WARRINGTON BC – GREEN ENERGY STRATEGY

INTRODUCTION

Warrington is an area of just over 207,000 population in the North West of the country. It has a low funding base but high economic growth. It has been severely impacted by Government cuts in funding under the Chancellor's austerity programme over the past five years.

In tandem with the worsening economic position, the Council has seen the rise in importance of energy and climate change in the Council's operation. The green agenda is now touching almost every area of Council's functions but is also offering considerable opportunity for those authorities capable of reacting sufficiently quickly.

Warrington Council has been involved in the green agenda for some years and has taken a leading position amongst local authorities in the UK in pushing forward innovation in this market.

However, these projects have emerged organically and have not been the subject hitherto of a formal strategy. The Council now considers it timely to draw together the different strands of its operation in this space and to set down its purpose for now and in the future.

This Energy Strategy provides details of the Council's goals, plans and projects and how such work will be approached in future and the Council's targets met.

GOALS, ROUTE MAPS AND PROJECTS

Goals

The Council's twin goals are to be energy self-sufficient in its own operations by 2030 and to support the work underpinning the Climate Emergency Declaration of 18 June 2019.

Energy self-sufficiency has not been reached by any local authority in the UK to date and would be achieved where the Council is generating an equivalent amount of energy from renewable sources to that which it uses in the delivery of its services.

The Council's Climate Emergency declaration pledges to make Warrington a net zero carbon area by 2030. This will involve both an inward looking focus and an outward looking focus. The latter is the work with partners across the town and region to deliver this goal through strategies and plans.

The inward looking focus is to make all Council property carbon neutral by 2030 and across all services. This Energy Strategy covers a large part of the work required to meet those pledges.

The Council has identified six key areas as part of these goals:

- Reducing fuel poverty;
- Reducing greenhouse gas emissions;
- Improving security of energy supply;
- Creating regeneration and economic growth;
- Achieving sustainability in all the Council's operations;
- Generating income to fund the investments.

The intention is to achieve social, economic and financial benefits in the delivery of this Energy

Strategy. The following outcomes are targeted:

- A reduction in fuel poverty figures for Warrington;
- A reduction in greenhouse gas emissions in Warrington;
- Achieving security of energy supply, largely by owning and controlling the generating assets to achieve energy self-sufficiency;
- promoting economic regeneration, including creating jobs and growth, by Warrington becoming a centre of excellence in the green agenda;
- Delivering a more sustainable Warrington;
- Undertaking the work on the basis of a sound business case approach that manages risk and delivers a return on investment.

The Route Map

The Council will continue to bring forward a series of projects to address the key issues above and help it

reach its goals. These will include both the developer and investment route, both of which are examined

below.

In each case, projects will go through the governance process, whereby projects are proposed by officers and considered in the Green Energy Officer Group; are then considered by the Member led Warrington Sustainable Energy Executive Board Task Group; with decisions ultimately being taken by the Council's Cabinet and then confirmed by Council.

The Projects

These provide the steps along the path towards the goals and targets. Each should be considered carefully for its aims and purpose; its social and economic benefits; and the business case that underpins it, providing a return for the Council on its investment.

Examples of the type of projects the Council is promoting are given throughout this Energy Strategy and there will be many more to follow.

THE ENERGY MARKET IN THE UK

The Current Market

The UK energy market has been changing for some years. However, those changes are accelerating and the Council has carefully positioned itself into a place where it can react quickly and effectively to take advantage of new opportunities that are arising.

Often the private sector will show the way, with private finance demonstrating how investments can provide good returns, whilst having considerable non financial benefits. However, Warrington is amongst a band of local authorities determined to make the most of opportunities that can be delivered within the civic envelope.

Traditionally, the energy market has been in 3 parts:

- Generation;
- Distribution;
- Supply.

Generation is about generating electricity from new, renewable sources. Classic examples are solar PV and wind

energy schemes. Many local authorities have entered the generation market, including the Council. Generation is generally about income generation from an asset that is within Council ownership, whilst providing green benefits at the same time.

