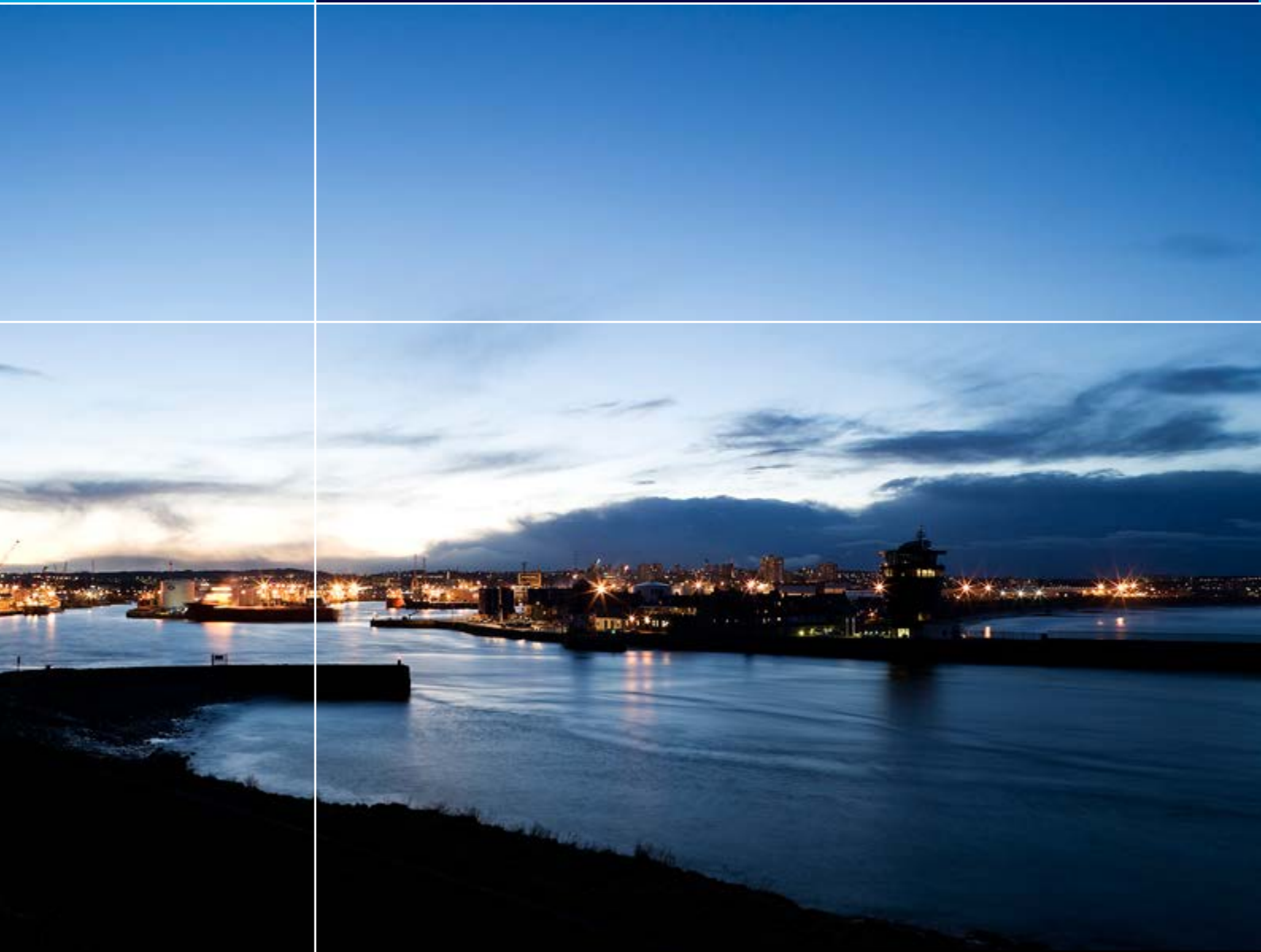


POWERING ABERDEEN:

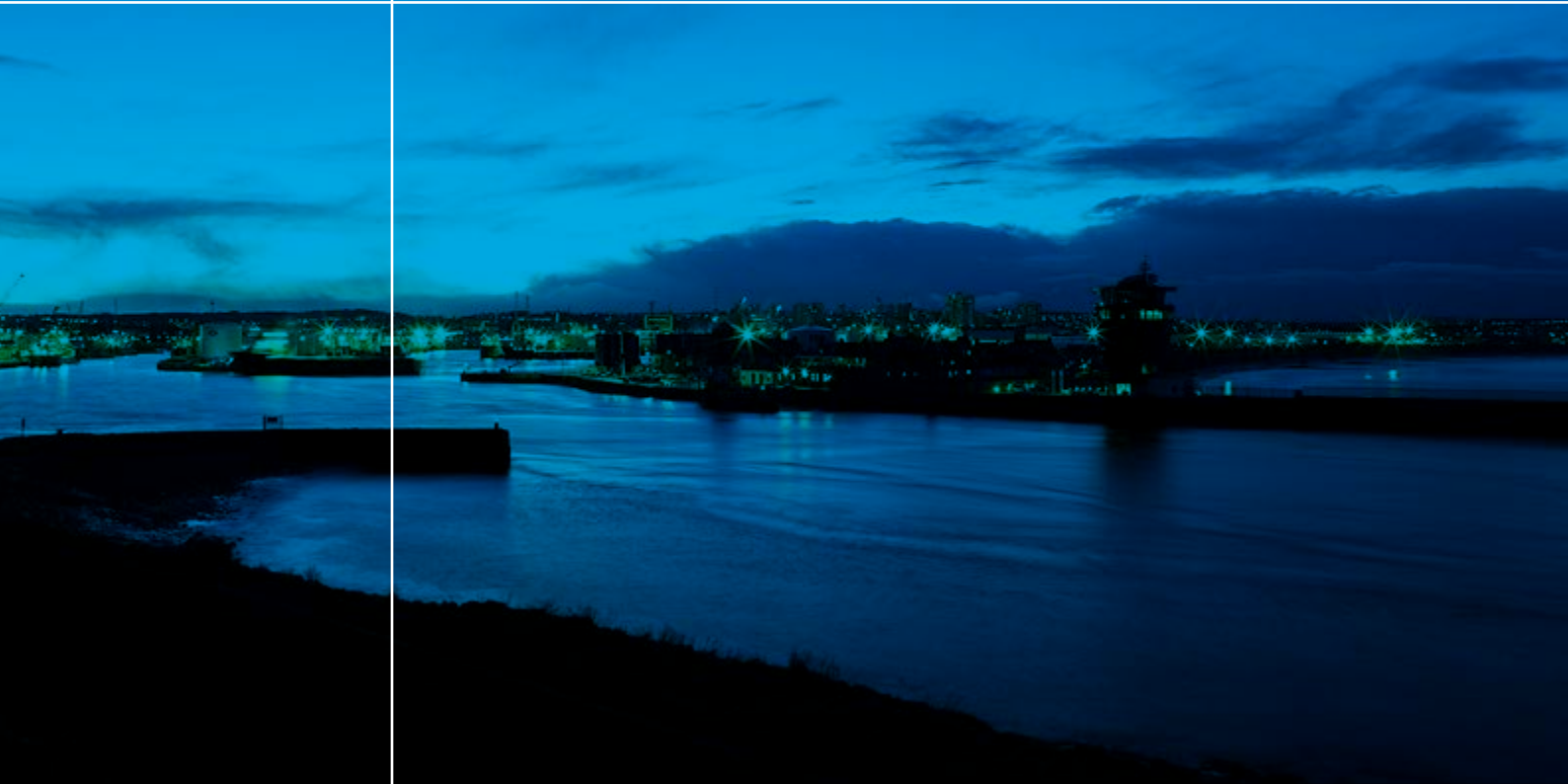
ABERDEEN'S SUSTAINABLE ENERGY ACTION PLAN



ABERDEEN
CITY COUNCIL

VERSION CONTROL

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FOREWARD

Aberdeen is a world leading city. It has reduced its emissions by 50%; diversified local industry to establish energy security; increased employment within the region; developed an alternative fuel infrastructure; alleviated fuel poverty and improved the health and wellbeing of its citizens. This is just the start. People are flocking to live in this vibrant sustainable city.

Well, that's the plan, and this is it: The Sustainable Energy Action Plan (SEAP).

Aberdeen, in common with many other cities, faces challenging social, economic and environmental issues. Whilst many challenges are similar to those of other cities, there are some that are unique to Aberdeen; especially those arising from the influence and reliance on the oil and gas sector. Our economic model of growth is changing, our expectations as citizens are rising and our population is growing and yet, at the same time, our impact on our environment continues to cause damage.

According to global scientific consensus¹, continued emissions of greenhouse gases (GHG) will cause further warming and long-lasting changes in all components of our climate. This will increase the likelihood of severe, pervasive and irreversible impacts for people and the environment. Limiting these impacts will require urgent action to ensure substantial and sustained reductions in GHG emissions and help deliver Scotland's Low Carbon Economic Strategy. The path to a low-carbon economy will also offer specific opportunities for Aberdeen including market diversification, reallocation of skills, investment, energy security, alleviation of fuel poverty, improved health and wellbeing of citizens, improved air quality, access to green space, a better quality of life and much more besides.

As Covenant of Mayors (CoM²) signatories, Aberdeen City is taking its climate impact seriously. The SEAP identifies ways to reduce GHG emissions and develop alternative energy supplies. Such opportunities have arisen from in depth stakeholder engagement and consultation resulting in a range of projects to be taken forward now over the coming years.

The foundations of the SEAP already exist in the many policies, strategies and projects already underway. By working together, stakeholders in the city can have the biggest impact on GHG emission reductions associated with buildings, transport, waste treatment and energy supply; whilst benefitting from sharing local engineering expertise to further develop our renewable energy supply.

It is feasible for Aberdeen to set a target of reducing carbon dioxide (CO₂) emissions by 50% by 2030³, supporting its goal of being an ambitious, achieving and smart city. If successful, this ambitious goal could be transitional, delivering an economically and environmentally sustainable city, while significantly improving the quality of life for its citizens and appealing to international business and inward investment.

¹ The Intergovernmental Panel on Climate Change (IPCC) is the international body for assessing the science related to climate change and are the leading experts who advise government on this position.

² A European movement involving local and regional authorities voluntarily committing to increasing energy efficiency and the use of renewable energy sources.

³ Compared to a 2005 baseline.

EXECUTIVE SUMMARY

To be written once approved.

1. INTRODUCTION:

WHAT IS POWERING ABERDEEN?

Powering Aberdeen is Aberdeen's first Sustainable Energy Action Plan (SEAP) as required by the city's commitment to the European Union's Covenant of Mayors (CoM) initiative. It is a key document that outlines Aberdeen's aspirations to reduce emissions 50% by 2030⁴ and establish alternative forms of energy. Powering Aberdeen is a major strategic programme that forms an important part of the development of the North East region of Scotland, with clear foundations within Shaping Aberdeen and the City Regional Deal and the Economic Development Strategy.

Powering Aberdeen covers the area of Aberdeen city; however its implications are transboundary. As such it is recognised within the *Aberdeen City and Shire Strategic Development Plan* and forms part of the *North East Sustainable Energy Action Plan* as led by Aberdeenshire Council.

It is hoped that through the implementation of the action plan, Aberdeen will start the journey towards an economic, social and environmental transformation covering many themes such as energy, water, waste, transport, construction, planning, health and wellbeing. Working with multiple stakeholders including citizens, businesses and the public sector, Aberdeen will be empowered to make informed choices regarding its future.

Whilst energy and emissions are the key drivers of the CoM it is important to acknowledge the wider significant benefits **Powering Aberdeen** will bring to the economy, market diversification, health and wellbeing, innovation, research and development and city resilience to a changing and uncertain future.

Powering Aberdeen will provide the political commitment, leadership and planning necessary for a low emission Aberdeen; reducing the city and region's dependence upon finite resources and diversifying the available energy mix. The delivery model will take a holistic approach and seek to use existing policies, plans and strategies through collaborative partnerships to ensure actions are delivered in the most effective way.

Powering Aberdeen is necessarily ambitious and the proposed action plan incorporates best practice developed from other European cities. Whilst the CoM requires signatories to attain targets by 2020, it was felt that this timeframe is too short to see the outcomes of some long term projects; therefore Powering Aberdeen will look beyond this timeframe up until 2030.

Performance will be monitored and reported on an annual basis to gauge progress against targets.

"A Sustainable Energy Action Plan is the key document in which a Covenant signatory outlines how it intends to reach its CO₂ reduction target by 2020. It defines the activities and measures set up to achieve the targets, together with time frames and assigned responsibilities."

⁴ Compared to a 2005 baseline.



1.1 Powering Aberdeen for all

Powering Aberdeen is designed for all who live, work and visit the city.

The UK is classed as third in the Climate Change Performance Index (CCPI) behind Denmark and Sweden. Scotland however is a world leader in climate change legislation and the innovation, science and renewables potential that it promotes.

Aberdeen is a centre of excellence and could be considered an example to the rest of the UK in transformation, engineering and entrepreneurship. Aberdeen is known as the energy capital of Europe but with reduced oil and gas reserves, a falling oil price and increased extraction costs, repositioning offers up the opportunity for expertise to be channelled elsewhere.

Whilst Aberdeen City Council (ACC) will lead the overall management of **Powering Aberdeen** success will require stakeholder involvement across all public, private and third sectors. There is an expectation that all involved will lead by example and become exemplars of good practice. **Powering Aberdeen** will be the one key action plan for all to work collaboratively to address emissions and alternative energy.

Powering Aberdeen will harness local knowledge to develop the action plan. Co-operative and community led projects will be supported to ensure that citizens have a greater role in their own environment, finances, health and wellbeing. There are a wide range of existing and planned initiatives addressing the principles of **Powering Aberdeen** already.



1.2 The Covenant of Mayors influence

After the adoption in 2008 of the European Union (EU) Climate and Energy Package, the European Commission (EC) launched the CoM to endorse and support the efforts deployed by local authorities in the implementation of alternative energy policies. Local governments play a crucial role in mitigating the effects of climate change, all the more so when considering that 80% of energy consumption and CO₂ emissions is associated with urban activity.

