealand's Wind Generation

In 1993 the first modern wind turbine in New Zealand was commissioned at Brooklyn in Wellington. Since then just over 228 Megawatts (MW) of wind power capacity has been installed in New Zealand, the majority of this being in the Manawatu. This provides two percent of New Zealand's electricity needs, enough to power around 75,000 homes.³ The following table lists the existing wind farms in New Zealand.⁴

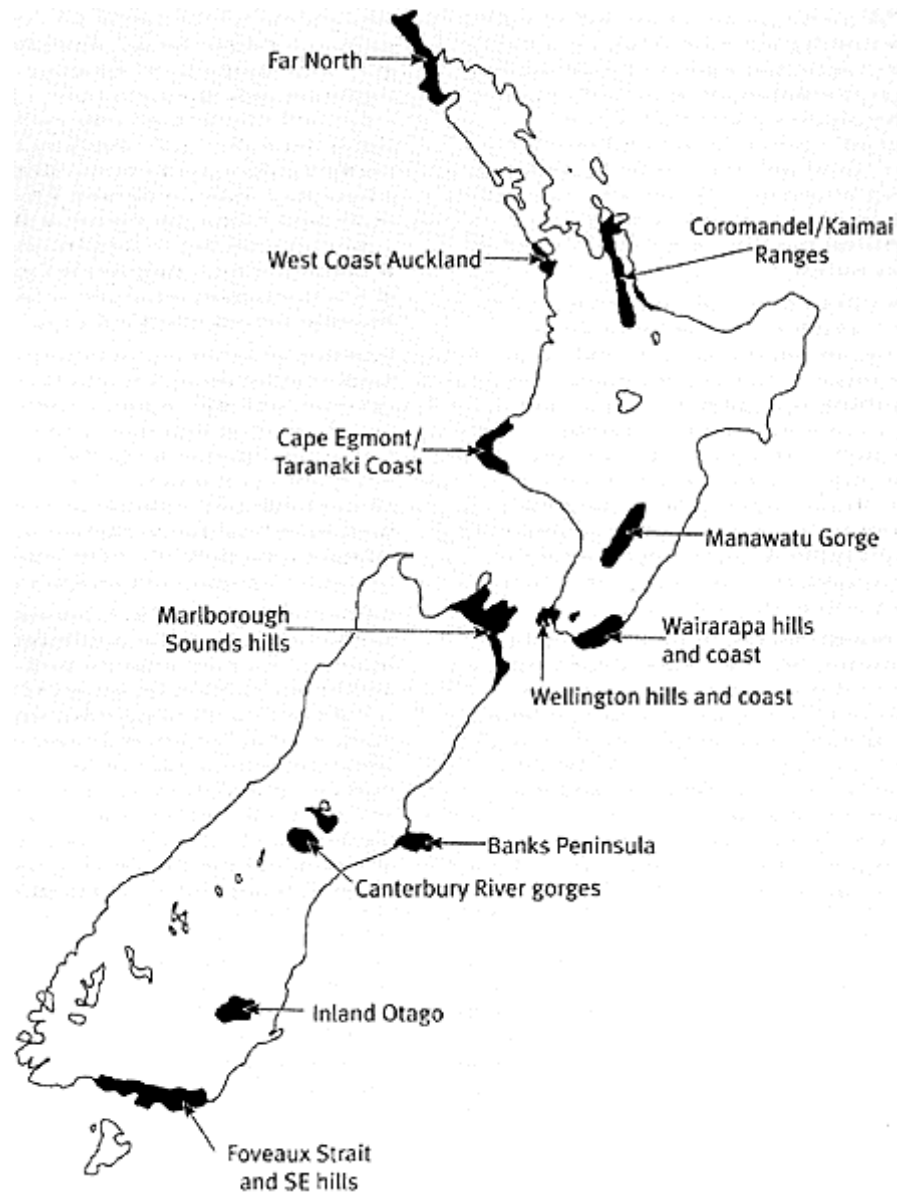
Date Commissioned	Name of Project	Developers	No. and size of turbines	Total size of (MW)	Location
1993	Brooklyn Wind Turbine	Meridian Energy	1 (225KW)	0.23	Wellington
1997	Hau Nui Wind Farm	Genesis Energy	7 (550KW)	3.5	Wairarapa
1999	Tararua Wind Farm I	Trustpower	48 (660KW)	31.7	Tararua Ranges, Manawatu
2003	Gebbies Pass	WindFlow NZ	1 (500KW)	0.5	Gebbies Pass, Banks Peninsula
2004	Tararua Wind Farm II	Trustpower	55 (1.65MW)	90.75	Ruahine Ranges, Manawatu
2004	Hau Nui Expansion	Genesis Energy	8 (600KW)	5	Wairarapa
2005	Southbridge	Energy ³	1 (100KW)	0.10	Southbridge, Canterbury
2006	Te Rere Hau Stage I	Wind Farm Developments Ltd	5 (500KW)	2.5	Tararua Ranges, Manawatu
2007	White Hill	Meridian Energy	29 (2MW)	58	Mossburn, Southland
228MW					

New Zealand has an excellent wind resource. It sits in one of the major atmospheric circulatory zones known as the Roaring Forties. The Roaring Forties is a zone of prevailing westerlies which means New Zealand has significant potential to utilise wind to generate electricity.

Figure 1: New Zealand's wind resource (Source: Ministry for the Environment)

