

3.4. ENERGY

3.4.1. INTRODUCTION

The use of energy is of fundamental importance to the development and functioning of modern society. The RMA definition of “natural and physical resources” includes energy and, as a consequence, the development and use of energy resources must be addressed by the District Plan. This section only deals with activities that convert natural resources into electricity or transform another energy type into electricity. The extraction, processing and use of minerals and biomass in generating other energy forms are dealt with in other sections of the plan.

The Clutha District is relatively rich in energy resources. Development of a hydro-electric scheme began on the Waipori River in May 1900, with the Waipori Hydro-Electric Power Station commissioned on the 27th April 1907. The river has since been progressively developed, with the Waipori Hydro Scheme today consisting of four generation stations. Waipori 1A delivers 10 MW, and Waipori 2A, 3 and 4 deliver 58 MW, 7.6 MW and 8 MW respectively.

The construction of a further hydro scheme in this catchment (the Deep Stream Enhancement Hydro Scheme) began in mid-2006 and was commissioned in 2008. This scheme channels water flowing from an existing Deep Stream diversion, impounds that water in a storage reservoir, and then allows the water to be released through canals containing two 2.5 MW generating units to Lake Mahinerangi. This scheme begins in the Dunedin City District but ends in the Clutha District.

Also located within the Waipori River catchment is the Mahinerangi Wind Farm. Resource consents are in place for a 200MW wind farm north of Lake Mahinerangi, which allow for a maximum of 100 turbines at a maximum height of 145-metres. The first stage of this development, which involves 12 three MW turbines, was completed in April 2011.

A smaller 7.65MW wind farm at Mount Stuart, comprising 9 turbines with a maximum height of 75-metres, was also constructed in 2011.

There are also other resources within the District that have potential for the development of electricity generation. These include the Lower Clutha River (which has been seen as a significant potential resource for hydro development for some years now) and significant coal and lignite reserves. Further opportunities also exist within the District for the development of wind powered generation.

Given the established electricity generation facilities within the Rural Resource Area and the significant potential for further sustainable development of energy resources within the Rural Resource Area identified above, electricity generation resources are recognised as an important part of the rural environment within the Clutha District. The reverse sensitivity effects of other activities that occur in the rural environment on existing and consented renewable electricity generation are required to be managed to the extent reasonably possible under Policy D of the National Policy Statement for Renewable Electricity Generation. The rules that address this matter are set out within the various zone provisions of the District Plan.

While electricity is critical to the efficient functioning of our communities, the development of generation facilities has the potential to both adversely and positively affect the environment. Depending on the type of generation facility developed, these effects can occur at a local level through to the global level. Global level adverse effects can arise from generation facilities that release greenhouse gases, if not adequately offset, whereas renewable electricity generation facilities can result in positive global effects.

In response to the greenhouse gas issue, Central Government has set a target for 90% of the country's electricity to be generated from renewable resources by the year 2025. To achieve this, they have put in place a National Policy Statement for Renewable Electricity Generation. This District Plan must give effect to this National Policy Statement. It is recognised that to achieve the target New Zealand will require significant development of renewable electricity generation activities along with

the protection of output from existing activities. This is further reinforced by Section 7(j) of the Act which requires Council to have particular regard to the benefits derived from the use and development of renewable energy. However this Plan acknowledges that there will still be a requirement for conventional non-renewable electricity generation over the life of the Plan.

3.4.2. OBJECTIVES AND POLICIES

OBJECTIVE ELG.1 – RECOGNITION OF ENERGY RESOURCES

- A. To ensure that the benefits of the District’s renewable and non-renewable energy resources and the electricity generation facilities that utilise such resources are recognised as locally, regionally and nationally important in the sustainable management of the District’s resources.**
- B. To recognise that the use and development of renewable energy resources have the following particular benefits:**
 - a. Maintains or enhances electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions;**
 - b. Maintains or enhances the security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation;**
 - c. Assists in meeting international climate change obligations; and**
 - d. Avoids or reduces reliance on imported fuels for the purpose of generating electricity.**

OBJECTIVE ELG.2 – DEVELOPMENT OF NEW ELECTRICITY GENERATION FACILITIES

To ensure the investigation, establishment, development and upgrading of energy generation facilities avoids, remedies, or mitigates any adverse effects on the environment.