Distribution of power is getting it from where it is generated to where it is used. This is mainly the preserve of the Transmission and Distribution Network Operators, but has a relevance where a local authority provides electricity to others from its own generating stations, perhaps by private wire or in Warrington's case, by providing solar PV on commercial rooftops and then selling the power to the occupant of the building. Distribution is generally about economic development, such as helping local companies reduce their energy bills by supplying them with cost effective energy.

The supply option is different again and chiefly has as its purpose social gain and the combatting of fuel poverty. This is the most complex of the three strands, but potentially has the benefit of providing most social gain and an answer to a very difficult social issue.

Fuel poverty is driven by three key factors: the price paid for energy, the energy efficiency of the home and the disposable income available to the occupant. By providing a means to supply energy directly to consumers, the Council recognises that it can effectively deal with one of those key elements. The difficulty is provided by the fact that the supply option offers little financial gain and a higher degree of risk.

Despite there being three different parts to the energy agenda, very few local authorities have ventured past the generation option. Many have renewable energy schemes of one type or another, but very few have projects which provide distribution and there are just two ESCO supply companies in Nottingham and Bristol City Councils. If an authority wants to maximise the opportunities, it has to aspire to operate in all three areas. Warrington Council does aspire to work in all three areas, as its projects below demonstrate.

A Changing Market

But the energy market is changing – and fast. A new age has arrived, characterised by the 4 D's:

- *Decarbonisation* – legally binding carbon budgets for the UK Government and a need for policy to support the aspiration under the Climate Change Act 2008 for net zero carbon by 2050;
- *Digitisation* – technology now acting as an enabler allowing quicker decision making with far greater machine- based learning;
- *Decentralisation* – energy is no longer generated at a central point and distributed one way – distributed generation is now more commonplace and growing in impact;
- *Democratisation* – social contracts and the need to take customers on the journey is now crucial to achieving acceptance and agreement in both regulated monopolies and commercial entities.

A series of events is causing disruption in the energy market and is driving transformational changes across the piece:

- The imbalance of supply and demand in electricity;
- New energy technologies coming forwards and accelerating;
- Renewable penetration in the market;
- Engaged vocal consumers of energy who want energy to be delivered as a service.

These events will change the face of the energy market over the next decade. This Energy Strategy need not contain all of the background to these changes, but for the purpose of this document, there will be 3 key 'tipping points' in the future:

- Tipping Point 1 – grid cost parity for non-utility solar plus battery storage systems;
- Tipping Point 2 – the price of battery electric vehicles reaches cost parity and performance parity with

internal combustion engine vehicles;
- Tipping Point 3 – the cost of transporting electricity exceeds the cost of local distributed generation and storage.

This means that the pace of change in the future energy market will be defined by three key technologies:

- Solar PV;
- Battery storage;
- Electric vehicles.

There will be implications across the value chain and the Council will need to decide when and how to intervene in the market or when and how to alter its intervention plans.

There will be winners and losers, but the Council's covenant should ensure that local people trust its offerings and as energy becomes more local, the Council can have more of an influence upon it, to provide greater social benefit. Local authorities have in the past provided energy services and can have a key involvement in this market again.

It is also worthy of note that those offering energy services are changing:

- The 'big 6' energy companies are rapidly losing market share as behaviour trends of consumers are changing;
- The big oil companies, principally Shell and BP, are moving into the wider energy market and purchasing 'up and coming' companies;
- Huge US technology companies, such as Apple, Google and Microsoft are also looking at taking a much greater stake in the energy market;
- As energy becomes more local and 'smart' the technology companies have a big role to play in its digitisation.

Essentially this means that the old way of the big 6 energy companies having a virtual monopoly on the supply of electricity and gas, both to consumers and commercial customers, is changing rapidly. What will be seen in the future is more local generation, more self-supply, benefitting through use of battery storage, energy trading at local level and even private grids and off grid solutions.

It is the Council's intention to position itself to take full advantage of these changes as they occur.

ADAPTING TO A CHANGING MARKET

Many companies in the private sector have seen these changes coming and are also positioning themselves. Whilst the Council may be a leader in the local authority market, its projects are mainstream in general terms rather than radical.