³ ibid, p 16

⁴ ibid, p 23

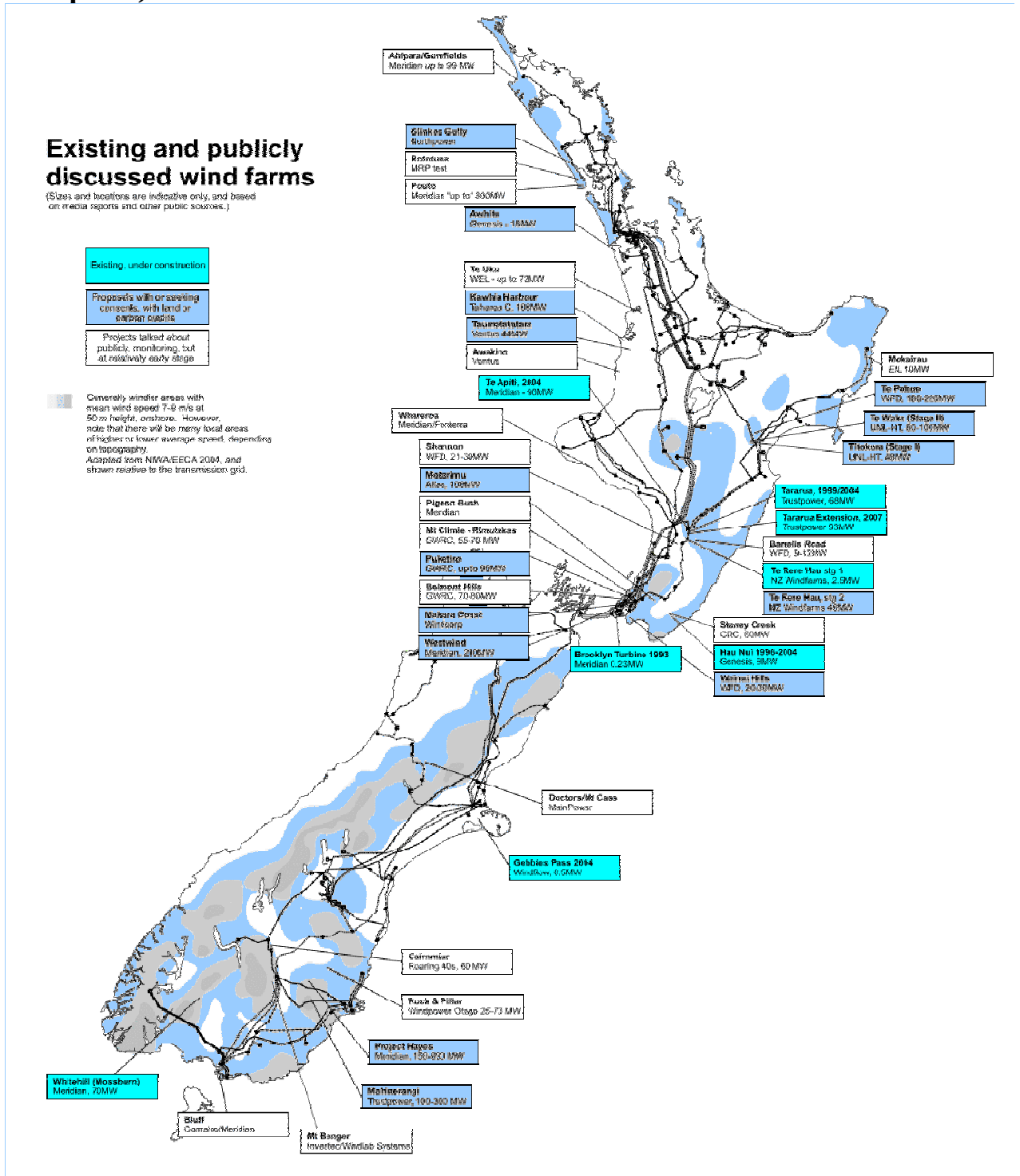


The Energy Efficiency and Conservation Authority (EECA) has identified 13 general areas suitable for wind power development. These include: the Far North, the west coast of Auckland, Coromandel/Kaimai Ranges, Cape Egmont/Taranaki Coast, North Island East Coast hills and coast, Wairarapa hills and coast, Manawatu Gorge, Wellington hills and coast, Marlborough Sounds hills, Banks Peninsula, Canterbury river gorges, inland Otago, Foveaux Strait and the southern hills.⁵

⁵ Energy Efficiency and Conservation Authority, *Review of New Zealand's wind energy potential to 2015*, Wellington, 2001 URL:

<http://www.windenergy.org.nz/documents/Pre04/010500-EECA-NZ-WindResource.pdf> accessed 28 June 2007

Figure 2: Existing and proposed wind farms in New Zealand (Source: Transpower)⁶



The wind power industry is growing rapidly in New Zealand. Figure 2 shows wind farms in New Zealand that are either under construction, consented, seeking consent or being evaluated for their feasibility. Although some of these potential developments may not

⁶ Please note that because of rapid changes in wind farm proposals, some of the wind farms shown on the map may no longer be being investigated, and new wind farm proposals may not be shown. For example, White Hill wind farm in Southland became operational in June 2007.

proceed and additional projects may be added, Figure 2 illustrates potential future locations and the extent of wind farm development in New Zealand so far.

The key site conditions for wind farms are locations where there is sufficient wind resource; proximity to transmission or distribution lines; and sufficient road access for construction purposes.

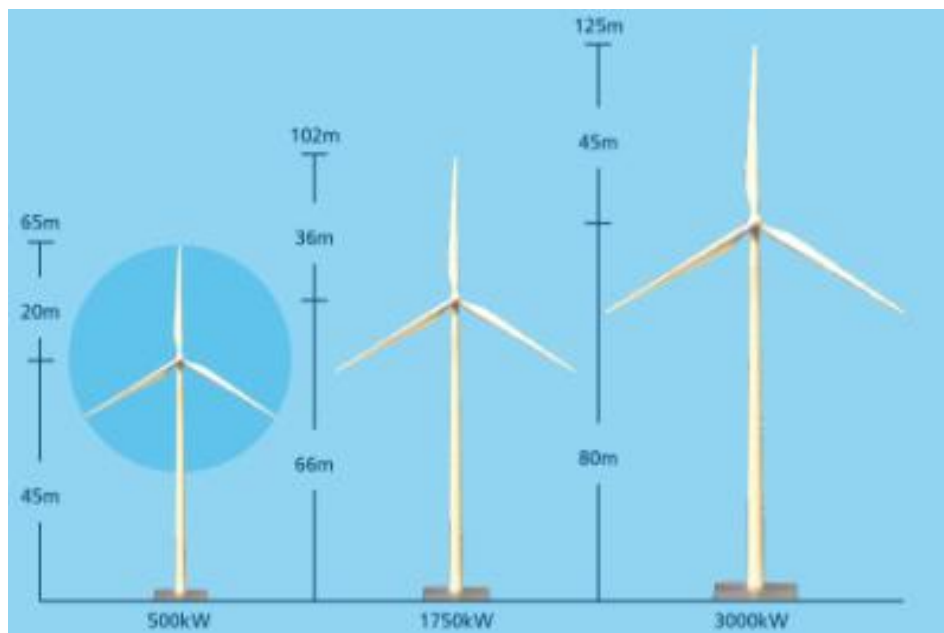
In New Zealand, land with the highest and most consistent wind speed is found in open, elevated, and/or coastal environments. However, in many cases these locations:

- Have high landscape, natural, historical or cultural values.
- Are highly visible (on top of ridgelines and hilltops).
- Are near urban settlements and rural lifestyle areas.

As technology has advanced turbine sizes have increased significantly because taller turbines with larger blades can harness a greater amount of wind and therefore generate an increased power output. A typical grid-connected turbine (1.5MW-3MW) stands 60-80 metres tall with a rotor diameter of 60-90 metres. Figure 3 shows the relative heights of wind turbines.

The size of each wind farm is also increasing. While the majority of proposed wind farms in New Zealand include over 20 turbines there are some proposed developments with over 100 turbines. For example, Meridian Energy's Project Hayes proposal to construct 176 turbines on the Lammermoor Range some 70km west of Dunedin.⁷

Figure 3: Different turbine sizes (Source: Greater Wellington Regional Council)⁸



⁷ For more information on Project Hayes go to <http://www.meridianenergy.co.nz/OurProjects/ProjectHayes/default.htm>

⁸ Greater Wellington Regional Council, *Size of wind turbines*, 2007 URL:

Wind turbines are unique structures, with a strong vertical presence and a sculptural quality. Unlike most other structures in the landscape that are static, the rotor blades of wind turbines rotate when the wind is blowing. This movement contributes to their visibility and attracts the eye.

Turbines can come in several different forms. Key design elements include:

- Height.
- Number of blades (typically 2-3).
- Spacing (between each turbine, and pattern of spacing).
- Colour (usually off-white).
- Tower type (lattice or tubular).

Wind farm development also includes roads, buildings, transmission lines, and other physical infrastructure. The nature of New Zealand's topography means that road and earthworks can be substantial.

Overseas Planning Guidance

International agencies have developed decision making frameworks and guidance specifically for wind power and historic heritage. The following are examples from the United Kingdom and Australia.

United Kingdom

In the United Kingdom, English Heritage has released guidelines called *Wind Energy and the Historic Environment* which deals with the landscape impacts of wind farms.⁹ These guidelines were developed in order for developers and local authorities to consider the impact on the historic environment when scoping, designing or determining planning applications for wind farm projects. This includes implications for archaeological remains, historic structures and buildings, designed landscapes, the historic character and associations of the wider landscape.

The English Heritage guidelines are focused on the following:

- Direct physical impacts.
- Indirect impacts.
- Historic sites.
- Setting and visual amenity.
- Wider landscape.

The direct physical impacts from wind farm projects will involve damage caused by earthworks for structures such as wind monitoring towers, sub-stations, turbines, access roads and other associated features. Generally direct physical impacts of wind farms on

<http://www.gw.govt.nz/story10187.cfm> accessed 28 June 2007

⁹ English Heritage, *Wind Energy and the Historic Environment*, 2005 URL:

http://www.helm.org.uk/upload/pdf/Wind_Energy_%28final%29.pdf accessed 16 June 2007

historic sites can be avoided by identification and avoidance. As outlined by English Heritage:

In comparison with other more conventional forms of development, ground disturbance within the overall footprint of a wind farm may be comparatively limited, and flexibility in the siting of individual structures provides opportunities to avoid damage.¹⁰

Indirect impacts involve developments that may 'impair the setting of historic sites and can compromise the visual amenity of the wider landscape, detracting from historic character, sense of place, tranquillity and remoteness.'¹¹ As explained by English Heritage:

Turbines towers are now typically in excess of 60 metres in height and may have a zone of visual influence more than ten kilometres in radius. Because wind turbines work best in locations where conditions are frequently windy, their visibility is often increased by being situated on high ground or in exposed positions in order to maximise energy yields. Similarly in order to distance development from population centres, many existing developments have been sited in upland locations: places which are valued for their wild and remote character and often for their exceptionally well preserved historic remains.¹²

Historic places are a finite resource which cannot be replaced once damaged or destroyed. Designated historic sites are often more limited in extent than nature conservation or landscape designations, which may embrace very extensive tracts of land.¹³ According to English Heritage it should not be difficult to avoid locating potentially damaging wind farm developments within nationally important historic sites, and this should be reflected in the criteria adopted by regional planning bodies and local authorities for assessing renewable energy projects.