OBJECTIVE ELG.3 – EXISTING ELECTRICITY GENERATION FACILITIES

To enable the ongoing operation, maintenance, upgrade and development of lawfully established electricity generation facilities.

OBJECTIVE ELG.4 – LOCAL EFFECTS OF NEW ELECTRICITY GENERATION FACILITIES

To ensure that the development of new electricity generation facilities has local benefits and that local adverse environmental effects (environmental, social, cultural and economic) are avoided, remedied or mitigated.

OBJECTIVE ELG.5 - SMALL AND COMMUNITY-SCALE DISTRIBUTED RENEWABLE ELECTRICITY GENERATION FACILITIES

To enable the development and operation of small and community-scale distributed renewable electricity generation facilities where the benefits are local and significant adverse environmental effects are avoided, remedied or mitigated.

OBJECTIVE ELG.6 – RESIDUAL ENVIRONMENTAL EFFECTS OF ELECTRICITY GENERATION FACILITIES

- A. To take into account offsetting measures when determining whether a proposal is consistent with sustainable management.**
- B. To recognise that in some circumstances not all environmental effects of electricity generation facilities can be avoided, remedied or mitigated, and to have regard to any environmental compensation measures offered in those circumstances.**

POLICY ELG.1

In determining the appropriateness of the development of a new electricity generation facility within the District, consideration shall be given to the following matters:

- a. the significance of the social, economic, cultural, landscape (including natural character and natural features) and ecological values, and hazard constraints of the land and local communities potentially affected by the facility;**
- b. the effects, both positive and adverse, the proposed electricity generation facility will have on those values identified in a) above;**
- c. Any local, regional, and national effects (both positive and adverse) over and above those local values/effects identified in a) above.**

POLICY ELG.2

In assessing the appropriateness of the location of any new electricity generation facility development proposed within the District, particular regard shall be given to:

- a. the constraints imposed on the proposed generation technology by the location of the necessary resources, infrastructure and logistical or technical requirements which may prevent some adverse effects from being avoided, remedied or mitigated;**
- b. Any functional or locational constraints affecting the associated transmission infrastructure.**

POLICY ELG.3

When assessing the effects of the proposed facility on the local environment under Policy ELG.1 the impact of the proposal in terms of the following matters, in addition to the requirements of other policies, will be given specific consideration:

I. SOCIAL

- a. The long term effects on communities (both positive and negative), including the potential for displacement, dislocation or severance of communities; the impact of rapid and temporary population increases and the potential social and economic investment in the community;**
- b. The impact, both positive and adverse, on reserves and other protected public and private land, and recreation areas, infrastructure (including the transportation network) and services;**
- c. The adverse effects of construction particularly in terms of noise, lightspill, glare, vibration, dust, traffic generation, stormwater management, earthworks, and health and safety;**

- d. The ongoing effects of the facility in terms of noise, lightspill, glare, vibration, dust, radio frequency emissions, traffic generation, stormwater management, earthworks, and health and safety;
- e. The impact on public access to, and along, the margins of the coast, lakes and rivers, and to natural and physical features.

II. ECONOMIC

- a. The positive economic benefits of the facility, including the direct positive effects for the community arising from the construction and operation of the facility (including but not limited to employment opportunities);
- b. The positive effects on the security of communities' electricity supply;
- c. The long term and/or irreversible effects on existing land uses within the affected area;
- d. The impact on the ability to access mineral resources;
- e. The impact on the ability to utilise high class or other special soil types.

III. CULTURAL

- a. The impact on waahi tapu sites or areas, and waahi taonga;
- b. The impact on the Kaitangata nohoaka site on the lower Clutha River;
- c. The impact on statutory acknowledgment areas under the Ngai Tahu Settlement Act 1998;
- d. The impact on other resources of value to Kai Tahu (refer to the relevant planning documents recognised by iwi and lodged with Council);
- e. The impact on historic heritage.

IV. HAZARD CONSTRAINTS

- a. Any known hazard or land stability constraints affecting the subject area;
- b. The potential impact of natural hazard events and the potential effect the activity itself may have on exacerbating or relieving natural hazard events.

