

Governance, Risk and Best Value Committee

10.00am, Tuesday, 16 January 2024

Millerhill Energy from Waste Plant: Heat Interchange Unit

Executive/routine
Wards

Routine
All

1. Recommendations

- 1.1 Governance, Risk and Best Value Committee is asked to note:
 - 1.1.1 This update on the cost of the development of a Heat Interchange Unit at the Millerhill Energy from Waste site; and
 - 1.1.2 That six monthly updates on the project will be provided for Committee, starting from August 2024.

Paul Lawrence

Executive Director of Place

Contact: Lesley Sugden, Contract Manager

E-mail: Lesley.sugden@edinburgh.gov.uk | Tel: 0131 469 5764

Millerhill Energy from Waste Heat Interchange Unit

2. Executive Summary

- 2.1 This report responds to an action agreed by the Council for a report to Governance, Risk and Best Value Committee to allow scrutiny of the increase in costs to date associated with the construction of a Heat Interchange Unit (HIU) at the Millerhill Energy from Waste (EfW) facility. The Council also requested updates on progress every six months, and these will be provided from August 2024 onwards.

3. Background

Millerhill Energy from Waste Facility

- 3.1 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) for the disposal of residual waste.
- 3.2 The Council, for itself as Lead Authority and on behalf of Midlothian Council, signed a contract with FCC (E&M) Limited in 2016 for the disposal of residual waste which also involved the construction of the Millerhill EfW facility. FCC will operate the plant for 25 years then return the facility to the Councils'. This is year four of operations.
- 3.3 The facility accepts up to 135,000 tonnes of residual waste from the Council and Midlothian Council, with the City of Edinburgh Council providing around 85% 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, comprising £29.5m from Edinburgh and £7.4m from Midlothian. 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.
- 3.4 The current blended 'gate fee' is approximately £94/tonne, which is below the average Energy from Waste gate fee reported by UK local authorities in 2022 of

£103/tonne¹. The total cost to the City of Edinburgh Council in 2022/23 amounted to £9.8m.

- 3.5 The Councils also receive a share of third party income generated from the sale of energy and third-party gate fees. FCC receive a guaranteed minimum as set out in the project agreement, with additional income shared equally between FCC and the Councils. The Councils' share is then subdivided in proportion to the level of waste generated by each Council. A breakdown of income received to date is provided below:

Table 1: Analysis of Third Party Income

	2019/20 £m	2020/21 £m	2021/22 £m	2022/23 £m
3 rd Party Gate Fees	3.88	5.09	5.42	5.70
Energy	4.90	4.13	5.25	16.64
Other Sales	0.07	0	0	0.05
Total	8.75	9.22	10.67	22.39
FCC (Guaranteed Minimum)	8.75	9.22	10.66	10.60
FCC (Gainshare)	0	0	0.006	5.90
CEC (Gainshare)	0	0	0.005	5.01
MLC (Gainshare)	0	0	0.001	0.88
Total	8.75	9.22	10.67	22.39

- 3.6 The plant operates under an Environmental Permit (PPC) regulated by SEPA (Scottish Environment Protection Agency). The requirement to connect to a heat network is a condition of the facility's PPC, without which the facility cannot operate.
- 3.7 A heat network is now being developed by Midlothian Energy Ltd (a joint venture between Midlothian Council and Vattenfall) adjacent to Millerhill EfW plant to service Shawfair.
- 3.8 As the facility has been built as a combined heat and power plant to comply with the PPC, there is potential to transfer heat from the facility to the Shawfair heat network through the development of a HIU. A Heat Supply Agreement was signed between FCC and Midlothian Energy Limited in November 2022, but this cannot take effect until FCC has confirmation from the Councils that the HIU will be provided. Payment terms for the supply of heat form part of the Agreement. These ensure that FCC is no worse off than they would be had they sold power alone (a requirement of the EfW contract between the Councils and FCC is that the Contractor can maintain the base case such that it does not need to increase the unitary charge for waste processing). The Council has engaged independent technical and legal advisers to ensure the terms of the Heat Supply Agreement are in accordance with the EfW contract.

