

The City of Edinburgh Council

10.00am, Thursday 22 September 2022

Millerhill Energy from Waste Plant Heat Offtake Unit – referral from the Finance and Resources Committee

Executive/routine
Wards
Council Commitments

1. For Decision/Action

- 1.1 The Finance and Resources Committee has referred a report on the Millerhill Energy from Waste Plant Heat Offtake Unit to Council for approval of prudential borrowing required to make a payment for the construction of the energy plant.

Richard Carr
Interim Executive Director of Corporate Services

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Legal and Assurance Division, Corporate Services Directorate
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Referral Report

Millerhill Energy from Waste Plant Heat Offtake Unit – referral from the Finance and Resources Committee

2. Terms of Referral

- 2.1 On 8 September 2022, the Finance and Resources Committee considered the Millerhill Energy from Waste Plant Heat Offtake Unit report. The report sought to approve expenditure relating to capital works for the addition of plant/equipment at the Millerhill Energy from Waste facility that would enable the facility to provide heat to the Midlothian Energy Heat Network.
- 2.2 The Finance and Resources Committee agreed:
 - 2.2.1 To agree to progress with the construction of the energy plant, noting that all the contractual conditions had been met.
 - 2.2.2 To agree to the payment of sum totalling £5,200,000 to be paid for this construction.
 - 2.2.3 To refer the report to Council for the approval of prudential borrowing.
 - 2.2.4 To note that approval was also being sought by Midlothian Council in accordance with the Inter Authority Agreement that governs the Energy from Waste contract.

3. Background Reading

- 3.1 [Finance and Resources Committee – 8 September 2022 - Webcast](#)
- 3.2 Minute of the Finance and Resources Committee – 8 September 2022

4. Appendices

- 4.1 Appendix 1 – report by the Executive Director of Place

Finance and Resources Committee

10.00am, Thursday, 8 September 2022

Millerhill Energy from Waste Plant Heat Offtake Unit

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1. Recommendations

- 1.1 It is recommended that Finance and Resources Committee:
 - 1.1.1 Agree to progress with the construction of the energy plant, noting that all the contractual conditions have been met;
 - 1.1.2 Agree to the payment of sum totalling £5,200,000 to be paid for this construction;
 - 1.1.3 Refer this report to Council for the approval of prudential borrowing required to make this payment; and
 - 1.1.4 Note that approval is also being sought by Midlothian Council in accordance with the Inter Authority Agreement that governs the Energy from Waste contract.

Paul Lawrence

Executive Director of Place

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Millerhill Energy from Waste Plant Heat Offtake Unit

2. Executive Summary

- 2.1 The Council is requested to approve expenditure relating to capital works for the addition of plant/equipment at the Millerhill Energy from Waste facility that will enable the facility to provide heat to the Midlothian Energy Heat Network. These works were foreseen at the time of contract signature in 2016 but could not be quantified or realised without the development of a nearby heat network which was outside of the Council's or Contractor's control. The requirement to connect is a condition of the facility's Environmental Permit without which the facility cannot operate.

3. Background

- 3.1 The Council, for itself as Lead Authority and on behalf of Midlothian Council, signed a Contract (the "Project Agreement") with FCC (E&M) Limited (FCC) in 2016 for the disposal of residual waste which involved the construction of the Millerhill Energy from Waste facility. FCC will operate the facility for 25 years then return the facility to the Councils (Council owned asset). This is year 4 of operations.
- 3.2 As a waste facility, the plant operates under an Environmental Permit (PPC) regulated by SEPA (Scottish Environment Protection Agency). The Permit required the facility to be built as a Combined Heat and Power plant and governs the operation of the facility to ensure it causes minimal environmental impact.
- 3.3 The facility currently only produces power which is sold to National Grid and provides a revenue to the Councils. When it was built, there was no heat network to take the heat so the facility was designed to allow a heat connection to be added at a later date. Specific plant/equipment was not constructed as it was dependent on network requirements. The Contract Project Agreement was written accordingly and sets out a change process to be followed.
- 3.4 It is a PPC Permit requirement that the facility connects to a heat network within 7 years of first operation unless there is no network available. If the facility fails to connect, then the Environmental Permit can be removed by SEPA and the facility can no longer operate. The Councils would have no waste disposal outlet

available, but would still be required to make contractual payments or a significant compensation payment for the facility.

