

CABINET

Date of Meeting	Tuesday, 17 th July 2018
Report Subject	Crumps Yard and Flint Landfill Solar Farms
Cabinet Member	Cabinet Member for Planning and Public Protection
Report Author	Chief Officer (Planning, Environment and Economy)
Type of Report	Operational

EXECUTIVE SUMMARY

Outline business cases for the installation of ground mounted solar PV at Crumps Yard and Flint Landfill have been developed (Appendix 1 and 2) using HM Treasury's five case model for public sector business cases. The strategic case has provided evidence that the solar developments align with key Council, regional and national carbon reduction/economic growth policies and strategies and facilitate and contribute to the achievement of key goals and targets. The financial modelling has shown that the projects are viable.

The commercial case for developing these two sites is also feasible and practical. It is suggested that the Council explores the use of Crown Commercial Service's Heat Networks and Electricity Generation Assets framework before seeking to undertake a single tender. This would reduce the additional legal costs of developing a bespoke contract. The management case details the governance arrangements required for projects of this scale and sets out the project board and contract management arrangements. Taking all five cases together suggests that the projects are viable and approval to move the next stages (planning application submission and procurement) is sought.

RECOMMENDATIONS

1	That both Crumps Yard and Flint Landfill Solar Farm Outline Business Cases (OBC) be approved and authority be delegated to the Chief Officer for Planning, Environment and Economy to lead the delivery of the projects.
---	--

2	That the Chief Officer for Planning, Environment and Economy be authorised to establish a dedicated Project Board to monitor delivery of both projects.
3	That the Chief Officer for Planning, Environment and Economy be authorised to submit the requisite planning applications relevant to the delivery of each project and to procure a contractor.
4	That authority be delegated to the Chief Officer for Planning, Environment and Economy in consultation with the Council's Section 151 and Monitoring Officers, to engage external legal/technical/planning support, as required and that budget is allocated for this purpose.

REPORT DETAILS

1.00	SOLAR PV AT CRUMPS YARD AND FLINT LANDFILL - OUTLINE BUSINESS CASES
1.01	The purpose of this report is to present the outline business case for ground mounted solar PV at Crumps Yard (1.5MW generation capacity) and Flint Landfill (2MW generation capacity) to Members following a report to Cabinet in January 2018.
1.02	An in depth outline business case has been completed for each site (Appendix 1&2). This report highlights key information contained within these business cases. These have been developed in collaboration with Local Partnerships as part of the Welsh Government's Green Growth Wales Programme.
1.03	The business cases follow HM Treasury Green Book 5 Case Model for public sector business cases. The 5 cases are: <ul style="list-style-type: none"> • Strategic • Economic • Commercial • Financial • Management •
1.04	<p><u>Strategic Case</u></p> <p>Developing solar PV at Crumps Yard and Flint Landfill aligns with a number of national, regional and Council plans and strategies.</p> <p>Council</p> <ul style="list-style-type: none"> • Council Plan 2017-2023: Directly contributes to the core priority 'A Green Council' and could also support actions under 'An Ambitious Council', 'A Supportive Council' and 'A Connected Council' • Renewable Energy 10 year Action Plan seeks to ensure that the social, economic and environmental benefits of renewable and low carbon energy generation are maximised by the Council. • Carbon Reduction Strategy: Electricity generated via the solar PV

could be used to meet the 60% reduction in energy related carbon emissions by 2021 through carbon offsetting or “sleeving”.

Regional

- Public Service Board Wellbeing Plan: Solar PV will support the reduction in carbon emissions emitted through standard energy generation which cause climate change and therefore contribute to a key action under the Environment priority; reducing the impacts of climate change.
- North Wales Growth Vision and Bid: Supports the Smart Access to Energy project

National

- Welsh Government ‘Environment (Wales) Act’ 2016 - aims to enable Wales’ resources to be managed in a more proactive, sustainable and joined-up way and embodies a statutory climate change emissions reduction target of 80% reduction in emissions by 2050 with carbon budgeting to support delivery.
- The Wellbeing of Future Generations (2015): The projects will contribute to the achievement of at least 4 Wellbeing priorities; a globally responsible Wales, a prosperous Wales, a resilient Wales and a healthier Wales
- Welsh Government consultation on ‘Decarbonisation of the Public Sector’ (2017) - Supported by the National Assembly for Wales the Welsh Government Cabinet Secretary for Environment and Rural Affairs has set the ambition for the Welsh Public Sector to be carbon neutral by 2030.
- Welsh Government Cabinet Secretary Targets for Renewable Energy (announced 2017):
 - Wales generating 70 per cent of its electricity consumption from renewable energy by 2030
 - One Gigawatt of renewable electricity capacity in Wales to be locally owned by 2030.
 - By 2020 new renewable energy projects to have at least an element of local ownership.