The vision of the CoM is:

**Towards a
sustainable energy
future**

Fundamentally CoM is the mainstream European movement involving local and regional authorities, voluntarily committing to increasing energy efficiency and use of renewable energy sources on their territories. By their commitment, CoM signatories aim to meet and exceed the EU 20% CO₂ reduction objective by 2020. All signatories are required to produce a Baseline Energy and Emissions Inventory (BEEI) and a subsequent action plan detailing measures to reduce CO₂ emissions and promote use of alternative energy sources.

ACC signed up to the CoM in 2008, with **Powering Aberdeen** seeking approval on an area wide basis. ACC is working closely with its neighbouring local authorities including Aberdeenshire, Angus and Moray Council's to develop a joint SEAP for the North East, underneath which will sit the boundary specific individual SEAP's. By participating in the wider NE SEAP it is hoped that trans-boundary issues can be accommodated.

It should be noted, that since commencement of **Powering Aberdeen**, the CoM has changed its targets and scope. Any new signatories are required to develop a Sustainable Energy and Climate Action Plan (SECAP) with new targets to attain 40% emissions reduction by 2030. The new framework adopts an integrated approach to tackling mitigation and adaptation to climate change. This will be investigated further when **Powering Aberdeen** is reviewed in two years' time.



1.3 Powering Aberdeen's Vision

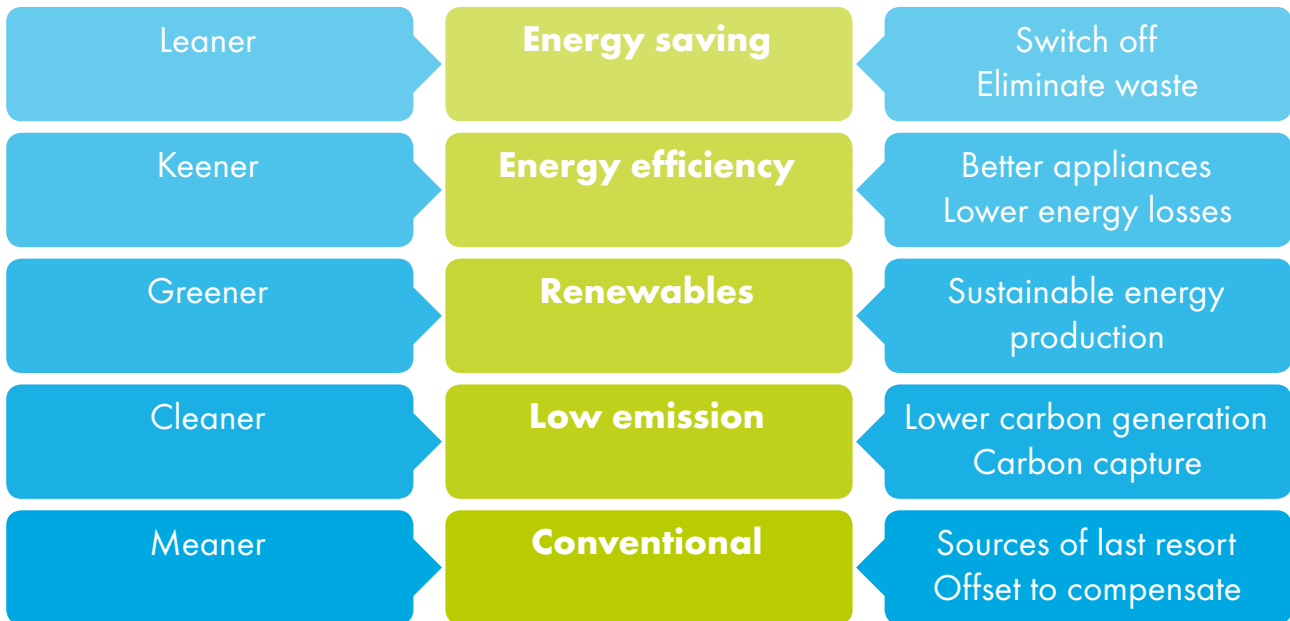
Powering Aberdeen aligns to the CoM and it has its own vision, which has been developed with input from the many stakeholders involved in its development.

and wellbeing of citizens continues to improve and fuel poverty has been eliminated. Emissions have reduced by at least 50%.

By 2030 Aberdeen is a vibrant, world class city which is an attractive and sustainable place to live and do business. The economy has diversified and is supported by efficient, low emission buildings and transport infrastructure. The health

Delivering this vision will be enabled by the enhancement of digital connectivity, development of sustainable buildings and infrastructure, creation of alternative sources of energy and progression of low emission transport.

Working towards a sustainable energy future will require alignment to the energy hierarchy. This works by establishing a simple framework for energy management as illustrated below.





1.4 Objectives

Powering Aberdeen is our city's commitment as a CoM signatory. It will use the results of the Baseline Energy and Emissions Inventory (BEEI⁵) to determine the best course of action in reaching emissions reduction and alternative energy supply targets.

Aberdeen city's emissions in the baseline year of 2005 (from which **Powering Aberdeen** will measure reductions in emissions) are estimated to have been 1,832 kilo-tonnes of carbon dioxide equivalent (kTCO₂e). In order to estimate the amount of savings achieved to date, emissions have also been estimated for 2012 at 1,482 kTCO₂e.

It is a working document which will be revised when actions are completed and the impact of taking those actions is reviewed. Progress will be assessed and recorded on a Monitoring Energy and Emissions Inventory (MEEI⁶).

A Baseline Energy and Emissions Inventory quantifies the amount of emissions emitted in the territory of the Covenant signatory in the baseline year.

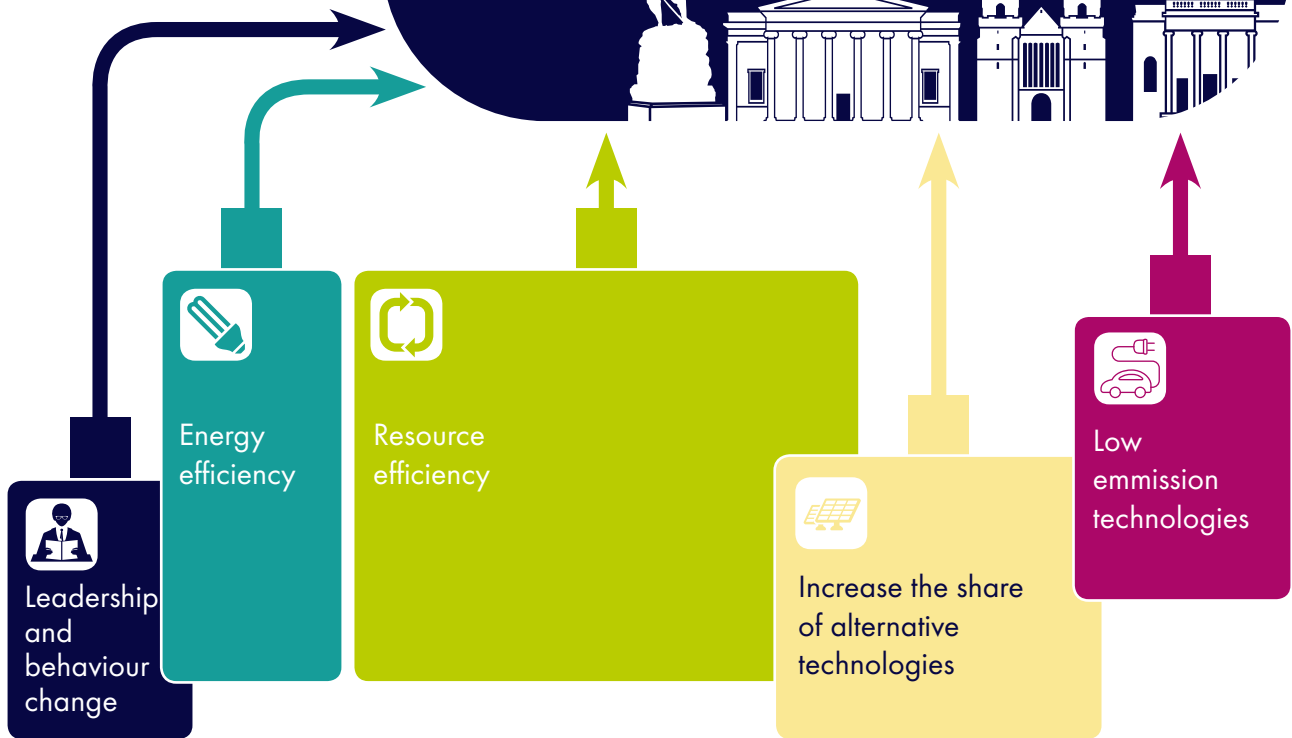
⁵ Information on the BEEI and MEEI is available within the Aberdeen city future energy and emissions scenarios report available at <http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?IID=64524&SID=27537>


⁶ Where the Baseline Energy and Emissions Inventory quantifies the amount of emissions emitted due to energy consumption in the territory of the Covenant signatory in the baseline year, the MEEI measures the progress towards the target.

Figure 1

The following diagram illustrates how Powering Aberdeen will help deliver strategic outcomes.

Objectives




Objective: what Powering Aberdeen hopes to achieve	Aims: Powering Aberdeen's intentions to fulfil the objectives	Strategic outcomes
<p>Leadership and behaviour change.</p> 	<p>Align Powering Aberdeen with all plans, programmes and strategies across the range of stakeholders, using appropriate regulations to support delivery.</p> <p>This will involve incorporating the reduction of city wide emissions and energy consumption in strategic decision making, lobbying for change in statute, strengthening communities and businesses to manage their own energy needs, supporting research and ensuring it is considered within planning and construction practices.</p> <p>Work will be undertaken to encourage behaviour change towards the implications of a changing climate.</p>	<ul style="list-style-type: none"> • Synergies between existing and future commitments and policies. • Setting a strategy beyond 2020 and think much further ahead e.g. to 2050. • Economies of scale. • Legislative compliance. • Reduced risk. • Reduced financial penalties. • Providing the leverage to implement change. • Political visibility and enhanced reputation. • City adaptation and resilience to changing weather patterns. • Business continuity. • Market diversification. • New innovative technologies developed which could create job opportunities. • Attraction of investment and funding. • Engagement of private sector in climate action. • Through the participation of wider society, it demonstrates the role in improving local democracy.



Objective: what Powering Aberdeen hopes to achieve	Aims: Powering Aberdeen's intentions to fulfil the objectives	Strategic outcomes
<p>Energy efficiency.</p> 	<p>Energy is efficiently used across all sectors by implementation of standards for construction, retrofit programmes, use of Combined Heat and Power (CHP), use of digital technologies, Low Emitting Diode (LED) street lighting, and use of efficient appliances and pooling of resources for example. Affordable energy to be provided locally through an Energy Service Company (ESCO).</p>	<ul style="list-style-type: none"> • Alleviation of fuel poverty. • Crowdfunded projects. • Local energy production. • Operational efficiencies which will impact upon revenue budgets. • Reduced energy demand by increasing the efficiency of the building stock. • Increased energy security. • Increasing employment and re-deployment of skills.
<p>Resource efficiency.</p> 	<p>Implementation of resource efficiency measures including for example:</p> <ul style="list-style-type: none"> • Awareness raising around the waste hierarchy and circular economy. • Expansion of mixed recycling collections. • Developing and promoting local food production and consumption. • Use operational and non-operational properties and assets more efficiently. • Development of Energy from Waste. 	<ul style="list-style-type: none"> • Increased energy security. • Increasing employment and re-deployment of skills. • Market diversification. • Reduced utility costs.
<p>Increase the share of alternative technologies.</p> 	<p>Increase renewable energy power generation and procurement including potential solar farms and offshore wind installations, expanding the district heat network and installing digital infrastructure and virtual networks; using heat maps, supplementary guidance, latest research and thermal flyover information to inform planning decisions.</p>	<ul style="list-style-type: none"> • Renewable energy installations. • Improved connectivity as per the requirements of a Smart City. • Increased flexibility in working arrangements. • Development of infrastructure that reduces reliance on individual vehicles and increases mobile working and digital connectivity. • Harnessing a culture of continual advancement in terms of technology used and initiatives taking place to ensure physical and digital connectivity. • Reduced utility costs.
<p>Low emission society.</p> 	<p>To attain a low emission society Powering Aberdeen intends to:</p> <ul style="list-style-type: none"> • Promote sustainable transport initiatives including. • Expand the Co-Wheels network. • Expand the hydrogen network. • Increase modal share for public transport and active travel. • Increase use of clean fuels in transport. • Undertake fleet reviews. 	<ul style="list-style-type: none"> • Improved urban mobility aligning with the city's Local Transport Strategy and priorities of our local transport providers. • Development of infrastructure that reduces reliance on individual vehicles and increases mobile working and digital connectivity. Working towards a decarbonised transport network. • Reduced levels of air pollution aligning with the city's Air Quality Action Plan.



Objective: what Powering Aberdeen hopes to achieve	Aims: Powering Aberdeen's intentions to fulfil the objectives	Strategic outcomes
<p>Low emission society. (Continued)</p> 	<ul style="list-style-type: none"> • Use digital technologies to negate the need to travel including video conferencing, smarter working • Develop markets for low and no emission technologies. • Support the principle of the circular economy, moving away from traditional models of growth. • Work with the education system to provide students/skilled people to inform and assist in the transition. 	<ul style="list-style-type: none"> • Improved health and wellbeing, reducing the strains placed upon care and welfare services. • Improved environmental quality of the city for residents, workers, visitors and wildlife. • Contribute to the global fight against climate change, aligning to the Paris Pledge⁷ and to Scotland's emission reduction targets; demonstrating our commitment to environmental protection. • Aberdeen is positioned as a low emission area. • Having a population which is informed and engaged in issues that affect people, finance and the environment.

To develop **Powering Aberdeen** it was necessary to establish current emission levels and how energy is consumed across the city. Initial work on gathering this information was undertaken by Robert Gordon University's (RGU) Centre for Understanding Sustainable Practice (CUSP) and then validated and finalised by Aether. This culminated in the production of a BEEI, a full copy of which is available on the SEAP webpages⁸.

