IMMINGHAM – FINANCIAL TEASER

2 x 10 MWel CHP READY WASTE-TO-ENERGY POWER PLANT, UK

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Project Structure





Business Model Overview

Standard Design	In collaboration with Immingham Industrial Estates Limited ("IIEL"), TEGCO GmbH has designed a "standard" modular waste to energy ("WtE") plant with a gross capacity of 10 MWel [Net 8,5 MWel].
	The design is combined heat and power ("CHP") ready and is extremely flexible to accommodate various grid capacities and site footprints available.
	Note: there is no heat offtake anticipated on this project.
Height	The boiler is a vertical boiler 6 pass compact design therefore the required height of the main building and boiler house is only around 30 meters
Stack	Planning Permit was issued for a 65 meter stack.
Turbine	The steam turbine is multistage and is therefore "CHP ready".
Fuel	The fuel required is "low grade" (8.4Mj/kg) refuse derived fuel ("RDF") which would otherwise go to landfill or exported to main land Europe.
	The RDF is derived predominantly from Commercial and Industrial waste. All recyclables are extracted leaving a low grade Refuse Derived Fuel.
	The UK currently generates in excess of 51 million tonnes of waste and just over half of this goes to landfill, therefore there is a plentiful supply of RDF for the foreseeable future.



Business Model Overview - Continued

Financial incentives	The business format is unique in that it is not dependent upon any government financial incentives.
	The planning permission was granted in Dez 2018, therefore the timing up to financial close is much more straight forward.
Environmental Permit	The application for the environmental permit will be made once financial close has been achieved. Obtaining the environmental permit will be an EPC Contractor risk and responsibility under the EPC Contract.
EPC and O&M Contractor	The EPC Contractor will be STC Power S.r.l. with TEGCO GmbH as Nominated Subcontractor, the O&M Contractor to be coordinated with the investor – either done by the investor himself or by TEGCO GmbH. Thus, the transfer from construction to operation will be seamless.
Power Purchase Agreement	A minimum 10 (15) year power purchase agreement ("PPA") with a national utility will be concluded. Quotations are currently being obtained from Engie Power, EDF Energy and others.
Fuel Supply Agreement	A minimum 10 year fuel supply agreement (with rolling 5 year extensions) with Tier I and Tier II suppliers giving, in effect, 200% coverage.





Site Overview

Location	Part of a parcel of land situated on Scandinavian Way, Stallingborough, Grimsby, Immingham. DN41 8D as delineated on slide after next. There is also an old existing railway siding for deliveries by train. (needs to be updated)
Project	The project is two "standard modules" or plants to be developed on the Site. The project can either be funded as one 20 MWel project or two 10 MWel projects phased over a 3-6 month period
Lease	A 30 year lease is to be granted by Jonathan Dibden (the "Landlord") of the Site to the SPV (Immingham) Ltd (the investor).
Planning	Planning was granted in Dec 2018 for a 20 MWel waste to energy power generation facility, with a 65m stack and associated plant, machinery, parking and external works. The current building needs to be partially demolished to accommodate the TEGCO technology.





Site Overview - Continued

Environmental Permit	The application for the environmental permit will be made once financial close is achieved. Obtaining the environmental permit will be an EPC Contractor risk and responsibility under the EPC Contract.
Contamination / Ground Risk	 Planning conditions associated with the site's contamination have already been discharged. The EPC Contractor will: assume full responsibility for all risks associated with the design and construction of the works including responsibility for ground risk; be responsible for all environmental liabilities arising out of the construction of the works including construction noise; and
Utilities	Under the EPC Contract, the EPC Contractor will be responsible for the provision of all power, water, gas and any other services (diesel fuel etc) that it may require for the project. We will be clear that the EPC Contractor takes responsibility for all third party rights required.