¹ Source: [WRAP Gate Fees Report 2022/2023](#)

- 3.9 As required by the Contract Project Agreement, as the Councils own the facility, FCC approached the City of Edinburgh Council (as Lead Authority) to provide the capital funding to allow the construction of the HIU.
- 3.10 The cost of development of the HIU is shared between the City of Edinburgh Council (80%) and Midlothian Council (20%), in accordance with the Inter Authority Agreement which governs the EfW contract.

Actions from the Council – 2 November 2023

- 3.11 On 2 November 2023, the Council considered a [report](#) seeking approval to increase the level of prudential borrowing to deliver a HIU at the Millerhill EfW facility. This report was referred to Finance and Resources Committee for approval and was duly approved on 21 November 2023.
- 3.12 In considering the report on 2 November 2023, the Council requested a report to Governance, Risk and Best Value Committee to allow scrutiny of the increase in costs to date, with regular updates on progress of the project to be provided to Committee every six months.

4. Main report

Financial Assessment of the Preferred Bid

- 4.1 On 22 September 2022, the Council [approved](#) capital expenditure totalling £5.2m through prudential borrowing (£4.16m to be met by the Council, £1.04m by Midlothian Council) to pay for the addition of plant/equipment at the Millerhill EfW facility. This was to enable the facility to comply with its PCC and to provide heat to the Midlothian Energy Heat Network.
- 4.2 This report outlined the arrangement between FCC and Midlothian Energy Limited and explained that FCC had 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 HIU and associated pipeline.
- 4.3 Two quotations were received and, following technical and financial evaluation, a recommendation to proceed was made to the Council. This was based on the lowest cost bid.
- 4.4 The report highlighted that the quotations were indicative, and subject to a detailed design stage, once the preferred supplier was identified.
- 4.5 The report also outlined the tendering process which FCC had followed and confirmed that the Council had undertaken its own technical due diligence of the preferred bidders' submission.

Update – October 2023

- 4.6 Following a prolonged period of updating and refining their proposal, the preferred bidder provided a revised price which resulted in FCC reporting an increase in costs

to £8.3m. Alongside the refinement of the bid, FCC undertook an assessment of robustness of the technical solution offered.

- 4.7 At the conclusion of this, a review of the bid submitted by the other bidder (adjusted to take account of the passage of time) was undertaken, and it became clear that the preferred bidder was no longer the lowest cost bid.
- 4.8 FCC then began negotiations with the alternative contractor for the design and build contract.
- 4.9 As noted in paragraph 4.7, to take account of the passage of time, the alternative contractor was asked to review their original bid and to confirm the current estimated costs for the works. The primary reasons for the increase in these costs from their original submission are:
 - 4.9.1 Inflation; and
 - 4.9.2 The introduction of a requirement to complete the connection works pipeline (which, in 2022, was assumed to be delivered separately from this build contract).
- 4.10 For information, in addition to the cost of inflation, the original preferred bidder's cost increases (which led to the review of the overall cost due to them no longer being the lowest cost bid) included inflation, clarification of the scope, and other factors.
- 4.11 Based on these negotiations, the latest estimate to deliver the project is £7.4m, plus a contingency of £0.5m, meaning a total estimated cost of £7.9m. This means the Council's estimated contribution will be £6.32m, an increase of £2.16m on what was previously approved.
- 4.12 On 21 November 2023, Finance and Resources Committee [agreed](#) the increase in prudential borrowing to meet the Council's share of the total cost of the project.

5. Next Steps

- 5.1 Construction of the HIU is scheduled to commence in the first quarter of financial year 2024/25. Costs will be closely monitored to ensure that they align with the approved funding.
- 5.2 The first progress update on the delivery of the heat off-take unit in August 2024.

6. Financial impact

- 6.1 As noted in paragraph 4.1, in September 2022, the Council agreed Prudential Borrowing of £5.2m (£4.16m to be met by the Council, £1.04m by Midlothian Council) to pay for the addition of plant/equipment at the Millerhill EfW facility.

