

## 9 Natural Resources and Utilities

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### NR: Introduction

**9.1** This section of the Plan deals with the policies and proposals relating to the Island's requirement for and management of natural resources including water, air and energy - but excluding land and marine resources and minerals. It also addresses the infrastructure requirements and management of risk associated with the use of these resources and the provision of other utility services, such as telecommunications.

**9.2** The Island's natural resources need to be carefully managed to ensure they are not depleted or damaged in any way that would adversely affect their use or sustainability. Ensuring that choices for future generations are not limited is one of the guiding principles of sustainability, suggesting the need for efficiency in use of materials, minimum use of scarce materials and the re-use and recycling of materials wherever possible. The principles of 'Reduce, manage, invest', outlined at the beginning of the Plan, have a particular resonance and applicability to the use and management of natural resources.

**9.3** Natural resources requiring particular protection through the land-use planning system include water and air resources. Planning also has a significant rôle to play in reducing energy consumption and in facilitating the appropriate generation of energy from different sources.

#### Policy context

**9.4** The States [Strategic Plan 2009-2014](#) recognises the significance of the sustainable management of these natural resources, which are fundamental to our quality of life, as well as the need to support the associated infrastructure for their use. This is reflected in some of its priorities and proposals, specifically;

- **debate and implement an Air Quality Strategy for Jersey**, including proposals for monitoring and publishing levels of local air pollution, and targets, policies and timescales for reductions in air pollution levels that reflect best practice globally;
- **introduce an integrated energy policy** to secure an affordable and sustainable energy supply to meet the changing world energy challenges and underpin economic and social prosperity, including assessing whether the Island's natural resources could be a future sustainable source of energy;
- **implement a range of measures to reduce waste, energy use and pollution** and to increase the environmental protection regime operating in the Island;
- **make best use of our own natural resources**;
- **support the development of a competitive telecommunications infrastructure** that supports economic and social prosperity.

## NR: Objectives and indicators

### Objective NR 1

#### Natural resources and utilities objectives

1. To protect the Island's water resources, including surface and groundwater quality and quantity, through prevention of inappropriate development and encouragement of water conservation measures;
2. To reduce or avoid significant adverse impacts on air quality in association with new developments;
3. To encourage the use of renewable energy, improve the energy efficiency of buildings through the careful siting and design of new development;
4. To support the appropriate development and siting of new facilities and infrastructure by utility companies; and
5. To protect, as far as possible, the safety of the public from hazardous installations.

### Indicators NR 1

#### Natural resources and utilities indicators

1. Water pollution incidents;
2. Air pollution incidents;
3. Energy related carbon emissions by source.

## NR: Policies and proposals

### Water resources

**9.5** Over the last decade, water consumption has remained relatively stable, despite 5,000 more connections to the mains water supply. Over 80% of the resident population of Jersey lives in homes connected to the mains water supply provided by Jersey Water and in 2007, there were nearly 37,000 connections along some 76km of trunk mains.

**9.6** The Island's water company, Jersey Water, supplies very high quality treated mains water (white water) to its customers and considers its infrastructure to be in extremely good condition. The company also has detailed plans for the continued maintenance and enhancement of its processing and distribution capability.

**9.7** The public water supply is mainly derived from reservoirs, with contributions from boreholes and the desalination plant. Private sources include wells, boreholes and rainwater tanks. In addition to collecting water in the Island's six main reservoirs, Jersey Water abstracts water from many of the Island's streams and from ground water sources (e.g. "Blanche Banque" aquifer). A number of the reservoirs have catchment areas which generate more water than can be stored and a system of raw water mains has been developed, which allow water to be transferred between reservoirs. As a standby resource, when water supplies are low, the water company operates a desalination plant at Corbiere. The plant has been modernised and uses the reverse osmosis process to produce very high quality fresh water which is pumped to Val de la Mare Reservoir. All the water supplied by the company is treated at one of two water treatment works located at Handois and Augrès.

**9.8** In developing its proposed 'Population Policy' based on an in-migration scenario of +150 heads of households per annum, the Council of Ministers sought advice from Jersey Water on the implications for future water supply. At the time, it was anticipated that projected water demand could be accommodated within the existing service infrastructure. Notwithstanding this, it has to be recognised that water in the Island is a precious natural resource, which is likely to come under increasing pressure from population growth, changing lifestyles, pollution and changing and less predictable weather patterns (including periods of low rainfall and drought). This could be particularly problematic for an Island with limited underground reserves of water and no links to external water networks.

**9.9** Water-borne sewage is currently carried by sewers to the treatment plant at Bellozanne and the extensive foul sewerage network serves all the major populated areas in the Island. The existing surface water drainage network is not particularly extensive and there are large areas where there is no separate surface water system. This can result in surface water draining into the foul sewer network, causing overloading of sewers and pumping stations and ultimately leading to the overflow of foul sewage to sea.

