CITY DEVELOPMENT PLAN
Background Paper 5

Resource Management

Background Paper 5 - Resource Management

Executive Summary

0.1 The Scottish Government identifies climate change as being one of the most serious threats facing the world. As a result, Scottish Government policy aims to promote the use of renewable sources of energy and heat and to reduce energy consumption. In addition, Scotland's Zero Waste Plan sets out the Scottish Government's vision for a zero waste society, envisaging 70 per cent of all waste being recycled, and a maximum 5 per cent sent to landfill, both by 2025.

0.2 The Climate Change (Scotland) Act 2009 creates a statutory framework for greenhouse gas emissions reductions in Scotland, setting a target of an 80% reduction in emissions by 2050, with an interim target of 42% by 2020. The Act requires all public bodies to act in the way best calculated to contribute to the delivery of these emissions targets, and in a way considered most sustainable. Section 72 of the Act requires Councils to include policies in their LDPs which require "all developments in the local development plan area to be designed so as to ensure that all new buildings avoid a specified and rising proportion of the projected greenhouse gas emissions from their use … through the installation and operation of low and zero-carbon generating technologies."

0.3 In this context, policy CDP5:

- supports a wide range of technologies that would generate energy and/or heat from renewable sources, and distribute it efficiently, including further investigation of potential sites for a limited number of wind turbines;
- supports the development of develop Combined Heat and Power (CHP) systems based on low carbon and renewable sources, or that facilitate the more efficient use of heat from existing energy generation or other processes;
- safeguards the Waste Transfer Stations/recycling centres at Queenslie, Dawsholm, Polmadie and Shieldhall, the recycling and residual waste facility at Blochairn and land for the new residual waste treatment facilities at Polmadie and Bogmoor Road;
- requires new development to include appropriate and well designed provision for waste storage, recycling and collection and also be designed to reduce the need for energy from the outset;
- requires that new buildings include low and zero-carbon generating technologies (LZCGT) to offset a proportion of emissions arising from their use; and
- sets out the basis for assessment of applications for extraction of on-shore oil and gas, should licence areas for their extraction be extended into the City.

0.4 The policy will be supported by Supplementary Guidance which, amongst other things, will:

- provide further guidance on different types of renewable energy proposals (and for extraction of on-shore oil and gas, should this be necessary) and the factors which will be taken into account in determining their acceptability;
- provide further guidance for proposals to develop Combined Heat and Power systems (including the use of heat mapping) and the prospective role they might play as a LZCGTs; and
- provide further guidance on different types of LZCGT for use in new development.

Background Paper 5
Resource Management

1.0 Introduction

1.1 This paper provides background information in support of City Development Plan policy CDP 5: Resource Management, examining, in greater detail, the contextual basis for the Policy.

2.0 Background

2.1 The Scottish Government identifies climate change as being one of the most serious threats facing the world. As a result, by 2020, Government policy is to:

- generate the equivalent of 100% of the country's gross annual electricity consumption from renewable sources;
- reduce Scottish final energy consumption by 12%;
- source 11% of heat demand from renewable sources; and
- generate 500MW of energy from community and locally owned renewable energy.

2.2 The Planning system has a key role to play in helping deliver these targets through its influence on the location, layout and design of new development and support for the development of renewable energy generation opportunities. Meeting these aspirations will help address the causes of climate change and meet other aspirations, including reducing reliance on dwindling fossil fuel reserves, addressing fuel poverty and helping. Energy is needed to keep Scotland's businesses, hospitals and schools running; heat our homes; and transport goods and people – it is important that new developments minimise their energy requirements to reduce costs and help ensure certainty of supply in the future.

2.3 Policy CDP 5 also addresses waste. The Scottish Government recognises that reducing waste will make a positive contribution to climate change and renewable energy targets and will also support sustainable economic as businesses become more resource efficient, costs are reduced and a competitive advantage is gained. The Planning system has a key role to play in meeting waste objectives, by identifying, and safeguarding, the additional locations for waste management which will be required to help deliver a reduced waste future, and by ensuring new development is designed to provide for waste separation and collection.