English Heritage suggests a number of factors that should be considered when assessing the acceptability of wind farm developments within the setting of historic sites.¹⁴ The factors include matters relating to visual dominance, scale, inter-visibility, vistas and sight-lines, movement, sound or light effects and unaltered settings:

Visual Dominance	Wind turbines are far greater in vertical scale than most historic features. Where an historic feature is the most visually dominant feature in the surrounding landscape, adjacent construction of turbines may be inappropriate
Scale	The extent of a wind farm and the number, density and disposition of its turbines will also contribute to its visual impact
Indivisibility	Certain archaeological or historic landscape features were intended to be seen from other historic sites. Construction of wind turbines should respect this

¹⁰ ibid, p 7

¹¹ ibid

¹² ibid

¹³ These areas are designated for Conservation because they possess a special character. A Conservation Area is described in law as "an area of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance".

¹⁴ ibid, p 8

	indivisibility
Vistas and sight-lines	Designed landscapes involve key vistas or the use of topography to add drama. Location of turbines within key views, which may often extend beyond any designated area, should be avoided
Movement, sound or light effects	Adequate distance should always be provided between important historic sites and wind turbine developments to avoid the site being overshadowed or affected by noise and shadow flicker effects
Unaltered Settings	The setting of some historic sites may be little changed from the period when the site was first constructed, used or abandoned. Largely unaltered settings for certain types of sites may be rare survivals and especially vulnerable to modern intrusions such as wind turbines

English Heritage comment that all landscapes are the product of human intervention and are, therefore, historic to some degree. However, some have been far more dynamic over time or have been altered more radically than others. These historically dynamic landscapes, particularly those where the prevailing character is industrially or agriculturally intensive, may be more suited to accommodating large-scale wind energy developments than less dynamic areas.

In considering the landscape effects of wind energy developments, English Heritage recommend that planning authorities should have regard to the immediate landscapes of the project, to the impacts of associated infrastructure, and to the cumulative effects of existing or planned renewable energy developments and their infrastructure.

In addition to the English Heritage guidance, Paul Masser of Headland Archaeology Ltd (UK) provides useful assistance on assessing the impact of wind farms on cultural heritage values relating to the setting in the British environment.¹⁵ Masser considers the importance of setting will vary depending on the nature of the historic site in question.¹⁶ For some sites, a landscape feature may be essential to understanding the site. In this regard they are not viewed as separate entities. Other features may be clearly separate, but make a substantial contribution towards the place and are demonstrably relevant to the function of the site in the past. Then again, 'more generalised attributes of the landscape may make minor contributions that are of slight functional relevance or relevant only to the present-day aesthetic appreciation of the site.'¹⁷ To illustrate, Masser provides the example of a Roman fort:

Significance	Example
Essential landscape feature	<i>Vicus</i> settlement outside Roman fort gate
Substantial feature	Strategic view along Roman road associated with fort
Minor contribution	Present-day aesthetic appreciation

¹⁵ Paul Masser, Environmental Impact Assessment of Windfarms: Cultural Heritage and the Problem of 'Setting' Headland Archaeology Ltd, February 2006

¹⁶ *ibid*, pp 6-7

¹⁷ *ibid*, p 7

Masser states that there is a need to identify changes that are relevant to the setting of a site and to measure the affects on people, as sensitive receptors, in relation to relevant impacts:

Setting is a key issue in the case of some, but by no means all sites. It implies the ability to perceive the site as a feature within a landscape, and without an 'embodied' perspective it is a meaningless concept. People, not physical features, are affected by changes to the setting of sites that they visit, dwell in and value...Research into the way members of the public actually perceive and value historic elements of the landscape, the circumstances in which people visit and experience sites, and how the wider landscape contributes to their appreciation of those sites, can be drawn into a more informed approach to the question of receptor sensitivity.¹⁸

In promoting receptor sensitivity research to gauge the impact of changes to settings, Masser points to the need to assess varying magnitude of impacts. The magnitude of impact 'reflects the extent to which elements of the site's setting are changed by the development, and the appropriateness of those changes in terms of compatibility between the site and the development.'¹⁹

The National Trust of Scotland has also highlighted the issue of wind farms as part of its 2007 election manifesto. The proliferation of wind farms in rural Scotland has become a highly contested issue in recent years. The National Trust of Scotland consider that the lack of guidance on where wind farms should be built has resulted in an extraordinary number of proposed developments across Scotland. In some areas they have the potential to blight landscapes of great beauty and impinge on rural communities and homes. The National Trust of Scotland has called on the Scottish Executive to prepare a national 'locational strategy' for renewable energy. The manifesto states that:

At present the greatest threat to Scotland's landscapes comes from ill-sited wind farms and transmission lines. Scotland does need to source more of its energy from renewable sources, but not at the expense of its natural and cultural heritage and landscapes, which are also so vital to the health and well-being of the people of Scotland and to the nation's economy.²⁰

The National Trust of Scotland is advocating that political candidates encourage the Scottish Executive to work with councils, conservation groups and others to identify areas suitable for development and to protect areas that need to be safeguarded. In the absence of such a strategy, public campaigns, protests and expensive inquiries are likely to continue. An example of this is the long-running battle over the proposed wind farm on the Isle of Lewis (please see following case study).

¹⁸ ibid, pp 4-5

¹⁹ ibid, p 7

Case Study

■ Name	Lewis Wind Farm
■ Date Commissioned	To be confirmed
■ Developers	Lewis Wind Power (AMEC & British Energy)
■ Location	Isle of Lewis, off the North West coast of Scotland
■ No. of turbines	181
■ Total size (MW)	651.6

The land on which Lewis Wind Power (LWP) proposes to construct this wind farm has been traditionally used by tenant farmers known as crofters. Crofters on the Isle of Lewis have joined forces with environmental campaigners to oppose the wind farm proposal. They are concerned that the fragile nature of the island's peatland could be damaged by this development while environmentalists have warned that hundreds of rare birds could be killed in collisions with the rotor blades.

Concern has also been expressed about the future of Lewis's historic shielings; tiny stone dwellings used by crofters and farm tenants as summer homes on the peatland. The shielings on Lewis date back to around 800 AD when the island became a Norse colony. LWP and the Western Isles Council have made assurances that the importance of the shielings has been taken into account:

Archaeological features were identified and taken into account during the design and consultation process. Issues around shielings were considered by the Comhairle (Western Isles Council) and its elected members during the process that led to their vote for the scheme. The construction process will be carefully managed to avoid damaging any important archaeological features.²¹

However, some Lewis islanders remain unconvinced:

It is one thing to say that a road or turbine would not destroy a building, but just as important is how the whole shieling system worked. I can see a thousand years of island heritage being destroyed, or obscured and destroyed. Those who are aware of the island's history value the shielings considerably.²²

Those backing the wind farm proposal believe the preservation of the archaeological heritage of the island needs to be balanced with the benefits to the local economy. It is estimated that the wind farm would create more than 300 jobs during the construction and a further 350 during its 25-year lifetime.

²⁰ The National Trust of Scotland, *A Call to Action*, 2007, p 42

²¹ *Scotsman*, 'Historic dwellings face uncertain future', 2005 URL:

<http://heritage.scotsman.com/places.cfm?id=2393862005> accessed 6 June 2007

²² *ibid*

In June 2005 the Western Isles Council granted consent to LWP proposal on the condition that 25 turbines were removed from the plans, to prevent some from being too close to surrounding residential areas or in areas of archaeological value.