1.5 Target

The target of a 50% reduction by 2030 is feasible with an interim target of 31% by 2020, both based on a 2005 baseline. This target is considered consistent with Scotland's target within the Climate Change (Scotland) Act 2009 (CCA:2009), being 42% by 2020 and 80% by 2050 based on a 1990 baseline⁹. Part of this target will require working towards increasing the share of renewable energy production.



⁷ The Paris Pledge is the outcome of the United Nations Conference on Climate Change, held in Paris in December 2015.

⁸ http://www.aberdeencity.gov.uk/council_government/shaping_aberdeensustainableenergyactionplan.asp

⁹ Scotland realised savings of approximately 17% between 1990 and 2005. As there is no Aberdeen-specific datasets before 2005, the assumption is made that Aberdeen's emissions reduced at approximately the same rate as Scotland's over that period. This results in a remaining 31% emission savings (based on a 2005 baseline) required between 2005 and 2020 to be broadly consistent with the SCCA target.

WHY DO WE NEED POWERING ABERDEEN?



2.

WHY DO WE NEED POWERING ABERDEEN?

This section establishes why Aberdeen needs *Powering Aberdeen*, highlighting some of the key drivers and main pieces of legislation, as well as the challenges and opportunities.

The way energy is managed is an important aspect of tackling climate change on the journey towards low carbon economy. The Scottish Government identifies that energy is not just needed to keep Scotland's businesses, hospitals and schools running; to heat our homes; and to transport goods and people, but energy also plays a vital role in Scotland's economy. Scotland uses 9% of the UK's total energy consumption, but is rich in energy resources.

The Scottish Government produced the *Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027: The Draft Second Report on Proposals and Policies* in January 2013; which outlined the next steps towards the targets established within the CCA: 2009.

Scotland is leading the way to a low carbon society. By 2011, Scotland's emissions, including international shipping and aviation, had fallen 25.7% from 1990 levels, which is over half way to meeting the 42% by 2020 target set in the CCA: 2009. However, the target remains an ambitious one. The vision is for a largely decarbonised electricity generation sector by 2030 which uses renewable sources for electricity generation.

Other electricity generation from fossil-fuelled plants would use carbon capture and storage. Further, the Scottish Government vision aims for almost complete decarbonisation of road transport by 2050, with significant progress by 2030 through the wholesale adoption of electric cars and vans, a shift towards public transport and 'active travel', and the significant decarbonisation of rail services.

Implementation of **Powering Aberdeen** will result in Aberdeen's emissions being reduced and its reliance on finite resources diminished and replaced with renewable and alternative technologies. Transport emissions will be reduced through the implementation of EU standards for new vehicles and use of biofuels.

Energy diversification, emissions reduction, 'circular economy' development, behavioural change and the health and wellbeing of the public will largely be determined by future policy development across all stakeholder organisations. Progress will very much depend upon the levels of support given by the Scottish Government, the impacts of proposed reforms and the upgrade and expansion of the necessary infrastructure.



2.1 Key drivers

2.1.1 Maximising economic development opportunities

Locally

Data from the Aberdeen City and Shire Economic Strategic Futures suggests that Aberdeen is currently considered an 'economic powerhouse', generating around £15 billion a year (based upon 2012 data). The majority of this economic activity is in the primary industries (including oil and gas extraction), but it is supported by world class professional, scientific, and technical services (11% of the total regional output). In addition, Aberdeen is one of the top 20 regions in Europe for the value of economic output per head of population.

Outside of London, Aberdeen has the highest labour productivity rates in the UK (£32,000 per head in comparison to £20,000 at a Scotland level and £21,675 in the UK). This makes Aberdeen one of the most productive economies in the EU. Average earnings, too, are among the highest in the UK. The median annual wage in 2013 in Aberdeen City was £31,735 (and £24,710 in Aberdeenshire).

The region's economic growth is underpinned by leading international research specialisms and centres of excellence which include: subsea engineering, food science, oil and gas,

and nutritional health. In 2013 Aberdeen was ranked 4th amongst the UK's 64 largest cities in terms of the number of patents per 100,000 of the population.

However, over the past year Aberdeen has witnessed a decline in the oil and gas sector; with corresponding impacts upon supportive industries. The report - 'Fuelling the next Generation'¹⁰ - forecasts that a total of 35,000 jobs will be lost by 2019 as oil exploration and recovery operations decline and new fields become harder to find and to exploit commercially. Some of these losses will be offset by recruitment into decommissioning activities.

Decline in North Sea activities will however flood the market with expertise. **Powering Aberdeen** could capitalise on this knowledge and the wide-ranging opportunities that renewable and alternative technologies can offer to Aberdeen's economy. This could include market diversification, developing local supply chains and new markets. This aligns to the four programme areas within the *Regional Economic Strategy*¹¹, which sets a 20 year vision for the well-being of Aberdeen by focusing on investment in infrastructure, innovation, inclusive economic growth and internationalisation.

Nationally

In January 2014, Scottish Renewables reported that renewable energy currently supports over 11,000 jobs in Scotland as a whole. Given the Scottish Government has an ambitious but achievable target for renewable energy in Scotland to generate the equivalent of 100% of gross annual electricity consumption and 11% of heat consumption by 2020; further job creation will be necessary.



target for renewable energy in Scotland to generate the equivalent of 100% of gross annual electricity consumption and 11% of heat consumption by 2020

The Low Carbon Economic Strategy (LCES) is an integral part of the Scottish Government's Economic Strategy to secure sustainable economic growth, and a key component to meeting Scotland's climate change targets and transition to a low carbon economy. The LCES seeks to establish strong policy direction around Scotland's key low carbon economic opportunities and strengthen business confidence in exploiting them. It sets out:

- the global economic opportunities that will arise in making the transition to a low carbon economy;
- the drivers and barriers to the development of these opportunities and growth of the low carbon economy; and
- the role of government, and wider public sector in supporting business to overcome the barriers.

¹⁰ Published by Ernst and Young covering the whole of the UK.

¹¹ Covers the North East of Scotland



As part of the transition, the Enterprise Agencies, SEPA and the academic sector are collaborating on a project to develop the Environmental and Clean Technology (ECT) sector in Scotland. This project will focus in the first instance on the development of technologies in relation to recovery and recycling; water and waste water treatment; sustainable transport; sustainable buildings; and environmental monitoring and instrumentation.

Powering Aberdeen will work in parallel with initiatives of this type.

Research has shown that the Scottish Low Carbon and Environmental Goods Sector was worth £8.5 billion in 2007/08 and is forecast to grow to around £12 billion by 2015/16. This research estimates that concerted action combined with an expanding global market could increase low carbon employment in Scotland to around 130,000 by 2020 from the current figure of some 70,000.

Powering Aberdeen will provide a single co-ordinated programme with the potential to attract investment and funding based upon the opportunities of market demand for energy and emissions management.

2.1.2 Reducing costs

Despite reduced energy bills, the overall long term trajectory is one of increasing costs associated with fuel supply for everyone. **Powering Aberdeen** will look to support home owners, businesses and organisations to reduce these costs through energy efficiency measures, digital connectivity and development of local generation.

2.1.3 Ensuring supplies

Relying on finite resources such as oil, gas and coal is unsustainable in the long term. Energy security is a priority in light of political instability, uncertainty of supply from oil-producing nations; and the perceived safety concerns of alternative supplies from nuclear and fracking.

The UK's dependence upon energy imports is of particular concern. Producing energy closer to home will help reduce our reliance on other countries, ensuring more control over supply and reducing risk. By developing renewable and alternative technologies to meet energy demands, Aberdeen will also be ensuring it is more resilient to future change and better protected against the fluctuations associated with fossil fuel supply. By developing a decarbonised society, Aberdeen could move towards energy independence and may even become an energy exporter again in the future.

2.1.4 Support of the National Performance Framework

*The National Performance Framework*¹² outlines the Scottish Government's purpose to focus on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth. **Powering Aberdeen** will go some way to supporting this framework locally, implementing projects in all of the key target areas: growth, productivity, participation, population, solidarity, cohesion and sustainability.



¹² <http://www.gov.scot/resource/Doc/933/0124202.pdf>



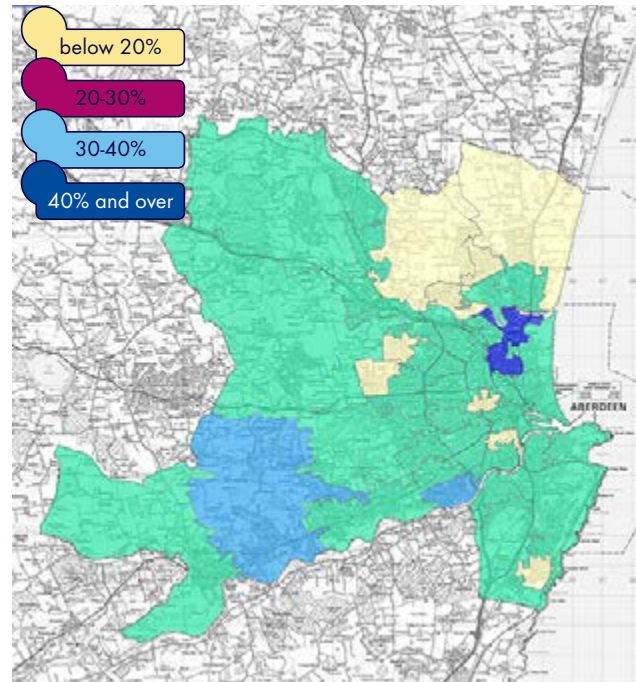
2.1.5 Alleviating fuel poverty

According to the *Scottish Housing Conditions Survey 2013*, while there have been year on year incremental improvements in things like efficiency ratings (households, boilers), levels of insulation and monitoring of energy use for example, adequately heating homes during winter remains an issue in Scotland. Of those surveyed, 20% reported their heating only keeps them warm sometimes, and an additional 5% reported their heating never keeps them warm.

The Scottish Government's current definition of fuel poverty is when a household spends more than 10% of its income on all household fuel use (heating, hot water, cooking, lighting and appliances). Extreme fuel poverty is defined as spending more than 20%. The cost of energy has continued to outstrip the growth of average household income and the rate of energy efficiency improvements for many years now. Although recent falls in oil prices seem to continue, it is likely that in the future energy prices will rise again, outstripping what any local authority can do alone to tackle fuel poverty especially within the existing housing stock. In a decade, energy prices have more than doubled, and in the last year around 100,000 people have been pulled into fuel poverty with the largest increase being in the 15% most deprived areas of the country. According to estimates¹³ 30% of Aberdeen's population live in fuel poverty, equating to around 32,000 households.

The following figure illustrates the proportion of households in fuel poverty in Aberdeen between 2010-2012.

Figure 2 – Fuel poverty in Aberdeen between 2010-2012
Proportion of Households in Fuel Poverty by Intermediate Zone
Aberdeen City 2010-2012



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Ordnance Survey license number 100024655. The Scottish Government 1 August 2014.

The main factors influencing fuel poverty are household incomes, fuel costs and the energy efficiency of homes. Projects from the National Records for Scotland suggest that household numbers in Aberdeen are set to increase by 36,446 between 2012 to 2037. Powering Aberdeen will look at these issues and develop actions that help support citizens to lower energy bills and reduce those living within these conditions.

2.1.6 Meeting regulation

In June 2013 the Scottish Government published the report *Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027: The Second Report on Proposals and Policies (RPP2)*

RPP2 is structured around the key sectors of energy supply, homes and communities, business and the public sector, transport, waste and rural land use; mirrored within Powering Aberdeen. For each of these sectors, policies to reduce

greenhouse gas emissions are identified, as are a number of proposals for further consideration and development. Taken together, these policies and proposals show that it is possible to meet the climate change targets established by the CCA: 2009.

The regulatory regime governing energy and emissions ranges from local pieces of statute to international conventions. Figure 3 lists just some of the key pieces of legislation.

¹³ http://www.scottish.parliament.uk/ResearchBriefingsAndFactsheets/S4SB_15-13_Fuel_Poverty_in_Scotland.pdf

Figure 3 – How Powering Aberdeen meets regulation

OVERARCHING THEMES				
<ul style="list-style-type: none"> • Paris Pledge • Sustainable Development Goals • Climate Change (Scotland) Act 2009 • Stern Review • Infrastructure Investment Plan • Low Carbon Economic Strategy • Low Carbon Scotland - Meeting the Emissions Reduction Targets 2010-2022 • Europe 2020 - looking toward smart, inclusive, sustainable growth. • EU Cohesion Policy 2014-2020 which prioritises integrated sustainable urban development. • Energy Performance of Buildings Directive - 2002/91/EC, this sets energy performance standards for buildings. • Other EU Directives, 93/116/EC, 2009/28/EC, 2003/30/EC and 2006/32/EC - setting conditions for fuel consumption in vehicles, promotion of renewable energy, biofuels in transportation and energy end use efficiency and services. • 2030 Climate Energy Policy looking towards secure energy provision and a low carbon economy. • United Nations Millennium development goals - goal 7 - ensure environmental sustainability. • Scottish Government National Outcomes - under sustainable places, environmental impact and the environment. • Mandatory reporting requirements under Public Bodies Duties will come into effect in 2016, supporting not only wider direct emissions reduction but indirect emissions as well. 				
ENERGY EFFICIENCY	RESOURCE EFFICIENCY	ALTERNATIVE TECHNOLOGY ¹⁴	LOW EMISSION SOCIETY	
<ul style="list-style-type: none"> • EU Energy Efficiency Directive • Energy Performance of Buildings Directive • Energy Directive • 2030 Energy Strategy • Carbon Reduction Commitment (CRC) • Energy Efficiency Action Plan • Home Energy Efficiency Programmes for Scotland • Energy Performance Certificates • EU Emissions Trading Scheme • Sullivan Report • Building Standards • Building Research Establishment Environmental Assessment Methodology • Home Quality Mark 	<ul style="list-style-type: none"> • Waste Framework Directive and other waste specific EU Directives • Zero Waste Plan and the Circular Economy • Aberdeen Waste Strategy • Waste Acts and Regulations • Voluntary Commitments 	<ul style="list-style-type: none"> • Renewable Heat Action Plan • Heat Policy Statement • Towards decarbonising heat • District Heating Action Plan • National Renewables Infrastructure Plan • Route map for renewable energy in Scotland • Electricity Generation Policy Statement • Roadmap for Scotland's Marine Renewables Industry • Blue Seas - Green Energy A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters • European Broadband Directive • Digital Communications: Infrastructure Strategy • Digital Scotland 2020 • Internet of Things – Walport review • Electronic Communications Code • Universal Service Obligation • UK Guarantees Scheme 	<ul style="list-style-type: none"> • EU White Paper on Transport • Scotland's National Transport Strategy • Scotland's Transport Future • Regional and Local Transport Strategy • Travel Plans • Sustainable Urban Mobility Plan • Road Safety Framework • Cycling, Bus, Rail, Freight, Health and Transport Action Plans • Decarbonising Vehicles (EU Directives) • Electric Vehicle Roadmap for Scotland • Plugged-in Places • Hydrogen Strategy for Aberdeen City Region • National Planning Framework and subsequent development Plans • National Guidance • EU Noise Directive • Directive on Ambient air quality and cleaner air for Europe • National Air Quality Strategy • Air Quality Action Plan • Low Emissions Strategy • Energetica • Curriculum for Excellence 	