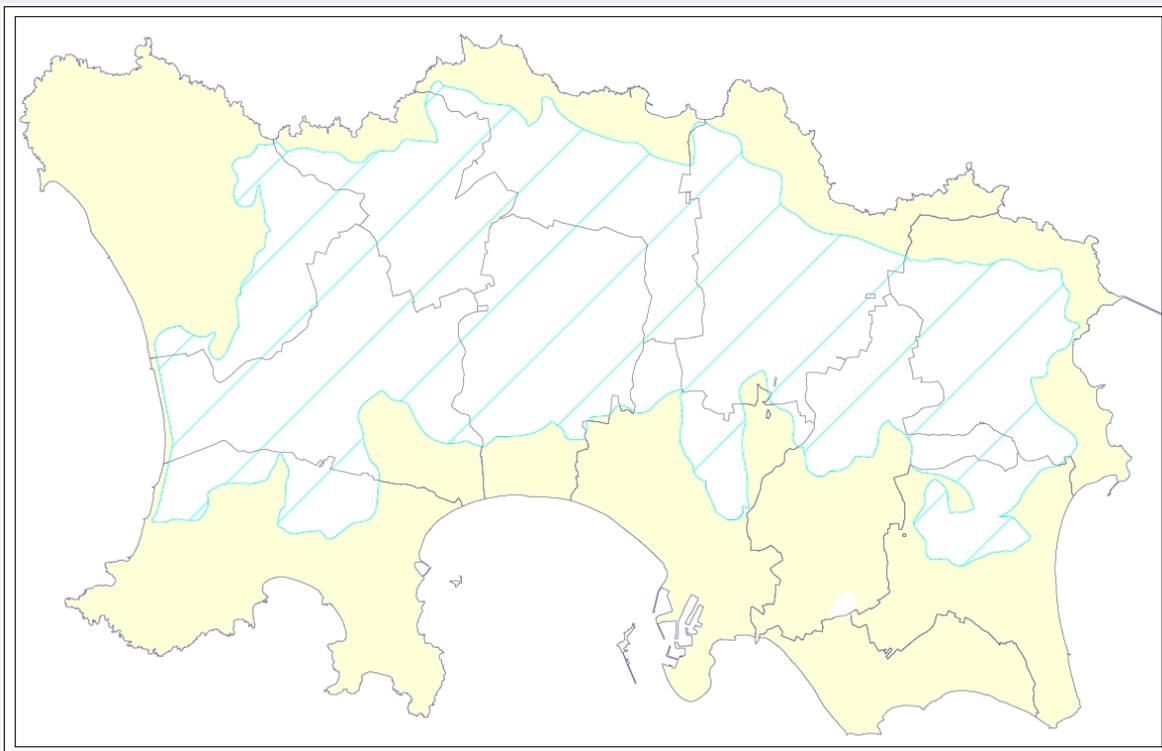
## Protection of water resources

**9.10** The quality and quantity of all waters in Jersey, including marine waters, surface waters and groundwater must be protected to ensure the protection of local ecology and biodiversity. Present and future generations of residents and visitors to Jersey must also have high quality drinking water and that water must be safe for recreational purposes. Activities associated with certain land-uses can adversely affect the quality and/or quantity of water resources in the Island.

**9.11** The [Water Pollution \(Jersey\) Law 2000](#) came into force in November 2000 and brings the Island in line with the rest of Europe with regard to the protection of the aquatic environment from all forms of pollution. The principal sources of

water pollution include industrial processes, leakage of oil from domestic and commercial oil tanks, run-off from roads and other impermeable surfaces, agricultural activity and foul sewage discharge.

**9.12** Water Pollution Safeguard Areas (WPSAs) have previously been designated around existing water sources in the catchment areas for the public water supply. The aim of these areas is to protect aquifers and watercourses from pollution. The introduction of Water Catchment Management Areas (WCMAs) is also being explored separately, under the auspices of the Water Pollution Law, primarily with the aim of reducing nitrate levels, in order to improve the quality of water resources. <sup>(1)</sup> To meet the wider aim of safeguarding water quantities and thus protecting resources for the future, a larger single designation of a Water Pollution Safeguard Area was identified in the 2002 Island Plan, which encompasses the outer boundaries of the original Water Pollution Safeguard Areas combined with the Water Catchment Areas. This larger Water Pollution Safeguard Area has been carried forward and is defined on the Proposals Map. Within this area, there is a need to have regard to the implications of development for both the quantity and quality of water.



**Map 9.1 Water Pollution Safeguard Areas**

1 Diffuse water pollution from nitrates is a major problem in the Island which poses serious risks to drinking water quality (through contamination) and nature conservation (through water enrichment). Most of the nitrates originate from intensive farming activities, which are outside the control of planning legislation. Where permission is not required for such practices, reliance is placed on the Water Pollution Law. The Department of the Environment has recently defined nine WCMA's that cover the whole Island and strategies will be developed for each of them.

**9.13** If a development proposal is within the Water Pollution Safeguard Area, Jersey Water will be consulted prior to determining the planning application, to ensure the public water supply is not put at risk from pollution.

**9.14** Whilst the most densely populated parts of the Island are served by the foul sewerage system there remain a large number of properties, predominantly in rural areas, that rely on private sewage treatment and disposal systems, including septic tanks and soakaways. These systems can pose a serious risk to the Island's aquatic environment and the quality of its water resources, as a consequence of which, new development using these systems should not be permitted (see Policy LWM 2 'Foul sewerage facilities').

**9.15** In addition to protecting the water supply from pollution, it is important that development proposals should look to reduce water infrastructure requirements and to manage water demand by, for example:

- designing external surfaces and surface water drainage to increase filtration and the natural recharge of underground water (e.g. through the use of soak aways, earthworks for improved filtration, absorbent paving and detention ponds);
- maintaining natural vegetation as far as possible (i.e. avoiding the creation of landscapes which require excessive irrigation).

**9.16** The Minister for Planning and Environment proposes to issue supplementary planning guidance in relation to this matter (see Proposal 30 'Surface water drainage systems').

## Policy NR 1

### Protection of water resources

Development that would have an unacceptable impact on the aquatic environment, including surface water and groundwater quality and quantity, will not be permitted. In particular, development proposals that rely on septic tanks, soakaways or private sewage treatment plants, as a means of foul waste disposal, will not be permitted except where they accord with Policy LWM 2 'Foul sewerage facilities'.

The Minister for Planning and Environment will also seek to encourage a high quality environmental design for development to minimise surface water runoff and to reduce the demand for and consumption of water in accord with Policy LWM 3 'Surface water drainage facilities'.

If a development proposal is within the Water Pollution Safeguard Area, Jersey Water will be consulted prior to determining the planning application, to ensure that the public water supply is not put at risk from pollution.

## Water capacity and conservation

**9.17** No development should be permitted, unless it can be shown that adequate water supplies are available. In most cases, it will be necessary to connect to the treated water supply in the mains and, where appropriate, advice will be sought from Jersey Water on whether or not the proposals will have an unacceptable impact on the capacity of mains water supplies.

**9.18** There are clear advantages to be had from using water more efficiently and reducing the amount of water that is wasted, both for the customer (in terms of reduced bills) and the supplier (in terms of reducing expenditure on providing and maintaining facilities for water capture, storing, treating and distribution). However, there are also wider and longer-term sustainability advantages associated with reducing the consumption of energy by the water company (i.e. embodied in construction and expended in providing water of drinking quality).

**9.19** Jersey Water has in place an extensive programme to reduce wastage of treated water, involving renewing and repairing leaks in mains, installing water meters when properties change ownership, hosepipe charges and public information material on using water wisely. However, land use planning also has an important role to play by encouraging a reduction in the demand for white water in new developments. A wide variety of measures can be included in new developments to minimise water consumption, including:

- installation of economical and efficient fixtures and appliances (e.g. effective showers, 'water saving' washing machines, low flush WCs and spray taps);
- use of low quality "grey water" for certain functions (e.g. WC flushing, which currently uses on average a third of the white water supplied to homes);
- provision for the collection, storage and use of rain water for landscaping; and
- recycling of waste water for certain uses.