- 3.5 A heat network is now being developed by Midlothian Energy Limited (a joint venture between Midlothian Council and Vattenfall) adjacent to the site to serve Shawfair and has approached FCC to provide the heat from the facility.
- 3.6 As required by the Contract Project Agreement, FCC has approached the Council to provide the capital funding to allow the additional plant to be provided (a heat exchanger) that will transfer heat from the facility to the network. They have also been in discussions with Midlothian Energy to ensure that the Heat Supply Agreement results in no detrimental effect on the existing revenue stream (electricity) from connecting to the heat network (a contractual requirement).

4. Main report

- 4.1 The Millerhill EfW facility was constructed between 2016 and 2019 under a Design, Build, Finance and Operate Contract (the Project Agreement) procured between the Council and Midlothian Council (with the Council as lead Authority) and FCC following competitive tender. FCC will now operate the facility for 25 years then hand back the facility to the Councils.
- 4.2 The facility accepts up to 135,000 tonnes of residual waste from the Council and Midlothian Council with the Council providing around 80% of the input. The capital cost of the facility was £136.9 million which was funded by FCC (the Contractor) with a £36.9 million contribution from the Councils. The Councils repay the capital cost through a “gate fee per tonne of waste delivered” which also covers the operation and maintenance of the facility. At the end of the Contract Project Agreement the Councils will own the facility. The Councils also receive 50% of income from the sale of electricity from the facility.
- 4.3 A condition of the Environmental Permit (PPC Permit) issued by SEPA is that the facility is built as a Combined Heat and Power plant and can provide heat to a heat network where this exists within 7 years of initial operation. If the operator (FCC) fails to connect, the PPC Permit can be removed by SEPA and the facility can no longer legally operate. The PPC Permit is provided as background (Paragraph 2.7 describes the heat conditions).
- 4.4 When the contract Project Agreement was signed in 2016, no heat network existed so it was not possible to include the necessary heat plant/equipment in the original design (a heat exchanger) which needs to be sized to meet the needs of a network, or the capital cost. Instead, the facility was built as “heat ready” which meant that heat offtake valves were provided at appropriate sections of pipework and planning permission included a heat offtake building. This meant that works relating to a heat connection would have minimal disruption on the facility’s operation when undertaken. The Project Agreement was written to allow connection at a later date (Schedule 34). Specifically, Schedule 34 allows the operator (FCC) to enter into a Heat Supply Agreement where there is no adverse effect on the Unitary Charge to

the Councils (the Gate Fee) under a “better or no worse” test. It clearly states that the capital expenditure is assumed to be paid by the Councils (paragraph 7.6). Where there is an adverse effect on the Unitary Charge, the Authority can object and if the PPC Permit is lost as a result of the Councils not agreeing to fund the heat works, this is an Authority Default with significant compensation to the Contractor. (Schedule 34 provided).

- 4.5 Midlothian Energy Limited has been progressing plans for a heat network at the Shawfair development adjacent to the EfW facility. It has approached FCC to provide the heat and negotiated a Heat Supply Agreement that compensates FCC for any losses such that the “better or no worse” test within the EfW Contract is being met. FCC has also sought competitive tenders for the design and build of the plant/equipment that will make the link from the facility to the network, namely the heat exchanger and the heat exchanger building. Two quotations were received and following technical and financial evaluation, a recommendation was made to the Council (as Lead Authority). The quotations are indicative and subject to a detailed design stage that takes place once a preferred supplier has been identified.
- 4.6 Documentation relating to the competitive tendering exercise undertaken by FCC is provided with this report. The Council has undertaken its own technical diligence of the tenders and agrees with FCC’s recommendation. The capital cost involved is made up of a number of elements:
- 4.6.1 Preliminary design works and the design, build and commissioning of the Heat Exchanger. The preferred D&B estimated cost is £2.9 million;
- 4.6.2 The Authority’s share of the Connection Works to enable heat to be made available at the site boundary (a preliminary quotation from Midlothian Energy Limited states £836,000 but this includes the pipe outside the facility boundary, so the contribution from the Councils should be less than this).
- 4.6.3 The life cycle works required to maintain the Heat Interface Unit (HIU) and any associated Connection Works for the duration of the Project Agreement:
- Capital costs still to be finalised include:
- 4.6.4 The Contractor’s project management costs and required technical support (an initial quotation of £1m has been refused by FCC as being too expensive);
- 4.6.5 The Connection Works costs as mentioned above; and
- 4.6.6 The life-cycle works.
- 4.8 Finalising these costs are subject to the appointment of a Design and Build (D&B) Contractor and further discussion with the Authority and the Heat Off-Taker.
- 4.9 A separate arrangement is being sought regarding the connecting pipework from the Shawfair site to the Heat Exchanger within the EfW facility site boundary. This is because there is one continuous pipe that will extend from the Shawfair Heat Network building across the boundary to the Heat Exchanger. The Shawfair Heat Network building is located on land being sold by the Council.