Currently Flintshire County Council produces circa 3 MW of renewable and low carbon electricity/heat per annum from non-domestic assets which generate an income of approximately £200k per annum (funded through Council capital budgets). The Council therefore has experience and knowledge of developing renewable energy infrastructure. To support and further the existing generation capacity; the projects have 2 key spending objectives;

1. To increase the amount of renewable energy generated by FCC by at least 1.5 MW and
2. To invest in a project with a minimum Internal Rate of Return of 4%.

Table 1 details the key critical success factors for the project which are essential for the successful delivery of the project. These will be used when assessing the various renewable energy options for Crumps Yard

and Flint Landfill (see economic case).

Table 1: Critical Success Factors

Key Critical Success Factors	Description
<i>Strategic fit</i>	Developing solar PV on Crumps Yard and Flint Landfill meets the spending objectives and align with strategic aspirations detailed above.
<i>Potential Value for Money</i>	The development has been sized to account for a reasonable grid connection offer cost. This enables sufficient electricity generation to occur and to generate sufficient long term income taking account of capital investment and ongoing operational costs.
<i>Supplier capacity/capability</i>	Indications are that there are sufficient development taking place across the UK and that the solar PV market is mature.
<i>Potential affordability</i>	Indications are that borrowing via Public Works Loan Board will be necessary and these borrowing costs can be borne by the project whilst still providing positive project cash flows.
<i>Potential achievability</i>	The Council has a range of in house expertise for this type of project. Where necessary, external expertise will be secured as detailed below. Appropriate project management good practice will be applied.

Financial appraisals will assess whether solar PV at Flint Landfill and Crumps Yard meet these spending objectives and critical success factors.

1.05

Economic Case

Workshops with key Officers, internal consultations, high level financial analysis and constraint mapping has led to Crumps Yard and Flint Landfill being prioritised for investment (see appendix 1 and 2 for full details). An options appraisal of development opportunities was completed for Crumps Yard and Flint Landfill. The following options were assessed against the project spending objectives and critical success factors (table 2):

- Do nothing: Land left vacant
- Land lease: Site is leased to a developer who builds and manages the solar installation and Council receives a rent
- Self-develop solar PV: The Council build and manage the solar installation and receive income through energy sales.
- Sell or lease the land for industrial or commercial purposes.

Table 2: Options appraisal for development opportunities at Crumps Yard and Flint Landfill

Description of	Status Quo	Land Lease	Develop	Sale/lease
----------------	------------	------------	---------	------------

Option	/ Do Nothing	Arrangement	Solar PV by self-development and operation	of Land for commercial purposes
Option Number	Option 1	Option 2	Option 3	Option 4
Spending objectives				
<i>1 Deliver renewable energy generation</i>		✓	✓	
<i>2 Generate a long-term source of revenue</i>			✓	
Critical success factors				
Strategic fit		✓	✓	
Potential Value for Money			✓	
Supplier capacity/capability	✓		✓	✓
Potential affordability	✓		✓	✓
Potential achievability	✓	✓	✓	✓
Summary	Discounted	Discounted	Preferred	Discounted

Having regard to the above spending objectives, options 1, 2 and 4 were discounted as it was determined that only option 3 would enable both spending objectives to be realised.

Although a land lease agreement is a possible route to market; it would provide much reduced scope for both financial and non-financial benefits. Since the demise of the subsidy regime there is only a very limited market for new solar development, and this is almost entirely through direct wire

PPA agreements.