Location: Netherlands Way, Stallingborough, Immingham. DN41 8DF. Area: 7 acres

> Strategically located in Immigham to benefit from excellent transport links and local infrastructure including M80 & M180





Financial summary

Cap-ex	£118m
Power Income Stream	£8.7m per annum equating to 26% of total income.
Gate Fee Income – 10 year (5 yr fixed) Contract	£ 24.9m (319,800 tonnes @ £65 per tonne)
Embedded Benefits assumed	£ 3.30 per MWe average net of commission
Capacity Market assumed	£ 8.4 kW/yr
Average EBITDA	£24.837m per annum





Financial summary - continued

Return on Equity – 100% with fuel @ 8.4 MJ per KG	21.05%
IRR % (after tax)	18.41%
Rate of Inflation included in Financial Projections	2% from year 5 onwards
Start of Commercial Operations	Q4 2021 for 20 years, plus option to extend for an additional 5 years
Financial Model	We would be happy to share the financial model with you.





Feedstock procurement

Feedstock Type	Low grade RDF
Tonnage	319,800 tonnes pa {159,900 tonnes per 10MWel line]
Gate Fee	£65 per tonne fixed for 5 years
Calorific Value (Net)	Average – 8.4 MJ/kg Range – 7 to 10 MJ/kg Plant range – 7 to 12 MJ/kg
Moisture content	Average – 25% wt Range – 15 to 35% wt
Ash content	Average – 15% Range – <25%
Contract Term	HOTs for a minimum 10 year fuel supply agreement to be agreed with a Tier I "Blue Chip" supplier with a 5 year review. The Tier I supplier is scheduled to be one of the largest Waste Mgmt Companies (RDF) from the UK. In addition to that, waste streams from various industries in the amount of more than 5,000,000 tons are moved all over Europe, as "alternative fuel" for various power plants, from the UK using vessels, trucks or container. Similar detail has been discussed in principal with two possible Tier II suppliers. Two suppliers will provide 200% cover.





Feedstock procurement - continued

Fuel Testing	Fuel to be tested by the O&M Contractor on a regular basis (at least bi-monthly).
Right of Rejection	The O&M Contractor will have the right to reject any fuel deliveries that do not comply with the contracted fuel specification.
Ash Disposal	The fuel supplier will provide a contract for the disposal of all ash produced, both hazardous and non-hazardous.
Fuel due diligence	Fuel due diligence will be undertaken to examine current and future fuel pricing, market dynamics, the drivers for change and impact on prices. There will be appropriate indemnities in the fuel supply contract to disincentivise contractor default.
Consumables	These will be included within the EPC Contract sum pre handover and the O&M Contract sum post handover. The consumable costs are to be managed on an open book basis for the duration of the O&M Contract.





Technology

Technology Summary	 WtE traditional combustion with steam turbine. The plant is designed to be waste incineration directive ("WID") / industrial emission directive ("IED") compliant to accept RDF as feedstock. The grate is air-water cooled. The design is to utilise steam turbine technology (multi stage therefore "CHP Ready") which is well proven and has a successful operational track record.
Electrical Output (gross)	20 MWel per hour
Net electrical production	139,400 MWh per annum guaranteed
Fuel Storage	3-4 days at maximum demand
EPC/Technology Provider	TEGCO GmbH (License of SFA Handels GmbH)
Performance of O&M Contractor	The O&M Contract includes responsibility for the provision and costs of spares; maintaining the spares inventory and maintenance schedules; routine maintenance; life cycle and penalties. Maintenance and lifecycle risk will sit with the O&M Contractor. An appropriately sized cash reserve (subject to due diligence and benchmarking) will be established as a further risk mitigant.





Technology - continued

Protection against EPC Contractor failing to deliver specified plant and technology	 Key EPC Contract items:- process specifications; contracting structure e.g. fixed price, turnkey, design and build warranties; adequacy of security package and TEGCO's covenant strength; liability cap; step-in rights; and rejection and termination rights.
Protection if plant availability falls below the guaranteed levels.	 EPC contract includes:- commissioning checks; tests on completion prior to handover; post completion performance verification tests; robust warranty package; and Recording of plant operations during warranty period to establish how the project has performed against an agreed availability guarantee. O&M Contract to include minimum availability levels with associated performance LD package if availability falls below contracted levels.





