

Biomass Environmental Solutions Ltd

Part 3: Specific financial details.

T J Waste Ltd
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For the attention of:
Mr J Higgins and Mr J Gosling

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Issued documentation.

The documentation previously issued included the outline of the technology and Part 2 your proposal. The additional information outlines the technical and financial details of the project, based upon the following information provided by yourselves.

- 1.0 Current average net price of White Diesel, (road use) being £1.02
Current expenditure £4,200,000 per annum divided by £1.02 equates to 4,100,000 litres per annum.
- 2.0 Current average net price of Red Diesel, (non-road use) £0.58
Current expenditure £ 230.000 per annum divided by £0.58 equates to 396.551 litres per annum.
- 3.0 Estimated cost of landfill, @ £105.00 per tonne, of mixed waste.
- 4.0 Estimated annual power use £45,000 per annum,
Current expenditure @ £45,000 per annum divided by £0.1429 Kwhr

Scope of proposal.

The project will be a single module installation, which for the UK we are only looking at Crude Waste Recycling and Waste Plastic Recycling. For your application we have focused on the latter, plastic waste to oil products.

Installation costs.

Cost of installation has also been considered, being a single modular construction, this has bought the project to below £19.5M, based upon the prices provided by Kurata Systems for a UK installation.

Our discussions with Kurata Systems Spain, have led to a restructure of UK projects and for our clients throughout the UK, we have been nominated by the Kurata Project UK Team (hereafter KUPT) as the lead contractor for all Mechanical, Electrical and Controls installation works and miscellaneous other works. All civil and structural works will be undertaken by KUPT sub contractors. As you are familiar with Regent Engineering, all our works will be completed to the highest standards.

We have discussed that for the opportunity to work, the prices have to be reduced to include as much as possible to be completed by UK contractors, with also an element of works being able to be completed by our clients, in this case, infrastructure, transportation and waste recycling.

This therefore has given the project a capped price, should the overall UK price be greater than the KUPT and Kurata Spain costings then the contract will be offered under contract with KUPT at a fixed price.

Project re-evaluation:

It has been fair to assume that although the project sum above has been based upon a duplicate installation, it is fair and reasonable that the location selected will have attributes that will genuinely reduce the price. Taking into consideration that it is likely to be able to considerably reduce the project price, it is also fair to state that during the planning application stage, there will possibly be changes required to meet with planning, which will also vary the overall project sum. We have discussed that during the planning stages the re-valuation will be completed, as planning is likely to be between 12–16 weeks, therefore adequate time to complete the construction phase costs.

Project expectations:

The project expectations need to realise a return of investment of less than 5 years, of which the model shown will be considerably less.

Return of Investment (ROI).

A single module installation 11,000 tonnes per annum of waste plastics producing approximately 6.5M litres of EN 590 Diesel or biofuel as it can be modified for other applications with simple changes such as the addition of sulphur for higher grade fuel products.
 1,600,000 litres Kerosene (note previous information was tonnage but not converted to litres)
 500,000 litres Gasoline. (note as above)
 600 tonnes aggregate for highway use.

The project return of investment has to be less than 5 years, of which the indications from Kurata Spain, the ROI is around 3 years, based upon certain particulars to include their 100% off road use.
 We therefore aim to make the overall ROI a max of five years from start of the installation phase.

Key point for consideration for ROI.

Raw materials,

The plant operation currently will need to allow for segregation of plastics, the process changes will require a small area for processing out the PVC,
 General steams as indicated prior, but the process will allow up to 5% of PVC but not preferred.

Therefore the Raw material chain is the key issue, of which we would suggest that this process can start once you have decided to go ahead, as this will also reduce the landfill for the year to the build and commissioning process, again an additional saving,

Hydrocarbon oil duties Act 1979.

KUPT have a body of people currently lobbying the government for the duty to be charged on the products produced, as at the time of the Act, waste to energy solutions were not considered. It is likely that by the time the project is commissioned the Act will have been revised, to allow for reduced duty relief on biofuels used by companies investing into the technology.

For the purpose of the ROI, we have to rely upon current duties to work the best proposal to TJW for a healthy return, of which the costs below can be applied to estimate the ROI.

Fuels used for generation and export of power will attract £0.05711 per litre.

Fuels used for heating will attract £0.1070 per litre.

Fuels used for on-site vehicles and plant will attract £0.1114 per litre.

Fuels used for your own vehicles on the highway will attract £0.5795 per litre.

Where fuels are resold, the duties will still apply.

The usual VAT will apply for all resold fuels.

Aggregate will only attract VAT if resold.

The final return of investment can be estimated once the build cost and financial costs etc have been confirmed,

Design responsibility.

The design for the project will be underwritten by Kurata Spain, where the footprint and dynamics should be incorporated as close as possible to the layout of the Cordoba site. Where changes are inevitable, the submission for dynamic changes will involve a redesign process, (included within the project costs) to ensure the affected part of the system will perform, or indeed to advise any changes required to incorporate the change of design. The final position of the technology does need to be positioned and arranged as per the design criteria. The sub-construction plant and equipment can be adjusted as per the site installation there will be a full design consultation before plant and equipment are ordered.

