

**Report to Councillor Deborah Urquhart, Cabinet Member for Environment**

**March 2021**

**Halewick Lane Battery Storage Project – amended scheme**

**Report by Director of Environment and Public Protection**

**Electoral division(s): Sompting and North Lancing**

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**Summary**

In June 2019, the Cabinet Member [approved](#) the business case for the development of the Halewick Lane site with reference to developing the site as a 20MW installation.

It is now recommended that the project is revised, and that an initial 12 MW system is completed on site enabling the project to benefit from changes in technology in future years, the residual export capacity on site will then remain an opportunity for the County Council to further expand the site in later phases, pending a review of the site's overall performance.

**Recommendations**

It is recommended that the Cabinet Member for Environment approves the changes to the Halewick Lane Battery Storage Project and the Halewick Lane site with focus on the following two key items:

- (1) the change to the previous system configuration, reducing the system size from 20MW to 12MW whilst retaining the residual export capacity on site.
  - (2) delegated authority to the Director of Environment and Public Protection to, at the conclusion of the procurement process, award the grid connection contract and the design and build contract(s) for the scheme.
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**Proposal**

**1 Background and context**

- 1.1 The Halewick Lane Battery Storage project proposes the re-development of the previously derelict North Sompting Waste Management Site into a profitable commercial battery storage project. The site will become critical infrastructure for maintaining the existing stability of the local electricity grid, as well as enabling a greater supply of intermittent renewable energy to be stored and released on the local and national grid network.

- 1.2 This project will form part of the growing portfolio of the County Council's energy generation projects developed over the previous 6 years. This portfolio now generates an annual net revenue to the council in excess of £1.5m and is making a lasting contribution toward the County Council's ambitious carbon reduction targets.
- 1.3 The original decision report proposed installing a 20MW energy storage site and then leasing the site to a third party. In addition, the initial business case was projected to benefit from grant funding of £4.1M through the Innovate UK-led SmartHubs project. Unfortunately, this funding opportunity was later withdrawn.
- 1.4 Alternative grant funding has been identified from the LECSea project which has recently commenced, the contribution of £535,293 has been reflected in the financial model. The LECSea project funds energy system enhancements to deliver localised benefits.
- 1.5 The project will still make use of the SmartHubs-funded Masterplan and Benefits Realisation Plan for smart local energy services within Adur & Worthing.

## **2 Proposal details**

- 2.1 Following review of the updated Business Case (V17) in the internal governance process, the Cabinet Member wishes to approve an initial 12MW battery storage installation on the site and to remove the previously proposed lease element from the project enabling the council to take advantage of changing technology in coming years.
- 2.2 In developing the Halewick lane site as a commercial battery storage project it will support the agreed objectives of the county council's Climate Change Strategy by increasing and enabling the expansion of green energy generation in the county as well as developing the low carbon economy and reducing CO<sub>2</sub> emissions. Revenue will be generated from the site by selling services to National Grid either during peak times of demand, or to achieve critical grid balancing needs.
- 2.3 Following the completion of this 12 MW battery installation, surplus land (and the remaining secured grid capacity) on the site will be sufficient for a second phase. This second phase would be expected to replicate phase one with a commercial battery scheme of up to 12MW. Proposals will be developed following a review of the first phase and will be dependent on achieving demonstrable revenue against projections. These proposals will be subject to new business cases.
- 2.4 By retaining the option of developing a subsequent phase of the project at a later stage WSCC could retain the option to take advantage of investing in newer, innovative technologies on the site.
- 2.5 Spreading the phasing of the overall development of the site over several years may mean being able to take advantage of future cost-reductions of commercial batteries (depending on electric vehicle demand).
- 2.6 In addition to the 12MW import/ export spare capacity on site, which will enable phase 2, there remains an additional 12 MW (export only) capacity

available for development as a possible third phase. Exploiting this opportunity through a green energy source, which does not require an import capacity can be looked at in future years. This would be built into a follow-up business case for the site, along with the additional battery storage project in circa two years.

- 2.7 By reserving the residual capacity on site, this future project would remain in the capital programme and Energy Services team pipeline as a 'shovel-ready' project with comparatively few development costs.
- 2.10 WSCC would remain a demonstrably innovative leader in the energy space.
- 2.11 Recommendation 2 allows the Director of Environment and Public Protection to undertake the procurement process and award contracts for the grid connection and the design and construction of the scheme. These processes will be undertaken in accordance with the Council's Standing Orders on Procurement and Contracts.

### **3 Other options considered (and reasons for not proposing)**

- 3.1 WSCC continues with the existing proposal and obtains planning permission for the site and completes the cabling works. It then leases the entire site to a third party to operate a battery storage scheme with WSCC simply taking a rent -

Advantages:

- WSCC would simply take a rent from the site for an agreed period. The risk associated with generating an income from the site would then sit with the site operator.
- The option presents a much lower capital cost to WSCC, enabling it to divert expenditures to other areas.