Lease Agreement	IIEL will enter into a lease with the SPV under the following key terms:	
	 30 year term commencing on financial close with £350k rent payable each year. Rent reviews will be every 5 years and will be increased in line with the RPI index (upwards only). Obligations on the SPV to comply with the planning, building regulations and environmental permits and relevant statutes. SPV option to extend the lease on the same terms in multiples of 5 years. SPV will undertake a contamination and topographical survey of the Site. The Landlord will be responsible for contamination existing prior to the commencement of the lease with the SPV. SPV will be responsible for contamination caused during the term of the lease. 	
Power Purchase Agreement (TBD)	Heads of Terms issued.	
	The PPA is for the offtake of the full electrical output of the plant, up to a maximum of 18MWe (Net). The key terms of the contract are as follows:	
	 10 (15) year contract term. All embedded benefits passed through to Immingham SPV. New benefits and/or exemptions are shared on 90/10% basis in favour of the Immingham SPV. PCG from the parent co (A3) with coverage of c. 6 months revenue in the event of default or termination. Standard clauses related to liability, suspension, termination and breach. No Floor Price offered. Discussions taking place with the following entities: Bristol Energy, Centrica, EDF Energy, EnDco, Engie Power, Inenco and Smartest Energy. 	





Grid Connection Offer (Norther Powergrid)	The Landlord has accepted the non-contestable contract with Northern Powergrid and already paid the deposit for a 24 MWe export grid connection (the "Grid Connection Offer"). The export grid connection is tied to the site will be sufficient to accommodate two lines of 10 MWe on the same site.
Fuel Supply Agreement	 Heads of Terms issued. Two fuel supply contracts provide the RDF supply for the project and the contracts contain the following key terms: 10 year minimum term with rolling 5 year extensions. Discussions have taken place with Tier 1 and Tier 2 suppliers giving, in effect, 200 % coverage. Supplier has to meet the fuel specification which ensures compliance with statutory permits. Standard clauses related to failure to supply, termination, insolvency, limitations on liability, indemnity and termination.





Contract (EPC)	Heads of Terms are agreed and in place between the EPC Contractor and the Immingham SPV.	
	The EPC Contract is for the design, supply, installation, testing and commissioning of the 20 MWe RDF-project contains the following key terms: EPC	
	 Fixed price contract for £118m, based on a turnkey precedent project form of contract including all costs prior to handover. 	
	 Security package also includes a 10% performance bond, 15% advanced payment and 5 (2,5) % warranty bond. 	
	 Contractor has to deliver a plant which meets the required planning and permitting conditions. 	
	 Obtaining the environmental permit will be an EPC Contractor risk/responsibility. 	
	 Delay LDs of £[TBC] per day, capped at [10]%; 	
	 Performance LDs of £[TBC]/MWhh for energy output, efficiency usage at £[TBC] capped at [10]%. 	
	 Sub-cap of [15]% for LDs and 100 % aggregate liability cap. 	
	 Payment milestones spread throughout the construction period, warranty bond released after the end of the Defects Notification Period 	
	 2 years Defect Notification Period post Taking Over. 	
	 Latent defects period of 12 years relating to civils. 	
	 Latent defects period of 5 years relating to the plant. 	
	 The EPC Contractor will assume full responsibility for all risks associated with the design and construction of the Works 	
	 Within the EPC Contract, a technical adviser will undate monthly on progress against the overall programme. 	
	to advise on any critical path issues and potential corrective actions. The EPC Contract contains a 6 month	
	longstop date and appropriate LDs package in the event of delay.	





EPC Advance Payment Bond	An advance payment bond for 15% is to be provided as a condition to making any advance payment in the same amount. The approach to the stepping down of any advance payment/bond to be commercially agreed.
EPC Performance Bond	10 % performance bond (from an Int. institution) in place from date of EPC Contract until the later of: (i) expiry of the 24 month defects liability period following the final Completion Date and (ii) payment in full by the EPC Contractor of any liquidated damages payable in accordance with the EPC Contract.
EPC Guarantee	The EPC Contractor's ultimate parent company will sign in the contract.
Cash retention	Instead of any cash retention, a warranty bond (5%/2,5%) will be issued.