**9.20** It is considered important that any policy or guidance on water conservation should offer a degree of flexibility on the methods used, because what can be practicably achieved in new developments will vary from case to case. The use of water conservation measures in large new developments could potentially reduce natural surface water run-off and, therefore, reduce levels in water courses and water tables, which could then impact on biodiversity. In such instances, therefore, it will be necessary to achieve an appropriate balance between management of water recycling and ensuring no adverse impact on the water environment and biodiversity. More detail relating to the management of surface water is provided at 'Surface water drainage facilities'(section 10).

## Policy NR 2

### Water capacity and conservation

Developments will not be permitted unless adequate water supply is made available at the time of the development. The Minister for Planning and Environment will encourage development proposals to incorporate all practicable water conservation and management measures to reduce water consumption and help conserve the Island's water resources.

It is proposed that all major development proposals (i.e. greater than 1,000m<sup>2</sup>, or 10 dwellings) submit a 'Water Conservation Strategy' as part of the Design Statement or any statement of sustainability to demonstrate how this is to be achieved.

## Air quality

**9.21** The planning system can help with the management of local air quality and this issue is specifically addressed below. However, it is recognised that air quality is also a transboundary issue (i.e. emissions from Jersey travel through the atmosphere to effect places elsewhere) and a global issue (i.e. greenhouse gas emissions contribute to climate change). Fortunately, the aims of reducing emissions to improve air quality locally and the aims of reducing transboundary and global air pollution are often complementary, because the sources of emissions are broadly the same.

**9.22** Good air quality is essential for people's health and the well-being of the local environment. Exposure to air pollution and poor air quality have detrimental impacts on health and can be particularly problematic for young children, older people, pregnant women and their babies, asthma sufferers, those with other pre-existing conditions (e.g. heart disease and respiratory problems) and those taking vigorous exercise outside. However, modern lifestyles and activities continue to give rise to air pollution, as a result of vehicle use, heating homes and workplaces, power generation, construction activity, industrial activity, quarrying and waste disposal.

**9.23** The main pollutants which affect local air quality (including human health and eco-systems) are:

- Nitrogen oxides (NO<sub>x</sub>)
- Carbon monoxide (CO)
- Particles or particulates (e.g. PM<sub>10</sub>)
- Volatile organic compounds (VOCs) or hydrocarbon species, such as benzene, toluene, ethyl benzene and xylene

- Ground level ozone
- Lead (Pb)
- Sulphur dioxide (SO<sub>2</sub>)
- Ammonia (NH<sub>3</sub>)

**9.24** The States of Jersey carries out a regular on-going programme of monitoring air quality at various locations throughout the Island, including those where pollutant concentrations are expected to be high. The pollutants monitored include SO<sub>2</sub>, smoke concentrations, airborne radioactivity, airborne particulates, VOCs and NO<sub>2</sub> and the results are measured against past trends, background locations and, where appropriate, permitted European health limits. The evidence to-date suggests that the current concentrations of pollutants in Jersey are within EU directive limits. This no doubt reflects the lack of heavy industry in the Island and the dispersive effects of the prevailing westerly winds.

**9.25** The main air quality issues in Jersey relate to emissions from motor vehicle traffic (NO<sub>2</sub>, PM<sub>10</sub> and VOCs) and a number of potential localised traffic related pollution “hot spots” have been identified at Beaumont, the Weighbridge and several other urban locations. Significant new developments planned for the town and the Waterfront are likely to increase areas of risk from traffic emissions. However, the successful implementation of a series of recommendations in the Sustainable Transport Policy has the potential to significantly reduce these emissions. There are also a small number of specific sites, including the Bellozanne Energy from Waste Plant (soon to close), the JEC Power Station and the Island Crematorium.

**9.26** Current compliance with EU standards, based on monitoring to-date, should not be regarded as grounds for complacency and every effort must continue to be made to limit the negative impact of air pollution as much as possible so as to ensure the best air quality achievable.

**9.27** Jersey is currently a signatory to several international agreements in relation to air quality and is obligated to reduce and prevent air pollution. To this end, the States Strategic Plan 2009-2014 commits to implementing an ‘Air Quality Strategy’, which will target reductions in air pollution levels that reflect best practice locally. The aim of the impending strategy (Jersey Air Quality Action Plan) is to “*ensure that everyone in Jersey should have access to outdoor air without significant risk to their health and that there should be minimal impacts from air pollutants on the environment of Jersey or our neighbours.*” This involves meeting obligations under a number of international conventions, as well as standards and objectives set by the UK National Air Quality Strategy and the EU Ambient Air Quality Directive.

**9.28** Planning has a key role to play in supporting the Air Quality Action Plan. Air quality, where it relates to land use and its development, is a material planning consideration and the planning system can help to alleviate some of the effects of the human activities which lead to the degradation of air quality and expose people

and the environment to unacceptable air pollution. It can do this through the formulation of planning policies and the determination of planning applications in a manner which:

- supports measures to improve current air quality;
- discourages polluting activities;
- ensures that air quality issues associated with proposed developments are carefully and appropriately considered;
- determines the location of developments which may give rise to air pollution (either directly or from traffic generated) through dust, smell, fumes, smoke, heat, radiation, gases, steam, or other forms of airborne emissions;
- prevents an increase in pollution, or allows for mitigating air quality impacts from new developments, particularly in areas already suffering high levels of air pollution;
- ensures sensitive developments (e.g. housing, or schools) are not permitted in existing areas of poor air quality, or affected by existing potential sources of air pollution.

**9.29** In order to ensure that due weight is given to air quality when determining applications that may adversely affect air quality, or may be adversely affected by existing air pollution levels, applicants must provide an appropriate assessment of air quality. 'Air Quality Assessments' may be required as part of a formal EIA for a major development, or as a stand-alone document. They are likely to be a requirement where proposed developments involve:

- a significant potential increase in emissions from road traffic. This might be as a consequence of likely increased traffic volumes, increased congestion, changes in traffic composition (e.g. increase in heavy goods vehicle movements), or changes in vehicle speeds;
- industrial activities, quarrying, landfill and other waste management operations which involve potential air pollutants;
- energy generation projects;
- major developments (>10 homes / 1,000m<sup>2</sup> floorspace) within or near to and likely to have an adverse effect on, any future 'Air Quality Management Areas' (i.e. identified in response to ongoing monitoring and declared under the emergent 'Air Quality Strategy', where it is found that relevant air quality targets in respect of air pollutants are exceeded).