LEADERSHIP AND BEHAVIOUR CHANGE

¹⁴ <http://www.gov.uk/government/publications/the-digital-communications-infrastructure-strategy>

In order to meet these regulations there are many subsidies, grant schemes and incentives available for communities, the public sector and citizens. There are many other drivers for producing **Powering Aberdeen** as detailed within the many strategies, approved reports, statute and national indicators of our stakeholders; including but not limited to:

- *Community Plan and Single Outcome Agreement* – with Aberdeen 2022 – being the city we love to live in: a socially, economically and environmentally sustainable and great city.
- *Aberdeen City and Shire Strategic Development Plan* – to be a city/region which takes the lead in reducing the amount of carbon dioxide released into the air, adapts to the effects of climate change and limits the amount of non-renewable resources it uses.
- *Aberdeen – the Smarter City: Smarter Environment*.
- *Five Year Business Plan: 2013-2018* – Increase sustainable economic growth for the benefit of all citizens through support of national outcomes.
- *Scottish Police Authority Strategic Plan* which highlights a key priority of delivery efficient and effective services and readiness to respond to natural hazards.
- *NHS Grampians Health Transport Action Plan*, covering two key themes of transport and public health; including for people in Grampian to choose to travel by active modes such as walking and cycling whenever appropriate and to have the ability to do so conveniently and safely, in order to improve activity levels and public health; and or everyone in the region to live without unacceptable risk to their health caused by the transport network or its use.
- *University of Aberdeen’s Sustainability and Social Responsibility Strategy 2013-2017*, being committed to the twin principles of sustainability and social responsibility as foundations for all their activities.
- *Public Bodies Duties: required and recommended reporting* - as part of this the Council is required to report annually on total area-wide and per capita emissions, targets and area wide actions and their importance in reducing emissions.

Business continuity in light of changing weather patterns and the impact of these events on public sector services is also a consideration. **Powering Aberdeen** follows on from the recommendations outlined within Aberdeen’s Local Climate Impacts Profile (LCLIP¹⁵).

Whilst the development of **Powering Aberdeen** covers all activities within Aberdeen, it assists ACC in monitoring its own emissions and working to reduce these, in compliance with CCA 2009. The CCA: 2009 sets in statute, the Government’s Economic Strategy target to reduce Scotland’s GHG emissions by 80% by 2050, one of the Sustainability Purpose Targets.



This covers the basket of six greenhouse gases (GHG’s) recognised by the United Nations Framework Convention on Climate Change, and includes Scotland’s share of emissions from international aviation and international shipping. The CCA also establishes an interim target for 2020 of at least 42% reductions in emissions.

¹⁵ <http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?IID=60120&SID=904>



2.1.7 Healthier lifestyles

The *Long Term Vision for Active Travel in Scotland*¹⁶ determines that environments in which walking and cycling are easy choices will be safer for everyone, promote healthy living choices, treat and prevent disease and reduce health inequalities. **Powering Aberdeen** looks to encourage all forms of 'active travel' which will help reduce obesity levels but also reduce emissions which can aggravate respiratory conditions. By doing so, reducing impact upon NHS Grampian and allowing those resources to be utilised for other services.

According to the Scottish Health Survey, in 2014, 65% of adults aged 16 and over were overweight, including 28% who were obese. There has been an increase in the proportion of people who are overweight or obese among both sexes (aged 16-64) since 1995, from 52% to 63%.

Since 1998 asthma in adults has increased but figures for the most recent years have not changed significantly.



¹⁶ http://www.transport.gov.scot/sites/default/files/554346_334708_Active_Travel_210mm_p9_HR_20141126103050.pdf

2.1.8 The planning context

Powering Aberdeen stakeholders are committed to developing a sustainable city at the heart of a vibrant and inclusive region. This is detailed within our Local Development Plan and the Aberdeen City and Shire Strategic Development Plan (SDP).

Aberdeen, together with the rest of the North East, plays an important role in many aspects of the life of the country. This is reflected in *Scotland's Third National Planning Framework (NPF3)*. Its key vision for Scotland's spatial development is to create a:

- successful sustainable place;
- low carbon place;
- natural resilient place; and
- connected place.

The strategy for the growth of the North East is set out in the SDP. The main aims of the SDP are to:

- grow and diversify the regional economy;
- tackle our changing climate;
- ensure the area has enough people, homes and jobs to support the level of services and facilities needed to maintain and improve the quality of life;
- protect valuable resources including the built and natural environment;
- create sustainable communities; and
- make most efficient use of the transport network.

The SDP establishes a target of increasing the population of the city region to 500,000 by 2035 and achieving an annual house building rate of 3,000 per year by 2020. **Powering Aberdeen** recognises that these activities will have a noticeable impact upon the area wide emissions and energy supply.

Current trends in energy consumption and emission production are unsustainable. It is intended that through the implementation of **Powering Aberdeen** this trend can be reduced.

“By 2035 Aberdeen City and Shire will be an even more attractive, prosperous and sustainable European city region and an excellent place to live, visit and do business.

We will be recognised for:

- **our enterprise and inventiveness, particularly in the knowledge economy and in high-value markets;**
- **the unique qualities of our environment; and**
- **our high quality of life.**

We will have acted confidently and taken the courageous decisions necessary to further develop a robust and resilient economy and to lead the way towards development being sustainable, including dealing with climate change and creating a more inclusive society” *Vision from ACSSDP*



2.1.9 Protecting and using the environment

Protecting the environment is a key aim **Powering Aberdeen**. Consumption of fossil fuels still significantly outweighs energy used from renewable sources. Extraction of fossil fuels is an intensive process which can have an impact on the environment through GHG emissions, water and air pollution, habitat and biodiversity loss, potential ground contamination and land take. Further adverse impacts are generated when fossil fuels are used through combustion to generate energy. Making use of the natural environment can offer solutions to urban problems; from providing infrastructure that

helps alleviate flooding for example to the sequestration of emissions in soils and plants.

It is therefore imperative that **Powering Aberdeen** focuses upon reducing the levels of fossil fuels extracted and consumed, aligning to the stages of the energy and waste hierarchy. This will require understanding demand management, progressing energy and resource efficiency measures and increasing the amount of energy from renewable and low emission sources.

2.1.10 City resilience

Severe weather is already affecting services provided by organisations across Scotland, with operational, reputational, financial and legal consequences. This trend is projected to increase in the future. The impacts we see today may occur more frequently, with more serious consequences, compounding many of the other long-term challenges we face of fluctuating energy prices, resource scarcity, an ageing population, and social and economic inequalities¹⁷.

Climate change gives organisations an opportunity to plan for the future. Choosing the resilience pathway allows organisations to increase efficiency, identify cost saving opportunities and add value to their services. This pathway presents an opportunity to protect the public good, to safeguard future generations, and to do things differently in response to a changing climate.

Climate change also of course presents threats. Severe weather and climate impacts will continue to interrupt service delivery, causing unexpected costs for asset maintenance, and an increased risk of fulfilling the duty of care for employees and communities. By taking a long-term view, the identification of climate risks now can allow prioritisation of actions, mitigation and adaptation to take place for the future.

It is hoped that **Powering Aberdeen** will consider merging the energy and adaptation agendas into a new enhanced document, not dissimilar to that which is required of signatories who sign up to the CoM post November 2015. This future revised version will be a Sustainable Energy and Climate Action Plan (SECAP).

2.2 Challenges and opportunities

Transitioning to a low emission economy will be a defining moment for Aberdeen, whose recent history is extrinsically linked with finite energy reserves. The path ahead is challenging. However, challenges can offer opportunities for Aberdeen to develop a new economic model of growth, supporting the UK government's *Low Carbon Transition Plan*¹⁸. It will protect the public from immediate risk, prepare for the future and support individuals, communities and businesses to play their part too.



¹⁷ *Five steps to managing your climate risks – a publication by Adaptation Scotland and Sniffer.*

¹⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228752/9780108508394.pdf



2.2.1 Population change

The projected population growth in Aberdeen between 2012 and 2037 is significantly higher than the Scottish average according to the 2012 based Population Projections Aberdeen City and Shire. Aberdeen could see approximate increases of 28% amounting to a further 64,000 people by 2037, aside from further net migration. There is also a prediction of an increasing number of older people and more people living alone.

The impacts of more people alongside their higher expectations to have certain dwelling types will result in

further expansion of the city as homes and infrastructure are built to accommodate these needs. There will be associated impacts upon consumption and travel which could result in more emissions.

Housing assessments within the Local Development Plan indicate that Aberdeen will require 28,500 new houses by 2035. Aberdeen will accommodate around half of the new housing and employment land needed to meet the strategic needs of the North East over the next 20 years as set out in the Strategic Development Plan.

2.2.2 How buildings perform

As detailed within the accompanying report *About Aberdeen*, there are significant challenges in addressing energy efficiency and emissions reduction in Aberdeen due to the high levels of flatted properties and the thermal properties of construction materials.

At the time of the 2011 Census, there were 103,371 households in Aberdeen and 307 public sector buildings. Overall, as with any major city, Aberdeen has mixed housing tenures and property portfolios. Traditional granite buildings typically consume more energy and improving their thermal performance can be expensive, disruptive, and detrimental to the historic integrity of the buildings.

The application of building standards and certified schemes

such as the Building Research Establishment Environmental Assessment Methodology (BREEAM) and the Home Quality Mark provides opportunities for addressing emissions at the construction and refurbishment stages. Property ownership can create challenges and barriers to the adoption of energy efficiency measures. Where things become more complex is where changes are required within the domestic and non-domestic arena's, where adoption of efficiency measures is difficult and will depend upon the property owner. Some property owners may require support in the form of grants, incentives and awareness about reducing consumption in order to access available financial benefits.

In the supporting document, *About Aberdeen*, the difficulties of dealing with granite buildings are discussed.

2.2.3 Intelligent Infrastructure

Aberdeen will need to embrace changes in construction design principles and infrastructure in order to deliver a city with low emission levels. Such considerations will play a key part in all levels of the design and planning process. There will be opportunities to use innovative new technologies and align to the latest sustainable building standards both for new builds and retrofits whilst expanding digital connectivity. Consideration will need to be given to ensuring old infrastructure is replaced and energy losses are reduced.





2.2.4 More active travel and considered transport

Both the business community and the public have stated that transport is one of the main issues that Aberdeen needs to address. Aberdeen faces many transport challenges:

- As Scotland's third largest city, with around 213,000 inhabitants, a large number of movements take place within the city centre;
- As the regional centre for the North East of Scotland, a large surrounding population commute into the city centre for work and to access Aberdeen's services and facilities;
- Its harbour in the city centre requires servicing by Heavy Goods Vehicles (HGV's);
- The historical success of the oil industry has brought a level of affluence to the North East which has led to a high level of car ownership;
- There is no adequate bypass of Aberdeen meaning that traffic tends to come through the city centre especially as a number of employment areas tend to be on the edge of the city; and
- The impact of freight and increased delivery of goods aligns with the rise in internet sales.

These challenges have led to high vehicle usage, congestion and poor air quality which exceed both EU and National targets in specific areas of the city. Furthermore, the success of covered shopping centres and peripheral business parks has meant that many areas of the city, especially Aberdeen's Union Street, are in need of revitalisation.

Responding to these issues, a number of major infrastructure projects are being built to establish Aberdeen's connectivity with the rest of Scotland and further afield, helping to alleviate some of the issues above; including the Aberdeen Western Peripheral Route, Third Don Crossing and Haudagain roundabout improvements.

Aside from these, more 'active travel' infrastructure is being developed including further 'park and chose' sites, expansion of the pool car club known as Co-wheels,

expansion of electric vehicle charging points, upgrade and maintenance of core paths and many other initiatives as outlined within the city's *Sustainable Urban Mobility Plan*.

H2 Aberdeen is an initiative working to bring about a hydrogen economy in the Aberdeen City Region. This work is helping to reinforce the area's position as an energy city, now and in the future. Hydrogen, as an energy storage medium, offers an opportunity to maximise the capacity of renewable energy.

With the transferable oil and gas expertise in the North East of Scotland, as well as a capacity for renewable energy generation, there is an opportunity to further enhance our economic competitiveness by being at the forefront of a hydrogen economy. The *H2 Aberdeen* initiative has to date delivered:

- a hydrogen strategy outlining the key actions required by the City Region over the next 10 years;
- a state-of-the-art hydrogen production and bus refuelling station;
- 10 hydrogen fuel cell buses, Europe's largest fleet; and
- the HyTrEc project (Hydrogen Transport Economy for the North Sea Region) which includes the trial of fleet vehicles - hydrogen hybrid vans and plug-in range extended vans.





2.2.5 Reliance on Oil and Gas

Aberdeen's relationship with the oil and gas industry has a huge influence upon the local economy. There is an opportunity to use the skills this sector has to offer in alternative technologies such as renewables. This aside, Aberdeen is in the fortunate position of having a wealth of digital technology talent and engineering expertise that can be transferred from this sector to one based around emissions reduction and alternative forms of energy supply.



2.2.6 Changing Behaviour

People find it difficult to resonate with climate change. As such, there can be issues with apathy over topics such as energy efficiency; with further confusion caused by the amount of jargon and green-wash used to convey messages to the public. This makes it challenging when asking people to consider these topics when making decisions. These issues are discussed as ten key behaviour areas within Scottish Government's report *Low Carbon Scotland: A Behaviours Framework*; addressing them at an individual, social and material level.

