

Assessment of the Current Costs of Residual Waste Treatment in Gloucestershire

Prepared by Stephen Burnett

I am an independent economist and financial analyst with over 35 years of experience specialising in waste and renewables. My specialisms include financial modelling and structuring the payment terms for household waste contracts. I have been commissioned by UKWIN to provide an estimate of the current cost of residual waste management faced by Gloucestershire County Council (GCC) under the contract that exists between the County Council and its contractor, FCC Environment (FCC). This is a follow-up analysis to work undertaken in 2017 for Community R4C and relies only on information available in the public domain. It does not profess to provide exact results because of more detailed commercial aspects of the contract which are inherently *not* in the public domain.

The Javelin Park Energy from Waste Facility has been operational since October 2019, with capacity for about 190,000 tonnes per annum (tpa) of residual (post-recycling) waste, about 70% of which is delivered by GCC and the balance from third parties. Net energy production (about 14.5MW after parasitic use) is sold to the national grid. The current contractual payments for the service are calculated with reference to the 2016 'payment mechanism' document agreed between the parties (Sch 4 of the project agreement).

The payments by GCC to FCC are structured in a manner that is common in such contracts, with different rates per tonne for receipt and treatment of waste in volume bands, combined with other smaller charges as well as some deductions that can apply for failure to achieve pre-agreed operational standards. In addition, GCC appears to pay FCC a set, indexed price for the exported power, thereby absorbing the pricing risk on the power. If the actual selling price to grid is higher than this fixed price, then the benefit falls to the Council. Conversely, the Council would be out of pocket if prices fall below the fixed price. In the current energy market, significant spikes in wholesale energy prices and market volatility generally have made this a winning proposition for the Authority. FCC also benefits because the stability of the cash flow will have been useful in securing favourable terms of financing for the facility when it was built. Both the waste treatment fee and the impact of the power sales arrangements are assessed separately below.

Waste Treatment Fees

Using indexation based on the Retail Price Index excluding mortgage interest (RPIx) and as applied to the starting band charges, the waste fees should be about £22.66m in 2024-25, as in the table below.

The first band has a very high starting price of £189.33 per tonne but is indexed at a blended rate with a large fixed (non-indexed) component of 81.9%, meaning that the indexation rate applied will only be 0.181% for every 1% of indexation arising (Ref 1). (This is meant to balance revenue and cost indexation theoretically such that profitability is evenly achieved.) Nevertheless, the resulting blended rate of £177.04 per tonne (for an estimated 128ktonnes) in 2024-25 remains quite high relative to the estimated market median of £116/t (53% higher) and at the top end of the reported

range of £66 - £189/t (Ref 2). The low indexation should ensure that GCC payments converge towards the market averages over time, but it will likely not happen until very late in the contract period.

It is also well above the median cost of landfill plus landfill tax currently (£24 + 103.70 = £127.70) and even with an increase in the tax by over £22/t in April, making the median price about £150/t, the gap will remain about 18%.

Estimated GCC Payments to FCC for Waste Treatment at Javelin Park, 2024-25

GCC Residual Waste	128,000	Tonnes	
RPIx indexation, 2012-2024	46.9%	(376.4/ 256.2)	
	<i>Unindexed</i>	<i>Indexation</i>	
PayMech Band 1 Price	£189.33	8.4%	partial RPIx
PayMech Band 2 Price	£16.54	46.9%	RPIx full
	<i>Indexed</i>	<i>Tonnes</i>	
	£205.33	108,000	£22,175,395
	£24.30	20,000	£486,000
Paymech Waste Payments	£177.04	128,000	£22,661,395

This calculation excludes other smaller charges and deductions that form part of the payment structure and which may be positive or negative in any given year.

The comparison with other EFW fees can only be indicative because of the bespoke commercial arrangements at each facility, which can vary significantly. In particular, the headline rates should not be seen in isolation from how the electricity revenues are treated, i.e. whether they are shared between the parties or passed through to the host Authority or many other possibilities. Most comparative gate fees will include some impact from electricity income but the charges identified here for GCC explicitly do not.

Also of note, the 2016 contract charges are significantly higher than those that applied in the original 2013 contract. Even adjusted for inflation, the like-with-like charges per tonne (adjusted to same base indexation date) are 26-27% higher. This was likely driven at least in part by increases in the cost of FCC's financing arrangements after the extended planning delays.

	New Base Price 2016	New Price Deflated* 2016	Old Base Price 2013	% ch
Band 1 Charge (1-108,000 tpa)	£189.33	£185.58	£146.36	27%
Band 2 Charge (> 108,000 tpa)	£16.54	£14.88	£15.00	-1%
Blended Charge assuming 130ktpa	£160.09	£156.70	£124.13	26%

* Deflated from new base date (Feb 15) to old base date (Feb 11)

Electricity Revenues and Costs

In a letter from GCC (Ref 3), Javelin Park is reported to have exported about 131,591 MWh in 2023-24 and with a cost to the Authority of £9.7m. This suggests the purchase price was an average of £73.71/MWh in that year. (By applying the RPIx indexation to the starting price for power in 2012 - £49.45, which includes a surrogate value for LECs- the average price should be a bit lower at £70.18/MWh and cost about £9.23m, but the difference is plausibly explained by added costs of generation or other factors not publicly accessible. In any event, the declared cost is higher than expected and so can be taken as prudent for the purposes of this note.)