3.0 National and International Policy Context

The United Nations Framework Convention on Climate Change (FCCC)

3.1 The FCCC is an international environmental treaty with the objective of stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system. The treaty itself sets no binding limits on greenhouse gas emissions, but provides a framework for negotiating specific international protocols that may do so. The 1997 Kyoto Protocol established legally binding obligations for developed countries to reduce their greenhouse gas emissions and the 2010 Cancun agreements state that future global warming should be limited to below 2.0^{c} of pre-industrial levels.

Europe 2020 Growth Strategy

3.2 The Growth Strategy includes 5 headline targets which have been agreed for the whole of the EU. Target 3 relates to climate change and energy sustainability and specifies:

- greenhouse gas emissions 20% (30%, if conditions are right*) lower than 1990;
- 20% of energy from renewables; and
- a 20% increase in energy efficiency

* the EU has offered to increase its emissions reduction to 30% by 2020 if other major emitting countries commit to undertake their fair share of a global emissions reduction effort.

EU Waste Framework Directive

3.3 The EU Waste Framework Directive provides the legislative framework for the collection, transport, recovery and disposal of waste to protect the environment and human health through the prevention of the harmful effects of waste generation and waste management. The directive requires all member states to take the necessary measures to ensure waste is recovered or disposed of without endangering human health or causing harm to the environment

3.4 The directive also requires member states to take appropriate measures to encourage firstly, the prevention or reduction of waste production and its harmfulness and secondly the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials, or the use of waste as a source of energy.

Climate Change (Scotland) Act 2009

3.5 The Climate Change (Scotland) Act 2009 received Royal Assent in 2009 and creates a statutory framework for greenhouse gas emissions reductions in Scotland. It sets a target of an 80% reduction in emissions, attributable to human activity, by 2050, with an interim target of 42% by 2020. Part 4 of the Act requires all public bodies to act in the way best calculated to contribute to the delivery of these emissions targets, and in a way considered most sustainable.

3.6 Section 72 of the Act amends the principal Planning Act by inserting a new section 3F on greenhouse gas emissions policies. This section requires the Council to include policies in the LDP which require "all developments in the local development plan area to be designed so as to ensure that all new buildings avoid a specified and rising proportion of the projected greenhouse gas emissions from their use, calculated on the basis of the approved design and plans for the specific development, through the installation and operation of low and zero-carbon generating technologies."

3.7 Part 5 of the Act relates to waste reduction and recycling. It includes provisions for the Government to regulate to require the production of waste prevention and management plans, and to comply with them – e.g. it could be that developer may have to produce plans to reduce waste generated by a building operation

Renewable Heat Action Plan for Scotland

3.8 The Scottish Government has set a target of 11% of the heat consumed in 2020 to come from renewable sources. The Renewable Heat Action Plan indicates that this will require a strong focus on the domestic sector, and will require retrofitting of micro-renewables and the development of district heating. The plan identifies a number of areas as having a key role in attaining the renewable heat target. Planning system will play a part in a number of these, including:

- the significant potential of woodfuel, including Combined Heat and Power (CHP) systems;
- thermal treatment of waste, a sustainable means of waste treatment and energy generation (albeit subject to the waste hierarchy;
- district heating, both heat only and combined heat and power, with a medium-longer term goal of switching to renewable heat for large scale district heating schemes in urban areas.

Renewables Action Plan (RAP)

3.9 The RAP underlined the Scottish Government's commitment to deliver 20% of total Scottish energy use from renewables sources by 2020, including a specific target of 50% of electricity demand. Its objectives include reversing the perception that the planning system is a barrier to the deployment of renewable technologies and investment.

2020 Routemap for Renewable Energy in Scotland - renewable heat update

3.10 The Routemap for Renewable Energy in Scotland 2011 updates and extends the Scottish Renewables Action Plan 2009. It set new targets of at least 30% overall energy demand from renewables and 100% electricity demand equivalent from renewables by 2020, replacing those in the RAP. It identifies that delivering fit for purpose development plans and supplementary guidance for renewables, within suitable time frames, is expected to be the most significant planning 'challenge', in generating greater numbers of renewables schemes. It goes on to state that "it is likely that improving the 'front end' of planning will bring forward applications at the development management stage that are less contentious and have greater levels of support."

