
**MEMBER UPDATE: COUNCIL ENERGY PROJECTS & PROPOSALS FOR
THE ROUTE TO MARKET**

Reason for the Report

1. To provide Members with a progress update on the Council's energy programme and to consider future energy proposals for the city.

Background

2. The Council's energy programme covers four key areas which are categorised as:
 - Staff awareness to reduce energy consumption;
 - Energy efficiency and retrofit;
 - Installation of decentralised energy generating plant;
 - Applying for and showcasing innovations in energy technologies.
3. The original pipeline of Cardiff energy projects were brought together into one document to an 'Energy Prospectus'; this new document was presented to Full Council in June 2014. A considerable number of the projects listed within the Council's Energy Prospectus have now been converted into the Council's energy portfolio.
4. By the end of 2015/16 the Council will have enhanced Cardiff's position in terms of energy sustainability by delivering on a number of projects including:
 - The installation of 6MW of electricity generation capacity (equivalent electricity for 3,000 homes) with solar schemes at Lamby Way depot roofs and landfill site; solar on schools; and hydro electric project at Radyr Weir;
 - Energy efficiency retrofit in almost 1,000 homes;
 - The installation of a range of energy saving measures on the Council's estate;

- The reduction of £100,000 in energy costs for schools across Cardiff. This has been achieved through improved energy management, for example, using the ‘Carbon Culture’ system to reduce energy consumption during school holidays;
 - The Council has helped to facilitate the development of the Energy from Waste facility at Trident Park which converts residual waste into 30MW of renewable energy; the project also has the potential of supporting a city centre district heating scheme. Since the creation of the Energy from Waste facility at Trident Park the Council has been a key partner in helping to drive forward the goal of achieving a city centre district heating scheme;
 - The demonstration of innovation through winning a total of £2.2m in external funding for six energy related research and innovation projects. These will showcase Cardiff’s approach to sustainability and fund innovative products and technologies that will bring added benefits to the Council’s estate;
 - Bringing in £8m of external funding for the projects listed above and securing enough revenue grant income to fund 2.5 full time equivalent salaries in the Council’s Energy and Sustainability team.
5. The sixteen live projects which the Council has also relate to Council’s wider Sustainable Development and “One Planet Cardiff” objectives. These are detailed in **Appendix 1** of this report. The projects include research and development initiatives where Cardiff is the first and only Authority in the UK to have run schemes under the UK Government’s Small Business Research Initiative, managing innovation competitions “Heritage Retrofit” solutions and “portable renewables” technology.
6. Looking ahead the Council is pursuing further exemplar work, for instance with the British Geological Survey looking at tapping into the City’s geothermal sources of heat, and seeking funding from Europe for “Smart City” bids, where we would like to test integration of data sets to optimise the sustainable way in which a city runs its key infrastructures like transport, waste, water, energy and digital. For information, the Council is considering plans to host a conference to promote and disseminate the findings of its innovation activities, showcasing the Council’s outputs and those of our many partners across the schemes.

7. The approach which the Council took with the production of the Energy Prospectus was appreciated by Welsh Government, to the extent that they have commissioned Local Partnerships to interview and catalogue the rest of the energy pipeline for all of the Welsh Authorities. Local Partnerships is a jointly owned not for profit venture between the Local Government Association and HM Treasury, offering specialist support and capacity. This work has shown enormous potential for Wales with 143 projects identified, the bulk of which are in concept and need support in getting to the point of installation. If all the projects reached the point of generation then they could provide 14% of the energy needs of the public sector estate.
8. Welsh Government is also considering an investment vehicle which could offer £500m borrowing capacity, or potentially equity, into the energy projects. This initiative approach was launched in concept last year as “Green Growth Wales” and would look to combine direct borrowing from Welsh government alongside Green Investment bank loans

Issues

9. Going forward the Council needs to agree the extent to which it invests further capital into energy projects. A generic paper on capital investment criteria for ‘Invest to Save’ schemes is currently being prepared which will look at issues such as overall business case requirements; approval process as part of the budgetary framework; interest rates; repayment mechanisms; acceptable returns on investment and crucially for the energy piece, whether there should be a maximum cap to capital exposure in certain categories of investment.
10. It is the outcome of this paper and the considered discussion on risk and reward, which will determine the appetite for further direct investment in the remaining pipeline of projects.
11. In broad terms the Council’s energy investment / support options are:
 - To continue to invest ourselves from the capital programme and take the rewards back into the revenue account as the projects return on investment;
 - To take a lower risk option of leasing assets (as in the various “rent-a-roof” solar schemes that are on offer) or leasing equipment, for example, heat exchangers

or PV (in the same way one leases photocopiers), though generating lower return;

- To engage more actively with community energy company models to share the responsibilities and opportunities, but this would also mean sharing the profits;
- As the Council owned energy production estate grows, we could also decide to step into the energy buying and selling business and set up an Energy Services Company (ESCO).