After further environmental analysis, LWP scaled their proposal scaled down to 181 wind turbines. In February 2007 the Western Isles Council recommended that the Scottish Executive approve this revised development. The Scottish Executive has yet to make a decision.

Australia

Wind development is a relatively young industry in Australia. However, as a result of renewable energy targets set in place by the government, wind development has experienced rapid growth in recent years. Interest in local government areas from developers wishing to construct wind farms has increased. Some heritage organisations have become concerned that inappropriately planned wind farm developments could adversely affect Australia's historic places and areas.

The NSW Heritage Office in Australia has developed a *Wind Farms & Heritage* paper concerning heritage and wind farms. The guidelines have been designed to assist the NSW Heritage Office, local government, planners and developers in their decision-making processes regarding wind farms and heritage items.²³

While the guidelines address the potential effects of wind farms on heritage items they also provide a definition of the heritage and cultural landscapes that need protecting.

According to the NSW Heritage Office heritage is 'landscapes, buildings, structures, relics, places and other works on land or under water. Our heritage is a valuable cultural resource that is non-renewable and becoming increasingly scarce.'²⁴ They state:

Heritage is important not just because it is old, but because it can tell us about our history and can inform how our values have been shaped over time. While heritage can be beautiful to look at, it can also provide a wealth of information about the community that lived there in the past as well as today. Heritage gives identity to and inspires present and future generations ²⁵

The NSW Heritage Office defines cultural landscapes as those that have been modified by human activity, or have influenced human development. Cultural landscapes include 'homesteads and farmlands, as well as remnant native vegetation, Aboriginal sites and places, wetlands, early settlements, disused cemeteries, defunct industrial complexes and so on.'²⁶ They are considered important because:

Understanding our cultural landscapes paints a picture of our past...Today we consider the wider settings in which homesteads and important built structures were built. The idea that a structure overlooked the scenic landscape, or that the landscape provided shelter from the hot sun, can help

²³ NSW Heritage Office, *Wind Farms & Heritage Policy (Draft)*, 2003 URL: <http://www.heritage.nsw.gov.au/docs/windfarms2003.pdf> accessed 14 June 2007

²⁴ *ibid*, p 9

²⁵ *ibid*

²⁶ *ibid*

us understand the interconnectedness of our current cultural values in our landscapes.²⁷

For a historic item or cultural landscape to be listed on the State Heritage Register and protected in New South Wales, they must meet one of the following criteria outlined in the Heritage Act 1977:

- Importance in the course or pattern of NSW cultural or natural history.
- Strong or special association with the life or works of a person, group or persons, of importance in NSW cultural or natural history.
- Demonstrates aesthetic characteristics and/or a high degree of creative or technical achievement.
- Strong or special association with a particular community or cultural group, for social, cultural or spiritual reasons.
- Potential to yield information that will contribute to an understanding of NSW cultural and natural history.
- Possesses uncommon, rare or endangered aspects of NSW cultural or natural history.
- Demonstrates the principal characteristics of a class of NSW's cultural or natural places/environments.²⁸

The NSW Heritage Office considers that a wind farm development has the potential to affect any of the seven criteria above for the assessment of heritage items and cultural landscapes. These are the criteria the NSW Heritage Office uses when assessing applications that may impact on these potential places. For example, if a proposed wind farm development is likely to materially affect the viewshed of a heritage item or cultural landscape, it is likely that amendments to the proposal will be requested.²⁹

Identifying the significance of the impact of wind farms on heritage items requires consideration of not only the magnitude of the impact and its likelihood of occurring but also the value and importance placed on the heritage item. The NSW Heritage Office states that 'an impact is any effect on heritage items, including cultural landscapes, which would not have occurred in the absence of the development. An adverse impact is one that leads to the loss of heritage value.³⁰ Heritage is important because it is 'a non-renewable resource. Once it is lost it cannot be replaced. Early consideration, planning and intervention are essential to ensure we conserve our most valued heritage items'.³¹

The Australian Council of National Trusts and the Australian Wind Energy Association have embarked on a collaborative project to develop a methodology for assessing landscape values for the siting of wind farm developments. The project has been divided into three stages. The aim of Stage One is to identify, analyse and develop priorities for key issues.³² Stage Two will involve developing an agreed methodology for assessing the landscape values of wind farm proposals. Stage Three will involve practical testing of the methodology.³³

²⁷ ibid

²⁸ ibid, p 10

²⁹ A viewshed is an area composed of land, water, biotic and cultural elements which may be viewed and mapped from one or more viewpoints and which has scenic qualities and/or aesthetic values

³⁰ NSW Heritage Office, p 12

³¹ ibid

³² Stage One was initiated in January 2004 and completed in March 2005

³³ Australian Council of National Trusts & Australian Wind Energy Association, *Wind Farms and Landscape Values Stage One Final Report: Identifying Issues*, Canberra, 2005, p 2

The paper highlights factors associated with the siting of wind farms in approaches to landscape assessment. The paper found that characteristics that contribute to the potential landscape impacts of wind farm developments include:

- Location.
- The height of towers and turbines.
- The number of turbines.
- Movement.
- Colour and materials.
- Ancillary infrastructure.³⁴

In terms of wind farm location the paper states that:

Wind energy facilities are designed to take advantage of the available wind. On land, the highest wind speeds are found in open, elevated and/or coastal environments. The facilities also need to be reasonably close to electrical grid infrastructure in order to economically deliver to consumers the electricity they generate. This makes remote or uninhabited areas problematic. As a result, the majority of wind energy facilities in Australia are on or near the coast, in open inland areas or on ridgelines...³⁵

As part of the research for the paper stakeholder surveys were conducted asking respondents questions about the positive and negative impacts of wind farms on landscapes. Responses concerning negative impacts included the affect of wind farms on indigenous cultural values and cultural heritage. In terms of indigenous cultural values the issues paper concluded:

A proposed wind farm site might be of cultural significance to Indigenous Australians because of its association with tradition or with the current practices of local Indigenous people or the traditional owners or custodians of that site. The presence of particular animal or plant species, for example, might have spiritual significance because it was the site of a historical event such as a massacre.³⁶

In terms of the impact on cultural heritage, the paper states:

None of the survey respondents referred to adverse impacts on built heritage items. This is probably because built heritage items are reasonably well documented and protected in Australia, and as a consequence wind farms have been sited away from them. There is, however, an emerging recognition in the heritage profession that the geographical and landscape contexts of sites are also worthy of protection. The Burra Charter refers to the need to protect the 'fabric and setting' of heritage places. Through their visual and landscape effects, and their potential dominance, wind farms can greatly change the setting of heritage features and thus affect the protection of their values...Furthermore, landscapes themselves can be identified as important heritage items by virtue of their association with the history or development of people and cultures...These landscapes can also be affected by inappropriate design or siting of wind energy facilities.³⁷

³⁴ *ibid*, pp 7-8

³⁵ *ibid*

³⁶ *ibid*, p 11

³⁷ *ibid*, p 12

The paper goes on to analyse the current methodologies for assessing landscape values in Australia. In terms of landscape assessment there is recognition in Australia (and overseas) that cultural and natural values should not be dealt with separately and a more holistic approach is required.

The assessment principles employed in Australia's national heritage system are used as an example of a more inclusive methodology. In this system 'heritage' is defined as part of the environment. Places and landscapes can be included in the National Heritage List for natural, indigenous, or cultural (historic, aesthetic and spiritual) values. In this way, heritage is seen to encompass intangible as well as tangible values.³⁸

The paper also identified the need for more effective community consultation in landscape assessments. Wind farm developments affect a broad scope of landscape values. Issues identified by Stage One of the paper include diverse values such as:

- environmental – impact on birdlife;
- aesthetic – wind farms contrast with the landscape;
- social – community connection with the landscape;
- emotional – a feeling of wonder or loss; and
- cultural – impacts on features of historic or archaeological importance

Not all of these values can be measured or quantified though. The paper suggests 'it is relatively easy to quantify the effects of a wind farm development on the tangible values of native vegetation; it is more difficult to quantify the effects on intangible values such as an individual's feelings about a place.'³⁹ In order to appropriately record and document these values effective community involvement in the assessment process will be required.