Conserve and Save, Energy Efficient Action Plan (EEAP) for Scotland

3.11 The Scottish Government states that the EEAP sets a framework for energy efficiency and microgeneration that furthers the climate change, economic and social agendas. It states support for developments across the built environment which strengthen the impact of energy efficiency, including:

- proactively developing district heating as a discrete policy area; and
- ensuring that planning policy takes the potential contribution of microgeneration into account

Scotland's Zero Waste Plan

3.12 Scotland's Zero Waste Plan sets out the Scottish Government's vision for a zero waste society, where:

- all waste is seen as a resource;
- waste is minimised;
- valuable resources are not disposed of in landfills; and
- most waste is sorted, leaving only limited amounts to be treated.

3.13 The Plan includes two targets that apply to all waste: an overall recycling and composting level of 70%, and maximum 5 per cent sent to landfill, both by 2025, and establishes a waste hierarchy, based on the principle set out in the EU Waste Framework Directive, and which will guide the Government's overall approach to managing Scotland's waste. The hierarchy identifies the prevention of waste as the highest priority, followed by reuse, recycling, recovery of other value (e.g., energy), with disposal as the least desirable option.

3.14 The Plan states that energy from waste has an important role to play in the hierarchy and could contribute to 31% of Scotland's renewable heat target and 4.3% of the renewable electricity target. It goes on to say that, for energy from waste to be truly sustainable, it should only be used for resource streams which cannot practicably offer greater environmental and economic benefits through reuse or recycling

National Planning Framework 2

3.15 National Planning Framework 2 (NPF2) highlights that planning policies can make an important contribution to meeting emission reduction targets. It indicates that development plans should include policies which contribute to the mitigation of climate change, recognising that better energy efficiency in buildings and more dispersed patterns of power and heat generation have key roles to play in creating a more sustainable built environment. It recognises that modifying the existing built environment to reduce emissions will be a challenge, but that in some areas it will be possible to harness energy from waste or the heat produced by power stations or industry to develop local heat networks.

3.16 NPF2 also expresses support for the realisation of Scotland's renewable energy potential and the generation of power and heat from clean, low carbon sources. It indicates that the Government is encouraging a mix of renewable energy technologies and that the aim of

national planning policy is to develop Scotland's renewable energy potential whilst safeguarding the environment and communities.

Scottish Planning Policy

Energy

3.17 Scottish Planning Policy (SPP) indicates that the planning system has an important role in supporting the achievement of sustainable development through its influence on the location, layout and design of new development. It indicates that, amongst other things, decision making in the planning system should:

- contribute to the reduction of greenhouse gas emissions in line with the Climate Change Act targets;
- contribute to reducing energy consumption and to the development of renewable energy generation opportunities:
- support the achievement of Zero Waste objectives, including the provision of the required waste management installations.

3.18 SPP further states that development plans should require the siting, design and layout of all new development to limit likely greenhouse gas emissions, particularly by limiting resource and energy requirements. The design of new development should address the causes of climate change by minimising carbon and other greenhouse gas emissions. New development should be planned to make use of opportunities for decentralised and local renewable or low carbon sources of heat and power wherever possible. The use of energy efficient, microgenerating and decentralised renewable energy systems will be components in the move towards reducing emissions.

3.19 The SPP provides explicit support for renewable energy technologies, stating that planning authorities should support the development of a diverse range of renewable energy technologies. Development plans should support all scales of development associated with the generation of energy and heat from renewable sources, ensuring that an area's renewable energy potential is realised and optimised in a way that takes account of relevant economic, social, environmental and transport issues and maximises benefits. Development plans should support the wider application of medium and smaller scale renewable technologies such as decentralised energy supply systems, community and household projects. Development plans should also encourage microgeneration projects including those associated with or fitted to existing buildings".