What's important to consumers differs enormously; being able to make sense of complicated issues in communications that are easily understood is essential for wider engagement. Finding out what is important to the target audience is critical to translating concerns over energy costs and health issues into practical steps. Encouraging consumers to change their behaviour could make a significant contribution to reducing emissions. Providing information is important, however this does not necessarily result in a change to behaviour. The challenge is to encourage energy conscious behaviour in decision making; in a way that is simple and sustained so that good practice becomes a habit.

2.2.7 Government support

Whilst there is a wealth of legislation and measures to address the issue of carbon emissions; little is being done to address the fact that targets haven't been met. This inertia leads to scepticism about the importance of making emissions reduction and demand management a priority.

Scotland has made good progress in a number of areas: in deploying renewable electricity generation capacity, installing community and locally-owned energy projects and in rolling out area-based energy efficiency programmes. There has been less progress in other areas including transport, renewable heat, agriculture and forestry, and in the waste sector. Even in areas of good progress, further action will be needed to meet Scotland's ambitious 2020 target. The Scottish Government has work to do to strengthen its policies on low carbon heat, energy efficiency, the public sector and transport, in line with recent commitments pledged at the Paris 2015 Climate Change Conference.

POWERING ABERDEEN'S DEVELOPMENT



3. POWERING ABERDEEN'S DEVELOPMENT

Powering Aberdeen provides a co-ordinated multi-disciplinary programme of actions spanning all sectors of the city. It is a programme that will encourage transformation of the economy, people and the environment through the ongoing identification of continual improvement actions and ultimately through their delivery.

Sustainable Energy Action Plans (SEAP's) are increasingly effective vehicles for driving change. They act as an enabler, allowing access to investment and innovation opportunities. It is intended that **Powering Aberdeen** shows that the city is ready to truly question its activities, intentions and future.

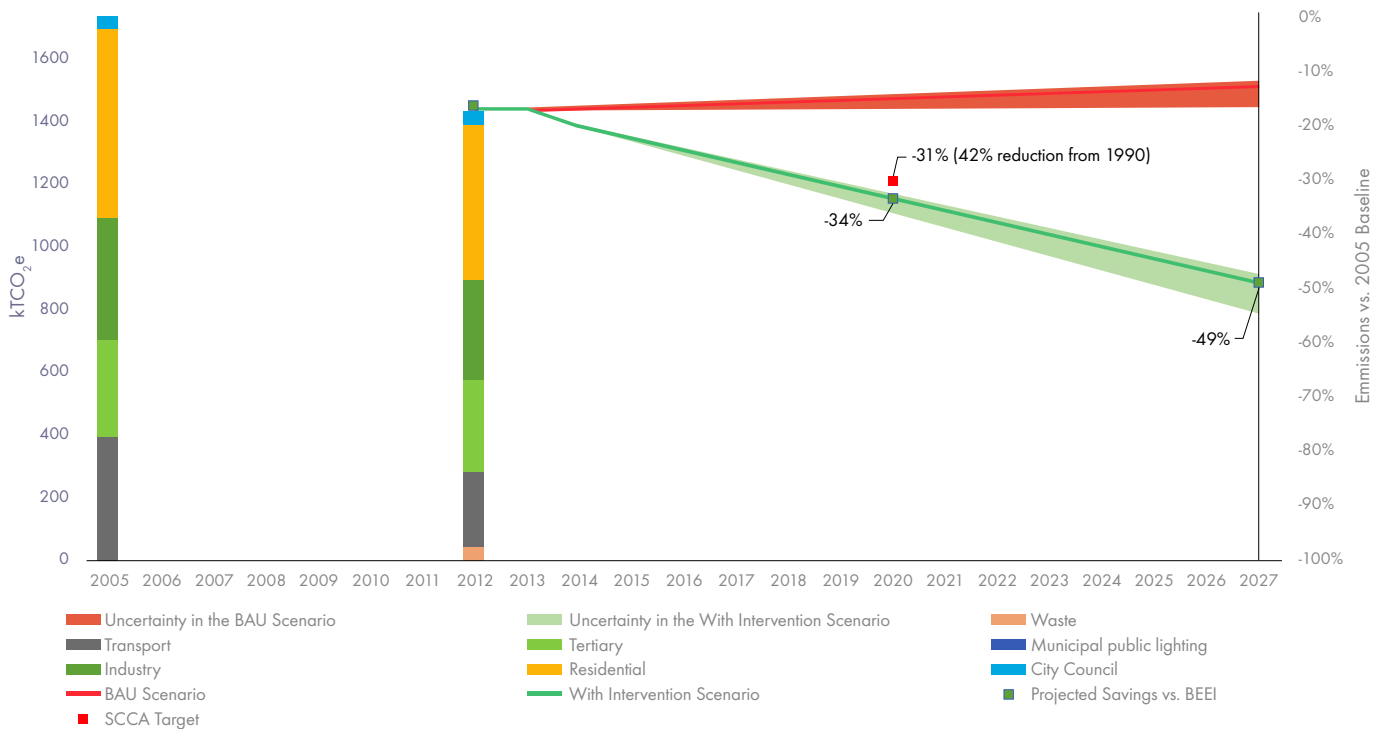
Powering Aberdeen provides the mechanism to work collaboratively to deliver coherent actions and drive change. This document has been developed with input from many stakeholders and consultants. It has been informed by a number of stakeholder engagement workshops, surveys

and data gathering exercises, scenario modelling and consultations; all of which have helped inform **Powering Aberdeen's** direction. Further information on these activities is available on **Powering Aberdeen's** webpage .

A key point from **Powering Aberdeen's** development is as the identification of the highest emitters; determining where future effort should be prioritised for maximum gain. Figure 4 below illustrates a summary of the scenario modelling. It shows 2005 as the baseline year and 2012 as the monitoring year, with trajectories for 'Business As Usual' (BAU) and with intervention (where **Powering Aberdeen's** actions are implemented).

The largest areas where impact can be made are within the residential, industrial, tertiary and transport sectors.

Figure 4 - Emissions in Aberdeen City in 2005 and 2012. Percentages provided are savings in emissions compared with the 2005 emissions.



4.

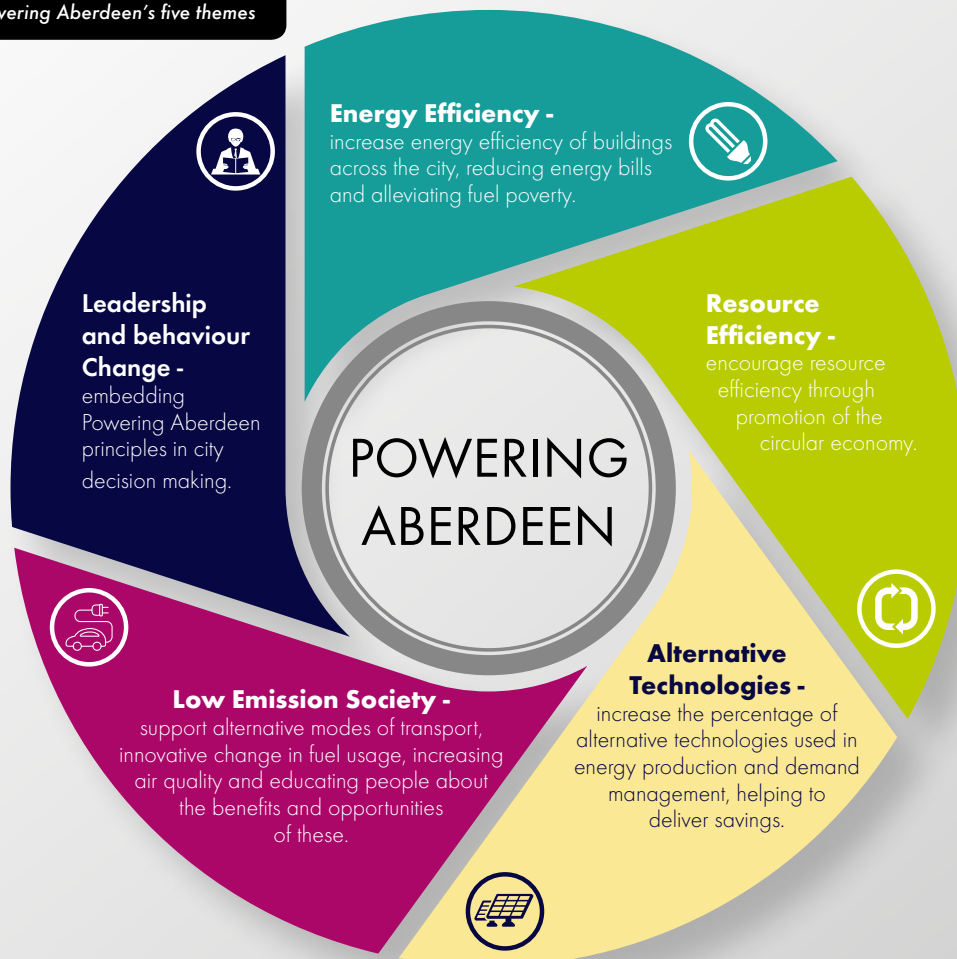
THE FIVE THEMES

This section introduces how the five key themes identified within the objectives form the foundations of *Powering Aberdeen* actions. In some cases, actions are already underway whereas others are still to be assessed for feasibility.

The actions have been identified following stakeholder engagement and are just a snapshot in time. The actions are not representative of Aberdeen as a whole due to difficulties in data capture; however it is hoped they will become more robust as **Powering Aberdeen** develops. A detailed list of actions is illustrated in Annex 1.

Referring back to figure 4, areas which have high emissions include the residential, industrial, tertiary and transport sectors. It is important to address these as priority actions within the five themes.

Figure 5 – Powering Aberdeen’s five themes





4.1 Theme 1: Leadership and Behaviour Change

Powering Aberdeen will inform policies, plans, strategies and their implementation across a range of stakeholders, using appropriate regulations to support delivery. **Powering Aberdeen** will also look to inform future legislation and best practice through participation in consultation responses and leveraging support.

This will involve incorporating the reduction of city wide emissions and energy consumption in strategic decision-making whilst ensuring the benefits of **Powering Aberdeen** are referenced within all relevant documentation.

There will also be a role in strengthening communities and businesses to manage their own energy needs, whilst supporting research and consideration within planning and construction practices.

Work will be undertaken to encourage behaviour towards the implications of a changing climate, continuing on from the many campaigns and promotional activities that are already underway.



4.2 Theme 2: Energy Efficiency

Energy used to heat and light residential, commercial and industrial properties is a major contributor to emissions across the city. In many cases, reducing emissions will also lead to potential financial savings.

Maximising energy efficiency requires that energy consumption is better managed. A measure is more energy efficient if it delivers more services for the same energy input, or the same services for less energy input.

CASE STUDY: The future success of Aberdeen is built on the decisions made today. According to the report *Britain's Building Stock – a Carbon Challenge*, it is estimated that 87% of the buildings standing today in Britain will still be around in 2050. Therefore the very highest standards for the built environment should be demanded. ACC intends to do this through the development of a Buildings Performance Policy. It is hoped this will ensure the local authority is seen to:

- lead by example and promote the quality of development expected from the private sector,
- produce modern buildings which are worthy of standing next to Aberdeen's outstanding built heritage,
- ensure these buildings are efficient and adaptable to support our current and future needs and;
- that all of this is done in the context of achieving long term value for money.

If approved, the Buildings Performance Policy will set clear standards for construction, energy performance and digital connectivity; whilst referencing the requirements of district heat expansion.

Focusing on energy efficiency is one of the most cost-effective ways of reducing emissions. It often includes a range of retrofit measures such as boiler efficiencies, insulation, controls and building energy management systems.

This theme will focus on the energy performance of public buildings, energy monitoring programmes, streetlight replacement, insulating and externally cladding properties and building energy efficient homes and schools. These measures will be supported with awareness raising and behaviour change campaigns.

CASE STUDY: Energy efficiency retrofitting. As part of the Housing Capital Programme, the Combined Heat and Power (CHP) district heating scheme at Seaton was extended to link in a further 741 flats, including up to 71 privately owned flats, in Bayview, Northsea, Aulton, Beachview, Balgownie, Inverdon, St Ninians and Lord Hays Courts. CHP is a system whereby electricity is generated locally for sale and the heat emitted by the generator is captured and used to heat properties instead of being released to atmosphere.

Seven of these blocks had electric heating and did not meet the Scottish Housing Quality Standard. Tenants of all properties were either sheltered or had communal heating systems and paid for their heating and hot water through the Council's Heat with Rent scheme. In tandem with this work, over-cladding and window replacement was undertaken to limit water ingress and increase energy performance.



CASE STUDY: The £1.2 million North East of Scotland Shared Data Centre (NESSDC) scooped a Green Gown award, which recognises exceptional sustainability initiatives in tertiary education.

In a double celebration, the project was also named Data Centre Project of the Year in industry awards covering the UK's entire IT industry, beating off competition from Tesco and Capital One.

The ten month, large-scale, complex and high risk project saw an upgrade to the live primary data centre at the University of Aberdeen. The goal was to turn an aged data centre into a state of the art shared data centre for all tertiary educational establishments in the North East of Scotland and spearhead a shared-service approach.

Tasks included major construction work, innovative technology deployment and relocation of all network and server kit whilst all business operations were kept running.

4.3 Theme 3: Resource Efficiency

Resources are often wasted through a lack of life-cycle thinking and due care and attention given to project management. Being resource efficient is about maximising the supply of money, materials, staff and other assets that can be used by a person or organisation in order to function effectively, with minimum waste.

Resource efficiency is a fundamental principle of the circular economy. This is an economy that is producing no waste or pollution. According to the Waste and Resources Action Programme (WRAP) a circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

It is important to ensure resources are used efficiently to minimise waste and resultant emissions throughout the life span of the product or activity. **Powering Aberdeen** considers resource efficiency to be an important theme to be addressed by a number of major actions. These will include the expansion of mixed recycling services, the construction of an Energy from Waste (EfW) facility connected to the district heating network, the more effective use of space and assets and the support of innovation in pursuit of a circular economy.