Disadvantages:

- The low projected rental income derived from leasing this entire site to a third party would make a project of this size unviable. Leasing a corporately owned site and its grid connection to a third party is a legitimate consideration for many energy sites of this nature. However, the grid connection cost for this site is substantial, and a leased site alone would therefore not pay back on this investment.

Reason for not proposing - the low projected rental income.

- 3.2 WSCC wholly owned 20 MW energy storage scheme -

Advantages:

- Developing an energy storage scheme that is wholly owned by WSCC would enable it to maximise the income generation capability from the site. Being in total control of the site would also mean that the County Council will be in a position to respond to any market changes that may become available in future.
- An energy storage facility of this size would occupy approximately one third of the total of the site. There will therefore be some opportunities to

further develop the site for additional energy projects if WSCC retains total control of the available connection.

- Battery storage is a rapidly growing added-value option in large and medium-sized energy schemes. By developing this site as a wholly owned WSCC project the council would maintain a position of leadership in this sector.

Disadvantages:

- A wholly owned project of this size would involve significant capital cost. The previous business case included an Innovate UK funding contribution which is no longer available to the project.
- All revenue generated from the site in this scenario would arise from the sale of power alone. The framework for calculating income in the capacity market is undergoing change and this could affect the business-modelling that has been undertaken to date. Whilst the projected net income figure is higher based on the 20MW scenario, the risk associated with not meeting the projections due energy market changes is therefore much greater.
- The timescales for delivery are significantly longer than the other options as it would require additional site design work, a new Key Decision to reflect the higher Capital expenditure and a revised delivery plan with UK Power Networks.

Reason for not proposing - This scenario represents a positive return on investment. However, it is recommended that the second phase of the project (potentially increasing the size of the overall system to 24MW be reviewed once the first phase is completed and is subjected to a full performance review. This way an additional corporately owned system, or a leased portion of the site may be considered at a later stage.

3.3 WSCC develops a 12MW battery storage system on site. In addition, an area permitting access to 12 MW of the export capacity on site is leased for a 20-year period -

Advantages:

- A site configuration in this way would enable the site to be able to moderate any potential fluctuations in revenue by leasing 12 MW of the electrical capacity on site to a third party. This would provide an additional £45k to the income from the site in the form of a rent mitigating the impact of a change to the capacity market projection.

Disadvantages:

- The site configuration would not have the capability to generate such a high revenue in contrast the previously proposed 20 MW system. However, in conjunction with the rental income it would present a sound project with revenue streams derived from both the sale of power and a stable rental income.

Reason for not proposing – whilst this scenario represents a positive return on investment and the additional rental income improves this overall return it

was considered that leasing the export capacity to a third party would be a missed opportunity for the County Council. Leasing this export capacity for a 20-year period would prevent it from developing a further project on the site at a later stage; on a site where most enabling works have been completed in the first phase of the project.

#### **4 Consultation, engagement, and advice**

- 4.1 The Capital and Assets Board (part of the Council’s internal governance process for capital projects) has considered and supports the Business Case options previously presented, and comments from the Board have been incorporated into the final proposal and recommendations.
- 4.2 During the early stages of the project extensive local consultation was undertaken with the local community. Throughout the planning application stage there were no objections received. The Parish Council has in addition been kept fully up to date with the project as it has progressed.

#### **5 Finance**

##### **5.1 Revenue consequences**

Over the 25-year life of the project it is estimated that the site will generate a net £5.8m to the County Council, with year 1 gross income expected to be in the region of £92k.

The tables 1 and 2 below demonstrate the income and expenditure across the life of the project and a detailed cashflow over the first 4 years of the project. The capital financing interest rate used for modelling purposes was 1.6%

Table 1:

	<b>Proposed 12MW Scheme- Income and Expenditure over 25 years</b>	<b>Previously approved 20MW Scheme (including SMARTHUBS contribution)</b>
	£'000s	£'000s
<b>Income</b>		
Grid Services	-22,136	-64,555
<b>Expenditure</b>		
Capital Financing Charges	11,455	16,103

Battery Management Services	2,435	11,092
Maintenance, Lifecycle and Rates	2,382	7,974
<b>Total Expenditure</b>	16,272	35,169
<b>Net Income</b>	- £5,864	- £29,385
<b>Payback Period</b>	15.2 years	7.2 years
<b>IRR</b>	4.83%	13.93%

Table 2:

<b>Contract Year</b>	<b>1 £'000s</b>	<b>2 £000s</b>	<b>3 £000s</b>	<b>4 £000s</b>
Income	-652	-694	-735	-750
Expenditure				
Battery Management services	72	76	81	82
Maintenance & Lifecycle	30	49	50	50
Capital Financing	458	458	458	458
Net Income	92	110	146	159
Budget Provision	-100	-100	-100	-100
Impact of Decision	8	-10	-46	-59

## 5.2 Capital consequences

	<b>Year 2 2021/22 £m</b>
Capital budget required	£9.531M
Capital budget previously approved	£11.553M
Variance	(£2.022M)

The remaining budget of £2.022m will be returned to the Energy Services Team in the capital programme to fund future schemes.