The Council recognises the opportunities offered by generation of electricity from renewable sources. In particular, it watched with interest the development of solar PV technology and its rapid deployment within the UK. As with other local authorities, it decided to enter the market and capture social, economic and financial gains in so doing. Good examples are its work with Golden Gates Housing Trust and the new proposal for solar farms in York and Hull. These are illustrated below.

Golden Gates Housing Trust

Its first work was in partnership with Golden Gates Housing Trust (now Torus), where over 2,000 former Council houses were fitted with solar PV installations and electricity supplied to tenants. The scheme generates 4,127 MWh of electricity per annum, saving tenants over £540,000 and reducing CO2 emissions by almost a thousand

tonnes.

The Council having successfully entered into solar PV projects has now increased its ambitions. It has entered into an arrangement whereby two new solar farm developments in York and Hull will be developed by a national contractor and then sold to the Council.

New Solar Farms in Hull and York

These are sizeable commercial projects, 25MW and 35MW in capacity, at a cost to the Council of around £60m. Both have the capacity for battery storage to be included in the construction, as in the case at York or added at a later stage for the Hull project. However, the Council has de risked the transaction by arranging for the contractor to build out the solar farms, with interim finance arranged, with the Council only taking ownership upon their successful completion and commissioning. This is also a neat procurement solution.

The 35 MW solar farm in York will generate enough power for 10,000 homes and generate carbon savings of around 15,000 tonnes per annum. The 25 MW solar farm in Hull will generate enough power for 8,000 homes and generate carbon savings of around 10,000 tonnes per annum.

The Council will then arrange for the electricity generated from one of those sites to power all Council buildings, securing further savings in its energy costs and making it the first local authority in the UK to be energy self-sufficient from renewable sources. The remainder of the power will be sold to the grid or to other public sector organisations.

Innovative ownership arrangements via wholly owned companies have been put in place to maximise the value of these developments to the Council.

Each solar farm will also have an electric vehicle forecourt as part of its development, whereby typical charging times of less than 30 minutes are provided from up to 24 ultra-fast charging bays. This is another leading innovation, as power for the electric vehicle forecourts will come from the solar farms attached.

The Council also recognises the potential local economic benefit from distributing energy via private wire or by fitting assets to the property of third parties. The work on the OMEGA development site is a good example of this.

The OMEGA Development Site

Few, if any, other local authorities have entered this space, as most have focussed specifically on their own assets and the potential for development. However, Warrington is an area with a high volume of commercial and industrial premises, such as warehousing and distribution centres clustered around the M62 corridor, with the OMEGA development site being a good example. These areas form an important part of the economic vitality of the Borough.

Accordingly, the Council has offered to fit solar PV installations on premises owned by third parties, on the basis that it will fund the installations and retain income derivable from them, whether from Government financial incentives and/or from the sale of the electricity to the occupants of the buildings. This is a highly innovative scheme for local government, but is mainstream in the private sector.

Considerable hurdles have had to be addressed to develop a workable model for this operation. The OMEGA development site has seen the first deals done, with 1 MW of solar PV installed on the roof of the Plastic Omnium site by the Council and the 735,000 kWh of electricity generated being sold to the occupants. A second two part scheme at the Hermes Distribution Centres in Warrington and Rugby have now been agreed, with 1 MW capacity of solar PV again being installed on each roof and wired into the building. Further projects in this series are

planned.

As indicated above, one of the Council's goals is to reduce fuel poverty and that is closely linked to the price that local people pay for their energy. This means that the necessity of influencing the price that people pay for their electricity and gas is recognised.

If a local authority wants to intervene in the energy supply market, there are few options. A popular move has been to develop white label arrangements, but these only have a minor impact at local level and it is recognised that the establishment of an Energy Services Company is the only real solution. This can either be alone or in partnership with other authorities.

However, establishing an ESCO from a standing start is a long, complex and expensive process. The Council is therefore seeking to de risk this process by acquiring an existing supply company with a supply licence.

The Council is in the process of seeking to acquire such a supply company.