Waste

3.20 SPP indicates that the Scottish Government has adopted Zero Waste as a goal which means, amongst other things, eliminating the unnecessary use of raw materials, sustainable design, resource efficiency and waste prevention, reusing products wherever possible, and recovering value from products when they reach the end of their lives either through recycling, composting or energy recovery, in accordance with the waste hierarchy. This will require a significant increase in waste management infrastructure. It identifies the planning system as having a crucial role in ensuring that installations are delivered in time to allow waste management targets to be met. Residential, commercial and industrial properties should be designed to provide for waste separation and collection.

3.21 Planning for waste management infrastructure to meet all waste needs within each local authority area is required and a significant increase in the number, range and type of waste management installation is needed to manage municipal, commercial and industrial waste. Composting facilities, transfer stations, materials recycling facilities, and anaerobic digestion, mechanical, biological and thermal treatment plants are the main types of installation that are required. All development plans must identify appropriate locations for required waste

management facilities, where possible allocating specific sites, and provide a policy framework which facilitates the development of these facilities.

3.22 When identifying sites for modern waste management infrastructure, requirements are similar to other industrial processes. Locations which are appropriate for industrial or storage and distribution uses are therefore also appropriate for many waste management installations. In keeping with the proximity principle, towns and cities will often be the best locations for new waste transfer, separation and handling installations. Locations for new installations, for community composting and bring facilities should be identified in development plans or supplementary guidance. Existing waste handling installations should be safeguarded in development plans and allocations on adjacent sites should not compromise waste handling operations. When locations for thermal treatment plants are being considered, the sensitivity of surrounding uses should be taken into account. Thermal treatment technology is more beneficial if it delivers both heat and power.

On-shore Oil and Gas

3.23 The SPP also deals with on-shore oil and gas extraction, indicating that secure energy supplies are an important objective of the Scottish Government. It states that, whilst there is a clear need for a reduction in emissions associated with the use of fossil fuels, oil and gas are expected to have a role in achieving diverse and sustainable supplies of energy and that there is potential for on-shore oil and gas extraction in some areas. The aim is to maximise the potential of Scotland's oil and gas reserves in an environmentally acceptable manner.

3.24 On-shore oil and gas extraction is licensed by the UK Government through Petroleum Exploration and Development Licences (PEDL). Licences have been granted for several areas in central Scotland. The methods of on-shore oil and gas extraction covered by this policy are:

- conventional on-shore oil and gas development – extraction of petroleum or hydrocarbon oils and gases by drilling and pumping,
- coal bed methane – extraction by drilling into un-mined coal seams to release methane,
- capture of methane that has accumulated in coal mine workings, and
- gas derived from shale reservoirs.

3.25 Development plans for areas covered by PEDL licences should identify the factors that will be taken into account when deciding planning applications for wellheads and transmission infrastructure. Relevant factors may include disturbance and disruption from noise, potential pollution of land, air and water, impact on communities and the economy, cumulative impact, impact on the natural heritage and historic environment, landscape and visual impact and transport impacts. Where PEDL licences extend across local authority boundaries, planning authorities should work together to ensure a consistent approach to on-shore oil and gas extraction, including the consideration of cumulative effects.

PAN 63: Waste Management Planning

3.26 PAN 63 was published in 2002 and predates the Zero Waste Plan. It states that development plans (whether under the present system of structure and local plans or a revised system following the review of strategic planning) will need to provide the context for appropriate land use decisions for waste management facilities. Planning authorities should aim to identify sites in plans to provide a degree of certainty for the community and for the waste management industry.

