



# BILLET D'ÉTAT

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**WEDNESDAY, 24<sup>th</sup> September, 2003**

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**STATES BOARD OF ADMINISTRATION**

Energy from Waste Facility Status and Way Forward

**XX  
2003**

***BILLET D'ETAT***

**TO THE MEMBERS OF THE STATES OF  
THE ISLAND OF GUERNSEY**

I have the honour to inform you that a Meeting of the States of Deliberation will be held at **THE ROYAL COURT HOUSE** on **WEDNESDAY, the 24th SEPTEMBER, 2003,** at 9:30 a.m.

9 August 2003

The President  
States of Guernsey  
Royal Court House  
St. Peter Port  
Guernsey

Dear Sir

## **ENERGY FROM WASTE FACILITY – STATUS AND WAY FORWARD**

### **1. Executive Summary**

- 1.1 Waste disposal in Guernsey has been the subject of a number of States debates over the last decade. In July 1994, the States faced the difficult decision of reconsidering the conflicting demands of the identified needs of water storage, stone extraction and the urgent requirement for new putrescible waste disposal facilities. The States reaffirmed previous decisions that Mont Cuet should be the island's next putrescible landfill site and resolved not to pursue stone extraction on the Chouet headland. The States directed the Advisory and Finance Committee to carry out a comprehensive examination of the island's waste needs and the options for meeting those needs.
- 1.2 In November 1994, the States considered the Advisory and Finance Committee's review of the Strategy on Waste, Water and Stone and resolved that local requirements for stone should be met from Les Vardes Quarry until circa 2020.
- 1.3 In June 1998, the Advisory and Finance Committee submitted its Solid Waste Strategy Report (WSA2) and the States resolved in principle that Les Vardes Quarry was unsuitable for the landfill of putrescible waste. The Committee's report acknowledged that export of waste for disposal was not sustainable and that there were no other suitable landfill sites available on island. As a consequence the report recognised that a sustainable waste disposal strategy must be centred on waste volume

reduction by incineration in an Energy from Waste (EfW) facility. The States directed the Board of Administration to investigate the feasibility of commissioning an EfW facility.

- 1.4 In April 2002, the States considered the Island Development Committee's report setting out the findings of the Planning Inquiry into the Longue Hougue site which had been identified, as a result of a two year Environmental Impact Assessment, as the preferred site for the location of an EfW facility. The States resolved that an integrated waste management facility should be constructed at Longue Hougue.
- 1.5 In June 2002, the States approved the Board of Administration's proposals in respect of the procurement of an EfW facility under a design, construct and two year operate contract to be signed by a Special Purpose Company wholly owned by the States of Guernsey and directed the Board to proceed with the seeking of tenders.
- 1.6 As a result of the above decisions, the States must either remain committed to constructing an EfW facility at Longue Hougue, as the cornerstone of its long-term sustainable waste disposal strategy, or it is faced with revisiting and rescinding previous strategic decisions.
- 1.7 Between July 2002 and February 2003, the Board undertook a tendering exercise for the procurement of an EfW facility in accordance with the proposals approved by the States in June 2002. These proposals sought to procure a facility that not only complied with European emission standards and the recommendations of the Environmental Impact Assessment but also met the requirement of being a landmark building with capacity for future growth in waste volume and the ability to meet more stringent future regulatory controls.
- 1.8 On 24 January 2003, tenders were received for the Design, Construction, Two year operation and Provision of essential spare/wearing parts, for a mass burn EfW facility in the following sums:

Martin Engineering Systems Ltd (MES)	£ 92,669,283.38
Lurgi (UK) Ltd	£ 102,454,000

The MES tender was submitted on the basis of the States taking currency exchange rate risk with approximately 70% of the contract sum being expressed in Euros. The exchange rate as at that time of 1Euro = £0.66 was used. The Lurgi tender was submitted as a fixed price in Sterling.

- 1.9 The tenderers, the Board and its consultants all recognised that at these figures the project was not viable and that the tendered sums were far in excess of the anticipated cost of a similar plant constructed outside of Guernsey.

1.10 In light of the tenders received, the Board commenced two parallel work streams. Firstly, to review the alternative waste disposal strategies previously considered by the States including landfill and the status of the alternative technology market (essentially gasification and pyrolysis). Secondly, to progress post tender negotiations with both tenderers with a view to establishing the scope for significant cost reductions and to identify a preferred partner for the construction of the plant.

1.11 Following post tender negotiations and examination of options for reducing the cost of the EfW facility, whilst maintaining the key objective of constructing a robust reliable plant capable of meeting European emission standards and meeting the needs of Guernsey, the tenderers agreed to a further tendering stage against a revised brief and procurement route.

On 27 May, 2003 tenders were received in the following sums (€ = £0.725) :

Lurgi - Design and Construct £72,254,178  
Two year operation £ 8,696,000

MES - Design and Construct £74,346,819  
Two year operation £ 6,258,082

Both tenders were submitted on the basis of the States taking currency exchange rate risk with approximately 60% of the contract sum being expressed in Euros. The prevailing exchange rate on 27 May 2003, of 1Euro = £0.725 was used. (This represents a 9% discount on the 24 January 2003 exchange rate)

1.12 The Board has assessed the revised tenders and entered into further post tender clarification and negotiations with the tenderers. As a result of these negotiations the following sums including cap-ex capitalisations and assuming a 60,000 tonnes throughput were derived(€ = £0.725) :

Lurgi -	Design and Construct	£72,713,545
	Two year operation	£ 8,199,406
	Less electricity income	(£ 1,322,933)
MES -	Design and Construct	£73,184,869
	Two year operation	£ 6,215,175
	Less electricity income	(£ 1,536,187)

The full break down of these figures is detailed in section 6, page 22 of the tender evaluation report (Appendix 7) **The MES tender was submitted not as a turnkey contractor but as a Limited Liability Partnership and as such was not a compliant tender.**

1.13 Having considered the tender appraisal report the Board of Administration identified Lurgi as its preferred tenderer and commenced a series of detailed negotiation and clarification meetings. As a consequence of its investigations into alternative options, the outcome of the tendering exercise and the detailed discussions with Lurgi as preferred tenderer, and taking note of the status of the Guernsey building economy and the demands on the States resources, the Board recommends the States to accept the design, construct and operate fee negotiated with Lurgi in the following sums (€1 = £0.725).

Initial Periods Services	£ 2,982,500
Construction of EfW Facility	£69,813,978
Two year operation	£ 7,513,106
Total	<u>£80,309,584</u>

## 2. Introduction

2.1 In 1998, following consideration of the Advisory and Finance Committee's report dated 20 May 1998, entitled "Waste Strategy Assessment – Current Status and Proposals for a Solid Waste Management Plan" (WSA2), the States resolved, inter alia:

*"To agree in principle the installation of a waste-to-energy plant, and to direct the States Board of Administration to pursue the feasibility of its installation for an intended operational date of 2002".*

2.2 In June 2002, following consideration of the Board of Administration's report dated 15 May 2002, entitled "Energy from Waste Facility" (Billet d'Etat XIII 2002), the States resolved:

i.) *To approve in principle the procurement of a mass burn Energy from Waste (EfW) facility as detailed in this report.*

ii.) *To approve in principle the procurement of the plant referred to in i.) above by means of a Design-Construct and two year Operate (DC2O) contract as described in section 16 of this report.*

iii.) *To direct the States Board of Administration to seek tenders for the provision of the DC2O contract and to enter into post tender negotiations with the preferred tenderer.*

iv.) *To approve the formation of a Special Purpose Company in the manner and for the purposes described in section 16 of this report.*

v.) *To authorise the Special Purpose Company to sign the DC2O contract on behalf of the States with conditions precedent, pending consideration of the outcome of the tendering exercise by the States.*

- vi.) *To direct the States Board of Administration to seek tenders in respect of enabling works as described in section 21 and to direct the Board to execute those works subject to obtaining necessary approvals or consents.*
- vii.) *To delegate authority to the States Advisory and Finance Committee to approve the capital votes in respect of those enabling works referred to in v.) above and consultants fees as set out in this report, which votes shall be charged to the capital allocation of the States Board of Administration.*
- viii.) *To approve the concept architecture for an EfW facility located at Longue Hougue as detailed in section 20 of this report and to direct the States Island Development Committee to take due regard of the concept architecture when considering detailed applications submitted in accordance with the requirements of the Environmental Impact Assessment.*
- ix.) *To authorise the States Advisory and Finance Committee to take account of the States Board of Administration's balance of capital allocation and its other capital priorities at the relevant time and, if necessary, to release to that allocation appropriate sums from the Capital Reserve.*
- x.) *To direct the States Advisory and Finance Committee, in consultation with the States Board of Health and Law Officers, to take all necessary steps to expedite the implementation of the proposed Control of Environmental Pollution Law and its associated Ordinances.*
- xi.) *To direct the States Board of Administration to report back to the States within twelve months on proposals for a long term Waste Management Plan including any proposals for an integrated waste management contract as set out in section 15 of this report.*

2.3 In accordance with resolution iii above the Board of Administration issued instructions to tenderers in July 2002.

2.4 In January 2003, tenders were received from Martin Engineering Systems Ltd in the sum of £ 92,669,283.38 and Lurgi (UK) Ltd in the sum of £102,454,000. These tendered sums excluded contingency sums, project specific insurance and project management/consultancy costs.

### **3. EfW Facility Brief**

3.1 The brief for the EfW facility as included in the tender documents was set out in the Board of Administration's report dated 15 May, 2002 and detailed:

- Current combustible waste arisings 50,000 tonnes/annum. (N.B. Waste arisings includes all parish waste and all commercial & industrial and construction & demolition waste.)
- Design (allowing for future) waste arisings 70,000 tonnes/annum.
- Design waste arisings provides for combustion of sewage sludge.
- Sewage sludge to be delivered as either 25% or 80% dried solids content.
- Incinerator design point of 9 tonnes/hour with average calorific value of 11 MJ/Kg.
- Growth in waste arisings over the life of the plant taken as 1.3% per annum. N.B. UK currently averages 3% per annum and has set a target of 1%. Europe is approximately 2% per annum and is seeking to reduce that figure.
- A single stream 9 tonnes/hour mass burn plant with horizontal water tube boiler. Design parameters of boiler are prescribed. Layout and architectural treatment to facilitate future expansion with a second stream.
- Gas oil start up and auxiliary burners.
- Animal Carcass Incinerator (ACI) with equivalent capacity to existing to be accommodated within building envelope.
- ACI to be equipped with flue gas treatment system in accordance with “Best Available Technology” (BAT) under Integrated Pollution Prevention Control (IPPC).
- Energy recovery by steam turbine/generator with air-cooled condensers. Efficiency of turbine is prescribed.
- Ability to operate in independent mode i.e. isolated from Guernsey electricity grid. This enables the plant to continue operating in the event of some problem or shut down with all or part of the electricity grid.
- No front end sorting line.
- Shredder in reception hall to process bulky waste.
- Ferrous metal removal from bottom ash. Organic content of bottom ash is prescribed.
- Mobile Baling Facility in reception hall to accommodate plant shut downs and emergency situations. Capacity of baling plant is prescribed.
- Wet flue gas cleaning system with plume suppression.
- Tipping hall and tipping bays to be able to accommodate compactor and non-compactor vehicles including manual offloading. Tipping bays and bunker capacity is prescribed.
- Fully automated, unmanned weighbridge utilising smart card technology.
- Duplicate waste cranes.
- Central Vacuum Cleaning System for improved health and safety.
- Inbuilt service cranes for maintenance and repair.
- Uninterrupted power supply with emergency back up Diesel Generator.
- Basic laboratory facilities for slag testing and analysis etc.

- Dedicated Control and Monitoring System including automatic generation of process and environmental reports.
- Ancillary accommodation. A schedule of rooms is prescribed.
- Application of principles of the Construction, Design and Management regulations.

3.2 At the time of the June 2002 States debate, the Board advised that it did not wish to divulge its pre-tender estimate for construction of the facility and hence compromise the tendering process. The Board can now advise that the pre-tender estimate based on the brief and concept architecture as presented to the States and taking into account Guernsey building costs was £58,000,000.

3.3 In June 1998, when the States considered the Advisory and Finance Committee's report WSA2, the indicative capital estimate sum for an EfW facility was quoted as £14.5 million, this sum being for the construction only of a plant capable of burning 25,000 tonnes per annum. The plant required to meet Guernsey's needs is approximately three times that size (maximum capacity of 70,000 tonnes) and the tendered contract included a two year operation element. In addition, the WSA2 price quoted was some four years out of date at the time the Board fixed its pre-tender estimate and during that time the EfW market place has changed dramatically and emission standards have become more stringent.

3.4 Against the pre-tender estimate the Board considered the project to be viable. However, at figures in the order of £90 to £100 million, tenders received were significantly in excess of the Board's pre-tender estimate. This increase was partially because of the reduced strength of the pound against the Euro along with the increasing costs of construction in Guernsey but also because of the significant civil engineering challenges presented by the Longue Hougue site and for which the contractors were being requested to accept the risks.

3.5 In addition, the EfW market place had changed dramatically over the preceding 12 months. On the supply side, two of the biggest suppliers amalgamated and two companies withdrew from the market place thus reducing what was already a limited supply market. On the demand side, the EU requirements to move away from landfill and the need to retrofit older plants with new emission control systems has meant a significant increase in new orders and projects. In addition, it has become apparent that the suppliers no longer favour turnkey contracts because of the additional risk such contracts place on the supplier. Together, these factors have resulted in what can only be considered to be a sellers' market. One of the Board's tenderers is currently processing orders for 21 plants to be delivered between 2003 and 2005. An independent survey by market consultants Frost and Sullivan has revealed that Europe will

require in the order of an additional 300 to 350 plants by 2020 of which over half will be commissioned before 2010.

- 3.6 It can be seen from the above that the indications are that the EfW market place is unlikely to become a buyers' market before 2020. Whilst a downturn in construction activity in Guernsey, if it were to materialise within the next few years, would have some positive benefit to the cost of procuring an EfW facility, this benefit is limited by the extent to which the contract involves off island procurement. Following discussions with the Board of Industry and that Committees consultants working on the Economic Construction Cost model, only £15 million of the capital costs of the EfW facility have been included within the model as impacting on the Guernsey construction industry. As such, any revision to strategy or decision to defer the purchase of an EfW facility should not be taken on the assumption of obtaining a significantly reduced plant cost in the short to mid term.
- 3.7 In light of the tenders received, the Board commenced two parallel work streams. Firstly, to review the alternative waste disposal strategies previously considered by the States including landfill/land raising and the status of the gasification and pyrolysis alternative technology market. Secondly, to progress post-tender negotiations with both tenderers with a view to establishing the scope for significant cost reductions and to identify a way forward. These reviews are documented below.

#### **4. Alternative Technology**

- 4.1 During the June 2002 States debate, concern was expressed that the Island would be committing to a mass burn energy from waste solution at a time when alternative technologies such as Gasification and Pyrolysis were becoming more attractive as a solution to waste reduction. The Board had, itself, been concerned to ensure that it was not recommending investment in what could rapidly become a redundant technology and had, therefore, appointed Juniper as independent consultants to review the status of these alternative technologies and their suitability as solutions for Guernsey. Juniper concluded:

*“The ability of a technology to provide a satisfactory track record which supports a plants' operating reliability and ability to accept similar waste to those that will arise in Guernsey can in our opinion only be provided at present by Incineration.*

*“The emerging technologies which are at demonstration level will need to develop through their semi-commercial phase and be successfully operated at full scale with MSW [mixed municipal waste] for two years for them to become, in our opinion, proven. We estimate the shortest time frame that this would be possible is 3-4 years.*

*“With this in mind, Juniper believes that incineration with energy recovery is the most appropriate route for Guernsey in light of the requirements of the Island community.”*

4.2 At the time of Juniper’s report, the Board had visited the three leading companies offering alternative technology solutions to the UK. These were: Davies Bros using GEM technology; Compact Power and Brightstar Environmental. The Board of Administration’s view was that of these three, Brightstar and Compact Power were further advanced in operating demonstrator plants. The Juniper report, however, noted that these plants had not yet entered the semi commercial or fully commercial stages. Brightstar had apparent orders for units at Kent and Derby whilst Compact Power had just floated on the USM market and had an apparent order for a plant at Dumfries. To date there has been no significant progress with the delivery of any of these projects. In recent weeks Energy Developments Ltd, the major partner of Brightstar, announced that following comprehensive technical and commercial reviews it had resolved to cease funding development of the Brightstar alternative technology process. In 2002 Compact Power reported a retained loss of £3.8 million against a consolidated market value of £5.9 million. In the year to 31 March 2003 Compact Power reported a loss of £4.1 million but against an increased turnover of £411,000. Shares in Compact Power have fallen from 90p at floatation to a current trading price of 15p.