All of the power from Javelin Park is sold to the grid under a power purchase agreement (PPA). Amidst volatile energy markets during this period, the Authority was able to derive the benefit of much higher prices in the wholesale markets, with an average selling price of £169.27/MWh, yielding £22.3m for the same export power (Ref 3). The overall financial benefit declared by GCC is £23.7m; this might be explained by additional capacity market payments (revenues above the wholesale price informed by day-to-day system imbalances etc.) but the commercial arrangements between GCC, FCC and the power purchaser are not fully known. At face value, this is a net benefit of £14m.

	2023-24	2024-25*	2025-26**
Electricity Volume (MWh)	131,591	127,705	<i>125,000</i>
Cost of Power from Javelin Park (£'000)	£9,700	£9,300	<i>£9,375</i>
Value Derived from Sale to Grid (£'000)	£23,700	£24,900	<i>£15,788</i>
Net Gain to GCC (£'000)	£14,000	£15,600	<i>£6,413</i>
Estimated Avg Purchase Price (£/MWh)	£73.71	£72.82	<i>£75.00</i>
Declared Selling Price (£/MWh)	£169.27	£194.98	<i>£126.30</i>

* Estimated for 12 months to March '25

** Italicised values are estimates

For 2024-25, the same letter forecasts costs of electricity from the plant to be £9.3m but a further increase in electricity sales to £24.9m, yielding a net gain of £15.6m. If the estimates hold, this offsets the overall costs of waste treatment at the site by 69%. GCC has also indicated that its forward selling price in 2025-26 will be £126.30/MWh, which could yield a net benefit which is reduced but still significant of £6.4m.

The gains during these three years arose after no real net gain in the first four years (2019-23). At the time of writing, electricity selling prices are now much closer to the indexed contractual price, implying a near-neutral financial impact from electricity sales will resume from 2026. Future electricity market volatility may well arise, but the exceptional benefits of these few years would not be relied upon for budgeting purposes.

GCC Capital Contribution(s)

Local authorities can contribute to the capital cost of a project where this offers a potential overall saving due to their ability to borrow money more cheaply than the private sector. GCC has acknowledged that it has made contributions equivalent to £38 million towards the Javelin Park development (Ref 4), which was an increase from the £13m originally earmarked in 2013. The interest rate for this loan (or loans) from the Public Works Loan Board (PWLb) is not known, but overall average rate applying to fixed loans to GCC from the PWLB is quoted at 4.60% (Ref 5). Assuming the loan is paid on an annuity basis at this rate over the 25 year life of the contract, the cost to the Authority would be £2.589m per annum, or £20.24 per tonne.

This loan repayment is a legitimate addition to the estimated total costs of the waste service and would bring the effective cost per tonne to **£197.28/t**. However, it does not directly compare with the charges referenced by WRAP in its surveys quoted above; a more detailed review of what other authorities pay *including* capital amortisation is beyond the scope of this note. Nevertheless, it does underline the additional costs that can arise when a highly capital-intensive solution such as EFW is selected over another which is less so. If the contribution had not been made, the capital would have been sourced privately by the contractor and resulted in higher charges for the service.

In addition to the direct capital contribution, GCC purchased the Javelin Park site for £7.4 million and likely receives a small, 'peppercorn' rent payment from the contractor. This will be on the Authority's balance sheet but it is likely not amortised since land retains its value, more or less, in the long term; it would not be value-less at the end of the contract. Therefore, although it is a resource commitment, it doesn't stand up as a transparent addition to the cost of the service.

Summary

- Current residual waste treatment costs are estimated at **£177/t** in 2024-25 before consideration of the impact of electricity sales to the grid, but over **£197/t** when the cost of capital amortization is included. Since 2023 and until 2026, strong gains from power sales have allowed / will allow for much lower net costs to be declared. Nevertheless, wholesale energy markets are highly unpredictable, making it unlikely that GCC can depend on these windfalls being sustainable.
- Longer term, predicting the future movement of wholesale electricity prices is fraught with risk, but in the absence of volatility that was seen in the last few years, the impact of the electricity trading arrangement to GCC will probably be neutral at best. If ongoing indexation of the electricity purchase price in the contract is broadly equivalent to the wholesale market price (a neutral effect on fees), GCC waste treatment charges are likely to remain above market averages for most if not all of the remaining contract period.

References

1. Schedule 4 of 2016 contract between GCC and FCC, the 'Payment Mechanism'. The rates in the contract were re-negotiated from an earlier version signed in 2013 because of planning-related delays in the planned start of financing and construction of Javelin Park.
2. WRAP, 2023-24 Gate Fees Report, Comparing the Cost of Alternative Recycling and Waste Treatment Options. [WRAP-Gate-Fees-Report-2023-24-V1.1.pdf](#)
3. Letter of 17 Jan 2025 from GCC Corporate Resources Dept to Thomas Jarman, responding to Mr Jarman's request for information on electricity purchases by GCC (volumes and prices).
4. County Council Public Questions, Nov 2024
5. GCC 2025-26 Budget Consultation, Dec 2024, App B