On-line Renewables Advice

3.27 The Scottish Government has produced a suite of online planning renewables advice with the intention that it will be regularly updated to reflect best practice. These advice sheets support the policy position set out in SPP and provide advice to local authorities, developers and others regarding renewable technologies and how they can be employed in new development to help

meet the Government's targets for electricity, energy and heat. Specific advice sheets have been produced on:

- on-shore wind turbines
- hydro schemes
- woody biomass
- landfill gas
- energy from waste
- anaerobic digestion
- deep geothermal
- large photovoltaic arrays
- energy storage; and
- microgeneration

Zero Waste Plan Annex - B

3.28 Annex B recognises the crucial role which the planning system has in delivering waste management facilities to ensure the objectives and targets of the Zero Waste Plan are met. It states that moving to zero waste means more facilities will be required to collect, sort, reuse, recycle and process waste and that this will provide opportunities to harness renewable sources of energy. Annex B set out the links between the Zero Waste Plan objectives, NPF2, SPP, PAN 63 and provides information on roles and responsibilities.

4.0 Strategic Context

Glasgow and the Clyde Valley Strategic Development Plan (SDP)

Energy

4.1 The SDP sets out a Spatial Vision which, amongst other things, seeks:

- the renewal of the urban fabric, based upon passive carbon neutral and energy efficient building standards and
- as an adjunct to centralised generation, decentralised distributed power plants, based on alternative technologies, and exploiting opportunities to develop biomass, combined heat and power and other forms of renewable energy.

4.2 The SDP recognises the specific role which biomass woodfuel production (from the green belt, green network and from vacant and derelict and from underused land) and wind energy could have in delivering renewable energy and heat. It identifies broad areas of search for wind energy (which do not impinge on Glasgow) and a Forestry and Woodland Framework which illustrates areas of search around the fringes of the urban areas for potential biomass production. Biomass production in these areas could bring into production under-used land, whilst not sterilising its longer term development potential, and provide temporary greening as part of the Green Network.

4.3 The SDP identifies the introduction and application of emissions-efficient building standards as a fundamental step to reducing emissions within the urban area. At the same time, it identifies a need to address energy supply - its raw materials and sources, and its usage - rather than simply addressing emissions mitigation. It states that, if European, UK and Scottish Government targets are to be met by 2050, the current energy paradigm must be changed to incorporate a fundamental decarbonising of the energy grid. The SDP predicates its strategy on centralised energy generation companies moving to implement the substitution of non-carbon fuels but states that the real potential for a paradigm shift lies in developing the potential of decarbonised local supply. This would seek a local energy solution around a micro-generation basket of renewable energy, smart-grid technologies and integration with the current energy distribution networks, effectively reducing the National Grid to a secondary back-up supply.

4.4 SDP Strategy Support Measure 12 states "in order to achieve a paradigm shift in energy generation and consumption to meet a low or decarbonised future, a structured approach "Energy – Carbon Masterplanning" could be adopted in Local Development Plans when taking forward the core components of the Spatial Development Strategy model. This approach needs a partnership with power utility companies to develop tailored energy solutions for the communities concerned.

Waste

4.5 The SDP recognises waste as an economic resource which can support its vision, including as a source of energy production as well as supporting through Strategy Support Measure 13 the re-use of waste heat. Annex B of the Zero Waste Plan indicates that additional operational waste management infrastructure capacity is required and that meeting the SDP authorities will need to work together support the delivery of such facilities. It also indicates that there is adequate capacity within the SDP area to satisfy the ten-year rolling capacity for landfill existing and approved sites identified in Annex B.

4.6 SDP Strategy Support Measure 13 indicates that support for the provision of the appropriate infrastructure to meet Zero Waste Plan targets. Development proposals for waste management facilities will generally be acceptable in industrial and storage or distribution locations and at existing waste management facilities particularly where there exists the opportunity to maximise the potential for the reuse of waste heat through co-location with potential heat users.

5.0 Local Context

Glasgow City Council Strategic Plan 2012 – 2017

5.1 The Council's strategic plan was approved in spring 2013 and sets out the Council's priorities for the next five years. There are five priority areas where the Council aims to drive real progress and achievement in Glasgow over the next five years. These are to make sure Glasgow has:

- Economic growth; and is
- A world class city
- A sustainable city
- A city that looks after its vulnerable people
- A learning city.