On the issue of methodology the Stage One issues paper concludes that:

For a landscape assessment to be a useful guide for the planning and development of wind farms, there does need to be a balance between subjective input and professionally developed frameworks with which to understand and document this input.⁴⁰

³⁸ *ibid*, p 15

³⁹ *ibid*, pp 16-17

⁴⁰ *ibid*

Case Study

■ Name	Wattle Point Wind Farm
■ Date Commissioned	2005
■ Developers	Southern Hydro Pty Ltd (Meridian Energy)
■ Location	Yorke Peninsula, South Australia
■ No. of turbines	55
■ Total size (MW)	91

The South Australian Government authorised the project under the condition that two cultural sites on the proposed wind farm site were protected. Some members of the Aboriginal community were upset at the decision not to protect the 'dreaming' of the entire site.

Construction on this project started in July 2004. Controversy erupted when the projects developers were accused of desecrating an Aboriginal burial ground and archaeological site. Contractors were said to have discovered Aboriginal artefacts, tools and skeletal remains while excavating at the site for Wind Turbine 4.

Construction was halted while Southern Hydro sought a determination from the Aboriginal Affairs Minister on whether the area was an Aboriginal site or whether Aboriginal objects existed there. After extensive consultation, Minister Terry Roberts found that there were places of significance to the Adjahdura Aboriginal community across the development site. However, he allowed the development to continue satisfied that Southern Hydro had the necessary procedures in place to protect these sites.

Members of the Adjahdura community believe irreplaceable history was being destroyed. Quenten Aguis of the Narungga Heritage Committee questioned the decision;

How is it, that in Australia, 100 year old buildings are heritage listed and protected, yet ancient Aboriginal heritage sites that are thousands of years old don't receive the same protection? And how can land developers like Meridian Energy and Southern Hydro bulldoze ancient burial grounds and archaeological sites and get away with it, when there are laws in place to stop this from happening?⁴¹

The developers believed that that had consulted with the local Aboriginal communities but faced a dilemma in dealing with the right people. According to Andrew Wilson, Southern Hydro's wind project implementation manager;

We knew there was some potential for archaeological sites and wanted to do the right thing, so we requested a determination. We also consulted with the Narungga people, but there were divisions within the community as to how to handle the issue. It's a problem sometimes knowing whether you're talking to the right people or dealing with the right groups within the community, which has complicated the process.⁴²

⁴¹ Adjahdura Land, 'Wattle Point Wind farm conflict', 2004 URL: <http://www.adjahdura.com.au/heritage.html> accessed June 6 2007

⁴² *Adelaide Review*, 'When two's a crowd', 2004 URL: http://www.adelaidereview.com.au/archives/2004_09/issuesandopinion_story9.shtml accessed June 6 2007

Construction was completed in May 2005 and Wattle Point wind farm was officially opened in June 2005.

New Zealand Context

Legislation of the most relevance to wind farms and historic heritage include;

- Resource Management Act 1991;
- Historic Places Act 1993;
- Queen Elizabeth the Second National Trust Act 1977; and
- Energy Efficiency and Conservation Act 2000

Resource Management Act 1991

The Resource Management Act 1991 (RMA) is the primary legislation controlling the environmental impact associated with the use of land in New Zealand. Wind farms must be authorised in some form under the RMA, whether it is through permissive plan provisions, resource consent, or a designation.

The overarching purpose of the RMA is 'to promote the sustainable management of natural and physical resources'.⁴³ A range of regulatory tools are provided to achieve this purpose. They include the guidance provided in Part II of the Act; and the following range of regulatory instruments:

- national policy statements;
- the New Zealand Coastal Policy Statement;
- national environment standards;
- regional policy statements;
- regional plans; and
- district plans

Section 6 of the RMA lists matters of national importance that must be recognised and provided for. The following elements of s6 are the most relevant to wind farms and historic heritage:⁴⁴

- (a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development
- (b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development
- (e) The protection of historic heritage from inappropriate subdivision, use and development

⁴³ Parliamentary Commissioner for the Environment, *Wind power, people, and place*, Parliamentary Commissioner for the Environment, Wellington, 2006, p 62

⁴⁴ Sec 6, RMA 1991

The protection of historic heritage from inappropriate subdivision, use and development is considered to be a matter of national importance because these places and areas contribute to the identity, distinctiveness and diversity of New Zealand's urban and rural environments. Historic places have lasting value in their own right and provide evidence of the origins of our distinct society.

The preservation of New Zealand's cultural heritage is crucial. Once it is altered or lost, it cannot be returned to its original state or replaced. Many generations and different cultures have lived in New Zealand. They had different lives and different experiences from those we have today. For example, heritage is reflected in the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga. The conservation of heritage places associated with our ancestors, cultures, or past allows people to experience in a small way how past generations lived and to develop a greater understanding of our history and identity.

Regional and District Plans

Under the RMA, it is the responsibility of regional councils and territorial authorities to give effect to the directions of Part II of the RMA through regional policy statements, and regional and district plans.

Regional policy statements are prepared by regional councils to provide an overview of the resource management issues of each region and to integrate the regional and district management of natural and physical resources. Both regional and district plans must give effect to a regional policy statement.

The Parliamentary Commissioner for the Environment has recently published a report stating that many of the first generation of district plans developed under the RMA have not dealt particularly well with issues such as renewable energy.⁴⁵ A study carried out in 2003 for the Ministry for the Environment found that while most regional policy statements contained policy on renewable energy, few district or regional plans contained energy policy.⁴⁶

Wellington City Council was one of the first local authorities in New Zealand to take a significant step toward wind specific provisions in its district plan. In 2004 the Council publicly notified a Renewable Energy change to the District Plan that included provisions focused on wind energy, along with changes to the Rural Area provisions and the introduction of Ridgeline and Hilltops provisions that affect Wellington's prime wind resource areas.⁴⁷ These plan changes are currently under appeal.

Specific provisions in the proposed Wellington district plan changes include:

- The amendment of policies and rule provisions concerning the landscape assessment of Ridgelines and Hilltops to include natural, recreational and heritage values.
- The introduction of a 'wind energy facility' definition, which distinguishes between domestic and commercial scale turbines.
- The provision that commercial scale wind farms are treated as fully discretionary, subject to a range of assessment criteria.

⁴⁵ See Parliamentary Commissioner for the Environment, *Wind power, people, and place*, Wellington, 2006

⁴⁶ *ibid*, p 66

⁴⁷ See Wellington City Council Plan Changes 32 (Renewable Energy) and 33 (Ridgelines & Hilltops)

Historic Places Act 1993

The purpose of the Historic Places Act 1993 is to 'promote the identification, preservation and conservation of the historical and cultural heritage of New Zealand.'⁴⁸

Under the Historic Places Act 1993 a historic place:⁴⁹

(a) Means-

- (i). Any land (including an archaeological site); or
- (ii). Any building or structure (including part of a building or structure); or
- (iii). Any combination of land and a building or structure; or
- (iv). Any combination of land, buildings or structures (including any part of those buildings or structures, or associated buildings or structures)

that forms [a place that is] part of the historical and cultural heritage of New Zealand and lies within the territorial limits of New Zealand; and

(b) Includes anything that is in or fixed to such land.

A historic area means any area of land that:⁵⁰

- (a) Contains an inter-related group of historic places; and
- (b) Forms part of the historical and cultural heritage of New Zealand; and
- (c) Lies within the territorial limits of New Zealand

The protection of historic places and areas is covered in Part I of the Historic Places Act 1993 – Protection of Historic Places. This is achieved through the use of:

- Heritage orders;
- Heritage covenants; and
- Archaeological sites

A heritage order is a legal requirement on the owner of a property to comply with a direction issued by a heritage protection authority such as the New Zealand Historic Places Trust Pouhere Taonga (NZHPT). Heritage Orders are issued under the RMA and Historic Places Act 1993 to ensure the protection of a heritage item and its surrounding area and for the reasonable enjoyment of the place.

