

3.3 ENERGY AND MINERALS

3.3.1 - OVERVIEW

Energy is included within the definition of “natural and physical resources” in the Resource Management Act 1991 and must therefore be managed in a sustainable way. It is a resource which is of fundamental importance to modern societies. In New Zealand, the transport and industry sectors consume some two-thirds of total energy, while the domestic sector consumes a little less than 15%.

In terms of this Plan, energy needs to be considered from two perspectives:

- The effects of using energy; and
- The effects of developing energy resources

The effects of both using and developing energy resources are wide ranging and have a global significance. It can be inefficient and unsustainable, can have significant environmental effect, and can have global implications in terms of CO₂ emission and its impact on climate change. There can be great disruptions to, and loss of, natural ecosystems, habitats, landscape, infrastructure and communities.

This Plan is concerned with the management and control of these effects.

In addition to renewable forms of energy such as wind, solar and hydro-electricity, there exists substantial potential for the development of non-renewable energy resources in the form of coal and lignite. Large deposits of these exist in Southland and their known energy potential is significantly greater than New Zealand’s current existing gas reserves.

As described in Section 1.6 - Minerals, there are a wide variety of other metallic and non-metallic minerals located in the District. While the Act does not require their use to be managed in a sustainable manner, it does require the effects of their extraction to be managed sustainably, and that these resources be managed in an integrated fashion along with other resources.

3.3.2 THE ISSUES

The following are considered to be the significant resource management issues related to Energy within the Southland District:

- **The need to reduce the emission of greenhouse gases in accordance with the objectives of The Convention on Climate Change.**

Explanation

Although there is uncertainty within the scientific community over the issue of climate change, the emission of “greenhouse” gases has been identified as a potential influence on the global climate with resulting effects on a wide range of human activities. Carbon dioxide is not the only “greenhouse” gas but it has been targeted by the international community because it is considered to be the greatest contributor to the enhanced “greenhouse” effect. Until Central Government has finalised the ways it intends to deal with the CO₂ emissions, it is not appropriate for Council to take unilateral action on this matter. The District Plan however is an effective and appropriate means of promoting a reduction in greenhouse gases through land use.

- **Energy waste, and the inefficient use and production of energy.**

Explanation

Potentially there is significant scope for making better use of existing energy. Energy efficiency methods are important for matching energy forms with end-use and for minimising the loss of available energy from conversion processes. The development and adoption of appropriate energy use technologies could also lead to more efficient use.

- **There is potential for the development of energy resources within the Southland District.**

Explanation

Significant power generation already exists within the District in the form of hydro electricity generating station at Manapouri, which has a total generating capacity of 590 MW (the largest in New Zealand), and Monowai which has a capacity of 6 MW.

Several further sites have been identified for possible hydro-electric development, while there is opportunity for an increase in generation capacity at Manapouri with the construction of a second tunnel.

As outlined in the Section 1.6 Minerals, Southland is the third largest coal producing region in the country. New thermal power generating technology may see this resource developed as an important energy resource in the future.

There are also known deposits of oil shale and potential oil producing basins in the District.

Other potential renewable energy sources include wind, biofuels and solar energy, although there has not to date, been any significant investigation into their potential. Wind is not currently a significant provider of electricity in New Zealand but research and investigations are being undertaken into its potential. Trees are a potential source of biofuel and there is scope within the District for developing woodlots and plantations for this purpose. Although the District is not in one of New Zealand's sunniest regions, there is scope for making greater use of the available solar energy.

Agriculture can also produce energy sources such as biogas, methanol, ethanol and the diesel substitute rapeseed oil. The technology is known for these energy sources and only present economic conditions stop the commercial development.

- **The environmental effects of energy production and use.**

Explanation

Although there are positive effects arising from the development of energy resources, the Resource Management Act 1991 states that any adverse effects identified be avoided, mitigated or remedied.

The development of energy resources has a number of potential adverse effects which need to be considered for District planning purposes. These potential effects will depend on the type of development but in general they can be summarised as follows:

- Land disturbance
 - Modification of natural ecosystems and habitats
 - Land inundation
 - Visual impact
 - Air and water pollution
 - Noise
 - Disruption of, and impact on, infrastructure and communities
 - Health and safety risks
 - Loss of landscape features
 - Loss of recreational opportunities.
- **Mineral resources are important to the region's future, and their integrated management should be provided for as part of resource management for the District.**

Explanation

Development of mineral resources plays an important role in the region's economy. Industrial minerals such as aggregate, gravel and limestone form an essential component of the construction industry.