5.2 The Resource Management policy will help deliver on the first 4 of these outcomes, in particular a sustainable city. The Strategic Plan indicates that the Council wishes to deliver a reduced carbon city. It states that the Council will set up an Energy Trust by 2014 to deliver new energy systems to the city, part of an Energy and Carbon Master Plan to be delivered by 2015. It commits the City to providing new and sustainable District Heating systems in Glasgow, with key projects linked to: the Commonwealth Games Village; Clyde Gateway: City Centre North; Cube Housing Association; Polmadie Waste Centre and the South Clyde energy centre. In relation to vulnerable people, it recognises that fuel Poverty remains a significant challenge in the City.

Glasgow City Plan 2 – The Local Plan

5.3 City Plan 2 seeks to lower the carbon footprint of the city's buildings through energy efficient design, increased on-site energy generation and use of low and/or zero carbon technologies. Through its design policies, it seeks to more environmentally sound and well-designed buildings across Glasgow. It also recognises that decentralised energy will have a significant role to play in encouraging the efficient delivery of energy to new and existing developments. It states that the Council is keen to encourage: developers to look beyond the boundary of their own sites in order to develop a shared energy resource with neighbouring developments; and

the set up of Energy Services Companies (ESCOs) as a means of delivering a stable local energy supply to developments.

5.4 City Plan 2 policy ENV 15 relates to the consideration of microgeneration on a small scale, for all development. This was based on the policy set out in Scottish Planning Policy 6: Renewable Energy and the accompanying PAN 45. The new section 3F on greenhouse gas emissions policies, introduced by section 72 of the Climate Change Act, provides a legislative basis for the requirement for Low and Zero Carbon Generating Technologies in new buildings.

5.5 City Plan 2 also addresses Waste issues, aiming to deliver an efficient, cost-effective and sustainable waste management service which promotes an overall reduction in waste by encouraging minimisation, re-use, recycling and energy recovery. It seeks to protect the continuing effectiveness of the existing waste management and recycling sites and sets out criteria against which applications for new waste management facilities should be assessed.

Sustainable Glasgow

5.6 Sustainable Glasgow is a city-wide partnership which aims to make Glasgow one of the most sustainable cities in Europe and brings together partners from higher education, the public and private sectors to work with local people, communities and businesses. It sets out an agenda for meeting the Climate Change Act's interim target for the reduction of greenhouse gas emissions in the City. This agenda includes:

- implementation of improved energy management systems and energy efficiency measures across all sectors;
- development of a district heating system for the city – starting in 5 identified zones;
- development of highly efficient natural gas/biogas fuelled Combined Heat and Power systems; and
- that these systems will also allow waste heat and other waste materials from industrial and commercial premises to be captured and used to provide low carbon energy for the city.

STEP-UP

5.7 Strategies Towards Energy Performance and Urban Planning (STEP-UP) is an energy and sustainable city planning programme that aims to provide cities with the tools and approaches necessary to enhance and integrate energy planning into their sustainable city planning. A partnership of twelve organisations, the programme is working together with local government, research and commercial partners in Glasgow, as well as Ghent; Gothenburg and Riga. It aims to bring together excellence in energy planning and low carbon energy projects from these four cities to create a coherent and easy-to-use model for energy planning. The programme is part of the EU Seventh Framework Programme.

5.8 The STEP UP project aims to enhance the process and product of Sustainable Energy Action Plans (SEAPs) to ensure that they are as comprehensive and integrated with other plans as possible and for actions and projects to be better able to be implemented. A SEAP is the key document in which a signatory of the EU Covenant of Mayors outlines exactly how it intends to reach its CO2 reduction target by 2020. An enhanced SEAP - the Energy and Carbon Master Plan for Glasgow - is being developed by STEP UP. STEP-UP is undertaking heat mapping to help identify those parts of the City best suited to the delivery of combined heat and power and district heating.