Heritage orders are issued to protect the heritage values of a heritage item where these values are under threat such as demolition. These include its:

- special interest;
- character;
- intrinsic or amenity value;
- visual appeal; and
- special significance to the tangata whenua for spiritual, cultural, architectural, historical, ecological or other value

⁴⁸ Sec 4(1), Historic Places Act 1993

⁴⁹ ibid

⁵⁰ Sec 2, Historic Places Act 1993

Heritage covenants attach to a land title and place conditions or restrictions on its use. A covenant involves an agreement between the NZHPT and a property owner and once signed is permanently attached to a property's title. It therefore binds all subsequent owners and any breach of this covenant is an offence under the Historic Places Act 1993.

Section 6 (1) of the Historic Places Act 1993 states that:

Subject to subsection (5) of this section, the Trust may negotiate and agree with the owner of lessee or licensee of any historic place, historic area, wahi tapu, or wahi tapu area for the execution of a heritage covenant to provide for the protection, conservation, and maintenance of that place, area of wahi tapu.⁵¹

The Historic Places Act 1993 protects all pre-1900 archaeological sites in New Zealand. Any person wishing to undertake work that may damage, modify or destroy an archaeological site, or to investigate a site by excavation, must first obtain an authority from the NZHPT for that work.⁵²

An 'archaeological site' is deemed in the Historic Places Act 1993 as any place in New Zealand that:⁵³

- (a) Either-
 - (i). Was associated with human activity that occurred before 1900; or
 - (ii). Is the site of the wreck of any vessel where that wreck occurred before 1900; and
- (b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.

The authority process applies to all pre-1900 archaeological sites, regardless of whether:

- The site is recorded in the New Zealand Archaeological Association Site Recording Scheme or registered by the NZHPT.
- The site only becomes known through development work taking place.
- The activity is permitted under a district or regional plan, or a resource or building consent has been granted.
- It also applies to sites on land of all tenure, including public, private and designated land.

Under the Historic Places Act 1993, the NZHPT has the responsibility to establish and maintain a register of historic places, historic areas, wahi tapu, and wahi tapu areas for the purposes of:

- Informing members of the public about historic places, historic areas, wahi tapu, and wahi tapu areas.
- Notifying owners of historic places, historic areas, wahi tapu, and wahi tapu areas where necessary for the purposes of the Historic Places Act 1993.

⁵¹ Sec 6(5) Historic Places Act states that the consent of the owner of the land is required

⁵² Sec 10 Historic Places Act 1993

⁵³ Sec 2, Historic Places Act 1993

- Assisting historic places, historic areas, wahi tapu, and wahi tapu areas to be protected under the RMA.

Queen Elizabeth the Second National Trust Act 1977

The Queen Elizabeth the Second National Trust Act 1977 established the QEII National Trust (QEII) to encourage and promote the provision, protection, and enhancement of open space for the benefit and enjoyment of the people of New Zealand.

The core activity of this statutory organization is to secure long-term protection of natural and cultural heritage on private land. QEII helps landowners recognise and protect features including: landscapes, bush remnants, wetlands, lakes, forests, coastlines, geological features and cultural heritage sites. This is achieved through a mechanism known as an open space covenant, which is a legally binding protection agreement registered on the title of the land. It is voluntary, but once in place, binds the current and all subsequent owners in perpetuity.

The ancillary roles of the QEII include:

- Assisting local authority's meet their responsibilities under the RMA.
- Working in partnership with councils by offering 'independent' mediation with landowners, legal expertise and ongoing monitoring of covenants.
- The purchase of property, either permanent or transitory, in order to facilitate or secure protection of natural and cultural values.

Energy Efficiency and Conservation Act 2000

The Energy Efficiency and Conservation Act 2000 is New Zealand's legislative basis for promoting energy efficiency, energy conservation and renewable energy.

The Act established the Energy Efficiency and Conservation Authority (EECA) as an autonomous Crown entity to promote energy efficiency, energy conservation and renewable energy across all sectors of the economy. This includes encouraging the preparation of regulations implementing product energy efficiency standards and labelling, as well as disclosing information to compile statistics on energy efficiency, energy conservation and renewable energy.⁵⁴

The Act also mandated the development of a National Energy Efficiency and Conservation Strategy (NEECS). The NEECS is organised around policies, objectives and targets, supported by a set of means (or measures). The Strategy's purpose is to promote energy efficiency, energy conservation and renewable energy and move New Zealand towards a sustainable energy future.

The Strategy was released in September 2001 and its aim is:

- To improve New Zealand's energy efficiency by 20 percent by 2012.
- To increase the amount of renewable energy used.

⁵⁴ Ministry for the Environment, *About the Energy Efficiency and Conservation Act 2000* URL: <http://www.mfe.govt.nz/laws/energy.html> accessed 28 June 2007

The move toward a sustainable energy future for New Zealand is promoted through energy efficiency, energy conservation and renewable energy. Much of New Zealand's electricity is provided by traditional renewable energy sources such as hydro electricity generation and geothermal power. In contrast to fossil fuel energy resources, they provide a continuing supply of energy from a source that is available on an ongoing basis. There is, however, considerable debate about the sustainability of both of these traditional renewable forms of energy, as they can both result in adverse effects on the local environment.

A new range of non-traditional renewable energy sources is being investigated and developed. While non-traditional renewable resources include traditional resources exploited in different ways wind, solar, biomass, tidal and wave energy sources are being investigated as well.

Parliamentary Commissioner for the Environment Report

In 2006 the Office of the Parliamentary Commissioner for the Environment (PCE) presented an extensive overview of New Zealand wind power in a report entitled *Wind Power, People and, Place*. The report looks at existing wind farms in New Zealand and the potential for growth; the international experience of wind power, the impact of wind power and sustainable energy on landscapes and local communities; case studies from Auckland, Wellington and Manawatu; as well as legal and planning frameworks.

Of particular relevance to historic heritage is Chapter 5 - Wind farms, Landscape and Community.⁵⁵ In this chapter the PCE investigates the positive and negative effects of wind farms on communities; and offers suggestions for minimising potential negative effects.

The PCE states that 'the impact of a wind farm is influenced by the significance and value of the landscape at a particular site. In New Zealand, landscapes have different significance to national, regional, or local communities, as well as different users.'⁵⁶ The PCE identifies the following landscapes as sensitive to the impact of wind farms:

- Outstanding natural landscapes.
- Conservation areas and national parks.
- Coastline with high natural and/or recreational value.
- Landscapes with significant ecological, cultural or heritage characteristics.
- Landscapes that provide amenity and sense of place to local communities (such as ridgelines and scenic rural areas).⁵⁷

The PCE explains the impact of wind farms on landscapes further by stating that:

The highly modern, technological, large scale nature of wind farms can dominate and be out of place in these landscapes. A wind farm can cause the loss or damage of specific elements that make up the fabric of the landscape, or cause changes to the perceived character and quality of the landscape. A

⁵⁵ Parliamentary Commissioner for the Environment, *Wind power, people, and place*, Wellington, 2006, p 40

⁵⁶ *ibid*, p48

⁵⁷ *ibid*, p 49

wind farm can also affect the values and experiences associated with a landscape.⁵⁸

Particular landscape types that can be affected by wind farms include:

- The natural character of the coastline.
- Outstanding natural landscapes and features.
- Ridgelines and hilltops.
- Rural character.
- Places of historical and cultural significance.

The PCE note that the character and fabric of places of historical and cultural significance can be affected by modern, large-scale wind turbine structures. Historic sites may be threatened through disturbance of the site (such as a wahi tapu, building, or registered site) or of the setting associated with the site. A wind farm could also alter the relationship between the site and the surrounding area and/or affect visual catchments (the area from which the wind farms would be potentially visible).⁵⁹

The PCE findings advocate the involvement of Maori in the decision making on wind farms. This is because Maori have intrinsic links to the natural environment and specific cultural values relating to the land. Good wind farm sites are often located on coastal land and hilltops, which may contain sites of significance to Maori. For example, one of reasons the Hutt City Council declined the application for a wind farm proposal on Baring Head in 1995 was because of the cultural values Maori attributed to the headland.