4.3 In light of the time lapse between the June 2002 States debate and receipt of tenders, and in light of the tender sums received, the Board immediately commissioned Juniper to provide an update on its May 2002 report. A copy of Juniper’s update is attached (Appendix 1). It concludes:

*“The failure of some companies and the slower than forecast progress at others, should, in our view, make the States of Guernsey less inclined to consider novel solutions instead of the proven incineration processes which have been tendered.”*

4.4 The Board would also remind members of Juniper’s comments concerning the potential cost/benefits of alternative technology (if proven) against conventional mass burn incineration. Juniper stated:

*“Since there has been no commercial scale pyrolysis or gasification plant developed in the UK, it is difficult to confirm the manufacturer’s assertions that gasification and pyrolysis are cheaper in terms of their capital costs than incineration. The risk factor assumed by the financiers with the development of an emerging technology will be evident in the resultant cost but this may be balanced with the supplier’s risk to get the technology commercially proven.*

*From our experience when advising on technology procurement, the lowest cost solution varies from project to project. In some cases, a*

*particular gasification technology may quote a lower cost than an incineration scheme but in others the situation is reversed.”*

- 4.5 Juniper’s addendum report also refers to the Prime Minister’s Strategy Unit report on waste disposal which: *“drawing on data from a wide range of other specialist organisations, concluded that there was no strong economic incentive for adopting alternatives to incineration for MSW applications”*.
- 4.6 In light of the above, the Board is firmly of the view that there have been, unfortunately, no significant developments in the alternative technology field and hence, in respect of any solution based on incineration, there are, at present, no grounds for moving away from the 2002 resolutions of the States as set out in 2.2 above.
- 4.7 Whilst it might be argued that deferring a decision to procure a mass burn EfW facility now may, if such deferral is sustainable, enable a reliable alternative technology plant to be procured at reduced cost at some stage in the future, there is unfortunately, no evidence currently available to substantiate such an assumption.

## **5 Status of Landfill**

- 5.1 In 2001, Mont Cuet landfill received 74,895 tonnes of waste. This figure reduced to 61,148 tonnes in 2002 as a result of differential pricing and other initiatives introduced by the Board to encourage segregation at source. If these levels can be maintained, and allowing for some doming of the site, Mont Cuet is expected to reach capacity by **2014**. It is, therefore, clear that Mont Cuet alone cannot offer a long-term sustainable waste disposal solution.
- 5.2 It should also be noted that there will, for the foreseeable long-term future, be an ongoing need for landfill capacity to deal with specific waste streams such as asbestos, bottom ash and other non-combustible waste which is not suitable for incineration, recovery or recycling. A sustainable strategy (deemed in the 1998 WSA report as being one generation) requires in the order of 30 years of remaining landfill capacity. Mont Cuet can only meet this if landfill is a subsidiary activity supporting incineration. Construction and commissioning of an EfW facility at Longue Hougue is now unlikely to be complete prior to 2007 when Mont Cuet will have a remaining life of 7 years. Incineration results in a ten fold reduction in landfill activity hence generating a corresponding increase in life at Mont Cuet to 70 years. However, every year of delay removes 10 years of life from Mont Cuet. Early commissioning of the EfW facility is, therefore, required if Mont Cuet along with incineration is to provide a sustainable solution.

5.3 Notwithstanding the previous strategic decisions of the States, the Board has taken the opportunity of reviewing the option of maintaining landfill as the key means of dealing with the island's waste and, in particular, has considered the scope offered by Chouet headland and Les Vardes Quarry. Whilst it is accepted that landfill alone cannot offer a long-term sustainable solution, the Board is mindful of the benefits that might potentially be gained by deferring the purchase of incineration facilities for a number of years. These benefits might result from a change in status of the mass burn incineration market place or in the development of alternative technologies. However, the Board would remind members that such a change should not be expected in the short to mid term (sections 3.5, 3.6 and 4 above).

5.4 The Board continues to support the findings of the WSA report and could not recommend the use of Les Vardes Quarry for landfill with putrescible waste. However, if the States did elect to pursue this option then, at current tipping rates, Les Vardes Quarry, could meet the islands requirements for some 20 years. If Les Vardes quarry was used for landfill in support of a strategy based on incineration, i.e. only taking the non-combustible element, it could meet the island's waste disposal needs for the foreseeable long-term future (two centuries). In the 1994 Stone, Waste and Water Strategy report, stone reserves at Les Vardes were anticipated to be depleted circa 2020. The option, therefore, exists to continue land-filling at Mont Cuet until some date in the future and towards the end of that period Les Vardes would be prepared for the receipt of the non combustible waste fraction and incineration facilities would be commissioned. The following table of indicative options can be postulated.

#### **Table of Indicative Options**

Date Incineration Ordered (delivered by)	Mont Cuet Life remaining after start of EfW	Les Vardes to be vacated by	Years of stone extraction lost
2003 (2007)	70	2075	0
2006 (2010)	40	2048	0
2007 (2011)	30	2039	0
2008 (2012)	20	2030	0
<b>2009 (2013)</b>	<b>10</b>	<b>2021</b>	<b>0</b>
2010 (2014)	0	2012	8

5.5 It can be seen from the above that if Les Vardes is to be designated as suitable for the landfill of the non combustible waste fraction (rather than all of the island's putrescible waste) and all available stone is to be extracted first, then a contract for the provision of incineration facilities must be signed by 2009. This allows for a lead in and construction period of four years resulting in a remaining life at Mont Cuet of only 1 year at

current tipping rates or 10 years once the incineration facility is operating. These 10 years could provide sufficient time for Les Vardes to reach the stated circa 2020 date and for the site to be engineered as a landfill site before Mont Cuet closes. It should be noted that this option results in the loss of Les Vardes for water storage at a time when climate change predictions are highlighting the need for improved storage facilities.

- 5.6 The procurement of Les Vardes from Ronez would, of course, need to be negotiated unless compulsory purchase powers were to be used. For this option to offer a secure strategy then certainty of acquisition at an acceptable price and within the required time period must first be established.
- 5.7 This option results in the deferral of the signing of a contract for procurement of an incineration facility by only 6 years and prior to contract signing it is necessary to shortlist and tender the contract. The Board would remind members that Juniper has advised that alternative technologies need to be built and operate as full-scale commercial plants for some two years before they can be considered to be proven. In 2002, Juniper advised that this would take at least 3 to 4 years and, in the absence of any significant developments in the last 12 months, it is clear that it would be a dangerous strategy to rely on alternative technology being proven, short listed and contracted by the critical 2009 date. In addition, there is no certainty that alternative technologies, even if those technologies were proven, could, taking into account whole life costs, be procured more cost effectively.
- 5.8 As a consequence, the decision to defer now, without providing additional landfill capacity, would result in the following:
- The existing tenders would be withdrawn and the Board would in due course need to rerun an expressions of interest, short-listing and tendering exercise, always assuming that any company would then wish to tender.
  - The Board would adopt a watching brief reporting back to the States by no later than early 2008.
  - Dependent upon the status of the alternative technology and the EfW market place a revised project brief and contract would have to be drafted.
  - The Board would prepare the project brief, shortlist and tender the project during 2008/2009.
  - Contract signing would take place in 2009.
  - Planning and construction would take place between 2009 and 2013.
  - The States would need to secure an early option on the purchase of Les Vardes in order to avoid the possibility of having to use compulsory purchase legislation at a later date and to ensure resilience of this strategy.

- 5.9 Such a strategy would not only necessitate the use of Les Vardes for non-combustible landfill but would also, in the Board's view, still necessitate the purchase of an EfW mass burn facility in 2009 and, with little doubt, at increased costs. It must also be stressed that any increase in waste arisings or delay in facility procurement by as little as 12 months would result in the need to occupy Les Vardes at an earlier date and hence the loss of in excess of 1 million tonnes of stone at Les Vardes. Similarly, should there be a case to extend quarrying activities at Les Vardes to extract potentially available reserves then the EfW commissioning date must be brought forward in order to create the required time to quarry those reserves.
- 5.10 It should also be noted that the longer Mont Cuét is used for putrescible waste rather than the non-combustible residual waste stream, the greater the environmental effects in terms of visual impact and litter/dust nuisance. The Board cannot, therefore, recommend deferring the decision to procure an EfW facility without first identifying acceptable and sustainable alternative landfill or land raising options that would allow landfilling of putrescible waste beyond the life of Mont Cuét.
- 5.11 It can be seen from the above that the potential to use landfill availability as a means of deferring procurement of an EfW facility is intrinsically linked to the aggregate industry and stone extraction rates. The Board has, therefore, held preliminary discussions with Ronez and Aggregate Industries.
- 5.12 During discussions held in April 2003, the Board sought confirmation as to the current accuracy of the 1994 predictions and the circa 2020 date for depletion of stone at Les Vardes and sought Ronez views on its future options and preferred way forward. As a result of those discussions the Board understands that extraction rates are currently in the order of 140,000 tonnes per annum supplemented by 100,000 tonnes per annum of imported aggregate including sand. Ronez has advised that extraction rates could potentially be escalated to 180,000 tonnes per annum if two quarries were worked together.
- 5.13 Ronez advised that, within current consent boundaries, stone reserves at Les Vardes would be depleted circa 2013. However, Ronez also believes that there exists reasonable potential to continue excavations at Les Vardes until circa 2038. Once all stone reserves at Les Vardes are depleted the only remaining reserves identified in the Strategic and Corporate plan are those at Chouet Headland. Ronez has advised that those reserves equate to 3.8 million tonnes including the area occupied by Torrey Canyon Quarry or 2.3 million tonnes if this quarry, which is in States ownership is retained. From the information provided Chouet Headland offers, at current extraction rates, up to 27 years of quarrying if stone extraction is to be optimised. Ronez has also advised that its preferred manner of operations would be to substantially deplete reserves

at Les Vardes before quarrying the Chouet Headland. For a short period thereafter, both quarries would be active during the period of preparation for extraction at Chouet and the clearance of Les Vardes. It is conceivable, therefore, that Quarrying at Chouet Headland could proceed between 2038 and 2065.

## **6 Sustainable Options to Extend Landfill Life.**

- 6.1 Developing the thought processes and information as set out above, the Board has considered the option of opening new landfill operations at Chouet Headland by land raising Falla's fields. By raising the headland as shown (Appendix 2), an additional landfill life of approximately 9 years can be gained (**landfill expires mid 2023**). The resulting contour is shown in appendix 2. This option is not sustainable but moves the critical contract signing date for an EfW facility from circa 2009 to mid 2019. This option results in a significant additional visual impact (15 meters above Creve Coeur mound) and nuisance potential on the headland, as land raising on an elevated windy site would be required rather than land-filling of a quarry. The option still necessitates the use of Les Vardes for the long-term disposal of the non-combustible waste stream. It necessitates closure of Les Hures, the purchase of private property and installation of necessary engineering works for which a total capital cost has been estimated at £7.5 million. Land raising activities would, in all probability require baling and placing of waste in order to reduce litter nuisance.
- 6.2 If the Falla's fields option was adopted then the option also exists, subject to a planning inquiry, to extract stone at Chouet Headland (Appendix 2), following which the resulting void could be engineered ready for receipt of waste. If this option was to enable procurement of an EfW facility to be further deferred then the resultant Chouet Headland void would need to be available for landfill from 2023. Allowing two years for a planning inquiry, States debate and engineering of the site, approximately 18 years of quarrying could be undertaken before landfill activities commenced. This potentially equates to approximately 2.5 million tonnes of stone if activities were concentrated at Chouet Headland in advance of depleting Les Vardes' reserves. Unless landfill and stone extraction could concurrently operate on Chouet Headland up to 1.3 million tonnes of stone would be lost.
- 6.3 In 1994, when the States purchased, from Ronez, Mont Cuet Quarry, the quarry was professionally valued at a capital sum equivalent to £3 per tonne of stone remaining. Re-inflating this figure to 2003 prices gives a figure of £3.77 per tonne. Assuming that approximately 1.3 million tonnes of stone were lost once land filling commenced in 2023, the opportunity cost in terms of lost stone would be at least £5 million. It would be necessary to enhance stone extraction rates to 200,000 tonnes

per annum, with activities concentrated at Chouet Headland in order to enable all stone to be extracted.

- 6.4 The resulting void space could be maximised by closure of Le Rue des Grandes Camps and raising the headland to abut the Mont Cuet and Falla's Fields mounds and contoured as shown (Appendix 2). The resulting void could create an additional landfill life of up to 27 years. Thus, total landfill life on the headland would be completed circa **2050**. However, if incineration was procured and operating by circa 2045 then the 5 years remaining landfill life would equate to 50 years for the remaining non-combustible waste element giving a sustainable strategy without compromising Les Vardes quarry. This would, therefore, require contract signing for the purchase of incineration facilities to take place circa 2040.
- 6.5 Land-filling Mont Cuet, land-raising Falla's fields, quarrying Chouet headland followed by land-filling the void and land raising above provides the potential, albeit with significant environmental impact, to defer contract signing for the procurement of an EfW facility until 2040. In so doing capital expenditure can be spread over a number of years. However, certainty of land acquisition and hence security of the strategy must be guaranteed and this could reduce the extent to which capital expenditure can be apportioned over various stages of the strategy.
- Acquisition of Falla's fields and Chouet headland quarry would need to be guaranteed by 2008
  - Acquisition of Falla's fields would be necessary by 2012.
  - Stage 1 engineering of Falla's fields would be carried out between 2012 and 2014
  - Acquisition of baling facilities would take place circa 2012
  - Site closure engineering would be carried out circa 2023
  - Acquisition and occupancy of Chouet Headland quarry would be necessary by 2012
  - Stage 1 engineering of the quarry would take place circa 2021
  - EfW acquisition would take place circa 2040
  - Site closure engineering would take place circa 2095
- 6.6 Such a strategy runs counter to the decision taken by the States in November 1994, Billet d'Etat XX, 1994; the decisions taken by the States on two occasions between 1994 and 1998 not to hold a further planning inquiry into the rezoning of Chouet Headland and the decision of the States in June 1998 Billet d'Etat XII, 1998. It should be recognised that Chouet Headland would then be zoned as the principal landfill (land raising) site, initially for putrescible waste but subsequently for the non combustibile element until circa 2095 during which time refuse disposal activities would take place on an elevated coastal site.

- 6.7 In recognition of the Board of Health's role as regulator, the Board of Administration has consulted with the Board of Health in respect of this potential strategy of prolonging landfill through the creation of new landfill facilities. A copy of the Board of Health's response is attached (Appendix 3). It should be noted that whilst the interpretation of some aspects of the EU landfill directive is the subject of debate, one of its principal requirements is that unsorted, untreated putrescible waste is not landfilled. Adoption of a strategy based on landfill rather than incineration would in all probability require the construction of treatment facilities which would provide for the sorting (including the hand picking) of waste in order that appropriate waste arisings could be dealt with by means other than landfill. Such a change in landfill practices would result in significant additional capital and revenue costs which would have a major impact on the level of landfill gate fees.
- 6.8 In addition to the impacts referred to above the land raising of Chouet Headland and the quarrying of the headland's stone reserves would result in the closure of this area of the headland to recreational activities from circa 2005 when quarrying would need to commence. In addition the only sites identified (principally Torrey Canyon Quarry) as likely sites for the location of a hazardous waste disposal site to take the fly ash from incineration facilities would be lost to landfill. It is uncertain whether or not the United Kingdom would consider the loss of potential hazardous waste sites to prolong landfill activities as acceptable grounds for export of hazardous waste off island under the provisions of the Basle Convention.
- 6.9 It should be noted that in November 1994, the States resolved that the Advisory and Finance Committee should, at least 10 years prior to the exhaustion of Les Vardes Quarry, lay before the States for consideration a report reviewing waste, water and stone requirements and policy.
- 6.10 The Board cannot recommend a strategy that ultimately requires the use of Les Vardes for landfilling, as a means of deferring the decision to commission incineration facilities. The Board believes the longer term strategic and sustainable needs of the island would best be met by maximising the island's existing landfill life capacity and allowing for complete stone extraction at Les Vardes. This would, subject to the outcome of consideration of the report referred to in 6.9 above, enable utilisation of Les Vardes Quarry for water storage or otherwise as directed by the States. These objectives can only be met by commissioning incineration facilities to operate alongside landfill capacity at Chouet Headland. The Board cannot recommend, the use of Falla's fields and the early quarrying of Chouet Headland with the resulting void being land-filled and subsequently land raised with both putrescible and in due course the non-combustible waste fraction, as a means of deferring the procurement of an EfW facility. This option

comes with significant adverse environmental impacts, is a strategy fraught with risk and incurs significant cost.