6.0 Glasgow City Development Plan - The Local Development Plan

Monitoring Statement

6.1 The monitoring statement prepared in support of LDP Main Issues Report analysed the progress that had been made to date on energy and waste issues. It noted the publication of the Sustainable Glasgow Report and the Climate Change (Scotland) Act 2009 and the fact that they raised issues which would need to be addressed in the LDP

Main Issues Report (MIR)

6.2 The MIR was published for consultation in October 2011. It set out a broad future regeneration context based on 6 facets, the first of which was to plan for the prudent and sustainable use of natural and other resources, including energy and waste. Issue 1.2 addresses renewable energy, with the preferred MIR option being to investigate the potential for wind and biomass installations in the City, and other renewable options where appropriate, to operate effectively and contribute towards reducing man-made greenhouse gas emissions. In addition, Issue 1.3 relates to Low Carbon Heating/Combined Heat and Power, indicating that the Sustainable Glasgow Report identified five key areas of the city for the development of district heating systems.

6.3 Consultation on the MIR identified a general support for the MIR's preferred option for Issue 1.2, but raised some concerns over the potential implications of urban wind turbines. The locations indentified in the Sustainable Glasgow Report as having the potential for wind power have now been examined further and it has been concluded that the main possibilities for the development of a limited number of wind turbines in the City lie at three locations – Queenslie, Netherton Braes and Cathkin. Further, more detailed investigation of the landscape, transport, amenity and environmental issues affecting these locations is now required to determine whether they would be acceptable. Should they be considered acceptable, the Council will bring forward, and consult on, Supplementary Guidance which identifies the specific locations and numbers of turbines preferred.

6.4 Notwithstanding the above, policy CDP 5 includes a general presumption in favour of renewable energy (and heat) proposals where they would not result in unacceptable impacts on landscape, amenity, transport etc. The potential for the extraction of oil and gas in the City was also raised, particularly in relation to the potential extension of the PEDL areas to cover more of Glasgow. CDP 5 addresses this issue by identifying the types of criteria which applicants should address, should PEDL licence areas be extended to include more of the City, with further detail on to be included in Supplementary Guidance.

6.5 Issue 1.3 indicates that the Council is keen to progress investigative work on the potential of ground-source/geothermal heat for district heating ands that the British Geological Survey (BGS) have identified significant potential in ground water in bedrock aquifers and superficial deposits, such as shales, for ground-source heat across much of the City. The Preferred MIR option was to revise existing policy to, wherever possible, require major new development to be designed to connect to existing or planned district heating networks and/or to develop opportunities for decentralised and local renewable (such as ground-source heat) or low carbon sources of heat and power to meet their own, on-site, needs and potentially those of others in a local heat network. Comments on Issue 1.3 were, in the main, very supportive of the preferred option, although concerns were raised as to the cost implications as regards the viability of new development and the potential implications of retrofitting in terms of amenity.

6.6 Ground source heat has the potential to make a significant contribution to the greenhouse gas emission savings which the Climate Change Act requires to be delivered through the use of low and zero-carbon generating technologies. The BGS has concluded its analysis to identify those parts of the City in which ground source/geothermal heat has most potential, and it is proposed that the results of this analysis will be utilised to develop a tool (and detailed advice in Supplementary Guidance) to provide developers with information on ground source/geothermal heat potential when they are designing their developments. This tool will require further input, particularly with regard to monitoring the development of geothermal schemes and the potential impact which too many in one location may have on groundwater quality, the temperature of the ground itself and related impacts on biodiversity.

6.7 There is also the potential for geothermal to provide sustainable heat for district heating schemes. Policy CDP 5 supports the delivery of combined heat and power and district heating schemes based on renewable resources or which make more efficient energy use of existing

energy generation or other processes. STEP-UP is undertaking heat mapping to more accurately identify the potential for co-locating developments with a high heat demand with sources of heat supply. The policy expects that, in these areas in particular, the feasibility of delivering district heating, and the potential to extend such a system to adjacent uses/sites, as part of a local heat network, will be fully evaluated during the design of new development and incorporated into the design where appropriate. Supplementary Guidance will be brought forward to identify the areas with greatest potential and to spell out the considerations which the Council will take into account in determining applications.