Solar developers and investors prefer larger development sites (5MW or more) to achieve economies of scale. Soft market testing indicates that there is currently little or no market appetite for development of new grid connected leasehold solar farms. To attract investment a scheme (with planning consent) would need to be producing an IRR in excess of 7%. Our current assessment of the Crumps Yard and Flint Landfill schemes are that they are more likely to produce an IRR in the region of 4% when rental and finance costs have been taken into account. The soft market testing proposed for the Summer, will test these assumptions as well as provide further clarification of expected capital costs specific to both sites.

Even if a land lease agreement is possible it would not produce the same financial returns, which could be expected from owning the scheme. As an illustration if a rent of £ 400/ acre could be achieved for the 7.5 acres at Crumps Yard and circa 10 acres at Flint Landfill required for the scheme this would represent an annual income of £ 7,000. With indexation this could generate up to £ 338k of cashable savings over 35 years. The indicative income for option 3 (self-develop solar PV) is over twice this.

Crumps Yard and parts of Flint Landfill have been marketed for industrial and commercial uses but with limited interest to date. Hence option 4 has been discounted

The main method of generating income will be through the sale of the electricity produced to an energy supplier such as EDF, Npower, Good Energy etc. This is known as a power purchase agreement (PPA). Electricity produced from the solar farms and landfill gas engines at Brookhill and Standard is sold in the same way. A long term PPA (15-20 years) will be sought which will guarantee long term income. This is to be agreed in principle with an energy supplier before the installation begins. To assess the likely long term income from a PPA the above financial analysis has used the Business, Energy and Industrial Strategy (BEIS) reference scenario forecast to determine the PPA price and has assumed that price changes are in line with this forecast. The forecast runs until the year 2035, from this point onwards the price has been set. Consumer Price Indexation (CPI) is applied from the model's base date. The starting PPA price used in the modelling is 4.19p/kWh. Welsh Government are exploring the implications of underwriting public sector led PPAs however no commercial terms have been agreed yet. Further soft market testing will be carried out to ensure up to date prices and financial modelling updated accordingly.

Further adjustments can be made as more reliable estimates of relevant costs etc. are built up. This will also allow of additional income streams and capital costs to be modelled; e.g. determining the impact of the co-location of battery storage in terms of capital expenditure and income generation through providing balancing and flexibility services to National Grid. It will also allow non-financial benefits such as carbon reduction and community benefits to be accounted for.

1.06

Commercial Case

A soft market testing or pre-market engagement with potential contractors and suppliers is proposed for summer 2018 which will be carried out via Sell2Wales. This exercise will seek to inform the procurement strategy. This soft market testing will assess expected capital costs for the development and installation of the site as well as ongoing operation and maintenance costs. It will also seek to establish market appetite for a land lease agreement and the potential rental income this could generate. A land lease arrangement is where the Council arranges the grid connection and planning permission before leasing the site to a developer.

The procurement strategy will seek to provide a turnkey solution for design, build and operation; ensuring value for money whilst facilitating innovation such as co-locating battery storage as well as ensuring deliverable community benefits. Confirmed grid connections and planning permission will significantly de-risk the development to potential bidders. The Council has accepted grid connection offers for both sites and will seek planning permission approval before awarding any contract. There are 3 main procurement options:

- Establish a OJEU compliant [DBO/EPC] framework or
- Undertake an OJEU compliant single tender or
- Use an existing OJEU compliant procurement framework.

Following consultation with Procurement and Legal Services the current intention is to use an existing framework. There are a number of frameworks which may be applicable; however the framework deemed the most suitable at this stage is Crown Commercial Service's Heat Networks and Electricity Generation Assets framework (due to be awarded in September 2018). This would provide a complete turnkey process and service, including power purchase agreements as well as reducing the need to use external legal consultants to draw up a bespoke contract which can be costly. It will also be fully OJEU-compliant and should reduce officer time required for tender and contract development. Once the framework is awarded by CCS; the contract and the terms of procurement (mini tender/direct call off) will be assessed by Procurement and Legal Services to ensure that they do not conflict with any of the Council's Contract Procedure Rules.