Alluvial gold mining directly and indirectly contributes to employment and expenditure in the region. The region also has significant coal resources, which may in the future have national strategic importance in energy development terms. A wide variety of other minerals have potential for development.

The nature of mineral resources is that they are geologically fixed in location. Therefore one important resource management issues is to recognise this, and ensure that their utilisation is not unduly comprised by other forms of development that could just as easily be located elsewhere (eg residential development over or adjacent to a potentially significant aggregate resource.)

- **Development and utilisation of mineral resources should be managed to ensure that negative environmental impacts are avoided, remedied and mitigated.**

Explanation

Mineral development affects the natural environment (as does any form of development). Therefore an important issue is to ensure that principles of sustainable management of the natural environment are recognised and reflected in mineral utilisation.

3.3.3 - OBJECTIVES AND POLICIES

Objective ENG.1

To promote the sustainable use of energy resources and reduce the District's dependence on non sustainable energy resources.

Objective ENG.2

To ensure the adverse impacts of the use and/or development of existing and future energy sources are avoided, remedied or mitigated.
(Refer Policy ENG.1 and 4)

Objective MIN.1

To recognise that non-energy mineral resources are important to the present and future needs of the district and that development of such resources is a possibility.

Objective MIN.2

To ensure that the effects of mineral resource extraction are managed so as to protect natural and physical resources as far as practicable.

Policy MIN.1

To ensure that in locations where there are either significant mineral resources, or known mineral potential, that the presence of minerals is a relevant consideration in decision making by:

- (a) Requiring that applicants for utilities and residential subdivision consents include information on the mineral potential of the application site and immediate area in such detail as corresponds with the scale and significance of the actual and potential effects of the activity on known mineral resources; and
- (b) Having regard to the potential for land use or residential subdivision activities to effectively render unusable known mineral resources of regional significance.
(Refer Rules PRA.4 and 6)

Policy MIN.2

To provide a regulatory framework which allows for the development of mineral resources in such a manner that the life supporting capacity of air, water, soil and ecosystems is safeguarded and that adverse effects of mineral extraction on the environment are avoided, remedied or mitigated.

Explanation

The management of minerals has features which differ from the management of other resources. The most obvious is that they are difficult to find, fixed in location and must be extracted where they are found. There is minimal opportunity to modify the system of extraction. For this reason Council believes it is important that applicants for other land use activities should have regard to the presence of known or potential mineral resources when lodging applications for resource consents.

*Just as the applicant for a resource consent to extract minerals is required to consider the effects of their operations on other resources and existing activities, Council believes it is appropriate to have a policy which addresses the effects of other activities on minerals, which are themselves a natural resource.
(Refer also to Rules ENG.3 and PRA.4, 5 and 6)*

Objective ENG.3

To ensure the efficient use of energy is a consideration in all developments.

Policy ENG.1

To minimise, avoid, remedy or mitigate the adverse effects of developing resources for the purposes of energy production.

Explanation

*Energy production developments have significant adverse effects on the environment, including communities. Discretionary resource consent status will enable all the relevant issues to be considered.
(Refer Rules ENG.1, 2 and 3)*

Policy ENG.2

To promote and encourage the efficient use of energy.

Explanation

*The Resource Inventory for the Southland District establishes that the District contains resources that are suitable for energy production and that the development of such resources is a distinct possibility and will be encouraged within the parameters set by this District Plan.
(Refer Rule ENG.1)*

Policy ENG.3

To require that energy efficiency is a consideration in all new developments.

Explanation

*In terms of the District Plan, Council can only go so far in providing for energy efficiency. New developments such as roads and supermarkets (which can encourage high vehicle use) can be influenced by the Plan in terms of their impact on energy use. However, the habits of domestic users can generally only be changed by encouragement and promotion of more sustainable practices.
This task should also be the responsibility of the energy industry and Central Government.
(Refer Rule ENG.1 and 3)*

Policy ENG.4

To encourage the investigation of alternative energy sources that have less environmental impact than traditional energy production methods.

