

Project Name	Ness Solar PV Project
Sponsoring Cluster	
Senior Responsible Officer	

1. Project Overview

Briefly describe the basic project concept.

Potential to implement a ground mounted solar PV system at the Ness Landfill site to generate green renewable electricity. By maximising the area of the landfill for PV to could give a system size of 4-5 MWp. There is great opportunity for Aberdeen City Council to utilise the green electricity generated for several purposes including production of green hydrogen, use of green electricity to other Council assets or sale of green electricity using PPA, grid balancing using battery storage or electricity sleeving arrangements to other sites adjacent to the site or within the wider Energy Transition Zone.

The Ness landfill site is located 2 km south of Aberdeen city centre on the Coast Road and was a former sand and gravel quarry. Ness landfill was closed in 2001 and covers an area of 49ha. The site has undergone a £16 m environmental restoration completed by SITA UK a subsidiary of SUEZ Environment in 2012. The site is fully capped and grassed.

In 2017, Aberdeen City Council commissioned a feasibility study and the scope of this report will include an options appraisal to determine the most appropriate size of a solar PV system to potentially install on the land available at Ness landfill. This appraisal considered site topography, access to grid and site layout. Capital and operational costs was appraised including the costs for the development and construction of the scheme, operating costs (O&M, and equipment replacement cycles), and finance costs. Revenue of any proposed scheme was also assessed with regard to income for the scheme based on assumed PPA pricing and subsidy tariffs available.

2. Project Pros & Constraints

Ness Landfill Solar PV Project is already identified within the Local Development Plan.

In the proposed project's favour is that several costs could be less due to the landfill site already having site access, security fencing, a nearby grid connection point and cable routes likely to run over ACC owned land, minimising length and expensive property leases.

Further investigations required on:

- Grid connection study by DNO
- Load calculations of PV system installation effect on the compressible fraction waste and overall settlement of the capped landfill, and wind and snow loading calculations to determine the amount of ballast required
- Soil tests to determine what can be installed in the restoration cap and to what depth (useful in determining what cables and cable routes to implement)
- Cable route assessment
- EIA and planning

A refresh of the 2017 feasibility report is required to update the financials and also to include the potential of other uses for the green electricity.

3. Management & Implementation

It is envisaged that this project will be managed by Aberdeen City Council through existing resources with additional support from the identified funding source for Project Management.

4. Consideration of Options

Depending on the chosen optimum use of the green electricity produced by Ness Solar, a consideration needs to be taken on the co-location of a hydrogen production facility such as an electrolyser and battery storage.

5. Costs, Benefits & Risks

The Ness Solar PV project will require a detailed appraisal of the capex and opex costs over the life of the assets. These costs must be factored in any funding model consideration including any JV option.

6. Funding & Affordability

There is currently no capital funding identified for the project within Aberdeen City Council budget plan but options on project delivery can be reviewed if alternative or external grant funding is made available.