- 6.11 A time line setting out the key dates in respect of the above strategy options is attached at appendix 4.
- 6.12 Should the States of Guernsey be faced with the hypothetical situation of having no alternative other than landfill then the only potential sites available outside of the water catchment area are listed in the table below. The estimated gate fees are based on current practice and do not take into account the additional capital and revenue expenditure that would be incurred as a result of the Board of Health's requirements in respect of application of the Landfill Directive standards (6.7 above).

### **Table of Potential Sites for Land-filling.**

Site sequence based upon ascending gate fee

	<b>Location</b>	<b>Gate Fee</b>	<b>Total Capital (M)</b>	<b>Life (yrs)</b>	<b>Cumulative</b>	
					<b>Life (yrs)</b>	<b>Capital (M)</b>
1	Chouet Headland	£17.98	£8.35	28.4		
2	Falla's Fields	£29.58	£7.47	8.7	37.1	£15.82
3	Les Vardes	£55.29	£47.21	19.7	56.8	£63.03
4	3rd & 4th tee	£56.58	£5.20	2.5	59.3	£68.22
5	Icart	£74.41	£8.76	2.8	62.1	£76.99
6	Hougue Noirmont	£86.20	£13.02	3.4	65.5	£90.01
7	L'Eree Aerodrome	£92.13	£27.61	6.3	71.8	£117.62
8	Pleinmont	£101.32	£5.93	1.4	73.2	£123.54
9	Prevote	£117.95	£2.60	0.6	73.8	£126.14
10	Grande Mare	£119.25	£84.54	14.1	87.9	£210.68
11	La Grande Hougue	£127.57	£28.36	4.5	92.4	£239.03
12	Rovers FC	£268.78	£48.08	3.4	95.8	£287.11
13	Mare de Carteret	£268.78	£48.08	3.4	99.1	£335.18
14	Rocque Barees	£305.07	£12.85	0.8	100.0	£348.03

- 6.13 It should be noted that current guidelines require that no new landfill site for putrescible waste is located within 250m of residential properties and hence in preparing the table it has been assumed that capital sums must allow for the purchase of nearby residential properties. This requirement had previously been raised as part of the States consideration of the 1998 Waste Strategy Report.
- 6.14 The Board recognises that all of the above sites would meet with very strong opposition from many parties and the Board could not recommend any of these sites.

## **7 Export of Putrescible Waste**

- 7.1 In its policy letter considered by the States in June 2002, the Board reported as follows:

7.1 Based on waste arising calculations carried out as part of the WSA2 and developed during the PDB, it will be necessary to process approximately 1000 tonnes of combustible waste per week. Export of this waste, if feasible, would require baling and transportation to a UK or European EfW plant. The Board has investigated baling options with UK equipment suppliers. Typically 1250 bales would need to be transported weekly. Bales, which are stabilised with net and wrapped in plastic, would be loaded into containers and transported from the baling plant to the harbour for shipment. Typically 30 return container/lorry movements of waste would be required per week, along with the weekly importation of some 200 to 250 rolls of plastic film and netting for bale construction. Options exist for hiring or purchasing a ship to transport to ports other than the UK, and to purchase or hire lorries and containers and employ drivers rather than use commercial hauliers. Indicative costings would be:

<b>ITEM</b>	<b>COST Over 20 yrs £</b>	<b>COST £ Per Tonne</b>
<i>Building and key infrastructure (20 yrs)</i>	6,000,000	6.00
<i>Plant and Equipment (20 yrs)</i>	2,000,000	2.00
<i>Labour on island (min 6 full time staff)</i>		3.00
<i>Consumables</i>		4.50
<i>Shipping (using commercial charge for shipping to UK port)</i>		30.00
<i>Incineration at receiving plant</i>		50.00
<i>Transport in receiving jurisdiction</i>		3.50
<b>SUB Total</b>		<b>99.00</b>

*Inquiries into shipping costs direct to Le Havre have indicated that three shipments every two weeks, each of 50 fourteen tonne containers would be required. Costs would be in the order of £400 per container or £28.50 per tonne (excluding costs associated with purchase and storage of 100 to 150 containers and road transport etc). Incineration costs in France have been quoted at between £40 and £50 per tonne excluding handling charges associated with unloading containers etc.*

7.2 To these costs must be added the administration costs, sampling and financial guarantee costs associated with meeting regulatory controls as referred to in 7.9 and 7.10 below.

7.3 In 1998 Jersey tested the costs of export as part of an emergency plan in the event of its incinerator shutting down. The costs were calculated to be in excess of £100 per tonne excluding some on island costs.

*7.4 The Board has also contacted 14 French incinerator plants being the nearest to the key ports as well as 10 plants in the UK. Between those 24 plants only 20,000 tonnes, less than half of Guernsey's requirements, of spare capacity is currently available.*

*7.5 Export of waste would be a high-risk strategy for Guernsey. Not only would the island be subject to any change in operating policies at the preferred incinerator plant or plants but also, in addition, the island would be subject to any change in governmental policy in respect of the importation of waste at the receiving jurisdiction. It would be unrealistic for Guernsey to assume that contracts could be formed, with Governments and incinerator operators, which would provide guarantees of a minimum of 4 years notice of contract termination. As such, even if export is possible, Guernsey could find itself, at relatively short notice, without a long-term waste disposal route during which time an on island incinerator would need to be constructed.*

*7.6 The export of waste is controlled by three international conventions. The Basle Convention 1989 regulates the shipment of hazardous waste which would include, inter alia, clinical waste, biocides and fly ash from incinerator flue gas treatment systems. However, the convention also refers to other (non-hazardous) waste including household waste. The OECD Regulations control the shipment of waste for recovery rather than for disposal, whilst the Lome IV Convention regulates the shipment of hazardous waste from Europe to African, Caribbean and Pacific jurisdictions. These conventions have largely been carried forward into EC Regulation 259/93 and the Waste Framework Directive 91/962/EEC*

*7.7 The Basle convention requires member states to take appropriate measures to ensure that the transboundary movement of hazardous and other wastes is only allowed if "the wastes in question are required as raw material for recycling or recovery industries in the States of import". Regulation 259/93 requires member States to restrict movements for disposal but to allow, in line with the requirements of the OECD decisions, wastes to pass to recovery facilities. The UK waste Import/Export plan makes it clear that where an incinerator has been constructed for the primary purpose of incinerating waste, recovery of energy from the waste cannot be used to classify the waste shipment as a recovery shipment. The Waste Framework Directive requires the establishment of a network of disposal installations with the aim of becoming self sufficient in waste disposal by disposing of the waste close to the point at which it is generated.*

*7.8 Where shipments do take place the shipment must be in accordance with a movement permit system which requires classification of the waste and prior notification and agreement with the authorities regulating export, import and (if the territories of a third party are involved) transit. The shipment must also be the subject of formal contracts between the*

*relevant jurisdictions. The contract requires the exporter to take back the waste if the shipment does not accord with the movement permits. This most typically occurs when the characterisation of the waste is shown, on analysis by the receiving jurisdiction, to be contrary to that stated on the movement permit. A financial guarantee must be provided in respect of each shipment and the various interested parties may be required to agree the value of the financial guarantee. The regulation also requires that 30 days prior notice of a shipment is given. Enforcement of these provisions is a function of the Board of Health and, whilst it is possible to issue a multiple notification for a period of one year in respect of a single category of waste following a single consignment route, it is far more probable that a number of incinerators in the receiving jurisdiction would be targeted, in order to ensure available capacity. As a consequence significant administrative impacts would occur to the Customs Department, the Board of Health and the Board of Administration.*

*7.9 All costs associated with administration and testing both in the export and import jurisdictions as well as the costs of providing financial guarantees must be born by the exporting country and hence these costs are added to the basic processing costs.*

*7.10 The Basle convention also requires wastes to be disposed of as close to the site of generation as is possible. The Basle, OECD and Regulation 259/93 principles are based on self-sufficiency and proximity. In effect it is necessary to demonstrate that the jurisdiction giving rise to the waste does not have the infrastructure to handle the waste in an environmentally acceptable manner and cannot reasonably provide the required infrastructure. Economic arguments alone are not sufficient evidence of inability to acquire the necessary infrastructure. The proximity principle then requires that the waste is disposed of or processed as close as is reasonably practicable to its origin and this would require shipment of the waste to either France or UK. Discussions with the UK have already indicated that it would be most unlikely that the UK could be convinced that the Island is not in a position to construct an EfW facility and is most unlikely, therefore, to accept municipal solid waste exported for disposal. Whether or not the States would be able to demonstrate, to the satisfaction of a receiving country, that Guernsey cannot be expected to handle its own waste is a matter to be tested with each “target” jurisdiction. However, in light of the risk assessment and financial findings referred to in 7.1 and 7.5, the Board does not believe that the exportation of waste warrants further investigation.*

7.2 The situation with regard to available incineration capacity in other jurisdictions has not improved in the intervening period and the previous Environment Minister Rt Hon Michael Meacher MP, has made it perfectly clear that the UK will not accept for incineration imported putrescible waste. As a consequence, the Board remains firmly of the

view that not only is export of putrescible waste not sustainable but that it does not offer an alternative solution even in the medium term.

## **8 Outcome of EfW Tendering Exercise.**

8.1 Four companies had been short listed for receipt of invitations to tender those companies being:

- AMEC Capital Projects Ltd. (lead contractor/operator) / Volund (technology);
- Lurgi (UK) Ltd. (lead contractor/technology supplier) / SITA and/or Guernsey Electricity (operator);
- Babcock Borsig Power Environment GmbH. (lead contractor/technology supplier) / CGEA-ONYX (operator) / Garenne Group; and
- Martin Engineering Systems Ltd. (technology) / MES Environmental Ltd. (operator).

8.2 Prior to release of tender documentation, Babcock Borsig Power Environment's parent holding company experienced serious trading difficulties with the result that BBP were unable to continue in the tendering process and subsequently went into insolvency. In addition, AMEC advised the Board that its company no longer wished to tender for government let turnkey contracts. Tenders were received from Martin Engineering Systems Ltd. and Lurgi UK Ltd.

8.3 At the time of the June States debate, the Board advised that it did not wish to divulge the pre tender estimate for construction of the facility and hence compromise the tendering process. The Board can now advise that the budget estimate based on the brief and concept architecture as presented to the States and taking into account Guernsey building costs was £58,000,000.

8.4 On 24 January 2003, tenders were received for the Design, Construction, Two year operation and Provision of essential spare/wearing parts, for a mass burn EfW facility in the following sums:

Martin Engineering Systems Ltd (MES)	£ 92,669,283.38
Lurgi (UK) Ltd	£ 102,454,000

The MES tender was submitted on the basis of the States taking currency exchange rate risk with approximately 70% of the contract sum being expressed in Euros. The exchange rate as at that time of 1Euro = £0.66 was used. The Lurgi tender was submitted as a fixed price in Sterling.

8.5 The above sums were exclusive of a contingency sum, currency fluctuations (MES), consultants/ project management fees and project specific insurances.

8.6 Both tenderers recognised that the contract sum quoted was significantly in excess of the anticipated cost of a similar plant constructed outside of Guernsey and, therefore, requested the opportunity to explore with the Board options for reducing the cost whilst maintaining the key objective of constructing a robust, reliable plant capable of meeting European emission standards and meeting the needs of Guernsey.

## **9 Revised EfW Facility Brief and Tenders.**

9.1 Discussions with the tenderers and the Board's consultants during February 2003 identified the following key areas for potential cost savings:

- Revised architectural treatment.
- Simplify building type.
- Reduced waste storage bunker capacity.
- Eliminate need for deep basements.
- Allow above ground bunker with ramp access.
- Accept a possible visible building height of 33 m (concept 27.5 m).
- Reduce tipping bays to two plus one manual tipping bay (concept 4 bays).
- Amended flue gas treatment system for NO<sub>x</sub> abatement but still complying with European emission standards.
- Allow vertical as opposed to horizontal boiler.
- Exclusion of the animal carcass incinerator.
- Client obtains planning and environmental permits.
- Contract terms to be rewritten to reflect "partnering" approach.

9.2 The Board was of the firm view that procuring a facility at the original tendered prices was not viable. However, discussions with the tenderers had enabled the Board to form the view that a facility suitable for Guernsey's needs could be constructed at Longue Hougue for a contract sum in the order of £65 million. Although this price remained in excess of the Board's pre tender estimate, the Board believed that at this target price the project was viable and presented an acceptable solution to Guernsey's long-term waste disposal needs. As a consequence, the Board commenced a second phase of tendering with both tenderers against a revised brief which took into account the cost saving measures referred to in 9.1 above. This tendering exercise required the tenderers to present their best price and proposed solution taking into account the revised brief and procurement route. Subject to States approval, the Board's preferred tenderer will work with the Board in a partnered approach to arrive at a detailed design with all necessary permissions including Integrated Pollution Prevention and Control licensing from the Board of Health. This "Initial Services" design period is expected to take 8 to 9 months.

- 9.3 It can be seen from the above that detailed planning and design will need to take place before the tendered sum can be converted into a fixed capital sum and a contract let. During this Initial Services period it is proposed that monthly payments will be made to the preferred tenderer in respect of design work carried out. The level of payments made will be fixed at a maximum of £2,982,500 if Lurgi is commissioned or £2,483,897 if MES is commissioned. By the end of the design period a firm capital price including the incurred design costs will have been set.
- 9.4 On 27 May, 2003 tenders were received including the Initial Services Period design costs as follows:

Lurgi -	Design and Construct	£72,254,178
	Two year operation	£ 8,696,000
MES -	Design and Construct	£74,346,819
	Two year operation	£ 6,258,082

Both tenders were submitted on the basis of the States taking currency exchange rate with approximately 60% of the contract sum being expressed in Euros. The prevailing exchange rate on 27 May 2003, of 1Euro = £0.725 was used. (This represents a 9% discount on the 24 January 2003 exchange rate ) In addition inflation risk had been removed from the contract sum with the tender documentation proposing that the contract sum be fixed as at July 2003 and subject to inflation in line with RPIX from that date.

- 9.5 The tenders were submitted on the basis that the majority of the reclaimed land at Longue Hougue (phase2), along with an adjacent property (Furzedown) owned by the Board of Administration would be handed over to the contractor for construction facilities including temporary accommodation facilities for construction workers. A letter concerning the latter from the Housing Authority is attached (Appendix 5) and the requested proposition is included in the Board's proposals.
- 9.6 Reductions in prices were achieved between the first and second tendering rounds as a result of moving away from the original concept design and amendments to the original commercial terms.

Significant cost changes resulted from –

- Reducing the extent of deep excavations and construction in ground affected by tidal rise and fall (from approximately 60,000m<sup>3</sup> to less than 5,000m<sup>3</sup>).
- Changing from a structure containing 3-dimensional curved elements to a more easily constructed rectilinear design. The architectural concepts are attached. (Appendix 6)

- Reducing the overall footprint of the building.
- Allowing tenderers to quote, where appropriate, their standard products rather than prescribed bespoke equipment.
- Simplifying the architectural finishes with reduced use of glazing.
- Eliminating a new animal carcass incinerator.
- Transferring the risk/cost of obtaining planning and environmental permissions from the tenderers to the Board. The tenderers being unfamiliar with the States procedures and in the absence of statutory response periods in respect of gaining planning and IPPC approvals had originally included a significant risk cost.
- Transferring exchange rate risks from the tenderers to the Board by changing from a fixed price sterling contract to indexed payments in sterling and euros. The States Treasury has the option to mitigate this risk using advance purchase options.
- Transferring inflation risks by indexing future payments to a proposed base date of July 2003 with inflation linked to RPIX
- Reducing (but not removing) potential penalty payments for contractor performance levels.

9.7 The Board assessed the revised tenders and entered into further post tender clarification and negotiations with the tenderers. As a result of those negotiations the following sums including cap-ex capitalisations and assuming 60,000 tonnes throughput were derived:

Lurgi -	Design and Construct	£72,713,545
	Two year operation	£ 8,199,406
	Less electricity income	(£ 1,322,933)
MES -	Design and Construct	£73,184,869
	Two year operation	£ 6,215,175
	Less electricity income	(£ 1,536,187)

The full break down of these figures is detailed in section 6, page 22 of the tender evaluation report (Appendix 7) The Board is satisfied that the tender from Lurgi complies fully with the tender requirements, offers a robust and safe facility that will be able to meet the licensing requirements of the Board of Health and offers whole life costs and a risk allocation package which present best value for Guernsey. **The MES tender was submitted not as a turnkey contractor but as a Limited Liability Partnership and as such was not a compliant tender.** Having considered the tender appraisal report the Board of Administration identified Lurgi as its preferred tenderer and commenced a series of detailed negotiation and clarification meetings.