O&M Contract (TEGCO, Investor)	Heads of Terms are agreed and in place between the O&M Contractor and the Immingham SPV.
	 The O&M Contract is to provide the long term operation and maintenance for the plant including managing the fuel suppliers and the O&M Contract contains the following key terms: O&M Contractor the same as the EPC Contractor, thus providing seamless handover; 20 year term with a fixed price of £700k linked to RPI and represents the management fee only. Other costs including insurance, personnel and consumables not included; EPC provides for mobilisation pre handover, c. 3 months pre operations; O&M contractor accepts full lifecycle risk and will take the risk on the sufficiency / adequacy of the lifecycle fund.; O&M Contractor has standard reporting requirements and must meet the required permit and regulatory requirements; Aggregate liability cap of 100% of the annual service fee; LDs with respect to output, fuel usage and ash disposal (rates to be finalised); and Performance guarantee of 8,200 hours [93.6% availability]
O&M Bond	A sustained guarantee from the O&M Contractor to be agreed with investors.





Management Services Agreement	The MSA Contract is to provide management services to the Immingham SPV for a 5 year rolling term (linked to RPI). It covers a standard set of management services such as financial management services, secretarial support, commercial support and project management. In additional, Fichtner will be mandated to act as owners engineer and will verify / certify the douelenment on Hand Over
	development on Hand Over.
Insurance	To be discussed with insurance adviser however it is expected that cover will be provided in respect of erection 'all-risks' (£10m sub limit), delay in start-up (£30m indemnity period), third party liability (£20m limit) and terrorism during the c. 24 month construction period.
	The EPC and O&M Contractors will provide a standard insurance coverage including employer liability, public liability and professional indemnity (£10m).



Contract alignment



WASTE TO ENERGY

TEGCO

TEGCO GmbH

Polytechnik Group	Polytechnik Group is main shareholder of TEGCO, their core business is energy production from biomass and biogenic fuels and production of firing systems in the range up to 30 MWth. Polytechnik turned from a family business to a global player within the last 50 years, is seated in Weissenbach/Triesting in Austria (near Vienna) and has subsidiaries in Hungary, Poland, France, Switzerland, Romania, Russia, Belarus, New Zealand and Australia. Their export rate is about 95%, there are approximately 3.000 Polytechnik systems in operation worldwide.
TEGCO GmbH	TEGCO GmbH is a member of the Polytechnik Group and is an international engineering and systems supplier specialising in providing turnkey EPC solutions, in particular WtE plants up to 50MWel. TEGCO is the competence centre of the group for innovative project solutions in the field of decentralized energy production from industrial and household waste. Technical Basis: Patented Combustion Technologies of SFA Handels GmbH (SFA), based in Rothrist, Switzerland
Area of operation	TEGCO GmbH operates globally, main focus on UK and Europe.
Reference Projects	Neukolln– GermanyOperational since 2006Fuel – waste woodPower Output – 20 MWel <u>Fechenheim</u> – Germany Operational since 2006Fuel – industrial waste incl railway sleepersPower Output – 12.4 MWel <u>Rostock</u> – Germany Operational since 2010Fuel – RDFPower Output – 20 MWel
Country of Residence	TEGCO GmbH is based in Vienna, Austria.





Pipeline of Additional Projects

Harworth	20 MW el
Sheffield	20 MW el
Scunthorpe	20 MW el
Doncaster	20 MW el
Hull	20 MW el







Process: summary

Planning Application	Submitted By July2018
Decision Notice	Received By 20 December 2018
Financial Close	30 June 2019
Interested Parties	Interested parties should contact us.
Start of Commercial Operations	Q4 2021. The Plant's operational life will be 20 years plus an option to extend if financially viable.
Pipeline of Projects	There are a number of similar projects at various stages of development and is seeking a funding relationship moving forward.



Günther Eibel Managing Director +43 676 6172384 g.eibel@tegco.eu

TEGCO GmbH Gaudenzdorfer Gürtel 67 A-1120 Wien