Creating or Purchasing an Energy Services Company

The Council intends to intervene in this area of the energy market, either by establishing an ESCO or acquiring an existing company, provided that the costs and benefits are proportionate. The Council would also would like to strategically incorporate its generating assets into any supply company structure that is developed. The major aim of this would be to reduce fuel poverty in Warrington and deliver the Councils Emergency Climate change declaration.

Community Energy

Many local authorities have not ventured into the community space, focussing instead on their own services and assets. However, the value of such work has been demonstrated to provide considerable community benefits.

Accordingly, the Council has become involved in supporting two local Community Energy Companies, Lymm Community Energy and Livewire Community Energy. The Council also plan to set up its own charitable organisation that a percentage of profits from its green energy projects can go into to support community energy initiatives and the reduction of fuel poverty in Warrington.

Warrington Borough Transport (WBT)

The Council will continue to work with WBT to implement a greed energy fleet, carbon literacy and to reduce the carbon foot print of WBT's buildings.

Energy Efficiency and Energy Use

The Council is aware that in the hierarchy of energy, the starting point is reducing energy use, then improving energy efficiency and finally creating new sources of renewable energy. The cost/benefit of each is different, with the greatest benefit from reducing energy use.

The Council has managed to reduce its energy use over past years. In 2016, the energy bill (combined gas and electricity) was £2.5m pa. In 2018 it had reduced to £1.8m pa. However, there have not been specific targets for energy reduction or specific mechanisms in place to focus on this area.

As part of the implementation of this Energy Strategy, in tandem with the Climate Emergency Motion, the Council will put in place new mechanisms and task specific officers with the role of 'eco champions' to promote lower energy use amongst the Council's employees.

It is the Council's intention to continually monitor its energy use and continue to make efforts to reduce the amount of energy used in the performance of its functions.

So far as energy efficiency is concerned, the Council has also undertaken work to try and improve the energy efficiency of its various assets. An excellent example is provided by the replacement of streetlighting with LED lights.

Street Lighting

The Council has replaced 18,000 street lights in its area with new LED lighting, offering greater flexibility for switching on and off and/or dimming. The 12.7m kWh of electricity used in 2011 to power the streetlights has now been reduced to 6.3m kWh in 2018. This has saved over £515,000 per annum in energy costs.

Other work includes voltage optimisation, boiler controls, variable speed drives, replacement of oil fired boilers, insulation and building lighting replacements. This work was mainly funded by low cost public sector loans via the Salix Recycle Fund.

The Council has also been replacing older vehicles in its operational fleet, choosing the most efficient vehicles possible, to reduce the costs of operation and also improve emissions figures.

The Council recognises that electric vehicles represent the future and that it will need to introduce electric vehicles fully into its fleet. This work has started and charge points have been installed for the Council's own use.

Further infrastructure to accommodate public charging of electric vehicles in Warrington will also be required but a big step forwards has been taken with the installation of 58 public electric car charging points on different floors in the new Times Square multi story car park.

Under the Council's planning policies, all new developments, both residential and commercial, are required to provide accessible electric charging points.

The Investment Route

There are different ways to adapt to a changing energy market. The vast majority of local authorities have taken the *developer route* in terms of renewable energy projects. This means that they take authority owned land and procure a design, build and operate contract whereby an asset is built for them and then subsequently run it on behalf of the authority. This traditional route is favoured because the Council controls the development process.

However, in other non-energy fields of local government operation, an *investment route* is well used, whereby the Council simply invests money in an asset for a commercial return. Here, again, the Council has been a trailblazer with its deal to arrange a bond of approximately £60m to purchase the Wroughton Solar Farm in Swindon, jointly with Thurrock and Newham Councils. Here, the Council did not operate the asset, but gained a financial return from its ownership, with the usual attendant social gain coming from the renewable energy facility. Other bonds have also been entered into, with the Council considering carefully how long to maintain an interest and when to liquidate interests.

Along a similar theme, the Council has again raised its ambition and plans to launch a Social Impact Fund in 2019. Social investment is part of the future, with renewed focus on how to divert more traditional investment into the green agenda, to promote more rapid decarbonisation of the UK.

Under social investment, finance is provided for qualifying schemes to generate social returns, but with the expectation of repayment of the capital and a return. This was encouraged in the Government review *Growing a Culture of Social Impact Investing in the UK*.