- 6.2 Following a prolonged period of negotiation, the total cost of the development of the HIU has increased, with the cost now estimated to be £7.9m, of which 20% (£1.58m) will be met by Midlothian Council.
- 6.3 The net requirement from the City of Edinburgh Council is £6.32m.
- 6.4 The loans charges associated with the Council's 80% share over a 20-year period would be a principal amount of £6.320m and interest of £4.249m, resulting in a total cost of £10.569m based on an assumed loans fund interest rate of 5.25%. This represents an annual cost £0.528m.
- 6.5 Prudential borrowing has been approved by the Council for this, to be met from the Council's share of third-party income generated by FCC at the Millerhill plant.
- 6.6 Although it is not anticipated that the heat offtake unit will result in additional income, it is considered appropriate that existing income is earmarked towards this investment. This is because both capital expenditure obligation and third-party income arise from the same contract, and neither were budgeted at the time of the September 2022 report. A summary of the financial impact is included in the table below:

Table 2: Millerhill Energy from Waste Plant Heat Offtake Unit - Financials

Capital		£
Estimated Cost from Contractor		7,400,000
Contingency		500,000
Total Capital Cost		7,900,000
Less 20% contribution from Midlothian Council	-	1,580,000
Capital Cost to be met by the City of Edinburgh Council		6,320,000
Revenue Impact - 2025/26 Onwards		
Estimated annual Income from Millerhill Plant (the City of Edinburgh Council's Share) ²		1,700,000
Less: Annual prudential borrowing costs associated with heat offtake unit	-	528,000
Net income available to meet Council budget pressures		1,172,000

² Estimate based on latest information from FCC

7. Equality and Poverty Impact

- 7.1 The HIU will enable the provision of heat to the new Shawfair town on the outskirts of Edinburgh, reducing reliance on fossil fuels. This heating solution also provides energy security and protects consumers from the volatility of fossil fuel prices.

8. Climate and Nature Emergency Implications

- 8.1 As a public body, the Council has statutory duties relating to climate emissions and biodiversity. The Council

“must, in exercising its functions, act in the way best calculated to contribute to the delivery of emissions reduction targets”

(Climate Change (Emissions Reductions Targets) (Scotland) Act 2019), and

“in exercising any functions, to further the conservation of biodiversity so far as it is consistent with the proper exercise of those functions”

(Nature Conservation (Scotland) Act 2004)

- 8.2 The City of Edinburgh Council declared a Climate Emergency in 2019 and committed to work towards a target of net zero emissions by 2030 for both city and corporate emissions and embedded this as a core priority of the Council Business Plan 2023-27. The Council also declared a Nature Emergency in 2023.

Environmental Impacts

- 8.3 The development of a heat network is a vital component in maximising the environmental efficiency of the facility, and minimising the climate impacts of managing waste, and so contributes to the delivery of the Net Zero 2030 target.
- 8.4 Wider environmental benefits would be expected to accrue as there would be an equivalent reduction in the use of energy supplied by other sources, which would have its own environmental impact regardless of whether that is sourced from renewable or other sources.
- 8.5 According to Zero Waste Scotland, converting electricity-only EfW plants to Combined Heat and Power (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](#)).
- 8.6 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](#)).
- 8.7 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.

- 8.8 The proposed action does not impact, either positively or negatively, on measures to mitigate climate impacts resulting from historic emissions.

9. Risk, policy, compliance, governance and community impact

- 9.1 Whilst this development is within Midlothian Council's area, the heat network project clearly has benefits for the community. The FCC plant manager is actively reaching out to the community to provide an update on progress, including engaging with the local Community Council (Danderhall).
- 9.2 The HIU 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.
- 9.3 Health and Safety issues would be the responsibility of FCC rather than the Council. The Council has full access to all of FCC's Health and Safety procedures and records.
- 9.4 The approach outlined in this report is a key part of the Council's own action to tackle climate change from its own activities and meet Net Zero 2030, as well as of the Council's own waste management strategy. Generating both heat and electricity improves the efficiency of the plant, compared to electricity only.
- 9.5 The approach outlined in this report is essential to allow the EfW plant to continue to operate in compliance with its PPC requirement that the facility connects to a heat network within seven years of first operation unless there is no network available.
- 9.6 If the facility fails to connect, then the PCC can be removed by SEPA and the facility can no longer operate. The Councils would then have no waste outlet but would still be required to make contractual payments or a significant compensation payment for the facility.

10. Background reading/external references

- 10.1 [Award of Residual Waste Treatment Contract](#) – Finance and Resources Committee, 17 March 2016.

11. Appendices

- 11.1 None.