**9.30** The approach used in producing Air Quality Assessments should be robust and appropriate to the nature of the proposed scheme, the scale of the likely impacts and what is known about air quality in the area. They should look to demonstrate the likely changes in air quality or exposure to air pollutants, as a consequence of the proposed development. Where an assessment is required, it should be undertaken by an independent professional air quality consultant. The

Minister will produce supplementary planning guidance on reducing air pollution, which will provide more detailed advice on the types of development requiring assessments and what they should contain.

**9.31** There are no plans at present to declare 'Air Quality Management Areas' in Jersey, but it is not inconceivable that this might happen in the future, in response to on-going monitoring, improved monitoring and modelling techniques and evermore demanding EU standards for air quality.

**9.32** Developments which are likely to breach key targets for relevant pollution concentrations in association with the Air Quality Strategy will not be permitted, unless agreement can be reached on appropriate mitigation measures to the satisfaction of the Minister for Planning and Environment. Any such agreement will be secured through the use of planning conditions or planning obligations, as appropriate.

**9.33** Mitigation measures to lessen and compensate for impacts can take many forms, depending on the nature of the proposed development, but might for example include: road and junction improvements; traffic management; limits on parking space provision; building layout and design restrictions; installation of suitably designed ventilation; implementation of workplace travel plans and car sharing schemes; provision of improved facilities for cyclists, walkers and public transport users; tree planting; and controlling air quality during the construction phase.

**9.34** In considering applications where air quality is likely to be an issue, particular account will be taken of advice received from the relevant health and environmental protection regulatory authorities.

**9.35** There are numerous other policies throughout this Plan which directly and indirectly address the need to reduce and prevent air pollution, including Policy GD1 'General Development Considerations' and a range of policies covering power generation, mineral workings and waste management facilities. Policy SP1 'Spatial Strategy' is especially important in helping to reduce the level of emissions from motor vehicles, by promoting proximity of new development to public transport and local facilities. This is supported by Policy SP6 'Reducing Dependence on the Car' and several travel and transport policies geared to minimising traffic generation and promoting sustainable modes of travel (see Section 8).

### **Policy NR 3**

#### **Air quality**

Development that would have a significantly adverse effect on air quality, taking into account the cumulative impact of other proposed or existing sources of air pollution in the area, will not be permitted when it would breach key

targets identified in association with the emergent Air Quality Strategy, or when it is considered that it would cause harm to the health, safety and amenity of users of the site or the surrounding area or put at risk the quality of the environment.

Such developments may be permitted, however, where the potential pollution problems can be overcome or contained to within acceptable limits by agreement on suitable mitigating measures, to the satisfaction of the Minister for Planning and Environment. Any required mitigation measures and monitoring requirements before, during and following development will be secured by means of planning conditions or planning obligations, as appropriate.

The Minister for Planning and Environment will require the submission of a full and detailed 'Air Quality Assessment' with applications, in order to assess the extent of effects on air quality where it is considered appropriate, including:

1. developments which significantly increase emissions from road traffic;
2. industrial activities, quarrying, landfill and other waste management operations which involve potential air pollutants;
3. energy generation projects;
4. major developments (>10 homes / 1,000m<sup>2</sup> floorspace) within or near to and likely to have an adverse effect on, any 'Air Quality Management Areas' which may be identified in response to on-going air quality monitoring, improved monitoring and modelling techniques and/or changing air quality standards;
5. Proposals to locate air pollution-sensitive development close to existing sources of air pollution and/or in areas with existing unacceptably poor air quality.

Where a proposed development requires an Environmental Impact Assessment, the Minister for Planning and Environment will consult with the relevant health and environmental protection regulatory authorities to determine whether the assessment should include consideration of emissions to air and the likely impacts on health and the environment.

## Energy resources

**9.36** Jersey's energy demands are met to a large extent through the use of electricity, although oil and gas are also important contributors. Much of the Island's electricity supply comes from France via two submarine interconnectors to La Collette power station: a third is also planned. Imported electricity is over 90% free from fossil fuel emissions both at the points of production and use.

However, there are other environmental implications associated with the French link, notably France's high reliance on nuclear power and the related issue of nuclear waste disposal.

**9.37** As a consequence of these challenges, 'Fuel for Thought?', the Energy Policy Green Paper <sup>(2)</sup> was published and consulted upon in 2007/2008 and the White Paper is currently being prepared for States debate. The Green Paper identifies a number of features and challenges for Jersey in respect of the Island's energy use, as follows:

- a high import dependency, particularly of hydrocarbon fuels, making Jersey a 'price-taker' and thus vulnerable to global price increases,
- a tendency to import energy in the form in which it is used,
- importation of electricity from the European grid via sub-sea cables,
- patterns of energy use dominated by the built environment and transport sector,
- an energy market with low levels of competition,
- relatively inelastic behaviour in the face of energy price rises and a low level of awareness and adoption of measures to reduce energy use and use energy more efficiently,
- a concentration of strategic infrastructure in the 'East of Albert', La Collette area e.g. the fuel farm and tanker berthing,
- international commitment through the Kyoto Protocol to reduce carbon emissions.

**9.38** This places Jersey in a potentially vulnerable position and the proposed goal of Jersey's draft energy policy is to achieve 'Secure, Affordable, Sustainable Energy', recognising that energy is essential to our quality of life, our economy and social equity. The Green Paper put forward a number of options that describe the fiscal, legislative and policy measures to achieve this goal, which fall into the following categories:

1. reducing energy use - doing more with less;
2. adopting sustainable energy solutions - at both the local and utility scale;
3. ensuring a secure and resilient energy supply;
4. preparing for the future.

**9.39** The planning system and the policy framework provided by the Island Plan have an important role in ensuring that the goals of the emergent White Paper can be achieved, as follows:

#### **Reducing energy use - doing more with less**

- **In the built environment:** the Island's consumption of energy and carbon dioxide emissions can be reduced by improving the energy efficiency of the

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2 ['Fuel for thought?' Energy Policy Green Paper \(September 2007\)](#)

existing built environment and the setting and delivery of the highest standards for all new buildings. As well, the eventual occupiers of these buildings benefit from reduced running costs and improved levels of comfort with the associated social benefits. All developments should also incorporate sustainable design features to reduce the consumption of natural resources and help to deliver targets for reducing carbon emissions. This is best tackled by Building Byelaws, but can be extended and encouraged through support for high quality environmental design which promotes energy efficiency through the planning system.