12. In reality, a multi-dimensional approach encompassing all of the above options may also be appropriate as individual schemes often present different risks, rewards, and complexities.
13. There are a range of background issues and opportunities which are also becoming clearer as the Council's energy knowledge grows; these will help to guide our future options. For example, there are electricity purchasing arrangements available, known as direct power purchase agreements or "sleeving". These allow the Council as the body which owns the generating capacity to buy back that electricity at rates which are better value than traditional purchasing from the grid. So for instance where we have projects remote from the Council buildings, like Radyr Weir, which sells electricity to the grid at 5p per kwh, and then at County Hall we are buying it back at 11p, we could have an arrangement that allows us to have a power agreement with a licensed supplier to buy back the power we produce at say 8p. The Council is currently examining these opportunities which may have positive additional benefits for our "invest to save" business cases.
14. There also needs to be clear synergy between energy investment decisions and the Council's asset retention plans and other devolved financial arrangements. In particular, complexities around energy investment on the schools estate need to be understood to ensure mutual benefit to both delegated schools budgets and the Council's bottom line return on its capital investments.
15. Another major issue for the Council relates to maximising the renewable energy potential of the Energy from Waste Plant at Trident Park. The Council has secured funding from the Department of Energy and Climate Change (DECC) to explore the potential of delivering a district heat network to supply businesses and properties in

the vicinity of the plant with the heat that is the by-product of its combustion process. The grant has allowed the Council to work with partners to identify the possible investment opportunities and governance issues that would arise in the delivery of such a scheme. The funding will extend into 2015/16 and so far has considered a number of issues including:

- The Council's potential options as a funder into a new company that would deliver and run the network;
- The Council's options as a customer of the heat, along with other major public sector organisations in Cardiff;
- The ability of the Council to address fuel poverty issues via links between the heat network and housing retrofit funding.

16. Following from this the Council has commissioned legal specialists to report in detail on options for the Council to engage with and promote a district heating scheme. These options would be transferable to other local authorities and other revenue generating infrastructure schemes thus supporting the wider Green Growth Wales agenda. DECC also see this as a key piece of work which can be shared via their Heat Network Delivery Unit network. The legal report will provide funding and engagement options and report on associated legal, procurement and contractual implications. The options will include a risk profile and recommendations for further actions. The findings of this report will be the subject of a more detailed future report to Cabinet that will allow the Council to agree a strategy to develop a resourced delivery plan including engagement with the private sector.

17. This heat network work is a part of the Council's current list of either incomplete or potential future renewable energy projects, which comprises:

- District heating networks with the Energy from Waste Plant at Trident Park and other potential sources of heat for the City Centre;
- Additional hydro schemes on the city's rivers;
- Large scale roll-out of solar schemes on the council's estate and, especially schools (a potential £12m investment);
- Extending the conversion of Street lighting to LED technology;
- Possibilities to support the Tidal lagoon proposal;

- Possibilities to maximise the sustainability credentials of the new communities arising from the LDP by working proactively with developers and other infrastructure providers to build renewables more positively into emerging designs;
 - Further engagement with innovation funding sources including the European Union’s “Horizon 2020” programme and other DECC and Innovate UK opportunities to support the roll-out of emerging technologies.
18. Given this pipeline of energy infrastructure projects and the possibilities of aligning energy infrastructure with investment sites to create a unique selling point around fuel security, then another route to securing the financing and delivery capacity could be through the City Deal. Accordingly, energy is included as a theme in City Deal and there is considerable regional support for this dimension.
19. This report highlights the diverse range of activity and potential that the energy sector holds for the Council. The Council’s emerging experience in the field has also highlighted the complexity that underlies the investment decisions and delivery mechanisms that need to be navigated to achieve this potential. It is proposed, therefore, that future investment decisions are made against a hierarchical framework of delivery routes; these were briefly commented on in bullet point 11 of this report. Where self- financed projects are prioritised they will need to meet the refreshed ‘Invest to Save’ framework and deliver the best income and return for the Council. If these projects do not meet the Council investment criteria then the range of partner and other delivery mechanisms will need to be explored.
20. Local Partnerships is currently bidding to Welsh Government to provide a support package to each local authority in Wales which will provide free at point of use assistance to effect accelerated delivery of these types of projects, for instance feasibility studies and business cases; assessment of due diligence; identification of further opportunities for efficiency or generation; assessment of investment models – for example community ownership and the identification or establishment of procurement frameworks to speed up and de-risk the process.
21. It is, therefore, felt that the Council needs to make best use of available support resources including:

- The Welsh Government support from Local Partnerships;
- Existing support mechanisms such as DECC's heat network grant;
- The Council's in-house financial guidelines.

22. These will provide vital support in helping the Council to properly understand the pros and cons of each potential energy opportunity.

Previous Scrutiny & Future Cabinet Reports

23. The Environmental Scrutiny Committee received an item titled 'Cardiff's Energy Prospectus' at its meeting on the 9th December 2014. This provided Members with the opportunity to scrutinise the development of Cardiff's Energy Prospectus and discuss the work which needed to be undertaken to complete the document. Following the meeting the Chair of the Committee wrote a letter to the Cabinet Member for Transport, Planning & Sustainability. A copy of this letter is attached as **Appendix 2**. In response the Cabinet Member for Transport, Planning & Sustainability responded in two letters to the Chair of the Environmental Scrutiny Committee. These are attached as **Appendices 3 & 4**.

24. The Cabinet are due to receive an item titled 'Update on the Council's Energy projects and proposals for the route to market for the remainder of the energy pipeline' at the meeting on the 16th July 2015. This report will:

- Provide an update to Cabinet on the implementation of the energy programme over the last 12 months, and;
- Seek Cabinet approval for the way forward in delivering the Council's next set of energy projects.

Way Forward

25. Councillor Ramesh Patel (Cabinet Member for Transport, Planning & Sustainability) has been invited to attend for this item. He will be supported by officers from the City Operations Directorate.

Legal Implications

26. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters there are no direct legal implications. However, legal implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any legal implications arising from those recommendations. All decisions taken by or on behalf of the Council must (a) be within the legal powers of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. Scrutiny Procedure Rules; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.

Financial Implications

27. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters there are no direct financial implications at this stage in relation to any of the work programme. However, financial implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any financial implications arising from those recommendations.

RECOMMENDATIONS

The Committee is recommended to:

- i. Note the contents of the attached reports;
- ii. Consider whether it wishes to make any comments to the Cabinet to take into consideration when it receives the report.

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8th July 2015