The Council has determined to take the lead on this area and plan into a joint venture with Altana Wealth whereby the first public sector social impact fund will be created in 2019, giving local authorities an opportunity to join together to improve public sector cashflows and invest in projects with long lasting social impact. This will be a national fund for all sectors of local government and will put Warrington in a leading position nationally on social investment for the local government sector.

GOVERNANCE ARRANGEMENTS

The Council has put in place suitable governance arrangements to oversee all current and future projects. Normally, ideas are cultivated by officers from a number of different sources, to see if they would work in the civic envelope.

These ideas are then considered by the Green Energy Officer Group, which has a wide range of officers in attendance, from corporate finance, through legal services, projects, housing and energy teams. This group will go through ideas and determine which should be progressed to Members.

Above the Green Energy Officer Group is a member led task group – the Warrington Sustainable Energy Executive Board Task Group -which has as part of its membership the Leader of the Council and Executive Member for Environment and Climate Change, as well as proportionate cross party Members. There are also officer members of this group, including the Deputy Chief Executive and s151 officer, together with legal, finance and projects teams.

This group was established in 2015 with the purpose to manage the capital funds allocated for the delivery of a sustainable energy project programme. Its role is to provide direction on sustainable energy strategy and policy in Warrington and to effectively make recommendations to the Executive Board on projects that should be progressed.

All decisions are taken by the Executive Board in accordance with the Council's constitution. By the time that decisions are required, projects have been thoroughly thought through and examined.

This Energy Strategy is flexible in nature and will be a working document that is constantly reviewed and updated on a regular basis. Progress on its delivery will be reported to Cabinet annually.

THE APPROACH TO FUTURE PROJECTS

A Flexible Approach

The Council is seeking to intervene in the energy marketplace, for the benefit of its inhabitants (both domestic and commercial) and its own energy costs and security of supply.

It needs to do this as energy is a key strategic area for it and it is becoming more central to everything that the Council does. Aside from its own functions, energy is also highly relevant to individuals and businesses in an area and there is a need to promote regeneration, combat fuel poverty and reduce costs.

The Council plans to make this intervention on a flexible basis, looking at a number of routes, including the investor route as well as the developer route.

It has developed a robust methodology for doing this, including the requirement for each project to show its aims and purpose are aligned with the Council's key goals, the social and economic benefits that will be delivered, be supported by a robust business case and include a sensible attitude to risk.

This Energy Strategy concerns just the Council's own operations but is aligned with its intentions under the Climate Emergency Declaration of 18 June 2019.

The Council intends to continue to closely monitor the changes in the market and look for viable opportunities in accordance with this Energy Strategy.

External Funding

The Government has put in place many different avenues of funding that could be used by the Council in pursuance of this work. Examples are the Office for Low Emission Vehicles (OLEV) for electric vehicle infrastructure and the UK's innovation agency, Innovate UK, which is a non departmental public body that helps realise the potential for new ideas, such as micro grids or smart energy systems.

The Council will continue to investigate viable routes of external grants or funding to drive this Energy Strategy forwards.

Carbon iteracy

Carbon Literacy is "An awareness of the carbon dioxide costs and impacts of everyday activities, and the ability and motivation to reduce emissions, on an individual, community and organisational basis." The Council will strive to train and educate its staff, members and stakeholders to make them fully carbon literate.

The Cleaner / Greener Commission

Warrington Council has been proactive during recent years in relation to its own energy situation, as indicated throughout this Energy Strategy.

However, the Council also has a role in relation to the wider community and the greenhouse gas emissions that emanate from that community. Accordingly, the Council determined in 2019 to create a carbon commission – named the Cleaner / Greener Commission – to help push this work forward, as part of its Climate Emergency Declaration.

The aim of the Commission will be to lead the public debate on climate change and energy in its widest context. It will involve the public, private, third sector and wider community to help improve understanding of the issues and the action that needs to be taken.

The Commission will draw together conclusions on the current position, identify areas for improvement and make recommendations for change in order to move the whole of Warrington to a position on net zero carbon.