- **In transportation:** careful land-use planning and the location of development to reduce the need for travel. This will bring about a reduction in energy use and carbon dioxide emissions as well as congestion so improving air quality and road safety, and is integral to Spatial Strategy; Reduce, Manage, Invest and SP 'Reducing Dependence on the Car'.

#### Adopting sustainable energy solutions:

- **At the local level:** householders and small businesses have the potential to meet a significant portion of their energy needs through 'micro generation' using renewable energy heating systems like geothermal, biomass and solar or combined heat and power plants. To encourage their use, the installation of some micro-generation technologies have, within certain parameters, been exempted from the need for planning permission<sup>(3)</sup>. Where permission is required, such development would fall to be considered under General Development Considerations.
- **At the 'district' scale:** by decentralising energy supplies through the use of on-site and 'district' scale renewable technologies, carbon dioxide emissions can be reduced and overall security of supply increased through the increased diversity of generation.
- **At the 'utility' scale:** the Energy Policy Green Paper<sup>(4)</sup> identified the potential for the exploitation of renewable energy, at a large enough scale to displace fossil fuel imports in the long-term. The Island has good on and off-shore wind energy and within its territorial waters there is the potential to exploit tidal stream technology.

#### Ensuring a secure and resilient energy supply

- **A particular challenge is maintaining the security and resilience of our energy supplies in order to meet our energy demands:** the Island currently imports all liquid hydrocarbons by sea-fed supply chains run by the respective parent company; tankers berth and discharge their products at the adjacent

3 see [Planning and Building \(General Development\)\(Jersey\) Order, 2008](#), where Class H relates to photo voltaic or water-heating solar panels; Class M relates to geothermal heating systems; and Class N relates to wind turbines, all within the curtilage of a dwelling house

4 ['Fuel for thought?' Energy Policy Green Paper \(September 2007\)](#)

harbour. Kerosene, liquid petroleum gas, petrol, diesel and jet fuel are stored at the fuel farm at La Collette before being distributed to end-use consumers or intermediaries. The size of the fuel farm limits the stocking capacity of all the products which are held at volumes well below European mandatory limits. Work to review the future of St Helier Harbour and La Collette in the context of Proposal 12 'St Helier Regeneration Zones' may provide the opportunity to reassess the location of the fuel farm and the necessary future appropriate storage capacity for hydrocarbon fuels.

### Preparing for the future

- The planning system can also play a vital role in helping to ensure that new developments through their location and design are resilient to the consequences of climate change including flooding, coastal erosion and higher global temperatures.

## Utility scale renewable energy

**9.40** If Jersey is to achieve carbon reduction targets in line with EU targets (80% reduction by 2050 based on 1990 levels) it requires a significant decarbonisation of the economy beyond simple energy reduction measures. There are opportunities to move away from imported hydrocarbon fuels which are finite in nature and constitute the bulk of the Island's carbon emissions. Encouragement of the development of renewable energy schemes must be weighed carefully against local environmental protection policies and the wider contribution that the proposal would make to reducing greenhouse gas emissions.

**9.41** Generating renewable energy at the utility scale is entirely possible, although realising this requires a long-term vision and framework to encourage investment in the necessary infrastructure. To be successful, this must be supported by an appropriately sized regulatory and planning framework to give commercial investors confidence to enter the marketplace.

## Off-shore renewable energy

**9.42** Despite all the obvious advantages of renewable energy, it is also important to ensure that the environment and the quality of life of Jersey citizens are not compromised. The [Integrated Coastal Zone Management Strategy - 'Making the most of Jersey's Coast'](#), was adopted by the States of Jersey in October 2008. It opens by reflecting that 'the coast and seas around Jersey are an integral part of Island life. It is therefore essential that the coast is protected and managed so that it can continue to be enjoyed by generations to come'. The very need for ICZM arises from the need to balance the temptation to exploit the resources that our coast and seas provide with the responsibility to protect an outstanding area containing internationally important ecosystems.

**9.43** Jersey's planning law extends to the limits of our territorial waters and this means that there is no invisible barrier between land and sea in relation to the control of development. Off-shore development proposals for renewable energy would, therefore, need to be specifically considered within the context of the ICZM and the planning policy regime for the Policy NE 5 'Marine Zone' and the Policy NE 6 'Coastal National Park', should it affect offshore reefs, as well as Policy HE 5 'Preservation of archaeological resources' and Policy NE 1 'Conservation and enhancement of biological diversity'.

**9.44** Environmental Impact Assessment provides the mechanism to assess the full range of impacts of a development proposal on a particular site and is a critical guide for decision-makers in respect of site-specific applications. There is a statutory requirement to produce an EIA for projects arising from the energy industry (see Schedule 1 of the [Planning and Building \(Environmental Impact\) \(Jersey\) Order 2006](#)), to include all associated infrastructure requirements.

#### Tidal stream and wind installations

**9.45** In December 2008 a report from the Tidal Power Steering Group <sup>(5)</sup> to the Minister for Planning and Environment concluded that tidal power harvested from Jersey's territorial waters is able 'to make a significant and increasing contribution to the energy requirements and security of the Island for the rest of this century'. It was recommended that the possibility should be actively pursued by an appropriately qualified and mandated group with a remit to :

- investigate funding options around the environmental and technical investigations;
- investigate the legislative and commercial framework necessary to attract resource developers;
- negotiate with our neighbouring jurisdictions to explore potential collaborations both in harnessing the resource and selling to potential markets.

**9.46** Whilst the report concentrated on the opportunities surrounding tidal stream technologies which is an emerging area, the off-shore wind resource is also good and the legislative and commercial frameworks described above can be applied equally to the development of wind turbine technology.

**9.47** Tidal stream technology is a nascent technology and currently there are no utility scale installations, although this is rapidly progressing with Channel Island waters offering attractive testing grounds for resource developers. Whilst it is acknowledged that Jersey's waters do not have the same potential as the exceptional resource surrounding Alderney, it still offers significant potential, particularly if cross-Channel Island co-operation could be secured.