9.8 In identifying Lurgi as the preferred tenderer careful note was taken of the tender evaluation report prepared by the Board's independent consultants. The full report is attached at appendix 7, and members will note that, having taken into account cap-ex capitalisations the difference between the tenderers design and build costs was only £471,324 (less than 0.7% of the contract price). The only significant cost difference was, therefore in respect of staffing costs during the 2 year operation period and quoted annual operating costs over the life of the plant. In respect of this latter point, section 6.3 of the tender evaluation report is noteworthy.

*“It should be noted that the calculated NPV for operating the plant should be considered as indicative only and not as accurate figures. It is recognised that there is a difference between the two Tenders as (a) the consumables required in the LURGI process are more expensive than those required for the MES proposal and (b) the power sales potential as per the MES proposal is larger than that of LURGI. On the other hand, (a) it is firmly believed that there will be a difference in maintenance costs for the two boilers and that difference, which would favour the LURGI proposal, has not been fully taken into account in the above indicative operating cost calculations and, of less significance, (b) the calculation is based on guaranteed power sales and MES appear to have no margin included, whereas LURGI have included a margin.”*

9.9 In respect of the technical proposals for both tenderers the report notes (section 4.1 and 4.2) that the proposal *“complies with the main requirements set out in the various ITT documents. RAMBØLL can confirm that the proposed technology generally is well proven and that the proposed solution appears to have incorporated sufficient flexibility to allow for fluctuations in waste characteristics and waste supply.”* The tender evaluation report in the detailed discussion of the technical proposals broadly ranks both tenderers equal with the exception that the Lurgi boiler configuration is preferred and considered to give considerably longer lifetime than the MES proposal.

9.10 Of particular significance was the difference between the tenderers in respect of visible plume suppression. The visible plume is the steam cloud that occurs as moisture precipitates out from the emissions in certain climatic conditions. Section 4.3.4 states

*“The gross electrical output is higher for the MES proposal. We believe this is mainly due to the fact that LURGI's proposal uses steam for the reheating of flue gasses upstream of the bag house filter for obtaining the right operating temperature and (as a side effect) to reduce the plume visibility.”*

And section 4.3.6 states

*“Because of the different ways of removing the dioxins, LURGI discharges the flue gas at a temperature of 130 °C, which will make the plume invisible in significant part of the year. MES discharges it at 60 °C, saturated with water vapor and it will be visible whenever operating. MES could, of course, be asked to re-heat the gas to 130 °C, but clearly this would have an adverse effect on both capital and operating costs.”*

This difference in approach to flue gas treatment and hence plume suppression therefore has an effect on the amount of energy available to export to the grid and hence the operating costs of the plant and reinforces the caution referred to in section 9.8 above.

- 9.11 The key area in which the two tenderers differed significantly was the approach to legal issues. Whilst it was noted that, at the point of tender submission, legal issues remained outstanding with both tenderers, this was to be expected in a major contract of this nature. The Board’s intention, therefore, was to resolve all significant outstanding legal issues with the preferred tenderer prior to signing the Letter of Intent. In this respect section 7.2.1 of the tender report is particularly relevant. It states:

*“Despite being requested to do so at the tender meeting on 11 June 2003, MES have not produced a detailed mark-up [annotation] of the Contract (which they are aware is needed in order to establish the full implications of their desired amendments) and instead MES have (rather ominously) suggested, in their amendments to the draft Letter of Intent, that a period of 8 months be set aside to agree the conditions of Contract following the selection of Preferred Tenderer (despite having had the draft Contract since July 2002).”*

*“The general impression given by the commercial commentary contained in MES’s tender submission is one of disinterest in ‘traditional’ turnkey projects coupled with a high degree of dissatisfaction with the proposed Contract terms. However, the representatives of the MES consortium who attended the tender meeting on 11 June 2003 gave a markedly different impression (which was positive, upbeat and accommodating) as if the MES representatives present at the meeting had little or no part in preparing MES’s legal/commercial comments. That said, despite the representatives’ stated willingness to accommodate the States, it was evident that CNIM wished to continue pushing their LLP proposal. As leader of the MES bidding consortium, CNIM were asked at the tender meeting if they would seriously reconsider their position and advise the States of the increase in price (if any) required in order for CNIM to be the sole Contractor (in place of their proposed LLP) and thereby assume 100% of the turnkey responsibilities (as this was the States’ express preference). As CNIM have not responded to the States on this issue, one can only deduce that (unlike the other Tenderer) they are unwilling to contract with the States on the ‘traditional’ turnkey basis envisaged in the ITT (but are similarly unwilling to pass on the dramatic cost savings that would be justified if their LLP proposal was accepted).”*

9.12 The italicised extract above refers to the LLP proposal. This is the Limited Liability Partnership structure under which MES would wish to sign the contract with the States. The proposal, **which was not in accordance with the tendering requirements**, is explained in section 2.2.1 of the tender evaluation report but the following extracts are noteworthy:

*“A key feature of LLPs is that the liability of the members of the LLP is limited to the amount of capital they contribute to it (usually just a nominal sum) and, in the UK, many traditional partnerships (such as law firms and accountants) are actively converting to LLP status solely in order to limit their liability.”*

*“We can see no advantages (and many disadvantages) to the States/SPC of proceeding with the proposed LLP structure. Given the nature of process engineering projects (and Energy-from-Waste projects in particular), the States’ preference has been (and remains) to enter into a turnkey contract with the optimum Tenderer in order to (a) pass the risk and responsibility for delivering the Project to a skilled and experienced process engineering contractor (for which the States is prepared to pay a premium) and (b) create a single point of responsibility for the Project, rather than for the States to be forced to take on the uncertainties, risks and responsibilities of a “hands-on” day-to-day Management Contracting-type role for what is a highly complex and unfamiliar project. Having regard to this, a consequence of the proposed LLP structure would be that the States would (i) necessarily become embroiled in apportioning responsibility/blame to individual LLP members (e.g. for delays, defects, failures, omissions, damages etc), (ii) require to be involved in resolving disputes between and among the individual LLP members and (iii) require to pay each of the LLP members separately.”*

*“An LLP is a legal entity, which is wholly separate and distinct from its members (who of course can change at any time) and must be viewed as such.”*

*“At the tender meeting on 11 June 2003, the project team made it clear to CNIM/Spie/Falla that the LLP was not an attractive option and that the States’ preference was for the LLP proposal to be dropped in favour of CNIM assuming the role of main Contractor. CNIM’s representative suggested that their price would increase ‘significantly’ with this option as CNIM would wish to add a margin onto the prices of their consortium members. CNIM were asked to re-consider their price on this basis and respond to the States by 23 June 2003. However, as stated above, they have not done so.”*

9.13 An LLP structure places significant additional risk on the ~~States~~ against the risk allocation planning previously carried out by the Board. It does not conform with the Boards tender requirements. As indicated in

section 7.2.1 of the tender evaluation report “*dramatic cost savings*” should be expected with such a contracting proposal but such cost savings were not reflected in the MES design and build tender sum. Historically, States construction contracts have carried a risk factor of 7.3% of the contract price. By proposing an LLP, MES had effectively passed that risk cost to the States and as such the contract sums were not comparable.

- 9.14 In light of the above and the consultants advice that “*Unsurprisingly, we could not recommend acceptance of this [LLP] to the States.*” The Board identified Lurgi as its preferred tenderer. The Board commissioned Dixon Wilson to carry out detailed financial checks in respect of Lurgi and its associated companies. The outcome of those checks has been reported to the States Treasury. Both the Board and the States Treasury are satisfied with Dixon Wilson’s conclusion that there are no apparent reasons, from a financial prospective, which should prevent the Board from awarding the construction contract to Lurgi or which should cause the Board concerns over the stability of the principal sub-contractors. During July 2003 meetings were held between Lurgi and the Board’s representatives in order to resolve all outstanding legal and technical issues. The outcome of those meetings is set out in the addendum to the tender appraisal report dated August 2003 and attached at appendix 7. The Board is pleased to be able to advise that the negotiations with the preferred tenderer Lurgi, not only resolved all contractual issues but also resulted in the improvement of certain areas of the specification without impacting on the construction costs. In addition a significant reduction in operating costs was achieved and the inflation indexation date was moved back from July 1<sup>st</sup> to September 1<sup>st</sup>. The Board has signed a Letter of Intent engaging Lurgi for the Initial Services Period and setting out the procedure for moving from the Initial Services Period to the Contract stage once all the required Initial Services have been provided. Initial Services include detailed architectural and engineering design, any necessary site surveys, consultation with relevant authorities including States Committees during the detailed design stages and any necessary pre-contract procurement activities. Subject to the States approval of the Board’s proposals, this Letter of Intent will become operative and the Initial Services period will commence. The Board will then work with Lurgi with the objective of developing the detailed proposals, obtaining all the necessary development permissions and setting the fixed capital price ready for contract signing. **Tods Murray has confirmed that the extent of overall security provided by the contract is in excess of that which would normally be achieved in similar projects in the UK. As a result it is their legal opinion that the States should authorise the Letter of Intent with Lurgi to become fully effective.**

- 9.15 As is common with all major construction contracts it is necessary to provide a contingency sum to cover unforeseen circumstances including, potentially, changes to the clients brief after contract letting. The Board

of Administration, therefore, proposes that a 10% contingency sum be added to the tendered capital sum. This 10% contingency will, in the Board's opinion and following advice from its consultants, be sufficient to cover any increase in capital costs as a result of design issues arising during the initial services period as well as unforeseen occurrences during the construction phase. The Board envisages that approximately 60% of the contingency sum should be allowed to cover design changes during the Initial Services Period with the remaining 40% covering unforeseen occurrences during the construction phase.

- 9.16 In addition, following consultations with the States insurance advisors Marsh, the Board agreed that best value would be achieved by the States taking out a project specific insurance policy in respect of the contract. The status of the insurance market fluctuates widely and the actual cost of this policy cannot be determined until the policy is purchased. This cannot be achieved until the Initial Services Period is completed and the detailed design confirmed and a fixed contract sum set. Nevertheless, Marsh has advised that the project specific insurance to cover the full construction period is likely to cost in the region of £450,000
- 9.17 Allowance must also be made for project management/consultancy costs including legal services and environmental compliance issues during the design and construction phases and the two year operation element. A sum of £1,500,000 is considered by the Board to be sufficient.

## **10 Consultants Fees**

- 10.1 At its meeting held in June 2002, the States resolved

*“To delegate authority to the States Advisory and Finance Committee to approve the capital votes in respect of those enabling works referred to in v.) above and consultants fees as set out in this report, which votes shall be charged to the capital allocation of the States Board of Administration.”*

The table below sets out the sums approved by The Advisory and Finance Committee in accordance with the above resolution and indicates the extent of expenditure against those sums.

<b>Description</b>	<b>Budget £</b>	<b>Spend to date £</b>
Waste Strategy Assessment	201,849	152,580
Environmental Impact Assessment	214,444	211,817
Norwest Holst - Site Investigations	153,757	116,315
Juniper Report – Alternative Technologies	30,000	23,284
Ramboll	500,000	404,424
Ramboll - Health & Safety Plan	25,000	20,221
S'Pace Fees - Concept Architects	55,000	52,889
Legal Advice	210,000	122,187
Insurance Services	30,000	17
Education & Communications Contract	55,000	21,672
Film Project (Barry Palin)	44,950	31,476
Electricity Works - Phase 1	335,000	70,540
Water Supply	65,000	-
Sewage Connection Works	150,000	-
Access Road (Ronez Ltd)	350,000	-
<i>Electricity Works phase 2 (To be approved)</i>	150,000	-
	<u>2,570,000</u>	<u>1,227,422</u>

## **11 Company Formation and Directors**

- 11.1 As indicated in paragraph 2.2 iv above the States resolved in June 2002 to approve the formation of a Special Purpose Company to sign the contract for the procurement of the proposed EfW facility. This approach affords the States maximum flexibility should there be a desire at some future stage to sell the facility, operate it as part of a States Trading Company or enter into a joint venture partnership with the private sector. There is no need to form the SPC significantly in advance of contract signing i.e. towards the end of the Initial Service period, and it is possible that the new departments resulting from the Machinery of Government resolutions will be in place at or around the date of SPC formation and contract signing.
- 11.2 The States noted in June 2002 that in the first instance two £1 paid up shares would be issued by the Company to the President and Vice President of the States Board of Administration to be held in Trust for the benefit of the States of Guernsey and that the liability of the Company's members is limited to the value of the paid up share capital. These shares can be issued at the time of company formation to, as the case may be, the President and Vice President of the Board of Administration or the Minister and Deputy Minister of the relevant States department. The Board does not believe or propose that the executive directors of the SPC need to be salaried positions as the relevant States committee or

department will continue to manage the project and service as a States function until such time as a decision is taken to commercialise or privatise the operation and facilities. The Board, therefore, proposes that the directors of the SPC should be the Chief Executive or Deputy Chief Executive, the Finance Director and one ordinary member of the relevant committee or department.

- 11.3 Members will appreciate that statutory responsibilities are imposed on an executive director of a company and those officers have a prime duty of responsibility to the shareholders. These are onerous duties beyond those normally required of a Civil Servant. The Board, therefore, proposes that the liability of the relevant officers is insured through appropriate mechanisms agreed with the States' insurers and that the States resolves a general exclusion of liability in the following terms:

“To hold free of any liability an executive director, member, officer or servant of any company wholly owned by the States of Guernsey and formed for the purposes as set out in this report, in respect of anything done or omitted to be done in the discharge or purported discharge of any of their functions unless the thing is done or omitted to be done in bad faith.”

## **12 Options Summary**

- 12.1 The Board has reviewed potential alternative options including: Export, landfill, land raising, alternative technology and deferment. The Board can only offer the following two options to the States as sustainable solutions:

- i.) To continue with the strategy first approved by the States in 1994 and developed in 1998 and 2002 and progress with the procurement of an EfW facility in accordance with the procedure set out in this report and to accept the tender from Lurgi. This option allows Mont Cuet to be used for landfill of putrescible waste followed by the non-combustible waste fraction until circa 2078 after which, if stone extraction has taken place, the void at Chouet Headland could receive the non-combustible waste fraction for the long-term future. Les Vardes could be reserved for water storage. OR
- ii.) Subject to the outcome of the necessary planning inquiries, to close Les Hures and land raise at Falla's fields (for 9 years) whilst extracting stone from the reserves at Chouet Headland, followed by land filling of the resultant void and closure of Rue des Grandes Camps to allow land raising above (26 years) to form a mound abutting Mont Cuet. This option to include the treatment of the waste arisings in accordance with the Board of Health's requirements prior to land-filling, and to include the procurement and construction of an incineration plant by circa 2044, the remaining land raising void then receiving the non-combustible waste fraction until circa 2094.

- 12.2 The Board has, therefore, identified, an option by which the States could, by extending landfill, defer capital expenditure at this stage. This requires the land-raising of the Chouet headland currently zoned Green Zone 1 and would be subject to the outcome of planning inquiries. Capital costs to achieve this deferral would be in the order of £16 million to which must be added the significant capital and revenue costs of pre treating the waste prior to landfill.
- 12.3 This option could allow the deferral of the decision to procure an incinerator by some 37 years. Such deferral provides no guarantees in respect of the provability or cost effectiveness of alternative technologies or a reduction in costs of mass burn incineration. As such, a decision to pursue this alternative can only be taken on the basis of balancing competing needs at this juncture and in the hope that the pressures on the island's economy or the costs and options open to the States in the next decade or so will significantly improve. It comes with significant impacts and the Board cannot recommend this course of action.
- 12.4 The Board, therefore, recommends the states to approve option one above.