The findings of the report concluded that:

- Investment in smaller-scale, distributed wind farms and turbines needs to be encouraged.
- New Zealand's potential for community-owned wind power should be investigated.
- Government should provide local authorities with guidance on planning for wind farm development, and managing tensions that arise from it.
- Wind farms in or near coastal environments, conservation land, and historic and heritage sites need particular attention.
- Regional authorities need to take a lead with a more proactive, strategic approach to wind power.
- EECA reporting on public attitudes to wind power needs to be expanded.
- Local bodies should use their long-term planning processes to get community input on wind farm development.

⁵⁸ ibid

⁵⁹ ibid, p 52

- Regional authorities should take a leadership role in landscape management.
- The Ministry for the Environment should develop a nationally consistent approach to landscape assessment that local authorities can use.⁶⁰

Energy Efficiency and Conservation Authority Guidelines

In 2004 the Energy Efficiency and Conservation Authority (EECA) prepared *Guidelines for Local Authorities: Wind Power* as part of its role to assist the uptake of renewable energy in New Zealand.

The guidelines have been developed because of requirements under the Resource Management (Energy and Climate Change) Amendment Bill 2004. The Bill stipulated that planning and consent authorities were required to make provisions for energy efficiency and the benefits to be derived from the use and development of renewable energy.

To assist local authorities in the resource consent assessment and decision-making process for wind farm development EECA prepared a set of guidelines. The guidelines include a section on how to best manage the environmental effects of wind farms. The EECA environmental assessment template is modelled on the European Best Practice Guidelines, which state the following factors should be taken into account when planning a wind farm development:

- Site selection.
- Visual and landscape assessment.
- Noise assessment.
- Ecological assessment.
- Archaeological and historical assessment.
- Hydrological assessment.
- Interference with telecommunications systems.
- Aircraft safety.
- Safety assessments (structural integrity, highway safety and shadow flicker).
- Traffic management and construction.
- Electrical connection (the impacts of new infrastructure such as overhead lines and substations).
- Effects on the local economy.
- Global environmental effects.
- Tourism and recreational effects.
- Decommissioning.⁶¹

EECA provide guidance on the actual and potential effects of wind farms on historic places and areas that are likely to influence site selection and resource consent applications in New Zealand. These factors are outlined in the table below:

⁶⁰ *ibid*, p 8

⁶¹ Energy Efficiency and Conservation Authority, *Guidelines for local authorities: Wind Power*, 2004, p 14

<p>Effects on culturally significant sites</p>	<p>Many iwi and/or hapu have strong associations with particular mountains, coastal areas or other landscape features. A tribe may be known by its mountain. In addition, many high points have traditional associations with ancestors, or as lookouts. These associations may be apparent from place names, or from tribal traditional record.</p> <p>Particular account should be taken of wahi tapu and other important sites. Consultation, as required under the RMA, with local iwi, and at times with hapu, is essential to ensure that wind farm developments are respectful to tribal associations and traditions.⁶²</p>
<p>Effects on intrinsic values of areas</p>	<p>As well as cultural values associated with sites, people may have strong feelings or associations with some areas. For example, areas may have wilderness or remoteness values, historical associations, or may contribute to the 'sense of place' for a nearby settlement. These values are often difficult to identify and define, but are 'intrinsic' to the area. Effects of intrinsic values should be addressed separately to visual impacts.</p> <p>The consultation process may assist in identifying and addressing such values. An assessment of community regard for wind farm sites can be undertaken as part of investigations for wind farm projects.⁶³</p>
<p>Archaeological and historic sites</p>	<p>Relatively little ground disturbance is associated with turbines or wind farms. However, the preferred wind farm locations, including land in coastal and ridge locations, may potentially contain archaeological evidence or material. This is because of the importance of such areas in pre-European and sometimes more recent, times.</p> <p>The Historic Places Act covers all sites and artefacts which are more than 100 years old, and requires a procedure, including cessation of work, if evidence of an archaeological or historic site or any artefacts is found. It is preferable that Department of Conservation records are inspected and a surface investigation carried out, if appropriate, prior to approvals being given.</p> <p>Opportunities to avoid or mitigate damage should be built into any application affecting an archaeological or historic site.⁶⁴</p>

⁶² ibid, p 26

⁶³ ibid

⁶⁴ ibid

ICOMOS New Zealand Charter

New Zealand retains a unique assemblage of places of cultural heritage value relating to its indigenous and its more recent peoples. These areas, landscapes and features, buildings, structures and gardens, archaeological and traditional sites, and sacred places and monuments are treasures of distinct value. New Zealand shares a general responsibility with the rest of humanity to safeguard its cultural heritage for present and future generations.

New Zealand's *Charter for the Conservation of Places of Cultural Heritage Value* outlines the principles to guard the conservation of places of cultural heritage value.

The purpose of conservation is to care for places of cultural heritage value, their structures, materials and cultural meaning. In general, such places:

- Have lasting values and can be appreciated in their own right.
- Teach us about the past and the culture of those who came before us.
- Provide the context for community identity whereby people relate to the land and to those who have gone before.
- Provide variety and contrast in the modern world and a measure against which we can compare the achievements of today.
- Provide visible evidence of the continuity between past, present and future.⁶⁵

Of particular relevance to wind farms are indigenous cultural heritage and setting. The New Zealand Charter states that:

The indigenous heritage of Maori and Moriori relates to family, local and tribal groups and associations. It is inseparable from identity and well-being and has particular cultural meanings...Particular knowledge of heritage values is entrusted to chosen guardians. The conservation of places of indigenous cultural heritage value therefore is conditional on decisions made in the indigenous community, and should proceed only in this context. Indigenous conservation precepts are fluid and take account of the continuity of life and the needs of the present as well as the responsibilities of guardianship and association with those who have gone before.⁶⁶

The general principle of setting is described as:

The historical setting of a place should be conserved with the place itself. If the historical setting no longer exists, construction of a setting based on physical and documentary evidence should be the aim. The extent of the appropriate setting may be affected by constraints other than heritage value.⁶⁷

⁶⁵ ICOMOS New Zealand, Charter for the Conservation of Places of Cultural Heritage Value 1992 URL: http://www.icomos.org/docs/nz_92charter.html accessed 20 June 2007

Cultural heritage value means possessing historical, archaeological, architectural, technological, aesthetic, scientific, spiritual, social, traditional, or other special cultural significance, associated with human activity

⁶⁷ Place means any land, including land covered by water, and the airspace forming the spatial context to such land, including any landscape, traditional site or sacred place, and anything fixed to the land including any archaeological site, garden, building, or structure, and any body of water, whether fresh or seawater, that forms part of the historical and cultural heritage of New Zealand

Case Study

■ Name	Project West Wind
■ Date Commissioned	To be confirmed
■ Developers	Meridian Energy
■ Location	Makara, Wellington
■ No. of turbines	70
■ Total size (MW)	210

The historic heritage issues surrounding the Project West Wind related to elements of the historic landscape associated with Terawhiti and Quartz Hill such as Maori occupation and land use, European Farm and settlement, gold mining, World War II coastal defences and radio communication.

The proposed Project West Wind development involves the erection of 70 wind turbines. To enable access for the turbines, it is proposed to construct temporary berthing structures at Ohau or Oteranga Bay and associated infrastructure. Both places have historical significance through their association with early Maori and European settlement. This is evident from the physical archaeological evidence that has been found at both sites. Concern was raised that the proposed works may uncover subsurface unrecorded archaeological sites.

The Terawhiti landscape is unique in the Wellington district (and the lower North Island) due to the presence of an historic gold field. Within the Oteranga Bay valley, the largest and most visible gold mining site is at the Albion Battery. There was concern that if Oteranga Bay was chosen as the landing site for Project Westwind, the construction machinery and material would need to be transported through the Albion Battery site causing irrecoverable damage to the area.

Resource consent was granted by the Wellington City Council in December 2005. The decision was appealed by several interest groups saying the wind farm would ruin the recreational value of the coastal Makara area and the case was taken before the Environment court.

In May 2007 the Environment Court ruled in favour of Meridian's Project West Wind although the number of turbines was trimmed from 70 to 66. The Court's decision relating to the protection of historic heritage from inappropriate use and development concluded that the Terawhiti area was rich in Maori and European history. In relation to proposed construction work in Oteranga Bay the Court said although there were prominent traces of Maori occupation close to the shoreline they would not be affected by the proposed works.