CASE STUDY: Recycling facilities for thousands of Aberdeen residents are set to improve, as the ACC begins installing new communal bins for mixed recycling from January 2016. The new bins will have blue lids and will be located next to general waste bins in areas with a bulk bin service. Residents will be able to recycle all their materials in one bin, including paper, card, glass, food and drink cartons (Tetra-Paks), plastic bottles, pots, tubs and trays, food tins, drinks cans, aerosols, foil and foil trays.

Any waste that is leftover will go into the black bin for landfill. The new system is easier and more convenient to use because it allows all recyclable materials to go into a single bin. More materials can be recycled too including plastic pots, tubs and trays and food and drink cartons and it is more efficient to collect. As a result ACC uses taxpayers' money more effectively by saving on collections and landfill tax. Once collected the items are sent to a material recovery facility or MRF, baled and then shipped to various reprocessors. There, the materials are recycled into valuable resources such as new bottles, cans and newspapers.



4.4 Theme 4: Alternative Technologies

Scotland's population is increasing, and how we live is changing too. By living longer in smaller households we are demanding more houses and more energy. Scotland's population was approximately 5.3 million in 2012. The latest projections suggest that this will rise to 5.76 million by 2035. The number of households grew faster than the rate of population increase (by 343,000, or 17%) between 1991 and 2012, indicating that household structures are changing, with fewer occupants per household. These trajectories are greater in Aberdeen.

Projections suggest that by 2035 the number of households in Scotland will increase to 2.89 million. This will further increase demand for housing and energy. At present, Aberdeen still relies heavily upon non-renewable sources of fuel which, through extraction and production, release significant emissions. It is important to ensure future energy security by transitioning to a renewable infrastructure for both heat and electricity.

Powering Aberdeen will seek to increase renewable energy power generation and its procurement. This could include solar farms and offshore wind installations, expanding the district heat network, installing digital infrastructure and virtual networks, and using heat maps, latest research and thermal flyover information in planning decisions, helping to inform accompanying supplementary guidance.

According to the Scottish Government, moving to a largely decarbonised heat sector by 2050 requires action by householders, business and the public sector across Scotland. This will involve using national heat maps to aid the planning process. There is a target to deliver 40,000 more homes with affordable low-carbon heat from district heating whilst exploiting Scotland's geothermal resources.

Department of Energy and Climate Change (DECC) statistics show that almost half (49.7%) of Scotland's electricity demand came from renewable sources in 2014, with Scotland exporting 23.7% of what it generated. Consequently, renewables provided 38% of electricity generated - above both nuclear, at 33%, and fossil fuels, at 28%.



CASE STUDY: ACC submitted a Proposal of Application Notice (PAN) for a new Energy from Waste (EfW) facility on a derelict industrial site at East Tullos in October 2015. The submission of the PAN signals the start of the pre-application consultation for the forthcoming planning application.

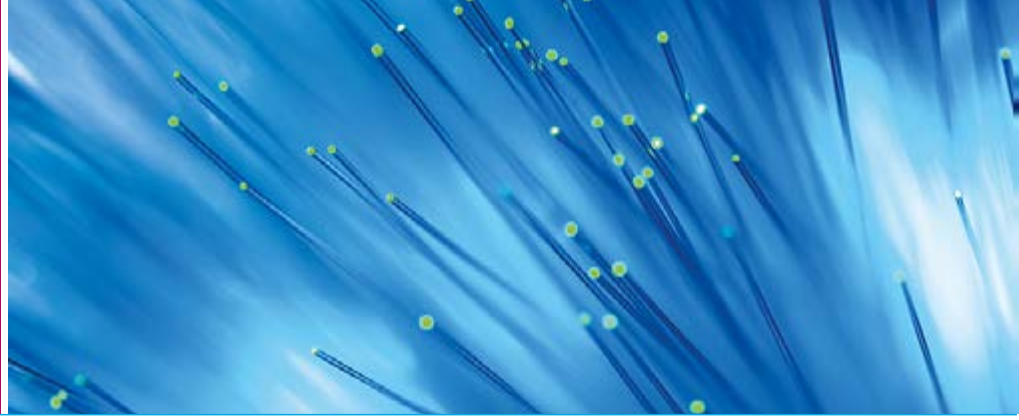
The proposed £120million development would process non-recyclable municipal waste from Aberdeen City as well as neighbouring local authorities, Aberdeenshire and Moray, subject to a formal legal agreement between the three councils.

A key feature of the EfW plant is the generation of heat and power, essentially developing a waste-fuelled power station to provide secure, low-cost energy to households, businesses and council facilities. Aberdeen has led the

way with the development of Combined Heat and Power (CHP) projects in the city, which has provided energy efficient, low-cost heating in 22 multi-storey blocks and a number of public buildings throughout the city.

The new plant would also help the region meet national recycling targets. The Scottish Government is aiming for 70% of waste to be recycled by 2025, with less than 5% going to landfill. ACC's Waste Strategy aims for the city to be zero waste by 2025.

The site at Greenbank Crescent, East Tullos, is identified as a waste management site in the proposed Aberdeen Local Development Plan. The planned capacity for the facility is approximately 150,000 tonnes of waste a year. ACC collected 112,880 tonnes of municipal solid waste in 2014, of which 37,331 tonnes was recycled and the remainder went to landfill.



4.5 Theme 5: Low Emission Society

Developing a low emission society will require a change to people's behaviour in how they commute, use resources and live a healthy life. **Powering Aberdeen** will look to progress towards a low-emission society by supporting projects such as:

- Promotion of sustainable transport initiatives.
- Expansion of the co-wheels network.
- Expansion of the hydrogen network.
- Increasing modal share for public transport and active travel.
- Increasing use of clean fuels in transport.
- Undertaking fleet reviews.
- Using digital technologies to negate the need to travel including video conferencing, smarter working etc.
- Developing markets for low and no emission technologies.
- Supporting the principle of the circular economy, moving away from traditional models of growth.
- Working with the education system to provide students/skilled people to inform and assist in the low emission transition.
- Encouraging the production and sourcing of sustainable food.

CASE STUDY: *H2 Aberdeen* is an initiative to bring a hydrogen economy to the Aberdeen City Region. It will secure the area's position as an energy city, now and in the future.

Hydrogen, as an energy storage medium, offers an opportunity to maximise the capacity of renewable energy. With the transferable oil and gas expertise in the North East of Scotland and a capacity for renewable energy generation, there is an opportunity to further enhance our economic competitiveness by being at the forefront of a hydrogen economy.

The *H2 Aberdeen* initiative has delivered to date:

- a hydrogen strategy outlining the key actions required by the City Region over the next 10 years;
- a state-of-the-art hydrogen production and bus refuelling station;
- 10 hydrogen fuel cell buses, the Europe's largest fleet;
- the *HyTrEc* project (Hydrogen Transport Economy for the North Sea Region) which includes the trial of fleet vehicles - hydrogen hybrid vans and plug in range extended vans.



THE STRATEGY



5.

THE STRATEGY

This document has so far discussed what a SEAP is and why it is essential within an Aberdeen context; but of real importance are the next steps. This section discusses *Powering Aberdeen's* roadmap, providing detail on how the measures will be progressed and implemented.

5.1 Leadership and capacity

It became clear from the stakeholder workshops that to take **Powering Aberdeen** forward, clear leadership would be needed. It was suggested that ACC fulfil this role, as it has the greatest understanding and potential influence of city-

wide activities. However, it was noted that all stakeholders should lead by example and push this agenda through their own organisational leads and contribute through **Powering Aberdeen's** governance model and delivery of actions.

5.2 Governance and delivery

Successful implementation of **Powering Aberdeen** will require strong governance at both strategic and action level. ACC will lead on the development of a steering group, programme board and thematic sub-groups, as illustrated in figure 6.

It is expected that stakeholder representation will be required through all levels of the governance structure to ensure **Powering Aberdeen** progresses holistically and that responsibility is shared equally.

All actions identified will be expected to have appropriate project plans and business cases with clear lines of responsibility within the lead stakeholder organisation. In the case of larger infrastructure or strategic projects individual project governance with project plans, resources and reporting structures may be appropriate. Where practicable, use will be made of existing working groups and partnerships to avoid duplication.

One of the key aspects of **Powering Aberdeen** will be the management and tracking of the benefits associated with the actions. This will involve the following:

- The construction of a 'benefits realisation plan' (BRP) demonstrating and tracking benefits aligned with the strategic objectives that set the context for the programme.
- Responding to exceptional situations on the actions or projects that will cause a change to the BRP.
- Monitoring and review of progress to include anticipating emerging risks to the BRP, to the Programme Board and relevant stakeholders.
- Embedding emissions quantification measures into programme and project management procedures and developing quality management systems to ensure easy and verified reporting.

Figure 6 – Powering Aberdeen governance





5.3 Resources

ACC has nominated Councillor Jean Morrison as **Powering Aberdeen's** Project Champion and to chair the steering group; whilst the Director of Communities, Housing and Infrastructure, Pete Leonard has been designated the Project Sponsor, responsible for chairing the programme board.

ACC has acknowledged that a dedicated resource needs to be made available for overseeing **Powering Aberdeen's** development, implementation and evolution. As such, a SEAP Programme Manager post has been established for a three year fixed term period. Further, an Emissions Accountant post has been established to help support this role; with specific emphasis on helping stakeholders within ACC become familiar with emissions reporting.

It is also recognised that expertise exists within Aberdeen and nationally that can be used in delivering **Powering Aberdeen**.

5.4 Building momentum

Aberdeen has been working on a number of projects to address emissions and alternative energy supply for a number of years, with significant progress being made in certain areas such as district heating, hydrogen fuel provision, waste recycling and domestic property retrofitting. **Powering Aberdeen** will build upon these successes, accelerating further innovation, collaborative working and investment.

CASE STUDY: Aberdeen Heat and Power - In 2002 ACC created 'Aberdeen Heat & Power', a not-for-profit independent Company, to develop CHP schemes for the city.

ACC has 4,500 flats in 59 multi storey blocks spread across the city. In 1999 these blocks were surveyed and were found to have very low energy ratings and consequently classed as difficult and expensive to heat. Many tenants were living in 'fuel poverty' conditions in under heated properties.

The initial focus was on a cluster of 288 flats in 4 multi storey blocks at Stockethill. All the flats had electric storage heating. It was estimated that energy ratings could be substantially improved; CO₂ emissions reduced by 40% and most importantly, the tenants could have warm homes for approximately half of the previous cost. The total cost of the scheme was £1.6 million of which £730,000 was provided by the Community Energy Programme.

Since then further work has been undertaken to expand the district heating network through Hazelhead, Seaton, Tillydrone and Cairncry.



CASE STUDY: The Suttie Centre for Teaching and Learning in Healthcare received the highest national rating of Excellent in the Bespoke category, which was awarded at the BREEAM 2008 Award Ceremony at the Earls Court, London on 18 September 2008. The new medical education and clinical teaching centre is currently operational, providing the University of Aberdeen and NHS Grampian with first-class facilities for training health professionals and doctors. Some of the building's environmental features include:

- An exposed reinforced concrete frame which helps to maximise the benefits of thermal mass
- A highly efficient façade system
- A rainwater harvesting system which collects rainwater and is used to flush WCs
- A building management system to monitor plant items and energy consumption
- Low carbon technologies and passive renewables to reduce energy demands and reduce carbon footprint.
- A design which maximises the controlled use of natural daylight.

CASE STUDY: Wherever possible, Dandara sources its people, equipment and materials locally and this is an approach, which has proved to be extremely successful, yielding tangible benefits for the Group both as an employer and a business.

Dandara are committed to minimising the impact of their activities without compromising the quality, usability and durability of the environments they create and continue to develop new strategies to help achieve this goal and maximise future value for their customers.



CASE STUDY: Through the Aberdeen based Mitigation in Urban Areas: Solutions for Innovative Cities (MUSIC) project in a pilot project to reduce energy consumption in public buildings took place where photovoltaic (PV) solar panels were installed on Loirston Primary School. This project has also led to the assessment of 90 public buildings in Aberdeen being assessed for suitability; many of these have now had PV panels installed including schools and community centres.

50kw PV system displaces on average 35,753 kWh of electricity from the National Grid annually, reducing carbon emissions by 19,060 kg annually, giving around 475 tonnes lifetime carbon savings (based on conversion factor of 0.5331 per Kwh).

An educational package accompanied the PV panels which involved a presentation to pupils and teachers, and a home energy monitoring project to engage parents. An online game (Energy City) was also developed for primary 5-7 pupils across Aberdeen.

Building and maintaining momentum will require a co-ordinated approach to city development to ensure these cross-cutting themes are embedded within the visions and aims of all Aberdeen stakeholders. Individual measures need to be integrated into a single over-arching programme which can support symbiotic partnerships and match resources and skills, enabling better communication and achieving greater results for the city. It is hoped that **Powering Aberdeen** will help fulfil this function.

5.5 Partnership working and engagement

Crucial to successful implementation of **Powering Aberdeen** is partnership working across the public, private and third sectors. Partners will need to work collaboratively to develop measures, monitor performance and contribute overall.

The range of sectors involved will bring different expertise. Businesses will offer opportunities for providing pioneering solutions, job creation and market diversification. Education establishments have a role to play in upskilling the workforce whilst undertaking research and development. This will ensure cutting-edge design and innovative thinking is at the heart of the strategic agenda.

Partnership working will promote a dialogue with the many community and voluntary groups across the city, building upon their local knowledge and enthusiasm to empower citizens and develop community-led initiatives.

There are a number of benefits of working in partnership in this way. Partners share the decision making and the responsibility; making the most of each organisations abilities whilst potentially having greater access to funds that require collaborative working as part of their eligibility criteria. It will also be necessary to work within existing structures, such as the Single Outcome Agreement and Community Planning Partnership to help inform city development.

Stakeholder engagement and statutory consultations have been done through all stages of **Powering Aberdeen's** development. Further engagement will be necessary to raise awareness of **Powering Aberdeen** to all stakeholders as it is implemented.

Communication and promotions will be developed to accompany **Powering Aberdeen**, building upon the Shaping Aberdeen webpages and established stakeholder networks.





5.6 Monitoring and reporting

Day to day programme management will be overseen by the Project Management Office (PMO) within ACC. This support will review the high level objectives of **Powering Aberdeen** and also ACC's own progression of its actions. This will be reported upon monthly in the form of a corporate dashboard.