### **13. Self-Funding**

- 13.1 During the February 2003 States meeting, as a result of an amendment placed by Deputies Trott and Prevel, the States debated the issue of borrowing to fund the Education Council's capital project proposals. In support of the amendment, the States resolved to investigate the impacts of borrowing some or all of the money required to fund the states Education Council's development plan, taking into account the construction industry economic model currently being prepared by the States Board of Industry and the prevailing economic circumstances. Whilst the amendment itself did not seek debate on borrowing, two broad conclusions can be drawn from the resultant debate. Firstly, a number of members viewed the principle of third party borrowing as a retrograde step. Secondly, borrowing to fund capital projects would be more acceptable if the project involved a revenue stream that could be set to meet the repayments.
- 13.2 The Board has identified and considered in liaison with the Advisory and Finance Committee a number of funding options that could be employed in respect of the proposed EfW facility. These options included private sector financing and ownership of the facility, traditional States procurement, private sector borrowing, and States procurement but with full pay back. In considering these options the Board and the Advisory and Finance Committee were mindful of the need to achieve best value. In addition the role of the EfW facility as part of an emerging integrated waste management strategy was a major consideration. The procurement

route, approved by the States, and utilising a Special Purpose Company along with a Design Construct and Two year operate contract, affords the States maximum flexibility in respect of future ownership and or operation of the EfW facility. This flexibility should not be undermined by the funding option chosen unless that funding option can demonstrate significant whole life cost savings. By linking the procurement route to an appropriate funding route the States can retain the option to Commercialise, Privatise or Partner the facility once any interlinking issues have been resolved as a result of the States consideration of the Waste Management Plan. Such interlinking issues will include the provision and operation of other waste management services and infrastructure.

- 13.3 States procurement with full pay back has, therefore, been chosen by the Advisory and Finance Committee as the preferred funding route. Under this procurement route the facility would be funded by a loan from States Treasury central funds. The capital sum would be repaid over the 25 years amortisation period. The capital would be loaned at the States Treasurer's interest rate and repayments funded by the fees charged by the plant. Such arrangements have been used in the past, albeit for smaller amounts. The gate fee would be set to cover operating costs plus capital repayment and interest charges less income from electricity sales. **The plant would be self-funding.** The States would retain ownership and control of the facility in the short term leaving open the option in the future to sell the facility or contract out operation of the facility taking into account other interlinked and potentially limiting factors
- 13.4 Using this procurement and funding route the Board has calculated that a probable gate fee of £100 per tonne would need to be applied if the user pays option is to be adopted. In arriving at this gate fee the Board has adopted the following reasonable assumptions:
- Capital sum £72,000,000
  - Interest rates 4%
  - Amortisation over 25 years
  - Average throughput 60,000 tonnes per annum
  - Fixed annual operating costs £1,500,000
  - Variable operating costs £20 per tonne
  - Electricity revenue at 2.4p per unit £12.80 per tonne
- 13.5 The above gate fee assumes an economic fee for electricity sold to the grid. The gate fee could be reduced if a green premium for electricity was paid on the basis that the EfW facility was displacing fossil fuel consumption. In addition the figure is based on a 25 year amortisation policy although many of the elements of the facility including civil works have a life far in excess of 25 years and for which a longer depreciation period could be applied. This could again reduce the pay back gate fee
- 13.6 The Board will be presenting cost proposals for all waste management operations as part of its Waste Management Plan report. However, the

Board would stress that, at present, General Revenue already subsidises waste disposal costs in the form of free bulk refuse and end of life vehicle disposal and free recycling initiatives. These initiatives currently cost in the order of £500,000 per annum. There is a very strong argument against further subsidising the cost of waste disposal at landfill or the EfW facility as this works against initiatives to minimise or reuse/recover waste. At present approximately 15,000 tonnes of waste is collected annually by the Parish collection rounds or roughly 0.25 tonnes per head of population. Adoption of the user pays principle would therefore mean that parish refuse disposal costs would be in the order of £25 per capita.

- 13.7 The introduction of revised charging policies at Mont Cuet along with the establishment of Fontaine Vinery Waste Segregation facility has resulted in the diversion of waste that would otherwise have gone to landfill at Mont Cuet. Whilst the Board recognises that a gate fee in the order of £100 per tonne is a significant increase on the current gate fees, the waste producers have it within their ability to minimise the impact of increased disposal fees by improved segregation of waste. Inert waste disposal charges are currently only £5.35 per tonne whilst metal disposal costs are typically in the order of £40 per tonne.

#### **14 Status of the Waste Management Plan**

- 14.1 To date, and in accordance with the States resolutions of 1998, the Board has been developing a Waste Management Plan which builds on the foundation of an EfW facility. The Board has modelled the costs and implications on sustainability when comparing incineration against other treatment regimes for specific waste streams. Early indications are that robust arguments can be presented, both on economic and environmental grounds, to increase the capture of recyclables and to introduce controlled composting operations. Segregation of commercial and industrial waste, including construction and demolition waste, will need to be enhanced to reduce the throughput of non-combustibles at the EfW facility. This, in turn, will require the construction of a Materials Recovery Facility which could serve the dual purpose of waste segregation and recyclable processing. Provision of Civic Amenity Sites is being considered in accordance with the findings of the 1998 Waste Strategy Report. These facilities will be required to support any move away from landfill and to optimise the life and efficiency of the proposed EfW facility.

14.2 Should the States decide to defer procurement of an EfW facility, then adoption of improved recycling initiatives and waste segregation would still be required to maximise the life of the landfill sites and comply with Board of Health requirements. A capital sum in the order of £5 million to £10 million is envisaged for these additional facilities, along with increased revenue costs. The capital sum is, however, heavily dependent on the location of the facilities, the cost of any land procurement and the architectural treatment required.

14.3 The Board had hoped to be able to present a policy letter setting out the Waste Management Plan proposals at the same time as seeking the States ratification of the Board's contract with its preferred tenderer for the procurement of an EfW facility against the brief considered by the States in 2002. This is no longer possible and the Board is unable to complete work on the Waste Management Plan without first seeking the States approval to progress the procurement of an EfW facility. Any decision by the States to pursue a strategy of landfill will, of course, require the Waste Management Plan to have landfill as its cornerstone and the Board's cost benefit modelling will need to be rerun. As a consequence, the Board can provide, at this stage, no more than the broad picture as described above. Nevertheless, the Board has placed in the public domain, a discussion document setting out its work to date in respect of the preparation of the Waste Management Plan.

## **15. Resource impacts.**

15.1 Impacts on Financial resources are set out in the relevant section of this report.

15.2 Environmental impacts were fully addressed during the Environmental impact assessments carried out by the Board and reported to the States in the Board's report dated 15 May 2002, entitled "*Energy from Waste Facility*" (Billet d'Etat XIII 2002).

15.3 The Board does not envisage any requirement for additional staffing resources during the design and construction phase of the facility. During this period the project will continue to be managed by the existing project team comprising staff of the Board of Administration and Guernsey Technical Services.

15.4 The operation of the facility during the first two years is covered under the contract and the officers of the Special Purpose Company will be officers of the Board of Administration. It is not, therefore, envisaged that any additional staffing resources will be required prior to two years after the construction of the facility.

15.5 The operation of the facility, following the two year operation period as provided for under the contract, will be a matter for future States debate

and will be influenced by the States consideration of the Board's waste management plan. The options include "in-house" operation, further service provision contracts with either the incumbent or alternative operator, or sale of the facility. It should be noted that in the medium to longer term reduction in landfill activity will necessitate a transfer of resources to other areas of the waste management service.

## **16 Conclusion.**

- 16.1 If modern standards are to be adopted, landfill no longer presents a solution to the island's waste disposal needs and prolonging landfill beyond the very short term will have significant environmental and cost impacts. The option does exist for the States to phase capital expenditure on landfill over a number of years, incurring costs in the order of £7.5 million in year 2012 (Falla's Fields), £12 million in year 2015 (purchase and preparation of Chouet Quarry). To this must be added capital costs in respect of provision of other recycling, pre-processing, segregation and composting facilities.
- 16.2 The Board does not believe that a short-term deferral in the decision to procure an EfW facility brings any benefits or that prolonged land filling is environmentally or economically justifiable. As a consequence the States is asked to direct the Board to conclude the work that has been undertaken over the last 5 years and proceed with the procurement of an EfW facility, including a two year operation contract .
- 16.3 This recommendation therefore requires:
- the acceptance of the design, construct and operate fee negotiated with Lurgi in the sum of £80,309,584 (including cap-ex capitalisations, €1 = £0.725) and inflated from September 2003;
  - the commencement of the 8 to 9 months Initial Services Period resulting in the detailed design, obtaining of all necessary permissions, and confirmation of the inflated fixed capital sum for the contract;
  - acceptance of a 10% contingency sum added to the tendered capital price;
  - purchase of project specific insurances as set out in paragraph 9.16
  - approval of the consultants and project management fee as set out in paragraph 9.17

## 17 Recommendations

The Board of Administration recommends the States:

- i.) To reaffirm its previous in principle decision to procure an Energy from Waste facility under a Design Build and Two year operate contract.
- ii.) To direct the Board of Administration to proceed in accordance with the provisions of the Letter of Intent signed with Lurgi as set out in section 9.14 of this report and to commence the Initial Services period at a sum not to exceed £ 2,982,500 (€1 = £0.725)
- iii.) To direct the Board of Administration to obtain all necessary approvals from the Board of Health and Island Development Committee as part of the plant design process.
- iv.) Following completion of the Initial Services period, to authorise the Board of Administration either directly or through its SPC, subject to the approval of the Advisory and Finance Committee, to contract with Lurgi, for the construction of an EfW facility at the capital sum being not more than the negotiated figure of £69,813,978 (Base Contract Price plus + Cap Ex Capitalisation, €1 = £0.725) excluding contingency, inflated as set out in section 9 of this report.
- v.) Following completion of the initial services period, to authorise the Board of Administration either directly or through its SPC, subject to the approval of the Advisory and Finance Committee, to contract with Lurgi, for the two year operation of the EfW facility at the negotiated sum of £7,513,106 (€1 = £0.725) inflated as set out in section 9 of this report.
- vi.) To approve as a contingency sum a figure of 10% of the tendered capital sum in respect of the design and construction phases of the facility.
- vii.) To direct the Board of Administration, to procure, subject to the approval of the Advisory and Finance Committee, project specific insurances and consultancy services, as set out in section 9.16 and 9.17 respectively of this report.
- viii.) To authorise the Advisory and Finance Committee to advance to the Board of Administration or the SPC a loan to the maximum sum of £80 million for the purpose specified in this report. Such loan to be advanced in stages as necessitated by the contract requirements and repaid over a 25 years amortisation period and attracting interest at the Treasurer's interest rate.

- ix.) To resolve a general exclusion of liability against any director, member or officer of the Special Purpose Company as set out in section 11 of this report.
  
- x.) (1) To agree that the provisions of section 65 of the Housing (Control of Occupation) (Guernsey) Law 1994, shall be suspended in respect of the temporary accommodation referred to in section 9.5 of this report
  
- (2) To direct the preparation of such legislation as may be necessary to give effect to their decision

I should be grateful if you would lay this matter before the States with appropriate propositions.

Yours faithfully

R C Berry O.B.E

President  
Board of Administration

**Appendix 1**

**Addendum to Juniper's Earlier Report on Incineration vs Emerging Technologies**



## Client Report

<b>Date issued:</b> 4 <sup>th</sup> April 2003	<b>Client Ref.:</b> States of Guernsey
<b>Title:</b>	
<p style="text-align: center;"><b>Addendum to Juniper's earlier report on Incineration vs Emerging Technologies</b></p> <p style="text-align: center;"><b>UPDATE ON THE STATUS OF NOVEL TECHNOLOGIES</b></p>	

**Important Note:**

This report summarises the current situation in what is a rapidly changing field: information was gathered and analysed in March 2003. The report draws upon our ongoing analysis of more than 100 processes that are being promoted as new solutions for waste management in the context of evolving market requirements.

*Statement of Competence*

Juniper are consultants specialising in the assessment of new waste treatment technologies. We are widely regarded as the leading independent analysts in the fields of pyrolysis and gasification, having provided the standard reference work on the topic: "Pyrolysis and Gasification of Waste; A Worldwide Technology and Business Review".

Juniper also has established expertise in conventional thermal treatment technologies like incineration. For example we hold the most comprehensive database of European energy from waste plants.

We have acted for public and private sector clients throughout the world in assessing the role that these new systems can play in meeting specific local requirements. We are, for example, currently acting as the Independent Adviser to the Government of Hong Kong on technology options for what will be the largest such infrastructure project in the world and have recently completed the technical appraisal of bids for a £1 billion PFI project in the UK.

*Responsibility of the Parties:*

None of the information contained in the report is confidential but in some cases our analysis does draw upon specific technical and commercial information that is proprietary and which has been revealed to us to enable Juniper to provide an independent analysis of the status of that process.

Our report is provided in good faith based upon information provided. Our role is to provide you with an independent review based on the current situation to inform your decision on which technology is the most appropriate for use for the Island's new waste treatment infrastructure. Our report will be one factor in many that the States of Guernsey and their professional advisers, who are consulting on the tender evaluation, will wish to take into account in determining the most appropriate route

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### BACKGROUND

#### *prior report*

Juniper was commissioned last year by the Board of Administration of the States of Guernsey to provide a briefing on the advantages and disadvantages of pyrolysis and gasification as an alternative to incineration for handling the island's solid waste.

The Board had posed a number of questions related to the issues surrounding incineration and the emerging thermal processes for solid waste treatment.

Guernsey asked Juniper, as a leading independent consultant specialised in this field, to provide a dispassionate and factual briefing divorced from any commercial considerations.

Our report provided the States of Guernsey with analysis and background information to allow a more informed judgement over the choice of a suitable technology for managing the island's wastes.

#### *our earlier conclusions*

The circumstances in Guernsey are particular. The island will be reliant upon one facility to process all of its solid waste arisings from businesses and households. Whereas a UK mainland Local Authority could relatively easily make alternative arrangements for treatment and disposal of waste, should a facility not be operating, this is not the case for Guernsey. Any backup would have to involve an off-island solution. From a practical and public health point-of-view the reliability of this facility is particularly important.. In our view this means that, provided processes meet acceptable environmental and health & safety criteria, the most important criterion in choosing a technology for Guernsey should be its robustness

and, in particular, the extent to which it is proven at a relevant commercial scale. Other factors should be taken into account but, for his reason, our reports have concentrated upon assessing this particular aspect.

The earlier report concluded that the new pyrolysis and gasification systems, which have started to be marketed by several companies, do indeed offer some advantages over existing incineration-based solutions; but that they were insufficiently proven at that time to be selected as the sole basis for handling all of the community's waste. Our assessment was that, for Guernsey, the advantages were insufficient to offset the risks associated with relying on any one approach that was not yet fully proven.

## SCOPE & STRUCTURE OF THIS REPORT

### *objective*

This report addresses the following question:

**have there been any significant changes to the status of the alternatives to incineration since Juniper's earlier report that might materially affect the choice of technology made by the States?**

### *structure*

The report is deliberately succinct and concise to allow conclusions about the change in status since last year to be readily apparent. The aim is that this document should serve as an Addendum to the earlier report.

**OVERVIEW OF DEVELOPMENTS IN THE LAST TWELVE MONTHS***summary*

**In general there has been little progress in the commercial development of the alternatives to incineration since our last report.**

It has been a disappointing year for many of the companies involved in this sector. Few orders have been announced for any type of thermal treatment plant in the UK. The developers of newer technologies of pyrolysis and gasification are dependent upon these orders to prove their technology, which is not the case for companies marketing established incineration-based alternatives. This means that the new systems continue to be at a disadvantage in terms of technology risk. This in turn has resulted in some companies having financial problems (one has gone in to liquidation in the last few weeks).

Progress is also slow on the Continent. The good news for pyrolysis and gasification is that the largest facility in the world of this type (Thermoselect at Karlsruhe) now appears to be operating satisfactorily. But, there have been few new projects. This lack of demand has led to several withdrawals from the market and more than one bankruptcy.

Overall, lack of progress has dented confidence amongst Public Authorities in these processes although interest remains real. A good Case Study from a commercial-scale MSW plant would help to reassure potential customers about the viability of this approach.

*progress in Japan*

There has been some progress elsewhere, notably in Japan – where a significant number of projects are underway utilising locally developed processes or technology licensed from Continental Europe. For example five facilities

have completed their Acceptance Tests from one company alone (Mitsui) over the last 12 months. Similar progress has been made by several other companies (notably Nippon Steel and Hitachi).

Japanese companies are also beginning to show an interest in exploiting opportunities in the UK and the rest of Europe. However, the market requirements in Japan are different and the waste composition is not the same, so processes designed for that market may not be directly applicable in a European context: the process must be re-designed to meet local requirements and to reduce costs to a competitive level. As yet there has not been a successful technology transfer from this region.

#### *customer attitudes*

Interest in alternatives to incineration remains considerable amongst Public Authorities throughout the world. Enquiry levels for leading suppliers remain high. However, as customers and their advisors become more aware of the issues related to using such systems, less of these preliminary enquiries are being converted into feasibility studies for potential projects.