Cost considerations:**Total production capacity:**

The stated output production using the best graded plastic will yield a max of 8.5M litre of product, but in the real world, unless the grading process is absolute this will not be achieved, therefore for the purpose of the project operation and costs we have reduced the target output to;

EN 590 Fuels @ 6,500,000 litres,

Used as white and red diesel.

Kerosene @ 1,600,000 litres,

Used for various purposes, heating, vehicles and energy production.

Gasoline @ 500,000 litres,

Used for heating, vehicles and energy production.

Aggregate @ 5% @ 600 tonnes per annum,

Used for road use and infrastructure.

TJ Current use and costs:

The figures indicated and confirmed below form the basis of the over ROI analysis.

On road use:

On road vehicle use cost of diesel average @ £1.02 per litre net of VAT, this includes duty of £0.5796/litre

Therefore this figure payable as duty will be the net cost to your for your fuel.

Table 1				
Current costs	Cost/litre	Total volume litres	Revised usage cost at the rate of duty	Total Savings
£ 4,200,000	£ 1.02	4,117,647	£ 2,386,588	£ 1,813,413

Off road use:

Off road vehicle use cost of diesel average @ £ 0.58 per litre net of VAT, this includes duty of £0.1114/litre

Therefore the figure payable as duty will be the net cost of your fuel.

Table 2				
Current costs	Cost/litre	Total volume litres	Revised usage cost at the rate of duty	Total Savings
£ 230,000	£ 0.58	396,551	£ 44,175	£ 185,825

Reduction of landfill costs:

The landfill costs indicated have been calculated for the period from order to completion, which for example will be approx. 1 year before the product is used, the product will need to be processed and stored, (also see additional surplus requirements income)

Table 3				
For first years stock:				
Current costs per 11,000 tonnes	Cost per tonne	Total volume tonnes	Revised usage cost at the rate of duty	Initial Savings
£ 1,115,000	£ 105.00	11,000	£ 0	£ 1,115,000
For operation period per annum.				Annual savings
11,000 tonnes	£ 105.00	11,000	£ 0	£ 1,115,000

Balance of production uses:**TABLE 4**

EN590 Grade	Production level	Uses	Income value net of DUTY and VAT	Additional income retail market
Production level	Balance after direct use			Use to only meet balance fuel rate, not accumulative figures. 1 of 3 figures carried to summary.
6,500,000 litres	1,985,802, rounded to 2,000,000 for calculations litres	White diesel Red diesel Generation of power Heating	44p/litre 47p/litre See table below 46p/litre	£ 880,000 £ 940,000 £ 920,000
Other fuels:			Max benefit surplus of EN590 used as above.	£ 940,000 Carried below to total max income figure
Kerosene				Available income.
1,600,000 litres	1,600,000	Heating	£ 0.46/litre	£ 736,000
Gasoline				Available income.
500,000 litres	500,000 litres	On road use	£.0.49/litre	£ 245,000
Aggregates	600 tonnes	600 tonnes	Average £50 tonne	£ 30,000
			Max income as indicated above,	£ 1,951,000

Generation of power:

The comparison chart below shows the use of the available fuels to generate power, as all fuels streams can contribute to a power generation source of different technologies;

The duty on power generation is only 5.7p for all fuels.

1 litre of Diesel will generate 10kwhrs of energy.

1 litre of others will generate 9.1kwhrs of energy.

The export value of energy will increase by 35% over the next three years as this is in line with the consumers increases which are 35% over the next three years.

Using current market prices the following revenue will be a minimum.

Note also the options for export of energy fall into two categories:

Licensed provider to consumers, high end yield at around 14 – 18p per Kwhr, lowest figure used for table below.

Licensed export to the grid under contract with a supplier, 10 – 12p per kwhr, lowest figure used for table below.

TABLE 5

Fuel type	Amount available litres	Kwhrs produced	Rate applied	Revenue, net of VAT
EN590	2,000,000	20,000,000	10p/kwhr	£ 2,000,000
Duty payable	2,000,000 @ 5.7p/litre			Less £114,000 duty
Kerosene	1,600,000	14,560,000	10p/kwhr	£ 1,456,000
Duty payable	1,600,000 @ 5.7p/litre			Less £ 91,200
Gasoline	500,000	4,550,000	10p/kwhr	£ 455,000
Duty payable	500,000 @ 5.7p/litre			Less £ 28,500
Less operating costs average				Less £ 500,000
			Total revenue	£ 3,177,730

Summary note:

The use of excess fuel for generation of power will provide twice the income of used as general fuels.

The project sum includes a current contingency for power export, but there are several points to look at in regards how and exactly where the points of export are installed.

Immediate thoughts would be smaller units located at every site, which will equal the current loading of the site, which reduces the site installation costs, with any additional requirements being met with a new sub-station.

Alternatively a new facility for the whole export, but this would be governed by the DNO (District Network Officer) but with the current demand would easily be located within 10 miles of the point of fuel distribution.

Operational Costs.

The costs of operating the plant have been included above, which we expect to be in the region of £500,000 per annum, subject to overall sizing and resources.