Individual stakeholders will have their own reporting mechanisms in place for monitoring progression of actions.

It is expected that the SEAP Programme Manager will have an over-view of all stakeholder's progress and will gather data to provide annual reports to the steering board. Furthermore

detailed reports will be provided to the CoM every two years in the form of an 'enhanced SEAP document' accompanied by the MEEI. This will require information on quantified savings and progress against agreed targets with input necessary from all stakeholders.

Compliance with strategic outcomes will be monitored through the steering group on a quarterly basis, where actions will be reviewed and modified. Feasibility and development of new initiatives will be discussed at the programme board level with feedback provided to both the steering group and thematic sub-groups.

5.7 Development Planning

A key area where ACC has influence is within the planning process, aside from this, the influence ACC has over city-wide emissions is minimal; with the majority arising from commercial and industrial activity, transport, waste and domestic consumption.

Following feedback from Scottish Natural Heritage (SNH) during the screening stage of the Strategic Environmental

Assessment (SEA), **Powering Aberdeen** is to be included within the SDP scheduled for revision in 2016. The implications of which should transcend all policies, strategies and guidance that sit beneath this including reference within the Local Development Plan (LDP) and accompanying supplementary guidance. This will ensure that the principles of **Powering Aberdeen** are truly embedded within city development.

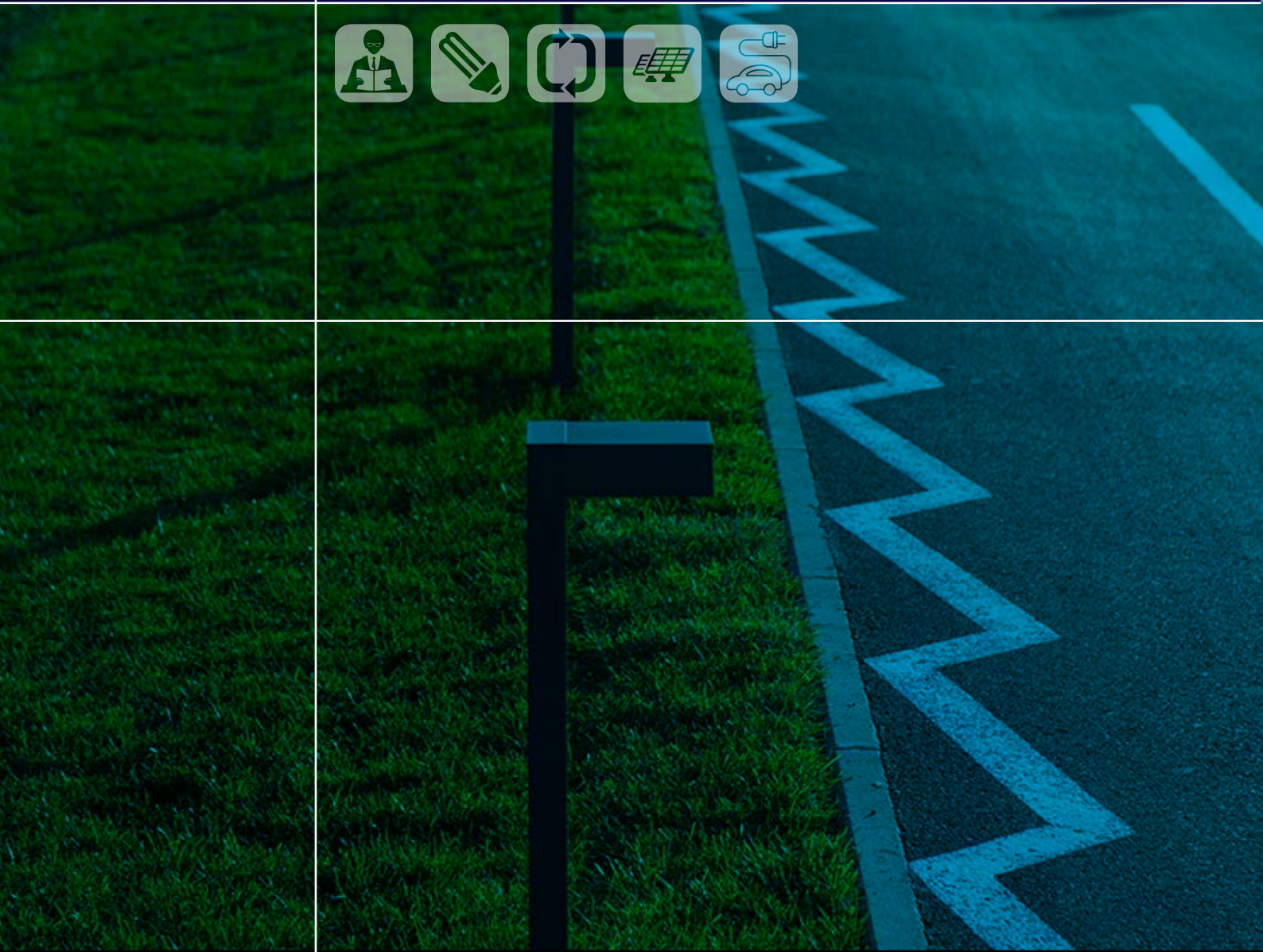
5.8 Community Empowerment

Powering Aberdeen will engage the wider community in the benefits of taking forward measures to reduce emissions and find alternative forms of energy supply, including youth groups, community councils, voluntary organisations and charities. It is essential that the citizens of the city share the principles of **Powering Aberdeen's** as they play a key role in fulfilling measures out with ACC control, for example considering emission and energy management within the home. This could be further supported through application of the Community Empowerment Act. This Act will help to empower community bodies through the ownership of land and buildings, and by strengthening their voices in the decisions that matter to them.

Active communities may even have the potential to take energy supply to their homes and businesses into their own hands by establishing energy co-operatives or crowd-funded projects. In recent years the trend in communities taking back this control and becoming energy independent has been increasing. Some local examples include Udry community wind turbine and Braemar micro-hydro in neighbouring rural Aberdeenshire. The benefits of community ownership go beyond those associated with emissions reduction and energy security, and can include increased community involvement and improved community spirit, creating an investment vehicle where funds can be reinvested locally providing greater financial control and responsibility, and providing volunteer opportunities.



POWERING ABERDEEN - THE JOURNEY AHEAD



6.

POWERING ABERDEEN – THE JOURNEY AHEAD

This section will look at the journey ahead for *Powering Aberdeen*; noting that this programme is subject to change, with a need to be flexible and having the ability to adapt to changing resource, legislation, best practice and many other factors.

6.1 Initial Action Plan

Annex 1 presents the initial action plan for **Powering Aberdeen**. This is made up of actions that are being driven by Aberdeen City Council and a number of key public stakeholders. The intention is that the Action Plan will evolve and grow as more partners become involved.

6.2 Funding

Funding will be particularly important for larger transformational projects. There are many avenues to pursue for funding ranging from government grants, EU funding allocations, finance schemes, private sector investment, crowd-funding and other equity schemes.

Potential funding streams are available from a number of sources, including investment funds at concept stage, programme funds, project development assistance during action implementation, and alternative financing schemes. The CoM has compiled a financing opportunities matrix that illustrates these avenues further¹⁹; this is supported by a thematic leaflet looking at inspirational finance schemes, showcasing best practice examples²⁰.

Some of these funding opportunities have eligibility criteria which mean they may only be accessible via specific channels; for example some may only be open to local authorities whilst others may be available to community groups. To increase opportunities for gaining access to such funds, the need to work collaboratively will be essential.

It should be acknowledged that some of the actions identified in annex one already have funding in place. What is evident is that further significant investment will be needed to ensure attainment of the targets. All sources of funding will be explored alongside any new opportunities that may arise following the Paris pledge.

The project manager of each action will have responsibility for overseeing action financing.

6.2 Next steps

Powering Aberdeen will build upon the foundations that have been developed over the last eighteen months.

Following the SEA public consultation on the accompanying environmental report, feedback will be incorporated prior to finalising this document. Steering group members will then endorse **Powering Aberdeen** by becoming a signatory, before submission to Full Council for approval. After which, **Powering Aberdeen** will be submitted to the CoM for approval.

In the time between CoM approval and the development of an enhanced document, effort will be spent upon improving data capture, monitoring progress, developing collaborations and reporting. In parallel with this the actions will be progressed and further discussion will commence on identifying new actions.

It is hoped that by 2030, Aberdeen will be a world leading energy city, providing solutions for an increasingly congested world. It has reduced its emissions by 50%, diversified local industry where businesses are managed responsibly, established energy security providing the energy people need in a reliable and sustainable way, increased employment within the region, developed an alternative fuel infrastructure, alleviated fuel poverty and improved the health and wellbeing of its citizens, whilst protecting the environment for future generations.

This transition will have been achieved through collaborative working across all sectors, community empowerment and strong leadership. The result will be a sustainable city where people across the globe aspire to live, where everyone can enjoy a healthy life and powered by a fair share of the Earth's resources.

¹⁹ http://www.eumayors.eu/IMG/pdf/Financing_Opportunities_Matrix.pdf

²⁰ http://www.eumayors.eu/IMG/pdf/EN_thematic_leaflet_3_web-2.pdf

CONTACTS AND FURTHER INFORMATION

Be involved

Powering Aberdeen needs to involve everyone in its development and implementation. This includes everyone who lives and works within the city and also those who visit the city.

Powering Aberdeen will evolve over time reflecting changes to legislation, best practice and attitudes. Essential to success will

be continued stakeholder engagement and communication. Further work will be done to ensure more organisations are involved including those from the public, private, third sectors as well as community and youth involvement.

Powering Aberdeen ambition is to be as big as the ambition of the city's citizens. Aberdeen needs you.

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GLOSSARY

ACC	Aberdeen City Council
ACSEF	Aberdeen City and Shire Economic Futures
ACSSDP	Aberdeen City and Shire Strategic Development Plan
Alternative technologies	Alternative technologies relates to energy provided from other sources aside from fossil fuels, this can include hydro power, combined heat and power, biomass and renewable energy for example
AWPR	Aberdeen Western Peripheral Route
BAU	Business As Usual
BEEI	Baseline Energy and Emissions Inventory
BREEAM	Building Research Establishment Environmental Assessment Methodology
BRP	Benefits Realisation Plan
CCA	Climate Change Act 2009
CCPI	Climate Change Performance Index
CHP	Combined Heat and Power
CO ₂	Carbon Dioxide
CoM	Covenant of Mayors
CUSP	Centre for Understanding Sustainable Practice
DECC	Department of Energy and Climate Change
EC	European Commission
ECT	Environmental and Clean Technology
EFW	Energy from Waste
EU	European Union
ESCO	Energy Service Company
FoE	Friends of the Earth – a stakeholder involved in SEAP development
FSB	Federation of Small Businesses – a stakeholder involved in SEAP development
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GVA	Gross Value Added
HGVs	Heavy Goods Vehicles
HyTrEc	Hydrogen Transport Economy for the North Sea Region
IPCC	Intergovernmental Panel on Climate Change
KSB	Keep Scotland Beautiful – a consultant involved in scenario modelling workshops
LCES	Low Carbon Economic Strategy
LCLIP	Local Climate Impacts Profile
LDP	Local Development Plan
LED	Light Emitting Diode
LTS	Local Transport Strategy
MEEI	Monitoring Energy and Emissions Inventory
MRF	Materials Recycling Facility
MtCO ₂ e	Million metric tonnes of carbon dioxide equivalent
NESTRANS	North East Scotland Transport Partnership – a stakeholder involved in SEAP development
NFES	National Grid Future Energy Scenarios
NPF	National Planning Framework
NSA	Nicki Souter Associates – consultants undertaking workshop facilitation
NTS	National Transport Strategy
Renewable energy	Energy from a source that is not depleted when used, such as wind or solar power
RGU	Robert Gordon University
RPP2	Scottish Government's Second Report on Plans and Priorities
RTS	Regional Transport Strategy
SBC	Scottish Business in the Community – a stakeholder involved in SEAP development
SDP	Strategic Development Plan
SEA	Strategic Environmental Assessment
SEAP	Sustainable Energy Action Plan
SECAP	Sustainable Energy and Climate Action Plan
SNH	Scottish Natural Heritage
SSE	Scottish and Southern Energy
SUMP	Sustainable Urban Mobility Plan
UK	United Kingdom
WRAP	Waste and Resources Action Programme

ANNEX ONE

KEY ACTION	PROJECT STATUS	LEAD PARTNER	OTHER KEY STAKEHOLDERS	TIMESCALE	RESPONSIBILITY
THEME 1: LEADERSHIP AND BEHAVIOUR CHANGE					
Review and update the Carbon Management Plan which will drive carbon emission reductions across Aberdeen City Council's operations.	Planned	Aberdeen City Council	Internal stakeholders	2016- implementation on-going	Planning and Sustainable Development
Develop and seek approval for the Action and Delivery plan which sets out how the commitments in the Sustainable Urban Mobility Plan and Local Transport Strategy will be delivered. This focuses on increasing walking, cycling and the use of public transport.	Current	Aberdeen City Council	Transport operators, public, funding bodies	Approval 2016 for 5 year plan	Planning and Sustainable Development
Undertake training and awareness of the newly approved Building Performance Policy for Aberdeen City Council which sets out minimum energy performance criteria for new builds. Establish methods to monitor its implementation.	Current	Aberdeen City Council	Internal stakeholders and suppliers	2016	Planning and Sustainable Development
THEME 2: ENERGY EFFICIENCY					
Replace street lights across the City with LED technology. This will be combined with light monitoring and control system to improve energy efficiency.	Current	Aberdeen City Council	Internal stakeholders, contractors, public	2016-2023	Public Infrastructure and Environment
Continue ACCs on-going programme to improve the energy efficiency of public buildings with the aim of reducing emissions by 2.5% per year.	Current	Aberdeen City Council	Internal stakeholders	On-going	Land and Property Assets
Implement a project to gain a better understanding of how vulnerable households connected to the heat network use energy. All properties in the study will be connected to fibre broadband and indoor temperature and energy monitors will be installed. Using the information from the study the City Council will work with local tenants to encourage them to reduce energy usage where necessary.	Planned	Aberdeen City Council	Householders, energy efficiency organisations	Subject to funding installation in 2016 then on-going	Land and Property Assets and Economic development