6.8 Issue 1.4 deals with Waste Management/Energy from Waste. It indicates that the majority of Glasgow's municipal waste is currently disposed of in landfill, but that this is neither sustainable, nor financially viable in the longer term. It identified that a new treatment facility was required to address residual waste. The preferred MIR option was to identify a preferred option for the treatment of residual waste, including a preferred location, in the LDP. Comments on the MIR were, again, generally supportive. However, issues were raised in connection with the transport implications of transporting residual waste to the site and with the need to ensure everything possible has been done to recycle or reuse the waste prior to it going to the Residual Waste Facility. Since the MIR was published, a preferred location at Polmadie has been identified for municipal waste, and a site at Shieldhall has been granted planning permission for private waste.

6.9 Issue 1.6 deals with Urban Lighting and notes that whilst the Council is keen to ensure that lighting continues to play a positive role in supporting the physical and cultural identity of Glasgow, there is a need to consider issues associated with urban lighting, including minimising light pollution and reducing energy consumption. The MIR preferred option was to produce a policy statement, supported by Supplementary Guidance, on urban lighting. The preferred option was generally supported, however some commentators, including the Scottish Government, questioned whether this was a land use planning issue. The Council wishes to further explore, and understand, the lighting issue and this is to be examined through work on the City Centre Strategy. If appropriate, the issue can be addressed further through the Supplementary Guidance.

6.10 Issue 6.4 addresses how to reduce the need for energy in new development. The Climate Change (Scotland) Act's requirement that the LDP include policy to ensure that all new buildings reduce expected greenhouse gas emissions through the installation and operation of low and zero-carbon generating technologies (including geothermal heat) is addressed through policy CDP 5. In doing do, it draws on the Building Standards 2013 Technical Handbooks. Sections 1 - 6 of the Handbooks deliver a level of sustainability in a number of areas such as energy efficiency, but section 7 (Sustainability) goes beyond these minimum standards. SDP4 draws on Section 7 in specifying a higher level of sustainability, including levels of carbon dioxide emissions, as a condition of planning permission.

6.11 The policy identifies the levels of emissions which will be acceptable for both domestic and non-domestic buildings, over time, with reference to the specified levels of sustainability set out in the Handbooks. This method for delivering on the Climate Change Act's requirements is considered to be widely understood and useable.

6.12 The MIR also highlighted that City Plan 2 included policies which aimed to promote the "overall" sustainability of proposed developments, including impacts on ecology, water usage, transport, accessibility, etc, through methodologies such as BREEAM and EcoHomes. Many of the aspects addressed by these methodologies are covered by LDP policies/Supplementary Guidance (e.g. accessibility, biodiversity, etc), with the position often strengthened in comparison to City Plan 2. Nevertheless, it is considered important that CDP 5 addresses other sustainable design matters. It, therefore, includes a requirement that new developments must include appropriate and well designed provision for waste storage, recycling and collection and should also be designed to reduce the need for energy from the

outset (in addition to reducing expected greenhouse gas emissions through the use of LZCGT). Supplementary Guidance will provide further detail.

6.13 Issue 6.5 relates to retrofitting the urban environment to help contribute to climate change mitigation and adaptation. In relation to mitigation, it identified a number of potential options, including re-skinning buildings with thermal covers to help enhance energy efficiency of older buildings, or with photovoltaic cells; and promoting green roofs to, for example, slow rainwater runoff and create habitats for native flora and fauna. Many of these options will be pursued through the LDP and the associated Supplementary Guidance in relation to new development, e.g. building design to enhance energy efficiency or Green Roofs as part of a SUDs scheme or to encourage biodiversity. The MIR focussed on the role which the planning system could play in redevelopment and refurbishment of existing buildings, and particularly where extensions were proposed, the possibility of requiring an audit of the energy efficiency of the total footprint of the existing building and extension.

6.14 Whilst the LDP will ensure that many of these issues are addressed in new development, including redevelopment, it is considered that introducing a requirement for an energy audit of the total building footprint when an application for a new extension is submitted would be an additional burden for applicants which would be inappropriate at this time.

7.0 References

Europe 2020 Growth Strategy, 2010
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