5. Next Steps

- 5.1 Following approval, a necessary variation to the Project Agreement (the Contractors Change notice) and Heat Offtake Agreement will be signed by the Council.
- 5.2 Construction of infrastructure including ground works, heat interchange unit, pipeline and Midlothian energy centre are scheduled to commence in October 2022.
- 5.3 Costs will be closely monitored to ensure aligned with agreed budget.
- 5.4 Performance of existing EFW plant will be closely monitored to ensure maximum efficiency is maintained throughout construction of Heat Interchange Unit and associated infrastructure.

6. Financial impact

- 6.1 This report sets out capital expenditure of £5.200m. This will be partially offset by a 20% contribution from Midlothian Council of £1.040m, resulting in a requirement of £4.160m in loans fund advances. The loans charges associated with this over a 20-year period would be a principal amount of £4.160m and interest of £2.074m, resulting in a total cost of £6.234m based on an assumed loans fund interest rate of 4%. This represents an annual prudential borrowing cost of £0.312m to be met from the Place revenue budget. Borrowing will be carried out in accordance with the Council's Treasury Management Strategy.
- 6.2 The annual cost of prudential borrowing can be met from the Council's share of third-party income generated by FCC at the Millerhill plant. This income is largely due to electricity sales in excess of what was assumed in the original business case. It is currently estimated that the Council will receive around £4m in respect of 2022/2023 and while the amount will vary from year to year, it is expected to be sufficient to meet prudential borrowing costs.

7. Stakeholder/Community Impact

- 7.1 Whilst this development is within Midlothian Council area, not Edinburgh, the heat network project clearly has benefits for the community. The FCC plant manager is actively reaching out to the community and has recently contacted the local Community Council (Danderhall) and awaits a response.

- 7.2 CEC staff have consulted with legal, finance, risk and insurance services within CEC. Health and Safety issues would be the responsibility of FCC not CEC. CEC has full access to all of FCC's H&S procedures and records.
- 7.3 The heat offtake unit will enable the provision of heat to the new Shawfair town on the outskirts of Edinburgh, thus reducing reliance on fossil fuels. This heating solution also provides energy security and protects consumers from the volatility of fossil fuel prices.
- 7.3.1 Generating both heat and electricity improves the efficiency of the plant, compared to electricity only. According to Zero Waste Scotland, converting electricity-only EfW plants to CHP systems is estimated to reduce their carbon intensity by 30% (source: [The climate change impacts of burning municipal waste in Scotland, Zero Waste Scotland, June 2021](#)).
- 7.3.2 Generating both heat and electricity improves the efficiency of the plant, compared to electricity only. According to Zero Waste Scotland, converting electricity-only EfW plants to CHP systems is estimated to reduce their carbon intensity by 30% (source: [The climate change impacts of burning municipal waste in Scotland, Zero Waste Scotland, June 2021](#)).
- 7.3.3 The district heating network for Shawfair is expected to save over 2,000 tonnes of CO₂ per year, the equivalent of taking 1,200 petrol/diesel cars off the road.

8. Background reading/external references

- 8.1 Award of Residual Waste Treatment Contract – Delegated Authority paper; discussed by the Finance and Resources Committee on [17 March 2016](#).

9. Appendices

- 9.1 None.