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5 ['Tidal power for Jersey - Options and opportunities'](#)

**9.48** Thus, it is recognised that a significant level of exploratory work (including the building of prototypes) may be required to establish the optimum locations and the long-term viability of renewable energy projects. Accordingly, development will be permitted only for exploratory proposals so that a proper assessment can be made of a particular site. This assessment of efficiency and appropriate monitoring to determine any impacts must be transparent and be demonstrated to the satisfaction of the Minister. This will allow an informed decision to be made should the developer wish to apply for a more permanent site.

## **Policy NR 4**

### **Exploratory, appraisal or prototype off-shore utility scale renewable energy proposals**

Exploratory, appraisal or prototype off-shore utility scale renewable energy proposals will be encouraged where they have :

1. produced an Environmental Impact Assessment in accordance with the Planning and Building (Environmental Impact) (Jersey) Order 2006 that demonstrates inter alia:
  - a. detailed engagement with all stake holders;
  - b. that there will not be an unacceptable impact on features of ecological, archaeological or historic importance, on hydrology or coastal processes, nor the marine, intertidal or coastal environment;
  - c. there will not be an unacceptable visual impact;
  - d. there will not be an unacceptable impact on the character of the immediate and wider landscape;
  - e. there will not be an unreasonable impact on neighbouring uses and the local environment by reason of noise, odour, pollution (to air, water or soil), visual intrusion or other amenity consideration during construction, operation and decommissioning; and
  - f. It will not prejudice the safe operation of shipping and / or Jersey Airport; and
  - g. there will not be any unacceptable impacts as a consequence of any associated infrastructure required to service the site.
2. included an appropriate monitoring programme and detailed restoration proposals which satisfies the requirements of the Minister for Planning and Environment.

The granting of an application for exploratory, appraisal or prototype proposals will be for a specific time period and without prejudice to any subsequent application to develop fully operational projects at that location.

**9.49** Given the acknowledged potential for the generation of renewable energy in Jersey waters, a policy framework for a permanent facility has been established in the eventuality that a proposal is put forward within the term of this Plan. This policy will also demonstrate that Jersey intends to move towards utility scale renewable energy generation in the medium to long-term.

## **Policy NR 5**

### **Off-shore utility scale renewable energy development**

Off-shore utility scale renewable energy developments will be encouraged where they have:

1. Produced an Environmental Impact Assessment in accordance with the Planning and Building (Environmental Impact) (Jersey) Order 2006 that demonstrates inter alia:
  - a. detailed engagement with all stake-holders;
  - b. that there will not be an unacceptable impact on features of ecological, archaeological or historic importance, on hydrology or coastal processes, nor the marine, intertidal or coastal environment;
  - c. there will not be an unacceptable visual impact;
  - d. there will not be an unacceptable impact on the character of the immediate and wider landscape;
  - e. there will not be an unreasonable impact on neighbouring uses and the local environment by reason of noise, odour, pollution (to air, water or soil), visual intrusion or other amenity consideration during construction, operation and decommissioning;
  - f. It will not prejudice the safe operation of shipping and / or Jersey Airport; and
  - g. there will not be any unacceptable impacts as a consequence of any associated infrastructure required to service the site, such as connection to shore base and grid connections.
2. demonstrated an appropriate monitoring programme specific to the design, scale and type; and
3. detailed, to the satisfaction of the Minister for Planning and Environment, acceptable restoration and maintenance proposals.

## On-shore renewable energy

### Wind installations

**9.50** A high level analysis <sup>(6)</sup> carried out to support the development of energy policy has shown the onshore wind resource to be good with particularly good opportunities in the north and west coast of the Island. However, in practice, realising this potential has many difficulties since the siting of utility scale <sup>(7)</sup> wind turbines capable of harnessing sufficient amount of energy to be economically viable must take into account a number of additional factors which include impacts upon aviation; visual amenity and landscape character; noise; ecology (e.g. impacts on surrounding habitats, birds and bats); radio communication; as well as feasibility issues (e.g. grid connectivity, access, terrain).

**9.51** It is considered that there are no suitable on-shore locations where the barriers to installation would not be insurmountable, (the most obvious of which is in relation to noise). Best practise is to locate installations no closer than 500m from a residential property <sup>(8)</sup> and it is not possible to site an economically feasible array of turbines anywhere on the Island that would be more than 500m from a residential property, much less in a location that would satisfy the other necessary criteria.

**9.52** Domestic scale micro-generation would either be exempt from planning permission <sup>(9)</sup> or would need to be considered under the terms of Policy GD 1 'General development considerations'.

### Other forms of on-shore renewable energy production

**9.53** There are currently significant technologies available for on-shore renewable energy production at the scale greater than domestic properties. Because these schemes are of benefit to more than just one property, it is likely that their scale, and thus potential impacts, will be considerably more significant than micro-generation projects. As such, they will require greater consideration and it is likely that planning applications will need to be supported by Environmental Impact Assessments. Examples include:

- District heating systems - i.e. systems for distributing heat generated in a centralised location for residential and commercial heating requirements.

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6 'Development of Energy Policy' (March 2007), AEA Energy and Environment - Report for the States of Jersey

7 Utility scale turbines typically capable of delivering 1-2 megawatts of power have a hub height of 60 - 80m high with rotor diameter of c. 80m

8 Noise Working Group UK Department for Trade and Industry now BERR The Department for Business Enterprise and Regulatory Reform (The Assessment and Rating of Noise from Wind Farms, ESTU-R-97

9 see Planning and Building (General Development)(Jersey) Order, 2008, where Class H relates to photo voltaic or water-heating solar panels; Class M relates to geothermal heating systems; and Class N relates to wind turbines, all within the curtilage of a dwellinghouse

Traditionally such systems are supported by combined heat and power plants (CHP) that burn fossil fuels to create both heat and electricity. Increasingly biomass, geothermal and solar schemes are used instead of fossil fuels to gain the benefit of a renewable energy primary energy source as well as the high efficiency that these installations provide.

- **Anaerobic Digestion** - a series of processes in which micro organisms break down biodegradable material in the absence of oxygen. Particularly relevant to Jersey is likely to be the treatment of livestock and agricultural wastes. The process produces a methane and carbon dioxide rich biogas suitable for energy production via the recovery of heat and power;

**9.54** Furthermore, this area is evolving rapidly and so more technologies are expected to become economically viable over the Plan period.

