

Halewick Lane Battery Storage Project

May 9th 2019



Proposal for the redevelopment of Halewick Lane Waste Management Complex into a large battery storage facility.

Site Characteristics:

- The project is located on Halewick lane in North Sompting .
- The site is a previous waste management complex closed in the mid 1990's.
- Vandalism and theft at the site costing the council £30K in security measures in the past year.
- The site increasingly poses a health and safety hazard and risk to the council in its current state.
- Independent options appraisal undertaken in 2017- highlighting limited uses for the site.



Planning:

- Summer 2018 a pre- application process was undertaken with South Downs National Park (SDNP).
- Resident and stakeholder engagement undertaken highlighted no objections.
- The project has highlighted a number of means by which the site will improve local ecology in and around the site.
- SDNP were appreciative of the sensitive nature by which the application was designed.
- Few planning conditions imposed on site
- Full planning application submitted to SDNP in January and full approval given in April 2019 with no objections received throughout the process.



Project proposal:

- Remove all hazardous buildings on site down to the concrete slab and erect a robust security deterrent.

Develop a stand-alone battery storage system capable of maximising all available income streams.

- Implement a 20MW battery system as the recommended technical option for maximising available income streams.

- The battery composition would be a Lithium Ion-based 'Second-Life' battery system



Project SMARTHUBS overview

- WSCC are one of the lead partners on an exciting 3-year project to create a smart local energy system in West Sussex.
- £13 million from the Department for Business, Energy and Industrial Strategy (BEIS) and Innovate UK
- The core aims of the programme are to demonstrate how new ways of generating, storing, distributing and using energy.
- It is proposed that Halewick Lane forms part of four smart local energy system projects that will help the government to shape the national energy system of the future.
- Project SMARTHUBS will address challenges around the generation, supply and storage of electrical and heat energy as well as energy for transport. Specific work packages within the project will deliver: New renewable energy generation and storage capacity; Heat generation from low-carbon electricity; Energy for transport.
- By including Project SMARTHUBS in the scheme WSCC is able to reduce its capital expenditure on the scheme by 30% (but will need to satisfy IUK terms and conditions).

Financial model overview

	First commercial solution	generation battery	Delivered using the Smart Hubs Energy Solution (and grant/discount opportunity)
	20 MW Battery System (1C/1 hour discharge capability)	20 (19.2) MW Battery System (1C/1 hour discharge capability)	20 (19.2) MW Battery System (0.5 C/2 hour discharge capability)
Phase 1			
Phase 1: Demolition, site preparation, security	£400,000	£400,000	£400,000
Grid Connection (included in capex below)	£3,400,000	£3,400,000	£3,400,000
Phase 2			
Capex (including Grid Connection)	£14,400,000	£7,066,000	£9,698,000
Contingency 15%	£2,212,000	£1,112,000	£1,507,000
Total Build Cost	£16,960,000	£8,526,000	£11,553,000
Gross Income in year 1	£1,521,000	£714,096	£1,604,000
Initial payback year (ahead of provisional battery replacement)	16.3	12.2	7.2
Gross Income over 25 years	£32,822,000	£20,023,000	£45,488,000
Internal Rate of Return	5.39%	7.45%	13.93%
Net Income	£9,182,000	£8,139,000	£29,385,000

Risks overview

Three main risks:

- **Performance of the battery storage systems:** the performance of the battery systems will be ensured through robust performance warranties and adequate insurance to protect against any losses of income caused by delays to replace components covered by warranty.
- **The value of the electricity sold in future years:** as has been applied to both Tangmere and Westhampnett solar farms the energy team have applied a cautious approach with regards to projecting the likely inflation of value of electricity over time. The two major solar assets are meeting expectations in terms performance and income. Tangmere is on track to pay back within the next 4 years.
- **SMARTHUBS discount risk:** the SMARTHUBS programme is yet to finalise all governance paperwork and the discount applied to the financial model.
- With the discount removed from the financial model the capital cost of the scheme increases to £13,854,000. The IRR would reduce to 9.19% and the payback would increase to 10.7 years, meaning the battery project is still financially viable without SMARTHUBS discount.