Within the UK, Local Authority members are still keen to consider such processes and there are more than 10 projects actively under consideration. Officers remain cautious about the operational reliability and the practicality of securing project finance since such infrastructure has to be funded from the private sector (Local Authorities are reliant upon either bank finance for project developers or Balance Sheet finance by waste management companies and both of these groups are frequently reluctant to advance funds until a technology has been successfully demonstrated at scale).

Elsewhere in Europe, attitudes vary considerably. In France, the outlook is more negative than a year ago and, in general, the market favours

conventional incineration. By contrast interest has increased in Spain and Italy, where attitudes were strongly negative towards incineration. In Germany, structural imbalances in the market are depressing demand for all types of thermal treatment.

*public policy*

Although Guernsey is outside the EU for environmental regulation, EU Directives are used throughout the world as a benchmark for determining Best Practice on waste management issues. There have been no significant changes in EU policy since our last report that might influence your decision. All the thermal technologies, including incineration, gasification and pyrolysis, were already required to meet the provisions of the EU Waste Incineration Directive.

In the UK the Government is encouraging the adoption of so-called Advanced Conversion Technologies (principally gasification, pyrolysis and anaerobic digestion) through, for example, preferential treatment of such systems under the Terms for Qualification for Renewable Obligation Certificates (in essence, the new processes qualify for premium tariffs on electricity sales, whilst incineration does not). This policy was already in place at the time of our earlier report but a bigger financial incentive is being offered in recognition of the need to provide greater financial support to offset the risks associated with adopting these processes at the present time.

The Prime Minister's Strategy Unit report ("Waste not, Want not") has been published since our earlier report. It largely reiterated the existing policy in relation to advanced thermal treatment technologies. A detailed review of these systems commissioned as part of the Strategy unit research, to which we contributed, concluded that their role would be limited "this side of 2006-10".

*economics*

The Strategy Unit analysis, drawing on data from a wide range of other specialist organisations, concluded that there was no strong economic incentive for adopting alternatives to incineration for MSW applications.

In general costs have risen over the last year. This is due to two factors. Firstly, greater recognition of the complexity of handling heterogeneous materials like MSW; resulting in more complex 'front-end' processing and, hence, more cost. Secondly, the withdrawal from the market of some systems that were being heavily promoted as capable of achieving low capital and operating costs. Many of the technologies which have made progress in the last twelve months have higher unit costs and so the nominal average cost has risen.

*level of risk*

Over the last year, finance markets have hardened their attitudes towards the less proven technologies. Process companies are finding that they cannot obtain project finance from banks or insurance at competitive rates. Instead they are having to secure partnership arrangements with larger engineering groups who can bring capital and access to financial markets on more favourable terms. Some of these alliance partners also bring valuable engineering resources and project management skills.

The Strategy Unit report concluded that Advanced Thermal Treatment processes were "relatively unproven in UK; less proven worldwide on heterogeneous as opposed to homogeneous waste streams." It also recognises the need to provide funding for pilot projects that utilise innovative technology to offset the risk premium attached to such systems. Recent experience has shown that this is necessary because the private sector is not willing to take on the risk associated with commercialising and debugging such processes. This is in the context of a mainland

scenario where alternative disposal options exist and where contingency arrangements, should a facility not perform as planned, are relatively easy to put in place. In our earlier report we argued that, since this is not the case in Guernsey, it would be inappropriate to adopt partially proven processes while risks remain. We maintain this view.

## UPDATED STATUS OF KEY PROCESSES

The table on the next page lists the processes that were identified in the context of our earlier report; shows the status of those systems as recorded in the original report; and, then, succinctly updates the status to show changes over the last twelve months.

Supplier	Status from Previous Rpt	Updated Status
Brightstar (EDL)	Demonstrator with orders for Kent and Derby	Commissioning problems at demonstrator project in Australia. Progress on orders for Kent and Derby delayed.
Compact Power	Demonstrator	Further trials on RDF and process modifications at Avonmouth. Good progress on establishing network of partnerships but no new orders announced. Dumfries still not underway and no other customer plants yet being built.
Energos	Fully commercial	Good progress: additional orders in Germany & Austria announced, but not yet active in UK market.
Enerkem	demonstration + others being commissioned	Plant in Spain now operational, but on defined plastic wastes. No real experience yet on MSW. New partnership just announced with Novera for UK market.
Foster Wheeler	Fully commercial	Announced focus on biomass, not MSW, so not a current contender.
GEM	Demonstrator	Delays to Bridgend project. No other orders announced yet.
IET	Conceptual	TOPS development mothballed. Refocusing on marketing an Australian system under license.
JND	Pilot	Recommended promotion. No tangible progress to date.
Mitsui	Fully commercial	Strong progress in Japan: 5 more plants started operating in the last year alone.. Pursuing projects in UK, but no orders announced yet.
Nippon Steel	Fully commercial	Market leader in terms of number of facilities operating (but all in Japan), several more added this year. Looking at entering the European market.
Organic Power	Semi-commercial	Ceased trading. Technology reported to have been bought by another company.
PKA Toshiba	Fully commercial	PKA bankrupt. Toshiba continuing, but for Japanese market only. Focus on End-of-Life homogeneous waste and not MSW.
RGR Ambiente	Pilot	Status unclear. No obvious significant progress in last year.
Serpac	Semi-commercial	Now bought by Sanifa (subsidiary of Sita). No significant market progress yet.
Techtrade/WasteGen	Fully commercial	2 <sup>nd</sup> German plant operating. No progress in UK market.
Thermoselect	Fully commercial	Karlsruhe received operating permit. Japanese plant seems to be operating well, further projects underway there. Re-promoting technology. No new orders announced yet.
Thide	Semi commercial	3 plants in Japan through relationship with Hitachi. French project (50kTpa, Arras) finally going ahead.
TPS	Semi commercial	Not apparently targeting MSW applications.
Von Roll	Semi commercial	Ceased promotion for MSW applications. Parent company in financial problems. Future unclear.

The six processes that are of most significance in a UK context are Brightstar, Compact Power, GEM, IET, Thermostelect and WasteGen. These are considered below in more detail.

### **BRIGHTSTAR (EDL) SWERF PROCESS**

The Brightstar SWERF process was arguably the leading contender in the UK market amongst the novel thermal technologies at the time of our original report, since the company had recently announced two firm projects (in Derby and Kent).

Since our last report, the company has missed several technical milestones associated with the commercialisation of their process concept and no new orders have been announced. This has impacted investor confidence in the parent company (EDL). Major changes are summarised below.

- ◆ The commissioning of the first facility (in Wollongong, Australia) has taken more than one year longer than expected.

At the time of our earlier report the company had identified an action programme to address problems with one part of the system (the char gasifier) and was confident of success. Unfortunately the problems proved more intractable than thought and two further delays to plant handover have been announced. The company decided last year to abandon this non-essential component, for the time being, and to concentrate on commissioning a configuration where the char was sent to landfill instead.

This was a sensible decision, since the future commercial development of the system and order closure for other projects was dependent upon handover of this plant; but it has reduced the advantages that this technology has over incineration, in that the amount of energy recovered is now reduced and the dependence upon landfill is increased.

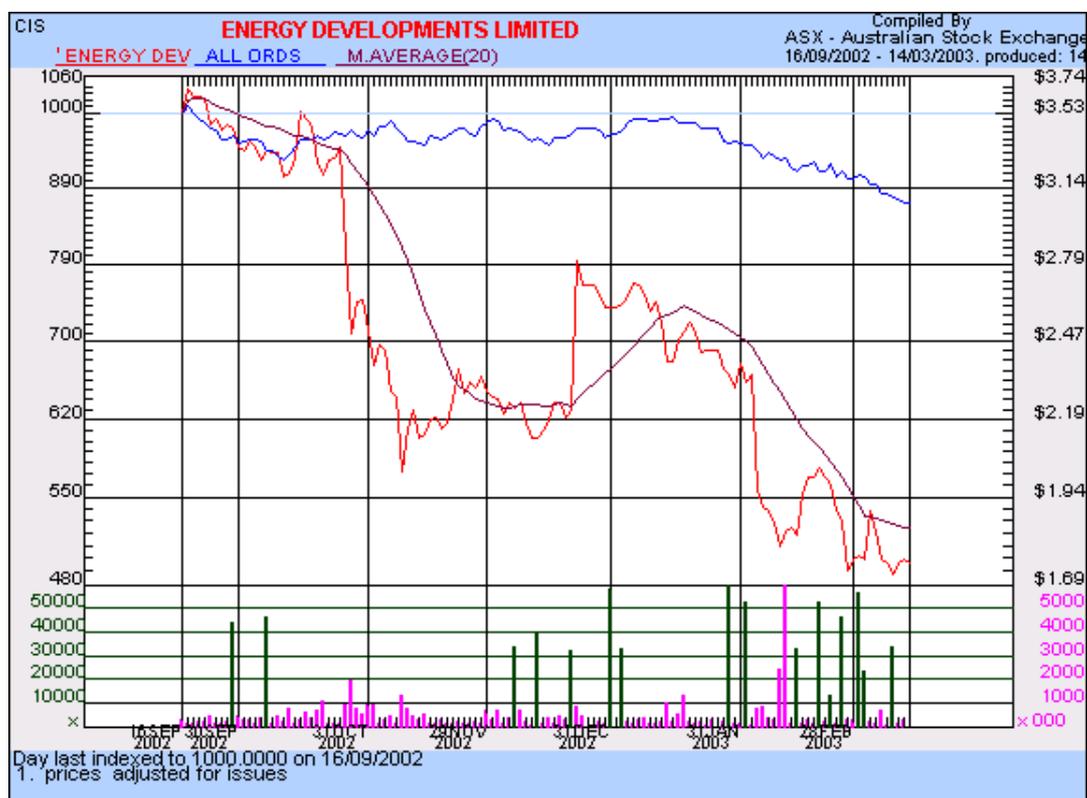
The delays also mean that, in effect, the technology concept has not yet been demonstrated at any scale despite several years of development and commercialisation.

- ◆ Company announced a write-off of capitalised development costs for SWERF last month (AUS\$ 78 million, £30 million).
- ◆ EDL are looking for a partner to share the costs and risks associated with development of the SWERF process.

- ◆ The company has reiterated its confidence in the technology and in the size of the market opportunity.
- ◆ Derby (UK) project not yet started. The application for an Environmental Permit (IPPC), which is a pre-requisite, will only be filed with the Environment Agency once the Australian plant has completed its commissioning trials to provide the data for the application. Excessive delays could lead to the client reconsidering other options.
- ◆ Kent project also not yet started for similar reasons to Derby.
- ◆ No new orders announced since last report. Company is focusing on:
  - finalising the commissioning of the Australian first plant;*
  - the 2nd stage expansion of that plant;*
  - delivering on the 2 announced projects in the UK;*

Latest investor report does not identify any firm projects other than Derby and Kent anywhere else in the world.

- ◆ Significant changes in senior management of company over last few months (including new Managing Director).
- ◆ Company share price hit by the delays and technical difficulties.
  - see graphic below (red continuous line is EDL's share price).*



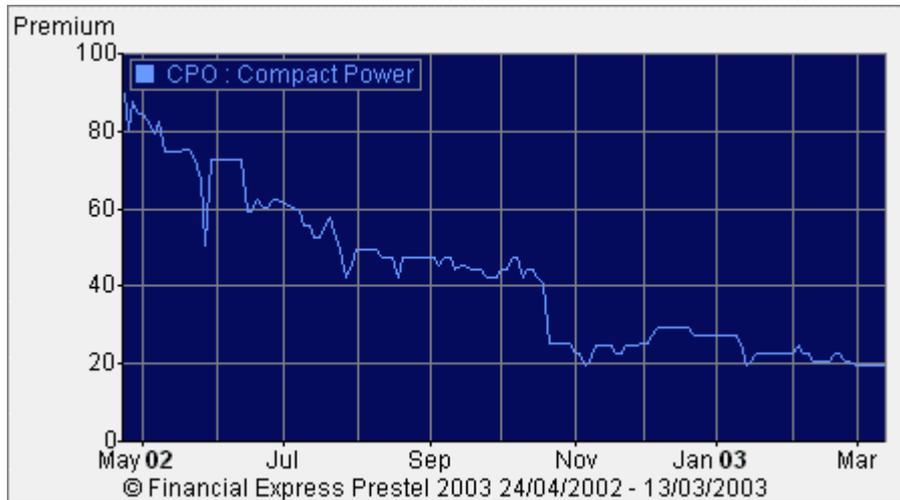
### COMPACT POWER

Compact Power is probably the most prominent of the technologies being developed in the UK. Their system has attracted a lot of attention in both the UK and overseas.

The last year has been one of mixed fortunes for the company. We have summarised the key developments below.

- ◆ The company successfully launched on the Alternative Investments market (AIM), the UK stockmarket's second market.
- ◆ This provided further funds for their development, which were needed because the company's expenditure on developing their business was higher than forecast and is significantly more than the revenues from their first small facility in Avonmouth, near Bristol, which is their only source of income presently.

- ◆ Early last year the company stopped their development on MSW processing that had originally been planned for the plant at Avonmouth, following operational problems related to difficulties with front-end processing of unsorted MSW.
- ◆ Partly as a result of those trials further modifications of the facility were made during 2002.
- ◆ At the same time they decided to focus upon processing higher value waste streams such as clinical waste and confidential documents to provide revenues. Unfortunately this meant that they built up less sustained operational experience with unsorted MSW than was desirable from the point of view of proving the robustness of the process on that particular type of waste feed.
- ◆ In mid-2002 Compact Power decided to change their emphasis in the Local Authority market towards processing RDF (refuse derived fuel derived from a waste sorting facility) rather than unsorted MSW and to co-processing this with other types of waste rather than as the sole feedstock for a project. They completed a seven day trial on this fuel at Avonmouth. More recently they announced an alliance with HLC to utilise their front-end processing experience for some projects, which should enhance their credibility when tendering for MSW applications.
- ◆ While the Dumfries project (60,000 tonnes per annum) did receive planning permission and approval from SEPA, the contract has still not been concluded, some two years after it was announced.
- ◆ The Cornish project was formally announced in 2002 and a planning application was submitted for a 64,000 tpa MSW plant in conjunction with the LAWDC (Local Authority Waste Disposal Company). A planning application has been submitted and the client would like the facility to be operational by 2006.
- ◆ No other projects have been announced, though we are aware of a considerable number of potential opportunities for the Company through our consulting activities within the market.
- ◆ Continued delays in securing orders hit the stockmarket's confidence in the company. This, combined with the general change in sentiment towards technology stocks, led to a down-rating of the company's share price (see figure below).



- ◆ The company announced a restructuring in late 2002 to reduce cash burn. The London office was closed and a number of staff positions were terminated, including the project procurement team. The company explained that, since they were not yet building any facilities, these personnel were not required.
- ◆ Further strategic partnerships have also been announced over the last year:

*Importantly, Compact Power decided to outsource project implementation engineering to AMEC. This is partly to reduce internal fixed costs and leverage their own activities but we see the main value as bringing a larger partner to help increase confidence amongst clients and financiers. AMEC have been working with many other developers of similar process technology over recent years and it is not yet possible to assess the significance of the relationship. As a company whose background is in civil engineering AMEC do not bring any direct technical input, but this was, in any case a strength of Compact Power. They certainly do bring contracting and project implementation skills and resources. However, at the present time this arrangement seems to relate narrowly to a Standard Pack design for a specific application.*

*A partnership with HLC has been announced which is referred to above. This will result in a significant lowering of risk for some types of MSW projects and so is of interest for Guernsey. It is too early to assess any direct tangible results of this agreement in terms of improving the processing of MSW.*

*Collaboration agreements for the French and Spanish markets were announced recently with credible local partners.*

- ◆ They have also announced partnerships aimed at processing tyres, sewage sludge and some other watery wastes and deriving value-added products from these wastes. While these are important initiatives for the Company, they are not of direct and imminent relevance to the decision process within Guernsey.

Over the last year the Company has moved forward with a number of initiatives that are of significance to their development and which may significantly enhance their medium term competitiveness in the emerging pyrolysis and gasification market. While these are important to the company, they are not of direct relevance to Guernsey's upcoming decision on the award of a turnkey contract. Compact Power have yet to demonstrate their technology for MSW applications through extended operation at any reasonable scale. Until they do, we continue to hold our previous view that selection of this process as the sole resource for handling Guernsey's waste could involve inappropriate levels of potential risk and uncertainty relative to any benefits that the technology has over incineration.