**9.55** Any proposals for on-shore renewable energy development will need to be considered within the policy framework of the Plan, and specifically Policy GD 1 'General development considerations' and other considerations relating to Policy SP 4 'Protecting the natural and historic environment'.

## Policy NR 6

### Proposals for on-shore renewable energy production

Proposals for on-shore renewable energy production will be encouraged where they have produced an Environmental Impact Assessment in accordance with the Planning and Building (Environmental Impact) (Jersey) Order 2006 that demonstrates inter alia:

1. detailed engagement with all stakeholders;
2. that there will not be an unacceptable impact on features of ecological, archaeological or historic importance;
3. there will not be an unacceptable visual impact;
4. there will not be an unacceptable impact on the character of the immediate and wider landscape;
5. there will not be an unreasonable impact on neighbouring uses and the local environment by reason of noise, odour, pollution (air, water and soil), visual intrusion or other amenity consideration both during construction, operation and decommissioning;
6. It will not affect the safe operation of shipping and / or Jersey Airport;
7. there will not be any unacceptable impacts as a consequence of any associated infrastructure required to service the site, such as grid connections; and
8. an appropriate monitoring programme specific to the design, scale and type; and,
9. acceptable restoration and maintenance proposals.

## Renewable energy in new developments

**9.56** Energy use in buildings is responsible for a large proportion of the fuel consumed in Jersey and the energy burnt in heating systems is responsible for a major part of the Island's carbon dioxide (CO<sub>2</sub>) emissions.

**9.57** The amount of energy used in buildings and the level of CO<sub>2</sub> produced is dependent on the building's energy efficiency, which is determined by its design, and on the appliances used in the building to provide heat, energy and other services. Consequently, as part of delivering sustainable development, and in response to the challenge of climate change and the goals of the emerging Energy Policy, the Minister wishes to encourage all new buildings to:

- be designed and constructed to high standards of energy efficiency; and
- incorporate suitable renewable energy technologies, where reasonably feasible.

**9.58** To this end, policies SP2 'Efficient Use of Resources' and GD1 'General Development Considerations', effectively require new developments to make the most efficient and effective use of energy and to make good use of opportunities for decentralised and renewable or low carbon energy. In preparing their proposals to maximise energy efficiency, designers and developers can give consideration to a range of measures and techniques, including: passive solar design; properly designed natural daylighting systems; the inclusion of thermal mass; compact building forms; good levels of insulation; and the use of energy efficiency heating systems and appliances.

**9.59** Having achieved energy efficiencies, designers and developers need to consider the opportunities for using on-site low carbon and renewable energy technologies. The Minister expects all major new developments (>10 homes / 1,000m<sup>2</sup> floorspace), whether new build or conversion, to use on-site low carbon or renewable energy to cut CO<sub>2</sub> emissions by at least 10% of predicted levels, wherever practicable. This 10% carbon offset must be on top of, rather than a contribution to, meeting the requirements of the Building Byelaws for energy efficiency.

**9.60** It is considered that a 10% threshold for the carbon offset policy sets a reasonable standard for achievement and this reflects good practice in the UK. Merton Council was the first to develop such a policy in 2003, which subsequently became known as the 'Merton Rule'. Since then, many UK councils have implemented the rule in various guises and it has become part of UK national planning guidance. It is recognised, however, that there may be circumstances where it would be appropriate to relax or waive the threshold. For example, where it is demonstrated by the applicant that the incorporation of renewable energy equipment would make the development unviable, or where adverse visual or amenity impacts would outweigh the benefits of the technology.

**9.61** In addition to helping to reduce local reliance on finite fossil fuel energy sources, reducing CO2 emissions and providing revenue benefits for subsequent users, the renewables requirement will also provide a greater incentive for developers to design and build more energy efficient buildings (i.e. to reduce the extent and cost of renewable technology required to meet the 10% CO2 emissions target).

**9.62** There is a range of renewable and low-carbon energy technology which might be used in new developments, including: solar photovoltaic panels (PV); small-scale wind power; combined heat, power and cooling; solar thermal water heating; ground source heating and cooling; air source heat pumps; biomass fuelled heating, cooling and electricity generating plant; and hydrogen fuel cells.

**9.63** In order to demonstrate the extent of the cut in energy demand and carbon emissions expected through the use of low carbon and renewable technology, applicants must provide evidence in the form of a 'Renewable Energy Statement' prepared by a suitably qualified professional. The Minister will publish supplementary guidance on renewable energy matters in due course.

## **Policy NR 7**

### **Renewable energy in new developments**

The Minister for Planning and Environment will encourage all developments to incorporate on-site low carbon or renewable energy technologies. However, all non-residential developments with a gross floorspace of 1,000 sqm or more and residential developments of ten or more units, whether new build or conversion, will be required to incorporate on-site low carbon or renewable energy production equipment to off-set predicted carbon emissions by at least 10%, except where:

1. it is demonstrated by the applicant, to the satisfaction of the Minister for Planning and Environment, that such provision would make the development unviable;
2. it would have an adverse visual or amenity impact that would outweigh the benefits of the technology; or
3. at least an equivalent impact on carbon emissions can be met by alternative means.

## Safety zones for hazardous installations

**9.64** Given the level of our reliance on hydrocarbons as a source of energy for heating and transport, amongst other uses, there is a need for fuel storage facilities within the Island. These essential installations include the fuel farm at La Collette, where kerosene, liquid petroleum gas, petrol, diesel and jet fuel are stored before being distributed to end-use consumers or intermediaries; Jersey Airport fuel store; Les Ruettes LPG store in St John; and the gas holder at Tunnel Street (which holds reserve stock). The nature of these facilities poses a particular risk and, as a consequence, it is important that development in the vicinity of them does not exacerbate that risk or expose the users of any adjacent development to unnecessarily high levels of risk. Whilst not a fuel storage facility, the storage of explosives at Crabbé falls to be similarly considered.

**9.65** Because of health and safety considerations, these installations effectively represent a constraint on development in the vicinity. The extent of that constraint is dependent upon the nature of the storage and the sensitivity of the development proposal. As a result of the Buncefield event in the UK, further work<sup>(10)</sup> has been undertaken to consider all the major hazard risks associated with all the major hazard installations at La Collette which has led to a revision of the safety zones at La Collette as shown on the Proposals Map. Proposals for new development at La Collette will be considered within the context of this work. They will be assessed, in consultation with the Health and Safety at Work Inspectorate, the States of Jersey Fire and Rescue Service, the La Collette Hazard Review Group and other La Collette users, as appropriate, against the current Health and Safety Executive's Planning Advice for Developments near Hazardous Installations (PADHI). Similar processes will be employed for developments within the vicinity of other hazardous installations in the Island, which will include consultations with appropriate regulators.