Should the framework be deemed unsuitable; the Council will need to undertake an OJEU compliant single tender for both Crumps Yard and Flint Landfill. Both sites will be tendered together to maximise economies of scale. A final decision on the procurement route will be taken by the project board. In preparation for this potential eventuality; the Project Manager will develop a draft specification for tender during summer 2018. A draft contract will also be developed; based on previous renewable energy development contracts. Should it be decided to undertake an OJEU compliant single tender; this draft contract will be sent to an external legal advisor for review and comment to ensure it reflects the most up to date regulations and contract standards for renewable energy development and is Construction Act compliant. This is also cost efficient.

Soft market testing will be carried out over summer 2018 to help demonstrate that the project is viable and key assumptions in the business

case are reasonable. This will be done via Sell2Wales and hosting a buyers event.

The main form of contract will be an Engineering, Procurement and Construction (EPC) Contract. This is industry standard for renewable energy developments and associated frameworks and has been used by the Council previously. Under EPC contracts, the contractor is responsible for the design, construction and completion of the facility for a fixed contract price and by a fixed time for completion. A properly drafted EPC contract will ensure that the contractor will have limited ability to bring claims for any extension of time or cost overruns. An EPC Contract also contains performance guarantees and bonds which are backed by performance liquidated damages and a guarantor. This provides assurance that the system will operate to contracted performance (and therefore provides assurance that a level of income will be generated as the design and performance risk is allocated to the Contractor.

Planning and technical consultancy is also required. This will be procured through an open single tender process using the Council's standard services contract during summer 2018.

1.07

Management Case

The Council will establish a dedicated project board to monitor progress of the project. The Project Board will report to Cabinet at key milestones/decision gateways. The project will be project managed in accordance with the Council's framework for programme and project management. The following project board is suggested:

- Chief Officer for Planning, Environment and Economy (Project Executive)
- Chief Officer for Housing and Assets or delegated
- Lead Member for Planning and Public Protection
- Corporate Finance Manager or delegated
- Procurement Operations Manager or delegated
- Legal Services Manager or delegated
- Project Manager
- Client Engineer/Clerk of Works
- Contractor Representative once procured

A detailed project plan with indicative timescales is appended to Appendix 1 and 2. Key milestones are as follows:

1. Assess the contaminated land to ensure remediation costs (if any) are acceptable
2. Engage technical/development support to prepare an outline design for the solar farm (sufficient for planning purposes)
3. Concurrently with 2 above, commence preparation of the planning application and relevant surveys (especially any time-sensitive studies deemed necessary). Also, initial work to develop the procurement strategy can take place
4. Secure planning permission. Procurement process can then proceed (as per strategy adopted)

	<p>5. Once procurement complete, FBC will be finalised and final cabinet approval sought to award contract and commence construction.</p> <p>Approval of Contract Award and Final Business Case will be taken by Cabinet. The project board will manage the following key milestones; planning application and submission, legal and procurement, design and construction and post project evaluation. There will be bi weekly progress reports to project board members with monthly meetings suggested.</p> <p>Several advisors are likely to be needed as previously detailed in the Financial Case. It is expected that the technical and legal advisors (dependent on whether a procurement framework is used) will be required for the complete project (pre build, construction and completion) and therefore required for at least 18 months. Technical advisors should be brought in early; during development of the indicative design for planning purposes.</p> <p>A dedicated project manager will also be required to ensure project success.</p>
--	---

2.00	RESOURCE IMPLICATIONS
2.01	The information presented here is commercially and financially sensitive and is therefore confidential and has been appended as a confidential appendix.

3.00	CONSULTATIONS REQUIRED / CARRIED OUT
3.01	<p>Internal consultations with Officers in Finance, Planning, Contaminated Land, Legal, Procurement Valuation and Estates and Ecology have been completed as part of the business case development.</p> <p>Previous Cabinet reports in July 2017 and January 2018 detailing progress made on identifying and prioritising sites for renewable energy.</p> <p>On the 28 November 2017 initial business cases were presented to; the Chief Officer for Planning, Environment and Economy, the Chief Officer for Housing and Assets, and the Chief Officer for Streetscene and Transportation; where it was decided to progress with Crumps Yard and Flint Landfill only.</p> <p>Consultation with local Councillors and the local community will be required. Please see the attached communications plan for details in Appendix 1 and 2.</p>

4.00	RISK MANAGEMENT
4.01	A detailed project risk log has been completed; see appendix 1 and 2. It is expected that there will be no equality, anti-poverty or environmental risks caused by the project or that will affect the project.