### GEM

GEM have not made the progress over the last year that was hoped for. This is partly due to circumstances outside their control.

- ◆ Their lead project at Bridgend has still not reached 'commercial close'.

*There have been complex negotiations involving the owner of the site and others that have not moved forward in the way anticipated.*

*One complicating factor was that TXU was their partner for energy offtake. The demise of TXU in the UK was a setback at an unfortunate time.*

*Since our last report, GEM state that they have now completed limited trials to couple the various process elements together and claim that these were successful. As yet, we have not had an opportunity to review data from these.*

*GEM are still hopeful that the project will proceed.*

- ◆ The company are known to be pursuing a number of projects throughout the UK. They themselves have named Swansea as one of these, but so far no project has contractually closed.
- ◆ To date, therefore, the company's experience base derives from very small scale trials at pilot scale, which, we feel, would not qualify them for consideration in Guernsey.

### IET

The commercial status of the IET TOPS process is worse today than at the time of our earlier report.

- ◆ The company failed in their efforts to secure funding for their project in Weston-super-Mare. This was largely due to the fact that the process concept has not yet been demonstrated at any scale. Commercial lenders were reluctant to advance funds without greater certainty of the viability of the process (similar problems have been experienced over the last year by at least three other process developers in this sector).
- ◆ The company is still trying to find a backer for the project, but in the meantime their temporary Authorisation from the Environment Agency for this facility has expired (at the end of 2002). If the project is reborn then they would have to re-apply for a permit and it is possible that, in the current context, the EA would require them to make a full application, rather than giving a new temporary permit, which would be a lengthy process and involve considerable extra cost.
- ◆ The company have no other active projects and the future of the TOPS process and the Weston project both seem uncertain.
- ◆ In this context, the company has scaled back its resources to a skeleton team operating largely from their homes.
- ◆ Meanwhile, recognising the difficulty of obtaining project finance and insurance for an unproven process, IET have negotiated a licence for an alternative technology sourced from overseas. This system has been developed by Entech in Australia and is now being rebranded for Europe as the Entech-TOPs system. It appears to be a relatively standard two stage process (gasification followed by combustion) with some limited operational experience. We have not, as yet, formally appraised the process. The availability of this system through IET will offer further choice to those European

customers who have particular reasons for wanting this type of technology, but it does not materially affect your decision.

### THERMOSELECT

Thermoselect have made some progress during the year towards re-establishing confidence in their technology. They were in a market leading position three years ago but then hit a number of issues associated with their flagship project at Karlsruhe, Germany. A recent plant visit by Juniper seems to indicate that these problems have now been addressed and we are currently re-evaluating the technical status of this process.

The company's licensee in Japan (Kawasaki Steel), meanwhile, has made steady progress in that market. Their first plant, at Chiba near Tokyo, is reported to be operating well. We will visit this plant next month. Further orders are in hand.

The process is therefore beginning to build an operational record at full scale facilities that could provide a basis for establishing confidence in the technology. Nevertheless commercial confidence in this process has been significantly impacted by adverse press coverage (especially in Germany of the earlier difficulties, which led to the loss of several projects throughout the world over recent years.

This technology is complex and would normally be more expensive than conventional incineration on a like-for-like basis. It is also optimised for a plant capacity that is larger than that needed in Guernsey.

While progress seems to be being made, there is still far less track record with this system than with the proven processes that were shortlisted for tender.

### WASTEGEN (TECHTRADE)

This is one of the more proven systems available and the company has made some further progress during the last year.

- ◆ There has been a plant in operation for many years at Burgau, Germany and, since our last report, the second facility at Hamm (also in Germany) has been handed over to the customer.

*When we visited this plant it was not operating and the clients (RWE) were themselves undertaking repairs to a part of the process.*

*WasteGen did not seem to be fully involved in either the engineering of these changes or in the decision making process. Some elements of the design at the Hamm plant are different from those that WasteGen say they would use at other facilities. They also do not seem to have full access to operating data from the plant.*

*Thought the facility is a valid reference for WasteGen's core pyrolysis technology, it is unfortunate for the company that the different overall plant configuration reduces the value of the facility as a whole in building confidence in stand-alone facilities to process unsorted MSW – as would be the case in Guernsey.*

- ◆ WasteGen have announced a partnership with Stone & Webster, a large international engineering company. Together the two companies are pursuing projects here and overseas. Stone & Webster's reputation will help with obtaining insurance and finance for projects as well as bringing a larger level of engineering resources and experience for project implementation.
- ◆ Despite active marketing in the UK over several years, the company has not yet announced any firm projects to date.

## CONCLUSIONS

- ◆ There are still technology risks associated with adopting any of the new technology approaches.
- ◆ In our judgement, it would not be appropriate to adopt less proven technologies in a context, such as Guernsey, where the entire community's waste disposal service relied upon that facility for managing virtually all of their solid wastes.
- ◆ Developments within this industry sector over the last twelve months have not materially altered our earlier conclusions.
- ◆ Some encouraging progress has been made by particular companies, and a considerable number of plants have been recently completed in Japan, but other suppliers have failed either financially or technically during the year.

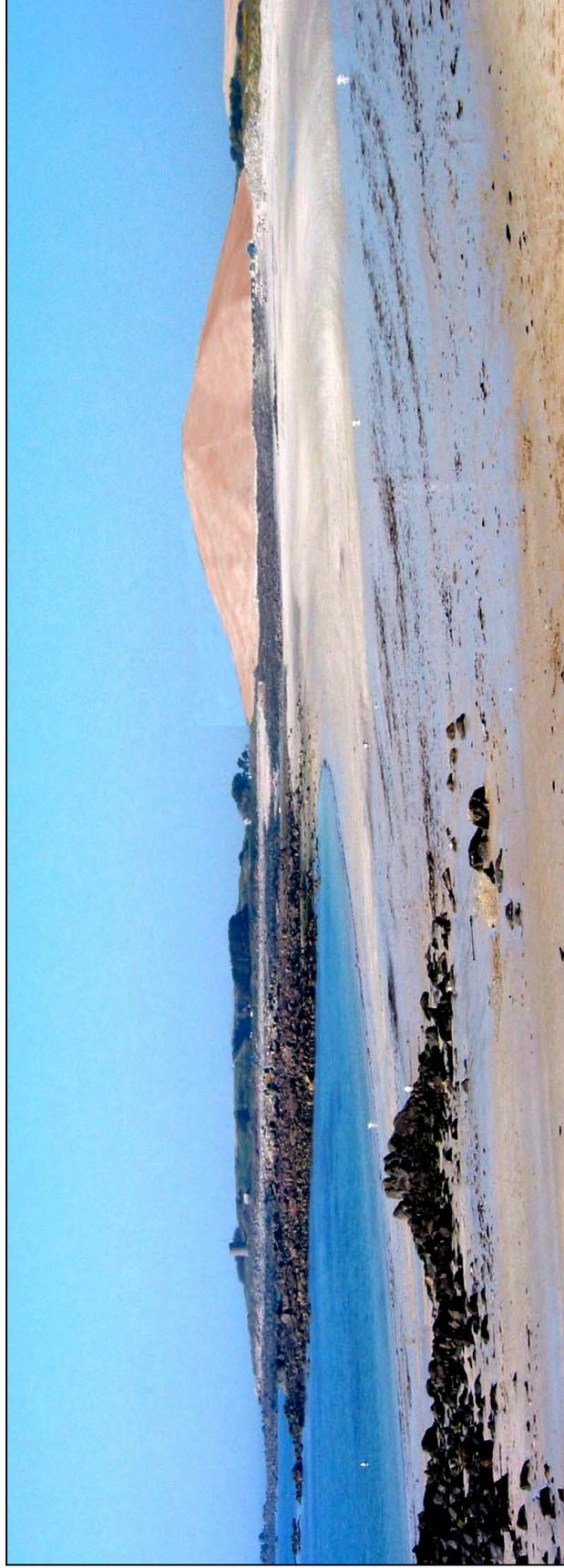
- ◆ The track record of many of the leading contenders over the last twelve months has increased, not decreased, the perception of risks associated with such novel approaches.
- ◆ The failure of some companies, and the slower than forecast progress at others, should, in our view, make The States of Guernsey less inclined to consider novel solutions instead of the proven incineration processes which have been tendered.

**Appendix 2**

**Sustainable Options to Extend Landfill Life**



Final Contour Resulting from Landraising at Falla's Field, mid 2023



Final Contour Resulting from Landraising at Falla's Field and Chouet Headland, 2095



**Appendix 3**

**Board of Health's Response to the Strategy to Extend Landfill Life**

Ref: B1.5

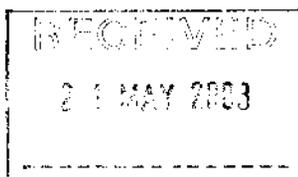


States of Guernsey

**BOARD OF  
HEALTH**

JOHN HENRY HOUSE,  
LE VAUQUEDOR,  
ST. MARTIN'S, GUERNSEY  
GY4 6UU, CHANNEL ISLANDS.  
TEL. 01481 735241  
FAX. 01481 235341

The President  
States Board of Administration  
Sir Charles Frossard House  
P.O. Box 43  
La Charroterie  
St Peter Port  
GY1 1FH



19 May, 2003

Dear Deputy Berry

### **Energy from Waste Facility – Status and Way Forward**

I refer to your letter dated 23 April 2003 and the attached section of the policy letter in respect of the procurement of an energy from waste facility.

In its role as waste regulation authority for Guernsey, the Board has adopted the policy that the best available technique is employed for any waste disposal or treatment process. The new Control of Environmental Pollution Law that the Board intends to bring before the States later this year will specify that best available techniques be employed for all waste activities.

The Board does not consider the landfilling of untreated putrescible waste to be the best available technique for waste disposal and it is intended that the standards of the EU Landfill Directive will be applied to any proposed new putrescible landfill site.

It is most unlikely that any new applications for landfilling untreated putrescible waste will be issued with a licence by the Board or any subsequent waste regulation authority. The establishment of a new landfill site for untreated putrescible waste, therefore, should not be considered an option.

Extensive research and consultation over many years has established that the best environmental option for waste disposal in Guernsey is the early procurement and operation of an energy from waste facility designed to utilise best available techniques for pollution prevention.

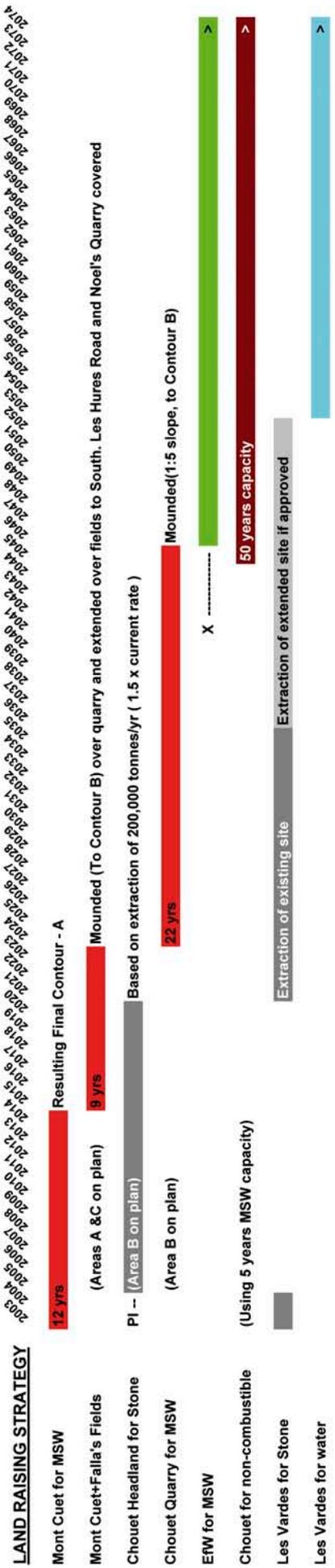
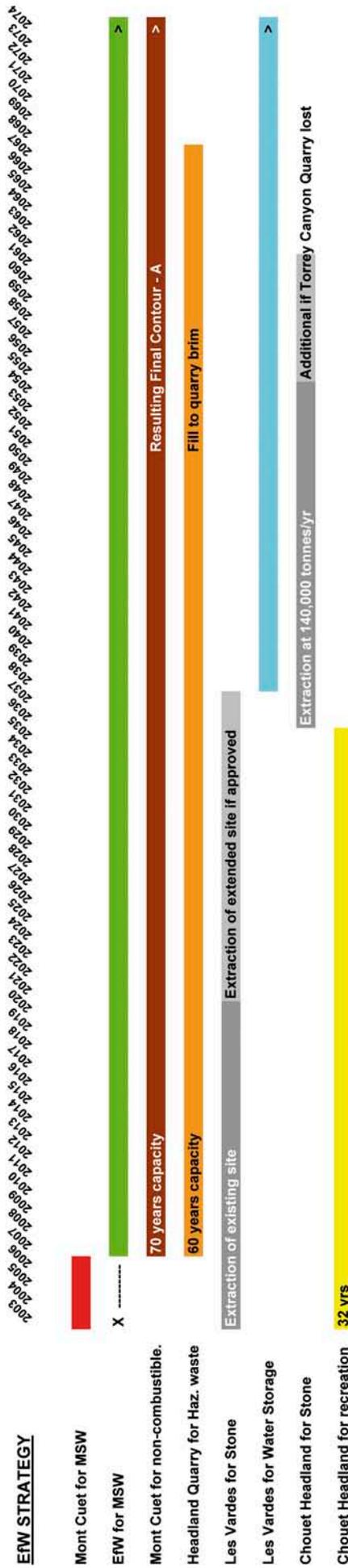
The Board, therefore, supports the procurement of an energy from waste facility without further delay and opposes any extension of the landfilling of untreated putrescible waste. The Board would be happy for this letter to be appended to your policy letter.

Yours sincerely

P J R Roffey  
President

#### **Appendix 4**

**A time line setting out the key dates in respect of the Sustainable Options to  
Extend Landfill Life strategy**



X - Decision Point  
 PI - Planning Inquiry  
 Haz. Waste - treated fly-ash from EFW  
 MSW - Municipal Solid Waste

**Appendix 5**

**Response from the Housing Authority regarding the use of Board of  
Administration land adjacent to the EfW site for Temporary Accommodation  
facilities for Construction Workers**

PAC

# States of Guernsey HOUSING AUTHORITY



Sir Charles Frossard House  
P O Box 43  
La Charroterie  
St Peter Port  
Guernsey  
GY1 1FH

President  
Board of Administration  
Sir Charles Frossard House  
P O Box 43  
Charroterie  
St Peter Port GY1 1FH

25<sup>th</sup> November 2002

2002 AON 9 Z

Dear Deputy Berry

## **ENERGY FROM WASTE FACILITY CONSTRUCTION – TEMPORARY ACCOMMODATION**

Thank you for your letter dated 29 October 2002 concerning the proposal to accommodate workers concerned with the Waste Facility contract in temporary accommodation sited on States owned land and in Furzedown which is now in States ownership.

I confirm that the Authority supports the proposal to accommodate staff in this way so as to reduce pressure on the housing stock.

I also confirm that under the provisions of Section 65 of the Housing (Control of Occupation) (Guernsey) Law 1994, no provision of the Law applies to dwellings in the ownership or possession of the States. The word “dwelling” in this context means any premises or any part of any premises used or usable for the purposes of human habitation.

This means that, at present, persons accommodated in either Furzedown or temporary accommodation on States owned land, would not require housing licences.

One effect of this is that the persons employed on the contract and accommodated in this way would not be required to declare any criminal convictions that they may have, which is a requirement in respect of any person making application for an employment related licence.

In seeking to solve the accommodation problem for the contractor the Authority feels sure that it is not the Board’s motive to avoid the need for employees to be subject to the criminal record checks which would apply if they needed housing licences.

The Authority had considered requesting a voluntary arrangement to declare convictions but realised that this would be unenforceable and could possibly infringe an individual’s rights as it would not be “in accordance with the law”.

However, the provisions of Section 65 can be suspended by the States by Ordinance. The Ordinance can be specific to an individual Committee of the States or to individual properties.

The Authority would therefore propose that the States be requested to approve an Ordinance which suspended the provisions of Section 65 in respect of the property Furzedown and any temporary accommodation constructed on States owned land for the purpose of accommodating persons who are not States employees.

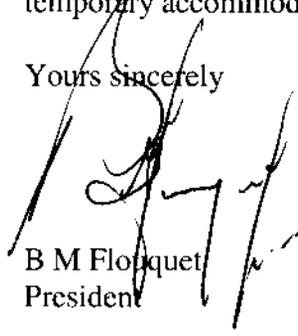
If such an Ordinance were approved the employees of the contractor and sub-contractors so accommodated would require housing licences and would therefore be subject to the requirement to declare their criminal records in accordance with the Law.