V. LANDSCAPE

- a. Potential for the loss of, or irreversible change to, any identified values of landscapes or natural features identified as outstanding in the District Plan or any relevant Regional Policy Statement or Plan;
- b. The impact (both positive and negative) on any identified values of landscapes identified as amenity landscapes in the District Plan;
- c. The impact (both positive and negative) on natural features, natural character, landscape and visual amenity values in general;

VI. ECOLOGICAL

- a. Potential for the loss of, or irreversible change to, any significant indigenous vegetation and any significant habitats of indigenous fauna;

- b. Potential for the loss of, or irreversible change to, any regionally significant wetland and other areas of significant indigenous vegetation and/or significant habitats of indigenous fauna identified in the District Plan or any Regional Plan;
- c. The impact on the mauri and health of ecosystems of indigenous species, including mahinga kai species;
- d. The impact on habitats including those of invertebrates, birds and fish, and valued non-indigenous fauna;
- e. The potential for biodiversity protection or enhancement either on-site or elsewhere including but not limited to offsetting and environmental compensation;
- f. The potential for the establishment of invading exotic vegetation;
- g. Stormwater and earthworks management;
- h. The impact on vegetation adjacent to water bodies;
- i. The potential for shoreline or bank erosion.

The relevance of these matters will be determined on a case by case basis, having regard to the scale of the proposal and the nature of the receiving environment.

POLICY ELG.4

In determining the significance of the effects of the proposed electricity generation facility under Policy 1, consideration will be given to the following matters:

- a. Whether the facility will maintain or increase electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions;
- b. Whether the facility will maintain or increase the security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation;
- c. Whether the facility reduces or avoids reliance on imported fuels
- d. Whether the facility uses renewable natural resources rather than finite resources
- e. The methods proposed to avoid, remedy or mitigate the adverse effects on the environment identified in Policy 3 which may include:
- f. The ability to offset adverse effects and the measurable outcome that this form of mitigation achieves (i.e. a net loss of values; no net loss of values; or gain in values);
- g. Environmental compensation (including measures or compensation which benefit the local environment or community affected) where there are any residual environmental effects that cannot be avoided, remedied or mitigated;
- h. Design measures which provide for operational requirements which may also complement and provide for mitigation opportunities;
- i. Adaptive management measures available to assist with avoiding, remedying or mitigating adverse effects;
- j. Where applicable, the benefit from the reversibility of the adverse environmental effects associated with the proposed generation technology;

POLICY ELG.5

To enable the ongoing operation, maintenance, upgrading and development of lawfully established electricity generation facilities, where the environmental effects of such work are compatible with the existing environment and none of the landscapes, natural features, wetlands, habitats or fauna listed in schedules of the District Plan, or any other wetland one hectare or greater in area, or areas of significant indigenous vegetation or habitat, are significantly adversely affected.

POLICY ELG.6

To enable the identification and assessment of potential sites and energy sources for electricity generation and research-scale investigation into emerging electricity generation technologies and methods.

POLICY ELG.7

To protect consented and existing energy generation facilities from incompatible subdivision, land use and development.

POLICY ELG.8

With respect to the assessment of wind farm noise effects during both the assessment of any resource consent application and the ongoing operation of wind farms, to:

- a. Require that wind farm sound be predicted, measured and assessed in accordance with NZS 6808:2010 Acoustics – Wind Farm Noise; and
- b. Recognise that compliance with this standard will ensure that noise and health effects associated with wind farms will be no more than minor; but
- c. Acknowledging that non-compliance with the standard in certain circumstances does not necessarily mean that noise and health effects are significant.

3.4.3. REASONS AND EXPLANATION FOR OBJECTIVES AND POLICIES

The ability to supply energy is essential to the functioning of communities, businesses and homes. Energy is necessary for the District's social and economic well-being as well as the health and safety of its residents and visitors. The Clutha District has significant energy resources (such as water, wind, coal and lignite) from which electricity could be generated. Some of these resources have already been developed but there is the potential for future development of energy resources within the District.

The objectives and policies of this Plan recognise that the development and operation of electricity generation facilities are important components in providing for the social, economic, and cultural well-being, and health and safety of the people of the District, and also the nation. However the objectives and policies also acknowledge that the development and operation of such facilities can have significant environmental effects and often have a major impact on the communities affected by their development. Consequently the local, regional and national benefits of such projects must be weighed up against potential adverse environmental effects. Policies 1 to 4 set out the matters that require consideration when determining the appropriateness of such developments.