With regards to concerns over potential damage to Albion Battery the Environment Court advocated the construction of long gentle ramps on either side of the existing embankment to allow the road to run over the area.

Case Study

■ Name	Te Waka Stage II
■ Date Commissioned	N/A
■ Developers	Unison Networks Ltd
■ Location	Te Pohu, Hawkes Bay
■ No. of turbines	37
■ Total size (MW)	72

The site of the wind farm is of cultural significance to local tangata whenua (Ngati Tukuru and Ngati Hineuru). The Maungaharuru ridgeline is an area rich in lore, history and spiritual significance as it recalls the journey of the Takitimu Canoe, is a navigation aid and a traditional source of kereru (wood pigeon). The ridgeline's prominent feature is named Te Waka because the skyline forms the shape of a waka (canoe). Tangata Whenua hold great meaning in the values and stories associated with this landscape and believe that the presence of turbines and related infrastructure would devastate a place that is sacred to them.

Unison's Stage II Te Waka wind farm proposal was granted resource consent by the Hastings District Council in June 2006. A number of groups had opposed the expanded wind farm proposal and this appeal was taken before the Environment Court.

In making its decision the Court weighed the positive effects of the proposal against the adverse effects. Although an expanded Te Waka wind farm would have established a source of renewable electricity in the area, the Te Waka site was also of archaeological and palaeobiological importance.

The Environment Court said the cumulative visual effects of the 37 extra wind turbines and another 75 turbines to be built alongside them by Hawkes Bay Wind Farm Ltd would be excessive in a sensitive and distinctive landscape. The extra turbines would also go against Maori spiritual values, which included the site's history, water and sacred areas. The Court did not agree that it was preferable in this case to consolidate wind farm proposals in one area rather than allowing them to be spread across the countryside.

Environment Court Judge Craig Thomson said;

It was impossible not to absorb some of the depth of emotion expressed...about the attachment of people to this area. It not only defines one of the boundaries of their tribal rohe, or districts, it also helps them as individuals, and as tribal and family groups. We have concluded that this proposal does not promote the sustainable management of natural and physical resources.⁶⁸

The Court found that after weighing all the differing factors, the Te Waka site was not suitable for this proposal, particularly taking into account visual impacts of the wind farm and Maori spiritual and cultural values associated with the site. The Court noted that while the use of renewable energy is important, it should not dominate all other values.

⁶⁸ *Dominion Post*, 'Spiritual argument wins wind farm case', Wednesday 18 April 2007

Wind Farms and Historic Heritage Guidelines

Large scale wind farms are a recent activity in New Zealand and there are no established guidelines in New Zealand that assist in the assessment of impacts of wind farms on historic heritage values. The need for guidance was highlighted in a recommendation by the PCE *Wind Power, People, and Place* report for the Department of Conservation and NZHPT to prepare guidelines on 'assessing and managing the effects of wind farms in or near the coastal environment, conservation land, and historic and heritage sites.'⁶⁹

At present, New Zealanders are reliant on overseas guidance to assist in assessing the impacts of wind farms on historic heritage. English Heritage and Paul Masser from Headland Archaeology Ltd (UK) provide useful criteria in assessing the impacts of wind farms on the historic environment. Additional assistance is provided by the New South Wales Heritage Office, Australia, who has provided guidance on heritage curtilages.⁷⁰ This guidance emphasises the importance of the significance of the original relationship of the heritage items to their setting, ensuring adequate visual catchments are provided, and the need for buffer areas to screen the heritage items from visually unsympathetic development or to provide protection from vibration, traffic, noise, pollution, or vandalism?⁷¹

While the English Heritage guidance (and guidance from specialists such as Paul Masser) can be adapted for use in New Zealand some of it has limited applicability to the New Zealand situation, especially in relation to designed landscapes or visually dominating historic features. New Zealand's historic heritage is different from that in the United Kingdom. New Zealand does not have large numbers of prominent castles or other large buildings that are landmarks in the rural environment. Further New Zealand has few examples in the rural environment of 'designed landscapes' or large-scale historic gardens and parks where the form, layout or designer is significant. Instead, New Zealand's historic heritage is largely small-scale and the natural landscape is mostly dominant. Even New Zealand's most iconic historic buildings (e.g. Kerikeri Stone Store, Kerikeri; Grand Château, Mt Ruapehu; Church of the Good Shepherd, Tekapo; Larnach Castle, Dunedin) have outstanding significance because their landmark values are enhanced by their natural settings. Many other historic buildings, such as early historic farm homesteads and historic roads, are often 'hidden' in the environment as result of the topography or vegetation. For this reason, New Zealand's historic heritage is very sensitive to changes in the natural environment.

The nature of New Zealand's historic heritage means any proposed guidelines concerning wind farm development need to be tailored to meet the specific characteristics of New Zealand's historic environment and its legislative and policy context. To achieve this, the following criteria have been developed to assist in the assessment of wind farm proposals. These criteria have been prepared to complement the general standards outlined in Discussion Paper No. 2 of this series, Assessment of Effects on the Historic Environment. The NZHPT welcomes any comments on the set of draft guidelines.

⁶⁹ Parliamentary Commissioner for the Environment, p 115

⁷⁰ Department of Urban Affairs and Planning, *Heritage Curtilages*, Heritage Office, NSW, 1996

⁷¹ *ibid*, p 10

Draft Guidelines: Wind farms and Historic Heritage

Wind farms and associated infrastructure should not be located within, near, or adjacent to:

- Registered historic places, historic areas, wahi tapu, wahi tapu area under the Historic Places Act 1993.
- Listed heritage places, sites or area in any regional or district plan prepared under the RMA.
- Archaeological sites recorded by the New Zealand Archaeological Association.
- Actively managed historic places or heritage resource managed under the Conservation Act 1987
- Historic reserves or other reserves for the managed for cultural and heritage purposes under the Reserves Act 1977 or Te Turi Whenua Maori Land Act 1993.
- Heritage properties managed by agencies such as the NZHPT, Department of Conservation, local authorities or non-government trust.
- Historic places that are subject to a heritage order, heritage covenant or other protective covenant or recognised in legislation.
- Places or areas of significance to Maori, including traditional Maori building and wahi tapu.
- An identified conservation area, heritage precinct, or heritage landscape using best practice criteria and research.
- Any other heritage place or area having cultural or heritage values identified using best practice criteria and research.

Draft Guidelines: Wind farms and Historic Heritage

A buffer area should be provided between any wind turbine farm and historic heritage. The extent of the buffer should be determined on a case by case basis having regard to best practice assessment criteria, including:

- Wind farms should not be located where they would visually dominate or distract from the landmark qualities of a historic place or area. The relative scale of the activity will be an important consideration.
- Wind farms should not be located within well preserved, authentic and essential settings surrounding historic heritage.
- Wind farms should provide for adequate visual catchments, vistas and sight-lines or corridors to the heritage item from major viewing points and from the item to outside elements with which it has important visual or functional relationships.
- Wind farms should be located so to protect any intervisibility values in situations where historic items were intended to be seen from other historic items (for example, views from a marae to a pa site).

Draft Guidelines: Wind farms and Historic Heritage

- Wind farms should be designed in partnership and consultation with communities, including the tangata whenua.
- Heritage assessments, including a heritage impact assessment, archaeological assessment and cultural heritage assessment should be prepared for all wind farm proposals that are located near or adjacent to historic heritage.
- Wind farm development should comply with any relevant comment or recommendation provided to the local authority by the Maori Heritage Council under sections 32D and 33 of the Historic Places Act 1993.
- If relevant, wind farm development must be authorised by an archaeological authority issued by the NZHPT under the Historic Places Act 1993. An archaeological assessment must be prepared according to the NZHPT's guidelines.⁷²
- Wind farms should mitigate or remedy adverse effects on significant historic places, including damage from earthworks, construction of structures and buildings or natural erosion.
- Wind farms should achieve positive heritage outcomes and provisions including promoting public access to historic heritage and the use of a covenant to protect significant places and areas.

⁷² NZHPT, *Guidelines for Writing Archaeological Assessments*, Archaeological Guidelines Series No.2, 2 June 2006: http://www.historic.org.nz/heritage/archsites_intro.html