Explanation

There is a great deal of scope for investigation and development into energy sources such as wind, solar, biogas, and biofuels. Development of energy production has, to date, tended to concentrate on sources of energy that are more easily accessed, despite the high environmental cost generally associated with these traditional sources. If environmental costs were added to the cost of power produced by traditional generation methods, alternative energy sources would look more attractive. (Refer Method ENG.1)

Policy ENG.5

To protect the life supporting capacity of the global atmosphere.

Explanation

In addition to investigation into alternative energy sources is the need to use existing assets such as existing or proposed afforestation as an offset against increased CO₂ emission. (Refer Method ENG.1)

3.3.4 - METHODS AND RULES

Rule ENG.1 - Permitted Activity

The operation, maintenance, refurbishment, enhancement and upgrading of existing energy facilities, transmission or related facilities, shall be a permitted activity except where a significant external modification or addition to a structural component or building is involved, in which case it becomes a controlled activity.

Reason

These activities have negligible effects on the environment.

Rule ENG.2 - Controlled Activities

Any significant external modification to an energy facility, including transmission and related facilities which involves the addition of any structural component or building, provided that, in granting its consent, the Council may exercise control over all or any of the following matters:

- (a) Location, bulk, height, cladding or colour of the proposed work;
- (b) Landscape treatment;
- (c) Earthworks;
- (d) Amenity values, including visual effect;
- (e) Disturbance of vegetation.

Reason

These activities come within the controlled category because of the qualifications placed on the permitted activities and because any adverse effects can be avoided, remedied or mitigated by the imposition, if necessary, of conditions on the matters listed.

Rule ENG.3 - Discretionary Activity

Any activity that involves or is associated with the construction and commissioning of energy facilities.

Any application under this rule shall be accompanied by:

- (a) A full assessment of effects on the environment (in terms of the Fourth Schedule to the Act) including an assessment of CO₂ emission, and other potential impacts on climatic/atmospheric conditions.
- (b) A description of all alternative energy production methods considered (including efficiency methods aimed at reducing the need for further production facilities) and of alternative sites considered for development of the facilities.
- (c) A description of consultation carried out, particularly with Government Departments, relevant Iwi authorities, and people adversely affected by the proposal.

In considering any such application, Council will consider, amongst other relevant issues the following:

- (a) Those matters contained in Sections 6, 7 and 8 of the Act
- (b) The impact on communities
- (c) The impact on infrastructure and services
- (d) The impact on ecosystems and habitats
- (e) The impact on amenity values, (including visual and noise)
- (f) Health and safety issues
- (g) Central Government's policy on greenhouse gas emission
- (h) The potential loss of, or irreversible change to, landscape and landforms, and uses associated with them

- (i) The sustainability of the energy source and energy production method
- (j) The need for the facility
- (k) The benefit to the District
- (l) Ongoing effects of the development (for example, climatic change, land instability, loss of a particular landscape, disturbance of vegetation).

Note: Not all of these issues may be relevant to every type of energy facility.

Reason

Development of energy facilities can have significant adverse effects. Discretionary activity status allows full consideration of all potential problems including ongoing problems that may occur.

Method ENG.1 - Advocacy

Council will encourage and support;

- (a) Investigation into renewable, low environmental impact energy sources (eg such as wind and solar).
- (b) Energy conservation and efficiency measures.

Where possible and practicable Council will lend assistance, at the appropriate level, in such matters and where practicable, will facilitate delivery of information to the public.

Reason

The production and use of energy, and its effects on the environment both at a local and a global level is seen as the most significant environmental problem facing the world. While Central Governments are mainly responsible for tackling this problem, local authorities must also play their part if sustainable management is to occur.

CROSS REFERENCES

- (a) Investigation work carried out prior to application for consent to develop an energy facility or mineral development will generally be covered by the rules for the specific area the work will be carried out in. Most of this work will occur in the Rural Resource Area - see Section 4.1.

- (b) The following sections of the Plan require consideration of energy efficiency factors:

Section 3.2 Transportation

Section 3.6 Subdivision

Section 4.1 Rural Resource Area

Section 4.6 Urban Resource Area