Objective 3 and Policy 5 relate to electricity generation facilities that already exist in the District and recognise that these facilities require on-going maintenance and upgrading. They also facilitate further development at these sites where enhancement work can be carried out in a manner compatible with the existing environment. This recognises that the environment is already significantly influenced by such developments and that there is often scope within the existing footprint of the facility or the environment adjoining the facility to increase energy output without any additional environmental impact.

The requirements of the NPS for Renewable Electricity Generation are reflected throughout the policy suite. Central Government has set a target for 90% of electricity to be generated from renewable resources by 2025. It is recognised that to achieve this target, New Zealand will need to establish new renewable electricity generation activities. The District has a wide range of renewable resources that can be utilised for electricity generation. The specific benefits of renewable energy resources are recognised in Objective 1B and must be considered under Policy 4. Objective 5 and Policy 6 reflect specific requirements of the NPS. Objective 5 provides for the development and operation of small and community-scale distributed renewable electricity generation. Policy 6 enables the identification and assessment of potential sites, sources, technologies and methods for renewable electricity generation. Policy 7 reflects Policy D of the NPS. The rules implementing this policy, however, are located within the provisions of the various Resource Areas of the District Plan.

3.4.4. RULES

NOTE: TO BE A COMPLETE CODE

The rules in this section of the Plan provide a complete code for those activities to which this section applies. Other than in relation to Section 3.7 – Subdivision, Section 3.8 - Financial and Reserve Requirements, the application of appropriate noise standards within the general section of the plan, and the Definitions in Section 5, no rule in any other part of this plan shall apply to any activity dealt with by this section, unless the application of that rule is directly referred to in this section of the Plan.

RULE ELG.1. PERMITTED ACTIVITIES

A. SCHEDULED ENERGY GENERATION FACILITIES

Any work or activity associated with the ongoing operation, maintenance, enhancement, refurbishment or upgrading within the existing envelope of any electricity generation facility that has status as a scheduled activity at Schedule 6.11 of this Plan in accordance with the provisions of that schedule is a permitted activity subject to the conditions contained within that schedule.

B. LAWFULLY ESTABLISHED ENERGY GENERATION FACILITIES

Any work or activity associated with the ongoing operation, maintenance, enhancement, refurbishment or upgrading within the existing envelope of any lawfully established electricity generation facility is a permitted activity.

C. INVESTIGATION AND ASSESSMENT WORKS FOR ELECTRICITY GENERATION PROJECTS

The following activities undertaken for the identification and assessment of potential sites and energy sources for electricity generation and research-scale investigation into emerging electricity generation technologies and methods are permitted activities:

- i. The erection of meteorological masts that do not exceed 100 metres in height in the Rural Resource Area and 20 metres in height in all other Resource Areas except if navigational lights are required on such structures;
- ii. Digging test pits, drilling boreholes, constructing investigation drives and removing samples to investigate geological conditions;
- iii. The installation of instruments into drill holes for monitoring groundwater levels and land movement;
- iv. Erecting survey monuments and installing instruments to monitor land movement;
- v. Installing flumes and weirs to measure water flows;
- vi. Erecting telemetry stations for the transmission of instrument data;
- vii. Installing microseismic stations to measure microseismic activity and ground noise;
- viii. Erection of signs or notices giving warning of danger;
- ix. Construction and maintenance of access tracks and roads to any investigation and assessment sites and facilities;

except on land listed in and/or identified in the following tables:

- Table 9 (SSWI Database);
- Table 13.1 (Register of Heritage Buildings)
- Table 13.3A (Potentially Outstanding Landscapes);
- Table 13.3B (Outstanding Natural Features);
- Table 13.5 (Significant Wetlands);
- Table 13.6 (Waahi Tapu);
- Table 13.7 (Waahi Taoka and Mahika Kai);
- Table 13.8 (Areas of Significant Habitat); and
- Any table that replaces the aforementioned Tables;

or on land that would otherwise trigger Rules RRA.13 or COA.6.

and **subject to** the following conditions:

- a. At the end of the investigation or assessment period, any ground disturbed by such activities shall be reinstated to a condition no less than that which existed prior to the commencement of the work. Should ground disturbance be required to be undertaken in areas adjoining Public Conservation Land and/or land listed in the tables identified above, plant and machinery shall be effectively cleaned of weed seeds and/or weed material prior to work commencing. Reinstatement of indigenous vegetation shall be on a "like with like" basis and any plants with wilding potential (as identified in the relevant Weedbusters material (refer www.weedbusters.co.nz) or its successor) shall not be planted;
- b. All New Zealand Standards in relation to noise, radio frequency emissions and any other emissions shall be complied with;
- c. Any public road damaged in such investigation or assessment activity shall be reinstated to a condition of a similar or improved standard to that which existed prior to commencement of the work;
- d. No such investigation or assessment period shall exceed five (5) years;
- e. All equipment and structures shall be removed at the end of the investigation or assessment period and the site shall be restored and rehabilitated to a condition no less than that which existed prior to the works commencing;
- f. All earthworks shall be undertaken in accordance with Section 10 of the Historic Places Act 1993 and that the accidental discovery of cultural and/or archaeological material shall be managed in accordance with the "Accidental Discovery Protocol" attached at Schedule 12.

- g. The construction of access tracks and roads shall comply with the conditions set out in Rule RRA.7 (iv).

RULE ELG.2. CONTROLLED ACTIVITIES

A. LAWFULLY ESTABLISHED FACILITIES AND SCHEDULED ACTIVITIES

Any work or activity provided for in Rule Energy 1(a) and 1(b) that does not comply with the permitted activity conditions is a controlled activity. Council's control is restricted to the matters which are not complied with and mitigation measures required to address any environmental effects that may arise as a result.

B. INVESTIGATION AND ASSESSMENT WORKS FOR ELECTRICITY GENERATION PROJECTS

- Any work or activity provided for in Rule Energy 1(c) that does not comply with the permitted activity conditions is a controlled activity. Council's control is restricted to the matters which are not complied with and mitigation measures required to address any environmental effects that may arise as a result.

A resource consent application made under this rule shall not be publicly notified.

- Any work or activity provided for in Rule Energy 1(c) that is located on land listed in the following tables:
 - Table 9 (SSWI Database);
 - Table 13.1 (Register of Heritage Buildings);
 - Table 13.3A (Potentially Outstanding Landscapes);
 - Table 13.3B (Outstanding Natural Features);
 - Table 13.5 (Significant Wetlands);
 - Table 13.6 (Waahi Tapu);
 - Table 13.7 (Waahi Taoka and Mahika Kai);
 - Table 13.8 (Areas of Significant Habitat), and
 - Any table which replaces the aforementioned Tables

or on land that would otherwise trigger Rules RRA.13 or COA.6.

is a controlled activity subject to compliance with the conditions specified in Rule ELG.1(c) (excluding condition (e)). Council's control is restricted to additional matters required to mitigate adverse effects on the relevant landscape or ecological values present at the site, and the time period over which the work may be carried out.

A resource consent application made under this rule shall not be publicly notified.

C. METEOROLOGICAL MASTS

Meteorological masts that require navigational lights are controlled activities. Council's control is restricted to effects on air traffic safety and amenity values.

RULE ELG.3. RESTRICTED DISCRETIONARY ACTIVITIES

A. LAWFULLY ESTABLISHED FACILITIES AND SCHEDULED ACTIVITIES

Any activity that seeks to extend any lawfully established electricity generation facility or any electricity generation facility that has status as a scheduled activity at Schedule 6.11 of this Plan within an area contiguous to the existing facility is a restricted discretionary activity.

Council's discretion is restricted to the following matters:

- i. The adverse effects of construction particularly in terms of noise, lightspill, glare, vibration, dust, traffic generation, stormwater management, earthworks, and health and safety;
- ii. The ongoing effects of the facility in terms of noise, lightspill, glare, vibration, dust, traffic generation, stormwater management, earthworks, and health and safety;
- iii. The impact on reserves and other protected public and private land, and recreation areas, community facilities, infrastructure and services;
- iv. The impact on public access to, and along, the margins of the coast, lakes and rivers, and to natural and physical features;
- v. The potential impact of natural hazard events and the effect the activity itself may have on exacerbating or relieving natural hazards;
- vi. The impact on sites and resources of value to Kai Tahu;
- vii. The impact on historic heritage;
- viii. Any geotechnical constraints of the affected area;
- ix. The effects on natural character, natural features, landscape and visual amenity values in general;

A resource consent application made under this rule shall not be publicly notified.