5.00	APPENDICES
5.01	Appendix 1: Outline Business Case for Crumps Yard (Please refer to the confidential appendix)
	Appendix 2: Outline Business Case for Flint Landfill (Please refer to the confidential appendix)

6.00	LIST OF ACCESSIBLE BACKGROUND DOCUMENTS
6.01	Contact Officer: Sadie Smith; Energy Conservation Engineer Telephone: 01352 703767 E-mail: sadie.smith@flintshire.gov.uk

7.00	GLOSSARY OF TERMS
7.01	<p>Business, Energy and Industrial Strategy (BEIS); Department of: UK Government Department which has a remit for energy and climate change.</p> <p>CAPEX: Capital expenditure inclusive of all development costs; comprising of planning consultancy and application fees, legal and procurement support, project management, technical support and construction costs.</p> <p>Carbon offsetting: the counteracting of carbon dioxide emissions with an equivalent reduction of carbon dioxide in the atmosphere.</p> <p>Contract for difference: In the UK energy market a Contract for Difference (CFD) is a private law contract between a low carbon electricity generator and the Low Carbon Contracts Company (LCCC), a UK government-owned company. A generator party to a CFD is paid the difference between the 'strike price' – a price for electricity reflecting the cost of investing in a particular low carbon technology – and the 'reference price' – a measure of the average market price for electricity in the GB market.</p> <p>CPI; Consumer Price Index; measures changes in the price level of market baskets of consumer goods and services purchased by households. The annual percentage change in CPI is used as a measure of inflation.</p> <p>District Network Operator (DNO): The private company who owns and operates the local level electricity network. In Flintshire this is Scottish Power Energy Networks.</p>

Engineering Procurement and Construction (EPC) Contract: Under EPC contracts, the contractor is responsible for the design, construction and completion of the facility for a fixed contract price and by a fixed time for completion. There also performance guarantees and liquidated damages for under performance of the solar PV

Export price: The price per kWh received for exporting and selling electricity to the grid

Green Growth Wales: Department within the Welsh Government who support energy efficiency and renewable energy projects.

Installed capacity: the total generation output of the solar PV

Internal Rate of Return (IRR): A metric used to estimate the profitability of potential investments

Locally owned: Renewable energy installations that are owned and operated by the public sector, the community or in partnership with each other.

Local Partnerships: A company owned by HM Treasury and funded by the Welsh Government to provide renewable energy and energy efficiency project development support to the public sector in Wales.

MW: Mega Watt or 1000 kW (kilo watt)

National Procurement Service (NPS): The Welsh Procurement Service

Off taker: An electricity user local to a renewable energy development who would purchase and use the energy generated via a private wire or equivalent.

OPEX: Operational expenditure inclusive of annual operation and maintenance costs, equipment replacement and borrowing repayments.

P50: a statistical level of confidence suggesting that we expect to exceed the predicted solar resource/energy yield 50% of the time.

P90: a statistical level of confidence suggesting that we expect to exceed the predicted solar resource/energy yield 90% of the time (therefore more conservative).

Power Purchase Agreements (PPA): A contract between the generator of the electricity/heat and the purchaser of electricity/heat.

RPI: Retail Price Index: measures changes in the price level of market baskets of consumer goods and services purchased by households. It is different to the CPI as the RPI basket of goods contains items that are excluded in the CPI.

Sleeving: Sleeving or third party netting is a variant of a standard Power Purchase Agreement (PPA) between a licensed supplier and generator and serves the purpose of linking the generation to the customer. This allows the customer to purchase energy directly from the generating plant via a licensed supplier, which manages the imbalance risk.

Strike Price: The fixed price at which the owner of the commodity can buy or sell the underlying security or commodity. It may be set by reference to the spot price (market price). In the UK energy market it is the price that the UK Government guarantee energy generators per unit of energy produced.

Virtual Private Network (VPN): A project which seeks to reduce the costs of sleeving electricity. This is being run in collaboration with Flintshire County Council, Scottish Power Energy Networks, Npower and the Welsh Government.