Summary of costs and ROI.

Ref	Item	Saving	Income	Year 1 Up to commissioning stage	Year 2 plus 1 st year of operation approx. 18 months from order date.
Table 1	Overall savings on current road use	£ 1,813,413		£ 0	£ 1,813,413
Table 2	Overall savings on off road use	£ 185,825		£ 0	£ 185,413
Table 3	Order period stock of fuel source PC Sum for storage costs	£ 1,115,000		£ 1,115,000 - £ 115,000	£ 1,115,000 Inc in facility
Table 4	Option not entered as table 5 shows better income stream				
Table 5	Generation revenue from balance of fuels available		£ 3,177,730		£ 3,177,730
				Balance Year 1 £ 1,000,000	Balance Year 2+ £ 6,291,556

All figures are net of VAT, exclusive of inflation and price increases, which would normally equal out.

Summary Target:

Therefore if the project can be realised for less than £18,000,000, the ROI excluding the costs of finance falls in line with the Spanish forecast.

Moving forward:

We do not expect any commitment until you have visited the two sites in Spain, Cordoba and Madrid. This can be arranged within a few weeks, you will meet the Torres family who own the technology and the sites.

All technical questions can be answered over a period of 3 days, you will be able to appreciate the size of the operation in the relatively small foot print.

We will attend with yourselves to assist with any technical aspects, construction etc.

Trip advised itinerary; Fly to Malaga, Train to Cordoba (2hrs), overnight in Cordoba, site all day then travel with Owners to Madrid, overnight stay, next day on site, overnight with final meeting day 3, then fly Madrid back to UK. We can arrange the trip details, but currently all costs will be incurred by individual parties, as the owners have had some unpleasant results of entertaining people whom were there just for the trip.

We do ask you to look at the Kurata website, to see the developments, history with also looking at the projects and the facades where for example Madrid is within the Urban area, but looks nothing like a process plant.

See www.kuratasystems.com

Services provided pre-ordering by BESL.

Where there will be further works prior to considering the project, BESL will be able to offer the consulting services to provide:

Pre-order final costs in line with your location and requirements.

Pre-planning details.

DNO liaison for location of power export locations etc.

All required documentation and final presentation.

Where some of these costs are considered for BESL, cost of sales, the general works required will be for the purpose to assist you in determining the validity of the project.

Where we charge a fixed fee for these pre-works if the project goes ahead the fees will be refunded.

Fee sum between £5000 and £7500 net of VAT. Our attendances to site will be at our own expense.

Other business opportunities:

We are looking at several sites in South Wales where clients have asked to secure a fuel chain of plastics for their own plant. These clients are not in the waste industry, but in the domestic home oil heating industry, therefore reliant upon external supplies of plastic.

We will be able to offer clients any surplus you may have at the time, but currently the prices locally from waste transfer companies is around £60.00 tonne delivered.

Where therefore your excess would normally go to landfill, with also the added income, this does make for a commercial opportunity to consider fuel supplies. However, delivering loose plastic is not really the best economic model, but if we considered a briquette facility to briquette the blocks of plastic, this makes more of a solution.

Alternatively, we are dealing with Owens Transport, they have 670 Vehicles on the road, where we openly discussed an opportunity of possibly a JV consideration of a second plant on your site, to produce exclusively fuel for themselves, from your waste streams.

The opportunity lends itself to an opportunity to increase the size of the plant to 22,000 tonnes per annum, with only a 50% increase in costs.

Therefore if a JV was considered the whole project from your financial aspect would be a lot less, as Huw Owens input would be 50%.

The actual operating costs etc, would be recovered from the Kerosene and Gasoline sales direct to TJW.

Huw Owen also owns Dyfed Waste Recycling Ltd, which is slightly smaller than Yapton.

They are now looking to expand into a new site, with a Waste Incineration Directive plant which uses under 3 tonnes an hour, to burn Grades Virgin A B C D, SRF and MDF waste. I have mentioned to Jamie that I introduced the opportunity of BESL and TJW to act as consultants for the overall design of the plant and installation, of which we extended the opportunity for them to visit your facilities. As Huw Owen expressed a very keen interest, where they only need to CHP plant, they do however need the fuel chain to support their business, as there is an opportunity if you would like this to be explored further we can invite them to consider the fuel JV venture.

The summary financials on this would be £1,115,000 savings on landfill with additional revenue for running costs and overheads, but with an additional revenue stream around £400,000K, for Owens Transport would be a massive saving of around £2.75M per annum allowing for collection by them. Therefore their ROI under 5 years.

PCC Joint venture:

Although it was indicated that there was to be a JV with PCC, the best option would be to enter into an electricity providing programme, which could include remote car charging points, local power generation to buildings etc. This would benefit TJW rather than PCC.

Other site considerations:

In the cold spell our Mechanical and Electrical team, (Regent Engineering) provided a quote for heating the picking stations, there could now be an opportunity to ready these areas using oil fired heating rather than electric, which although the use of fuel would be minimal, it would solve a site problem in front of this winter.

Meeting notes:

Yours Sincerely.

Alan P Conduit

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