B. SMALL AND COMMUNITY-SCALE DISTRIBUTED RENEWABLE ELECTRICITY GENERATION FACILITIES

The development of small and community-scale distributed renewable electricity generation facilities (as defined) is a restricted discretionary activity except where they are located on land listed in the following tables:

- Table 9 (SSWI Database);
- Table 13.(1 Register of Heritage Buildings)
- Table 13.3A (Potentially Outstanding Landscapes);
- Table 13.3B (Outstanding Natural Features);
- Table 13.5 (Significant Wetlands);
- Table 13.6 (Waahi Tapu);
- Table 13.7 (Waahi Taoka and Mahika Kai);
- Table 13.8 (Areas of Significant Habitat), and
- Any table which replaces the aforementioned Tables;

or are on land that would otherwise trigger Rules RRA.13 or COA.6.

Council's discretion is restricted to the following matters:

- i. The adverse effects of construction particularly in terms of noise, lightspill, glare, vibration, dust, traffic generation, stormwater management, earthworks, and health and safety;
- ii. The ongoing effects of the facility in terms of noise, lightspill, glare, vibration, dust, traffic generation, stormwater management, earthworks, and health and safety;
- iii. The impact on reserves and other protected public and private land, and recreation areas, community facilities, infrastructure and services;

- iv. The impact on public access to, and along, the margins of the coast, lakes and rivers or to natural and physical features;
- v. The potential impact of natural hazard events and the effect the activity itself may have on exacerbating or relieving natural hazards;
- vi. The impact on sites and resources of value to Kai Tahu;
- vii. The impact on historic heritage;
- viii. Any geotechnical constraints of the affected area;
- ix. The effects on natural character, natural features, landscape and visual amenity values in general;
- x. The effects on any significant indigenous vegetation, significant habitats of indigenous fauna or any significant wetland;
- xi. The potential for the establishment of invading exotic vegetation.
- xii. A resource consent application made under this rule shall not be publicly notified.

RULE ELG.4. DISCRETIONARY ACTIVITIES

A. SMALL AND COMMUNITY-SCALE DISTRIBUTED RENEWABLE ELECTRICITY GENERATION FACILITIES

The development of small and community-scale distributed renewable electricity generation facilities (as defined) located on land listed in the following tables:

- Table 9 (SSWI Database);
- Table 13.1 (Register of Heritage Buildings);
- Table 13.3A (Potentially Outstanding Landscapes);
- Table 13.3B (Outstanding Natural Features);
- Table 13.5 (Significant Wetlands);
- Table 13.6 (Waahi Tapu);
- Table 13.7 (Waahi Taoka and Mahika Kai);
- Table 13.8 (Areas of Significant Habitat), and
- Any table which replaces the aforementioned Tables;

or are on land that would otherwise trigger Rules RRA.13 or COA.6,

is a discretionary activity.

B. NEW ELECTRICITY GENERATION FACILITIES

Any activity that involves or is associated with the construction and commissioning of a new electricity generation facility, other than a small and community-scale distributed renewable electricity generation facility is a discretionary activity.

For the purposes of this rule “construction and commissioning” activities includes those activities directly involved with the building and operation of a new electricity generation facility. This includes site preparation, earthworks, quarrying, concrete batching, plant construction, road construction and widening, traffic generation, reservoir formation, clearance or inundation of vegetation, but specifically excludes investigative activities such as geological sampling, surveys and geotechnical investigations.

Activities associated with “construction and commissioning” includes the need to reroute or relocate network utilities and community facilities; the need to construct new infrastructure including the system of electricity transmission (including substations) required to convey electricity to the distribution network and/or the national grid as provided for in the definition of ‘electricity generation facility’.

C. ALL OTHER ACTIVITIES ASSOCIATED WITH ELECTRICITY GENERATION FACILITIES
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Any electricity generation activity or associated activity, including investigation and assessment works for electricity generation facilities, that is not covered by any other rules in the Energy Section is a discretionary activity.