Westhampnett and Tangmere Solar Farms recap + other LA investment in batteries

WSSC – owned major sites:

- **Tangmere Solar Farm** : commissioned in 2014, the site has continued to over perform in respect to overall generation from the site and income . It is on course to payback on the investment within 7 years.
- **Westhampnett Solar Farm** : since commissioning in October 2018 the site has generated over a £100 K income to the council and is performing beyond expectations.

Energy Storage as a growth industry in the UK :

- In 2016 when Westhampnett was first approved few local authorities were directly investing in equivalent storage schemes . A large number of local authorities are now investing in similar schemes at is recognised that the battery technology and associated income streams represent a reliable investment.

Examples of areas actively developing schemes are as follows:

- Cambridgeshire County Council
- South Derbyshire Council
- Cornwall Council
- Warrington Council



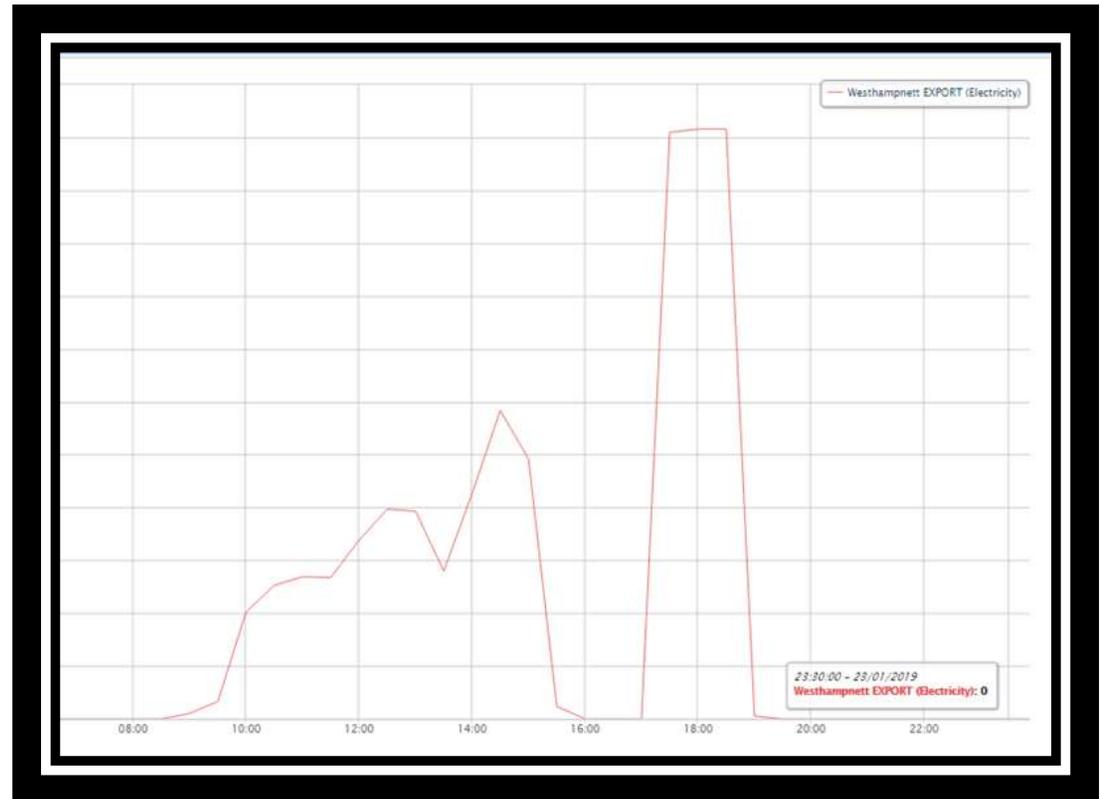
THE WEST SUSSEX WAY

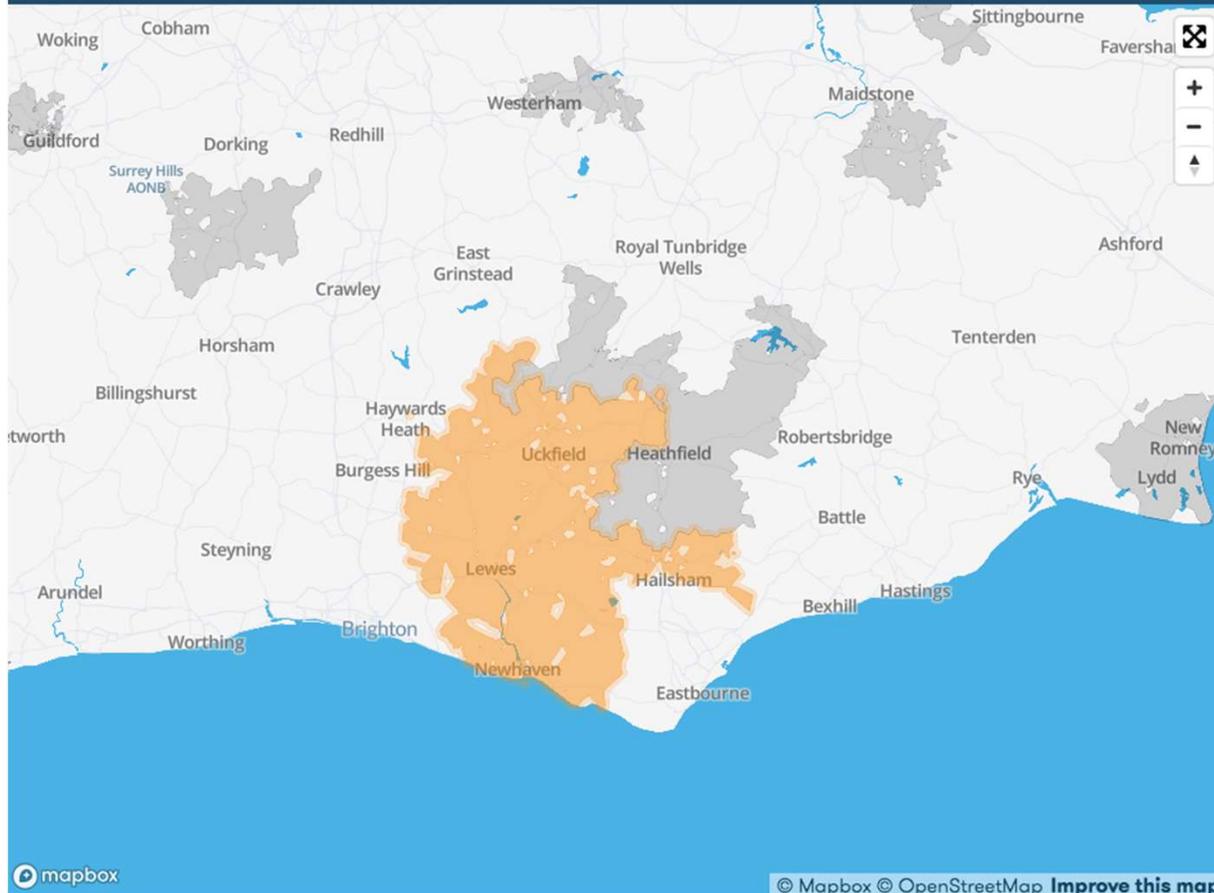
www.westsussex.gov.uk

Westhampnett Solar Farm and Battery Storage Site :

Post- commissioning update:

- Projected net income in year 1 – £57K
- TRIAD period income in March 19- £28K
- Total income generated from the site since Oct 18- £104K





Lewes Newhaven

27 Mar 2019 12:00

Competition open

2 Apr 2019 13:00

Competition close

- Status
- Qualification close 12 Mar 2019 12:00
- Need type Reinforcement deferral
- Need Generation turn up / Consumption turn down
- Connection 33 kV or below
- Buyer UK Power Networks
- Competition type Availability Utilisation

W19/20_LWNH - Morning

8 MW, 274 hours available

1 September 2019

Contract start

31 May 2020

Contract end



Qualifying assets

None