## 5.3 The effect of the proposal:

### (a) **How the cost represents good value**

- The projected income after financing costs, from the recommended system size is £92k for year 1 and £5.8m (net) over the lifetime of the project.
- The scheme will generate an income that will mitigate WSCC energy budget exposure to future energy price increases.
- The land has very limited alternative development potential and presents a scheme that is entirely removable. A decommissioning budget has also been included within the financial model.
- The model has been tested for its sensitivity to variances in the key variables. If interest rates were to rise to 2% (0.4% increase) then the total income is reduced by £0.5m over the term of the project and 1<sup>st</sup> year income is reduced to £70k. Whilst if income was to be reduced by 10% per annum then the IRR reduces to 3.75% and first year net income reduces to £34k.

### (b) **Future savings/efficiencies being delivered**

The project makes a contribution towards protecting the County Council from energy price inflation and projects a net income for WSCC of £5.8M over the lifetime of the project.

### (c) **Human Resources, IT and Assets Impact**

- No additional HR or IT resources are required for the scheme. There is no impact on WSCC assets

## 6 Risk implications and mitigations

<b>Risk</b>	<b>Mitigating Actions (in place or planned)</b>
The battery solution procured for the site	1. The final design of the system is heavily influenced by the protections that can be

<b>Risk</b>	<b>Mitigating Actions (in place or planned)</b>
<p>either incurs problems within the lifetime of the warranty or after it has expired</p>	<p>purchased and designed-into the final project. The energy storage system purchased will have a 7-year performance warranty which can be renewed. This will ensure recourse to the battery system designer in the event of any reduction in overall performance of the system. Full replacements of the battery inverters are also budgeted for within the scheme</p> <p>2. Within the financial model for the scheme a full battery replacement will be budgeted for every 8 years. In contrast to first-generation models the capital cost replacement of the second-life batteries is far lower and is projected to be so owing to the projected proliferation of this industry which will follow the expansion of the electric vehicle industry</p> <p>3. As has been secured with the Westhampnett solar farm, insurance will also be included against loss of income in the unlikely event of system failure. Whilst the batteries will be under warranty, the lead-in time to obtain any replacement components under warranty will be insured against.</p>
<p>Income from the battery system is reduced due to Government policy changes</p>	<p>1. The income from this scheme does not rely in any form upon any Government subsidy such as Feed-In Tariff. Whilst there is some uncertainty and potential for change with regards to the income streams available to energy generating assets, the overall trend is unchanged. The urgent need for grid balancing and local generations assets such as this project is needed nationally (as has been documented in the strategic case) and this has been demonstrated in the financial modelling below</p> <p>2. The proposed system configuration of the site is for a battery system that will be flexible enough to support national grid with all known challenges that it faces which tally with the available income streams. The council also receives regular specialist advice from NPOWER Business Services to support decision-making in how the assets are monetised and how any such policy changes can be managed</p> <p>3. A 1-hour (1C) battery will be used for this development as the previously proposed 2 hour (0.5C) battery has been shown through peer review to be less financially efficient and so no longer the optimal system for the market.</p>
<p>The development receives negative press coverage</p>	<p>On 3 April 2019, the South Downs National Park Authority granted full <a href="#">planning permission</a> to develop the site. During the planning application phase, the project received no objections at all.</p>

<b>Risk</b>	<b>Mitigating Actions (in place or planned)</b>
and is objected to by the local community	The conditions placed upon the planning permission are also fully budgeted for. A planning amendment will be required to outline the final designs for the site but this is not expected to impact the project due to the changes needed being purely in relation to the configuration of items on the site.

## **7 Policy alignment and compliance**

### **7.1 Legal Implications**

There are limited legal implications to consider. The two procurements which will form part of the project are being led by the internal procurement team and fully aligned to the corporate procurement policy. Outlined in the business case are the methods by which adequate insurances will be secured in order to provide robust protections from design, product and/ or contract disputes.

### **7.2 Equality duty and Human Rights Assessment**

The project will have minimal direct implications for groups with protected characteristics but through the construction and operation period of the project it will ensure full regard for the public sector equality duty.

### **7.3 Climate Change**

The project will be a landmark development for reuse of second-life electric vehicle (EV) batteries, thereby contributing to prudent use of resources.

There will be ecological enhancements made to the site through significant native hedge and tree planting. This will benefit local wildlife populations particularly on the northern, eastern and southern boundaries.

### **7.4 Crime and Disorder**

The site in question has become a target for anti-social behaviour and vandalism in the local community. This project will turn what has been a derelict site with little development potential into a safe and secure site, generating revenue for the County Council.

### **7.5 Public Health**

This project has a minimal impact with regards to health and wellbeing of West Sussex residents.

### **7.6 Social Value**

The scheme will support local industry where possible, by employing local businesses both prior to, and on completion of the project where practicable.

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**Appendices** – none

**Background documents** - none