Dundee City

District Heating Feasibility Case Study

Project Value: £13,785

Project Start Date: 28th January 2021

Project End Date: 5th March 2021

Client: Uniper Technologies Ltd

JBL Engineers Ltd

uniper

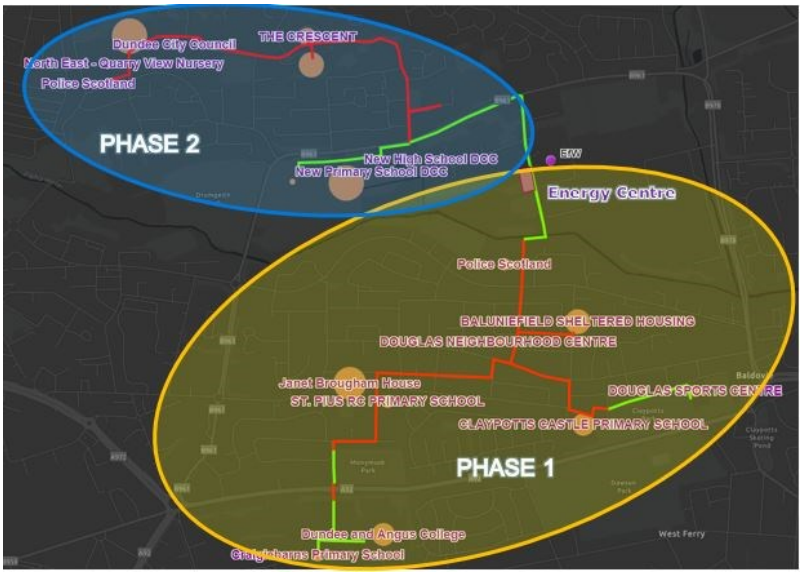
VIRIDIS ENERGY

Dundee City DHN

JBL Engineers Ltd was commissioned by Uniper Technologies Ltd to provide a two-stage feasibility study for a Dundee City Council led initiative to provide a low carbon district heating network utilising a bulk heat supply from an Energy from Waste (EFW) facility.

JBL Engineers in conjunction with Viridis Energy working in collaboration delivered the first stage of the study to the Client, EFW operator, and City council. This resulted in a negative finding for the conceptual scope initially proposed. JBL & Viridis however, saw potential within the scheme and after consultation with all the stakeholders prepared a new scope and explored the potential and feasibility. This demonstrated a new concept to the stakeholders by identifying new connections and reducing CAPEX yielding a viable low carbon project at high level.

The second stage of the project required that a business case be optimised, outlined for either a local authority led ESCo or a private investment. In appreciating the potential loads confirmation with the building operators and where unavailable utilising benchmarks the business case was resolved with Anchor loads from existing buildings, and potential connections with sensitivity analysis.



In conjunction with the client, JBL Engineers & Viridis Energy presented the proposed scope of the network shown in the diagram. This outlines the options available by phased construction with the hard dig and soft dig area's colour coded for ease of reference via GIS Mapping.

The proposed system utilises a bulk heat supply from the local and imminently expanding Energy from Waste facility that processes municipal waste. The introduction of the bulk heat supply is an optimisation for the operator by increasing cycle efficiency of the plant, while enabling low cost, low carbon heat to be enabled in the area. The Phase 1 & 2 schemes are provided to enable future expansion of the network and therein to be included within local planning policies. This shall be the Springboard for a larger network to come, and the decarbonisation and mitigation of fuel poverty in Dundee. With the springboard model applied, the ESCo gains a presence while allowing organic expansion of the network on a connection by connection basis