ANNEX ONE

KEY ACTION	PROJECT STATUS	LEAD PARTNER	OTHER KEY STAKEHOLDERS	TIMESCALE	RESPONSIBILITY
THEME 2: ENERGY EFFICIENCY					
Provide energy use information to 6000 properties gained from a thermal imaging survey and develop a supporting programme to encourage householders to improve the energy efficiency of their property or use energy more wisely.	Planned	Aberdeen City Council	Householders, energy efficiency organisations.	On-going	Land and Property Assets
Externally insulate 96 properties in a three-story mixed tenure building in Froghall to improve the energy efficiency of the housing stock.	Current	Aberdeen City Council	Householders, contractors, internal stakeholders.	2016	Land and Property Assets
Implement a programme to over clad 7 multi storey blocks in the Seaton Area to improve their thermal efficiency.	Current	Aberdeen City Council	Householders, contractors, internal stakeholders.	2015 to 2018	Land and Property Assets
Install Energy Monitoring Systems at the Altens and city centre Campus's as part of reducing energy usage across the Aberdeen college building portfolio.	Current	North East Scotland College	Internal stakeholders, contractors	2016	Property Management
Implement Aberdeen City Police Carbon Management plan to reduce use of electricity and gas in the operations.	Current	Aberdeen City Police	Internal stakeholders	On-going	Aberdeen City Police
Implement University of Aberdeen's Carbon Management Plan which includes amongst other things energy efficiency measures and refurbishment of buildings to deliver year on year reductions in carbon emissions.	Planned	University of Aberdeen	Internal stakeholders, contractors	On-going	University of Aberdeen
THEME 3: RESOURCE EFFICIENCY					
Explore the use of cold asphalts on the road network to reduce energy usage.	Future opportunity	Aberdeen City Council	Internal stakeholders, contractors	At feasibility stage	Public Infrastructure and Environment
Revise the current recycling collection programme to increase recycling rates, encourage greater participation and increase the levels of materials that can be recycled.	Current	Aberdeen City Council	Householders, contractors and internal stakeholders	On-going	Public Infrastructure and Environment
Develop plans to make Aberdeen a Sustainable Food City - producing and buying locally to reduce the amount of miles a product travels.	Planned	Aberdeen City Council	Internal stakeholders, businesses	On-going	Planning and Sustainable Development

ANNEX ONE

KEY ACTION	PROJECT STATUS	LEAD PARTNER	OTHER KEY STAKEHOLDERS	TIMESCALE	RESPONSIBILITY
THEME 4: ALTERNATIVE TECHNOLOGIES					
Installation of an anaerobic digestion plant at the new AECC which will power the building and three hotels as well as having available additional heat. These will be BREEAM excellent buildings.	Planned	Aberdeen City Council	Contractors, internal stakeholders.	Due for completion by 2019	Economic Development
Implement programme to provide district heating to an additional 7 multi storey properties between 2016 and 2018.	Planned	Aberdeen City Council	Householders, contractors and internal stakeholders	2016-2018	Land and Property Assets
Install CHP at 3 multi storey blocks in 2017/18.	Planned	Aberdeen City Council	Householders, contractors and internal stakeholders	2017/18	Land and Property Assets
Continue planning for a new energy from waste facility which will remove 96% waste from landfill and provide electricity and heat.	Planned	Aberdeen City Council	Neighbouring local authorities, contractors, utilities companies.	Due for completion 2021	Public Infrastructure and Environment
Develop plans for further expansion of the heat network taking into account the new heat sources at the Energy from Waste plant and AECC.	Future opportunity	Aberdeen City Council and Aberdeen Heat and Power	Internal stakeholders and potential partners	2016/17	Aberdeen City Council and Aberdeen Heat and Power
Aberdeen Heat and Power to complete a feasibility study to use a water source heat pump for the Seaton Heat network which would reduce carbon emissions further for the heat supplied to the network.	Future opportunity	Aberdeen Heat and Power	Internal stakeholders and contractors	2016	Aberdeen Heat and Power
Upgrading and refurbishment of the Aberdeen University district heating network system to achieve further efficiency gains which will reduce carbon emissions.	Current	University of Aberdeen	Internal and contractors	2016	University of Aberdeen

ANNEX ONE

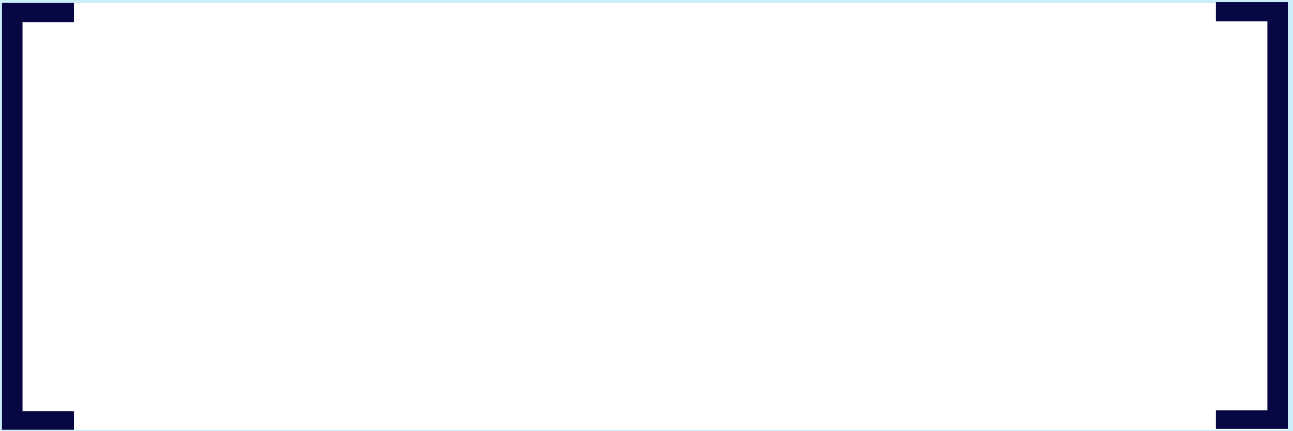
KEY ACTION	PROJECT STATUS	LEAD PARTNER	OTHER KEY STAKEHOLDERS	TIMESCALE	RESPONSIBILITY
THEME 5: LOW EMISSION SOCIETY					
Develop two additional Park and chose sites on the A96 and at school hill with the aim of doubling the number of people using Park and Choose by 2021.	Planned	Aberdeen City Council	Public, internal stakeholders, transport operators and contractors	On-going	Public Infrastructure and Environment
Continue to expand the co-wheels car club and promote and encourage it's wider spread use across the city.	Planned	Aberdeen City Council	Public and businesses	On-going	Planning and Sustainable Development
Introduce digital intelligent traffic management systems to alleviate congestion, which helps improve air quality and reduce emissions.	Planned	Aberdeen City Council	Public transport operators, internal and external stakeholders	On-going	Public Infrastructure and Environment
Continue to seek funding to expand the current hydrogen fleet of 10 buses and encourage greater uptake of hydrogen across the city as an alternative fuel.	Planned	Aberdeen City Council	Internal stakeholders, partners and transport operators	On-going	Economic Development
Implement the Transport Action and Delivery Plan to improve the air quality in the city centre through measures to encourage more walking and cycling and greater use of public transport.	Planned	Aberdeen City Council	Public, internal stakeholders, transport operators and contractors	5 year plan	Planning and Sustainable Development
Implement a carbon management plan at Aberdeen College to reduce carbon emissions from transport. This will involve reducing business miles, purchasing low emission vehicles and increasing the use of video conferencing.	Current	North East Scotland College	Internal stakeholders, public transport operators, suppliers	On-going	Carbon Management Plan.

PUBLIC CONSULTATION QUESTIONS

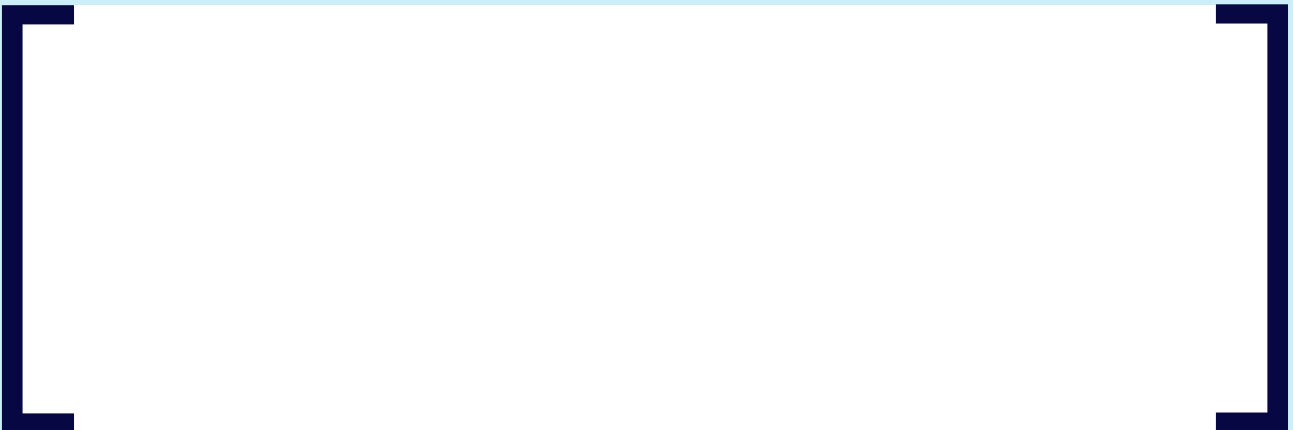
1. Do you agree with the vision on page 8? If not, how would you change it?



2. Do you agree with the objectives on page 9 - 12?

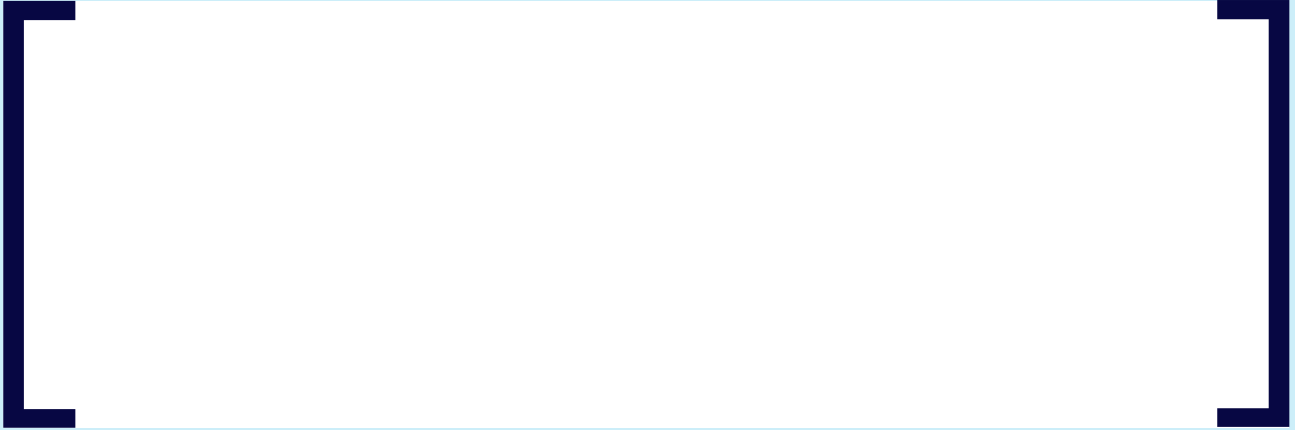


3. Do the objectives cover all areas of interest to you or your organisation?




PUBLIC CONSULTATION QUESTIONS

4. Does the direction of Powering Aberdeen align with you or your organisations own vision, objectives, values?



5. Can the objectives collectively deliver the transformation aspired to, in your opinion?




6. What do you think of the five themes on pages 28 - 32?

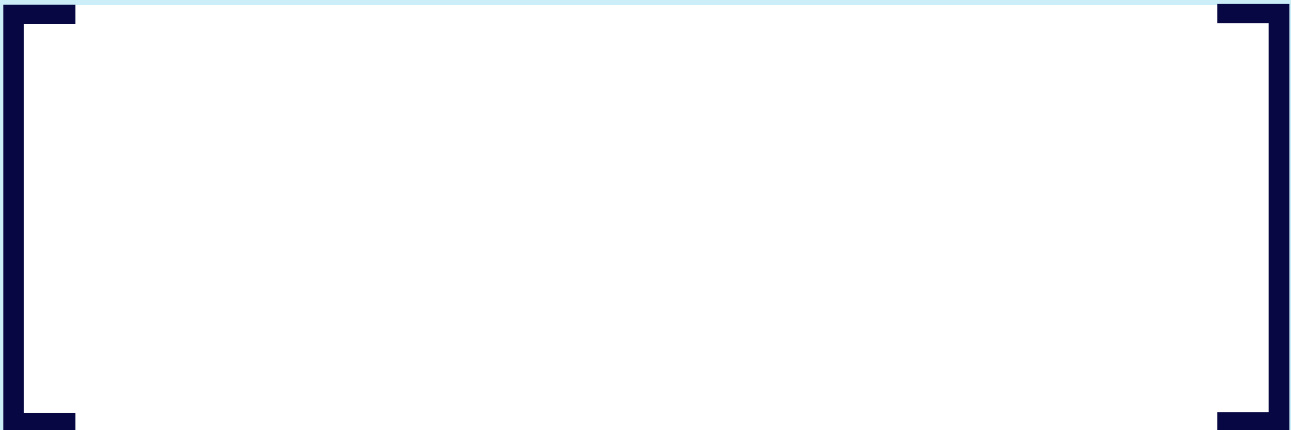


PUBLIC CONSULTATION QUESTIONS


7. What are your thoughts on the governance structure shown on page 35?



8. Who else should be involved with Powering Aberdeen?



9. Are you aware of other actions that are already happening? If so, please provide information on this, where possible providing contact details, organisation and information on the project itself.



PUBLIC CONSULTATION QUESTIONS

10. What other actions could be taken forward?



11. Would you like to be involved? If so, please let us know by providing your contact details.



POWERING ABERDEEN:

ABERDEEN'S SUSTAINABLE ENERGY ACTION PLAN



ABERDEEN
CITY COUNCIL