**9.66** Work will be undertaken to review existing safety zones and to define new zones, where this work has yet to be undertaken, as appropriate.

**9.67** Health and safety considerations will be the primary material consideration in the assessment of development proposals in the vicinity of these installations and developments which would expose people to unnecessarily high levels of risk will not be permitted.

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10 [Land Use Planning Risk: Assessment for La Collette Fuel Depot and Jersey Gas Facility \(2007\) Atkins](#)

## Proposal 27

### Review of Safety Zones for Hazardous Installations

**9.68** The Minister for Planning and Environment will seek to ensure that work is undertaken to review existing safety zones and to define new zones, where this work has yet to be undertaken, as appropriate, during the Plan period.

## Policy NR 8

### Safety Zones for Hazardous Installations

In considering development proposals within the following safety zones associated with hazardous installations, as designated on the Proposals Map, the Minister for Planning and Environment will consult with those regulators identified in brackets below and other relevant stakeholders, to determine the appropriateness of the development:

1. La Collette Fuel Farm (The States of Jersey Fire and Rescue Service);
2. La Collette LPG Storage Site (Health and Safety at Work Inspectorate);
3. Les Ruettes LPG Storage Site, St John (Health and Safety at Work Inspectorate);
4. Airport Fuel Storage Site (The States of Jersey Fire and Rescue Service);
5. Crabbé Explosive Storage Site, St Mary (The Home Affairs Department);  
and
6. Gas Holder, Tunnel Street (Health and Safety at Work Inspectorate).

Developments within the vicinity of the hazardous installations at La Collette will also be the subject of consultations with the La Collette Hazard Review Group.

In all cases, the health and safety of the public and the extent to which any risks can be managed or mitigated will be the overriding considerations. Developments that would conflict with the reasonable requirements of health and safety will not be permitted.

## Utilities infrastructure

**9.69** Utility companies in the Island provide services to supply water, electricity, gas and telecommunications to homes and businesses. Each of the utility companies will have different land-use requirements during the Plan period. These requirements may be part of an ongoing programme of development by the company or a result of changes in technology that may occur over the next ten years.

**9.70** There are no known specific requirements for the development of utility infrastructure that cannot be met within existing service infrastructure over the Plan period. Any works that do occur should, where possible, be limited to the Built-up Area and be within the grounds of existing facilities. Where new facilities are required, particularly where they have a coastal or countryside location, the Minister will need to be satisfied that there is sufficient operational justification for development in such a location.

**9.71** Any such development should seek to minimise its impact upon the environment, and specifically the Island's biodiversity and heritage assets, as well as seeking to minimise any impacts upon neighbouring uses of land, in accord with Policy GD 1 'General development considerations'.

**9.72** Should any major infrastructure proposals emerge during the Plan period these may need to be considered within the context of an Environmental Impact Assessment, which will be prescribed by [Planning and Building \(Environmental Impact\) \(Jersey\) Order 2006](#).

### Policy NR 9

#### Utilities infrastructure facilities

Proposals for the development of new or additional utility infrastructure facilities or for the extension and/or alteration of existing utility infrastructure facilities will be permitted provided that the proposal is required to meet a **proven need** and is:

1. within the grounds of an existing utility infrastructure facility; or
2. within the Built-up Area;

The alternative development of utility infrastructure facilities will only be permitted where it can be demonstrated that they are no longer required for utility infrastructure purposes.

## Masts and antennae

### Telecommunications masts

**9.73** The liberalisation of the telecommunications market and the growth in the development and use of mobile technology has been accompanied by a plethora of development associated with the installation of the necessary infrastructure to support mobile telecommunications.

**9.74** In planning terms, the key issues relate to the visual impact of telecommunications masts and antennae, particularly where they are located in sensitive coastal or countryside locations, or where they affect protected sites or buildings. Health concerns have also been raised about the implications of people living in close proximity to telecommunications equipment<sup>(11)</sup>.

**9.75** To reduce the visual implications of telecommunications equipment, the sharing of masts will be encouraged as will their incorporation into existing structures and buildings. The size and location of telecommunications masts will be strictly controlled to reduce visual impact and avoid serious adverse effects on the amenities of local residents in accord with Policy GD 1 'General development considerations'.

### Policy NR 10

#### Telecommunications masts

Telecommunications development will only be permitted where development is in accord with Policy GD 1 'General development considerations'.

The installation of new masts and / or antennae will only be permitted where it can be demonstrated, to the satisfaction of the Minister for Planning and Environment, that all practicable possibilities of sharing facilities have been fully explored and found to be unfeasible or unacceptable.

### Satellite TV receiving or communication antennae

**9.76** Satellite dishes attached to buildings and structures can be visually intrusive. Applicants will be encouraged to install satellite dishes where they will have the least visual impact. Locations that should be avoided include in front of

11 The Health, Social Security and Housing Scrutiny Sub-Panel and the Health and Social Services, Economic Development and Environment Departments have worked together to achieve an improved precautionary approach to mobile phone masts: see [Response to report into the perceived health effects of mobile phone masts](#)

the building line of the property, above the roof ridge and other particularly conspicuous locations. The implications for heritage assets, townscape and character will be material considerations.

**9.77** Supplementary planning guidance, Television, Radio and Other Antennae<sup>(12)</sup> provides detailed guidance on the need for permission and submitting applications.

## **Policy NR 11**

### **Satellite TV receiving or communication antennae**

Applications for the installation of satellite dishes will be judged on their merits, having particular regard to:

1. the nature of the building and its surroundings;
2. the type, size and colour of the equipment in relation to its background; and
3. whether the building is a Listed building or within a Conservation Area.

In all cases, the Minister will seek to minimise any adverse impact. Applications which cause significant harm will be refused.

Where there are proposals for larger housing developments and buildings in multiple occupancy, developers will be expected to provide carefully sited communal satellite dishes, to avoid the unnecessary visual clutter associated with a proliferation of individual antennae and reduce the overall impact on the environment.

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12 Television, Radio and Other Antennae (July 2009)[Television, Radio and Other Antennae \(July 2009\)](#)