On a more general point, the Authority is concerned that the problem of accommodating construction workers on States projects can be overcome by providing accommodation on States owned land but no such facility is currently available to construction firms undertaking private contracts.

The Authority considers that there should be a coordinated approach across the relevant States Committees to ensure equitable treatment for contractors engaged in either the public and private sectors.

The Authority would be obliged if you would append this letter to your policy letter. It is also requested that you include a proposition to direct the preparation of an Ordinance to suspend the provisions of Section 65 in respect of Furzedown and the temporary accommodation as set out above.

Yours sincerely

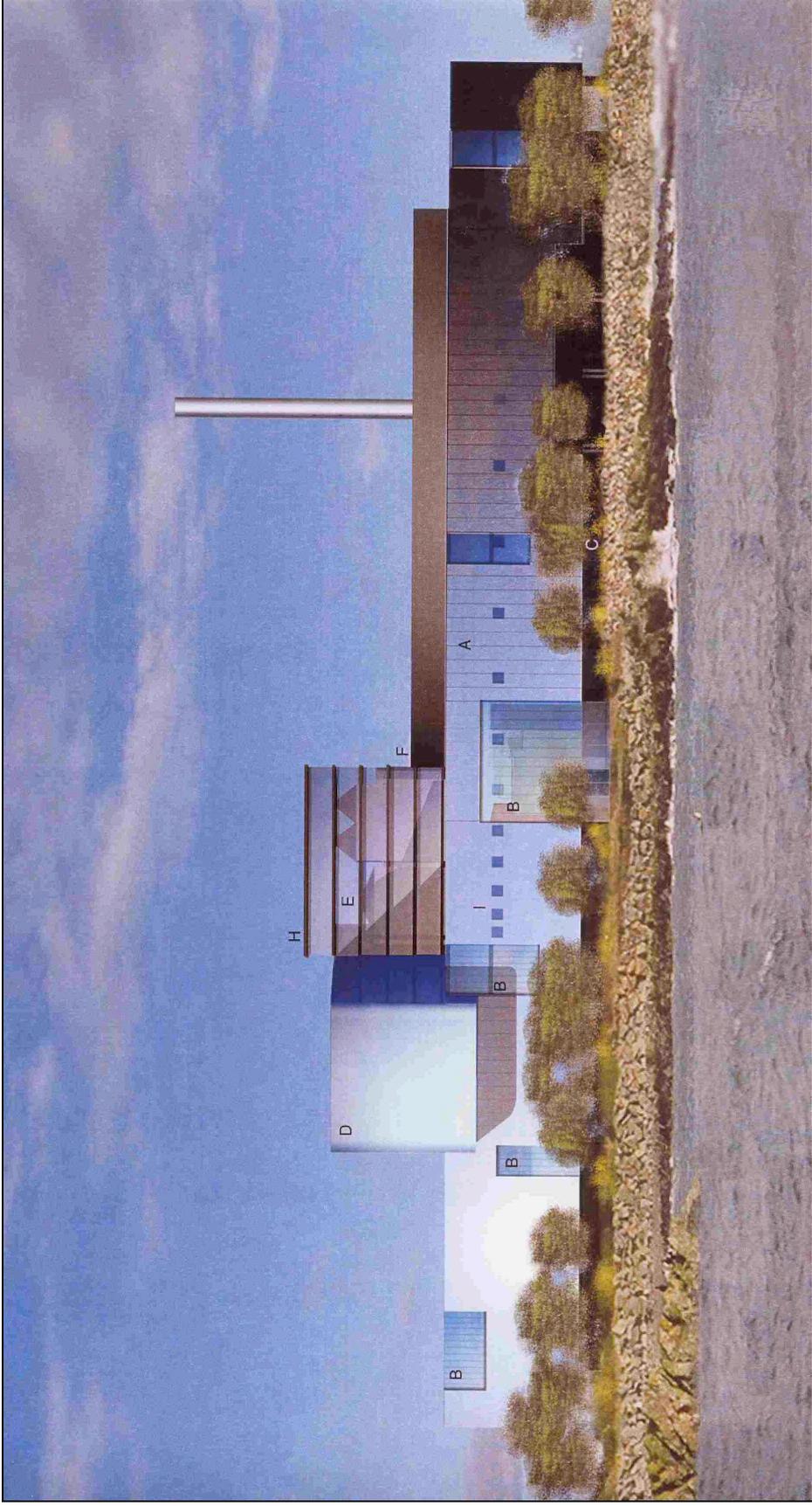


B M Floquet  
President

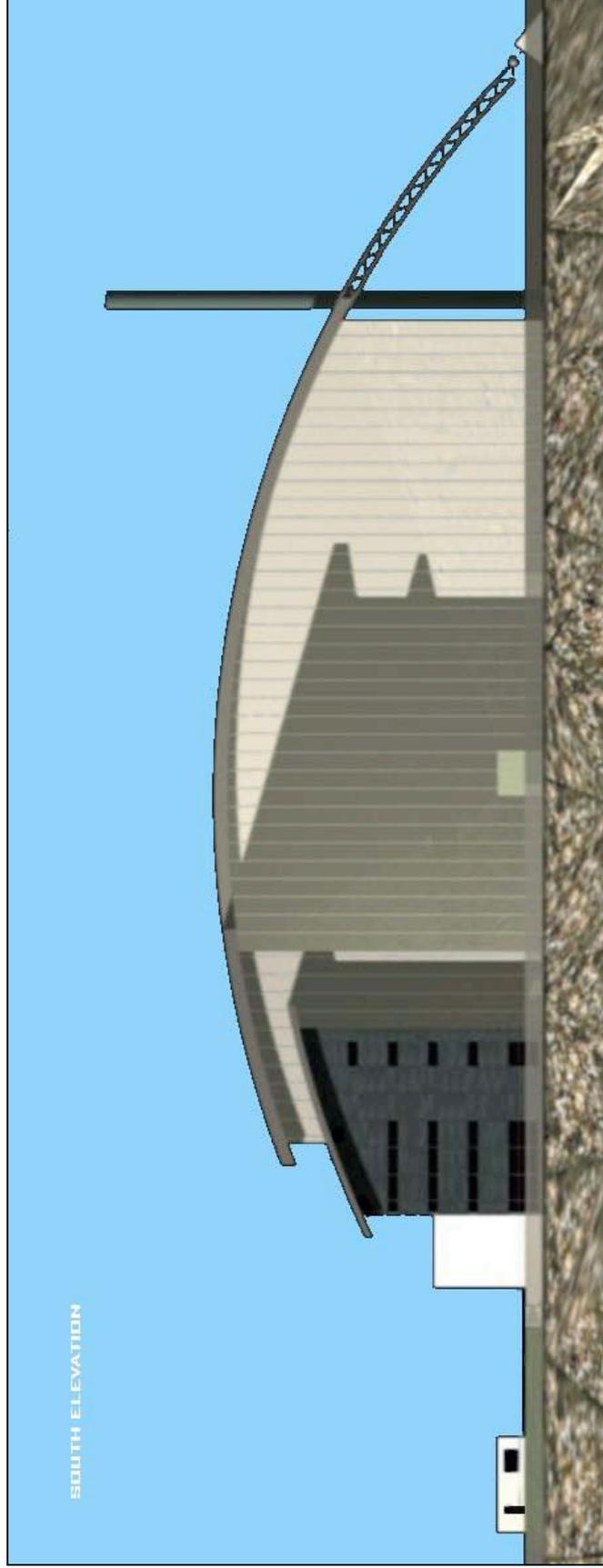
**Appendix 6**

**Tenderers' Architectural Concepts**

Martin Engineering Systems – Architectural Proposal



Lurgi – Architectural Proposal



**Appendix 7**

**Tender evaluation report**

# GUERNSEY TECHNICAL SERVICES

Guernsey EfW Plant  
Tender Appraisal Report

June 2003

Job 157003K  
Ref.No. 834-031226  
Edition Final  
30 June 2003

Prepd. KJJ/eas/cas/sad/RDC/JMN  
Checked PEHA  
Appd. TR

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## 1. Background

The States issued in July 2002 an Invitation to Tender for the Guernsey Energy from Waste plant. Tender clarification meetings were held in October 2002 and two Tenderers returned their Tenders on 24 January 2003. Tender clarification meetings were held in February 2003 to discuss the initial findings and preliminary results of the initial Tender evaluation. As a result of these meetings it was resolved (a) that the Tender prices were unacceptably high, (b) that the costs of building a plant to a sophisticated architectural level were too high and, (c) that the States would have to accept an increased risk sharing. At the same time, both Tenderers would have to clarify their Tenders in a number of areas. As a result, an amended ITT was issued to the Tenderers on 2 April 2003. Both Tenderers responded to the Amended ITT on 27 May 2003 and meetings were held with each of them in early June 2003 to clarify their responses. Out of the June 2003 meetings came a further round of clarifications resulting in responses to final questions returned to the States by 23/24 June 2003.

It is now the States' intention to identify a Preferred Tenderer and enter into a Letter of Intent (LOI) with such party, which will allow the States and the Preferred Tenderer to develop the current Tender from its current base level to a final level and concurrently with this, apply and procure for the grant of Planning Permission to build the plant and Environmental Licence to operate the plant.

On the basis of the responses given by the two Tenderers to the various ITT documents and requests for further clarifications, this Tender Appraisal Report presents our assessment of the robustness and degree of compliance with the specifications of the two Tenders.

The present Tender Appraisal Report contains the combined comments and assessments of RAMBØLL, PHMcCarthy and Tods Murray.

## 2. Presentation of Tenderers

### 2.1 LURGI

#### 2.1.1 Organisation

LURGI (UK) Ltd. is the proposed contract holder. LURGI (UK) Ltd. will procure the design and delivery of the key mechanical components from their sister company LURGI Energie & Entsorgung.

For the purpose of Civil and Building Works, LURGI propose to sub-contract with Hochtief (UK) Ltd, who, in turn, propose to sub-contract with Mott McDonald Ltd. for architectural design work.

Cyclerval/TIRU is LURGI's proposed operator for the 2-year operation part of the Project.

LURGI (UK) Ltd. and also LURGI Energie & Entsorgung are both wholly owned companies of German company LURGI Lentjes AG, which employs 607 full time equivalents as per 1<sup>st</sup> quarter 2003.

The parent company of LURGI Lentjes AG is the German company 'mg technologies ag', employing a total of 31,785 full time equivalents as per 1<sup>st</sup> quarter 2003.

'mg technologies ag' is rated '5A 2' by Dun & Bradstreet, where '5A' represents a company net worth of +€50M and '2' represents low risk.

LURGI (UK) Ltd. is rated '1A 2' by Dun & Bradstreet, where '1A' represents a company tangible net worth of £0.7-1.5M and '2' represents low risk.

#### 2.1.2 Parent Company Guarantee (PCG)

LURGI (UK) Ltd. have not yet formally confirmed that a PCG will be provided from mg technologies ag (its ultimate parent company) as requested by the States.

### 2.2 MES

#### 2.2.1 Organisation

In the MES Tender CNIM/Spie/Falla have proposed (a) that, instead of contracting with the States/SPC in CNIM's own name, the Contractor will be a Limited Liability Partnership (LLP) formed under the United Kingdom's Limited Liability Partnerships Act 2000 (with the initial members of the LLP being CNIM, Spie Batignolles and RG Falla) and (b) that the LLP would then sub-contract with

CNIM for the Process Work and with a Spie/Falla joint venture company for the Civil Works.

A key feature of LLPs is that the liability of the members of the LLP is limited to the amount of capital they contribute to it (usually just a nominal sum) and, in the UK, many traditional partnerships (such as law firms and accountants) are actively converting to LLP status solely in order to limit their liability. There also are taxation treatment benefits for LLP members.

**Questions:** The key questions to be answered in relation to the LLP proposal are:

- Q1:** Why is an LLP being proposed by the Tenderer for this turnkey contract?
- Q2:** Are there any disadvantages to the States/SPC of an LLP being the Contractor?
- Q3:** Are CNIM prepared to contract with the States/SPC in their own name (as envisaged in the ITT) if an LLP proposal is not acceptable to the States/SPC?

**Answers:** From the evidence so far presented by CNIM and the information gleaned at the tender meeting with CNIM, Spie Batignolles and RG Falla on 11 June 2003, the answers to the above questions would appear to be as follows:

- A1:** Unlike LURGI, CNIM have made a policy decision to avoid (wherever possible) assuming sole responsibility for turnkey projects and in particular CNIM prefers to avoid liability (a) for Civils Works (n.b. the island location and Longue Hougue's civil engineering challenges are likely to have shaped some of CNIM's thinking on this) and (b) for the management of interfaces between sub-contractors. The LLP structure is intended to implement this policy change and seeks to achieve this by pigeon-holing the design and construction responsibilities of the individual LLP members (see also paragraph 2.2.2 below) and limiting their personal liability by utilising the legal protections afforded by the LLP. The marketplace (i.e. the willingness of clients to accept CNIM's LLP proposal) will determine whether CNIM's policy change is successful, but so long as their competitors are not suggesting LLPs we feel that it will increase the attractiveness of their competitors' tenders over those of CNIM for turnkey projects. At the tender meeting on 11 June 2003, CNIM stated that they were already using the LLP structure in an incinerator project in Sheffield although we have ascertained firstly that the LLP is merely a sub-contractor to the main Integrated Waste Management Operator, with whom CNIM have an well established trading relationship, (rather than the procuring UK Local Authority) and that the contractual arrangements between the proposed LLP and the

Integrated Waste Management Operator have not yet been fully finalised. We consider that the LLP proposal is contrary to the turnkey objective of the States, which is to select a substantial, experienced preferred Tenderer (being an existing major engineering company possessing a demonstrable track record, assets and financial standing) who can be entrusted with sole responsibility for successfully delivering this strategically vital Project (and who will select its sub-contractors and suppliers with great care in the knowledge that it is contractually responsible for them).

**A2:** We can see no advantages (and many disadvantages) to the States/SPC of proceeding with the proposed LLP structure. Given the nature of process engineering projects (and Energy-from-Waste projects in particular), the States' preference has been (and remains) to enter into a turnkey contract with the optimum Tenderer in order to (a) pass the risk and responsibility for delivering the Project to a skilled and experienced process engineering contractor (for which the States is prepared to pay a premium) and (b) create a single point of responsibility for the Project, rather than for the States to be forced to take on the uncertainties, risks and responsibilities of a "hands-on" day-to-day Management Contracting-type role for what is a highly complex and unfamiliar project. Having regard to this, a consequence of the proposed LLP structure would be that the States would (i) necessarily become embroiled in apportioning responsibility/blame to individual LLP members (e.g. for delays, defects, failures, omissions, damages etc), (ii) require to be involved in resolving disputes between and among the individual LLP members and (iii) require to pay each of the LLP members separately.

Therefore, it could be argued that MES's proposed LLP structure creates a Management Contracting arrangement whilst retaining the outward appearance of a turnkey contract.

Each of the Tenderers for this Project have pre-qualified on the basis on the financial, technical and commercial standing and suitability of their own companies to be the main Contractor. An LLP is a legal entity, which is wholly separate and distinct from its members (who of course can change at any time) and must be viewed as such. CNIM have always been the leading party in their bidding consortium and, until 27 May 2003, there had been no suggestion that the Contractor would be an LLP other than a statement in their original Management Proposal that CNIM, SPIE and RG Falla were considering setting up a "special purpose vehicle" for the Project (without further clarification). At the June tender meeting CNIM were advised that the States needed to know whether CNIM were prepared to act as the main Contractor (and any price

implications of this) in order to create a “level playing field” on which the two tenders could be properly compared. Regrettably, to date, CNIM have not offered an alternative to their LLP proposal.

**A3:** At the tender meeting on 11 June 2003, the project team made it clear to CNIM/Spie/Falla that the LLP was not an attractive option and that the States’ preference was for the LLP proposal to be dropped in favour of CNIM assuming the role of main Contractor. CNIM’s representative suggested that their price would increase ‘significantly’ with this option as CNIM would wish to add a margin onto the prices of their consortium members. CNIM were asked to re-consider their price on this basis and respond to the States by 23 June 2003. However, as stated above, they have not done so.

The level of reliance that can be placed on the following information will depend on whether or not CNIM/Spie/Falla (or any of them) is named as the main Contractor instead of the proposed LLP.

CNIM S.A. employs a total of 2,457 (2001 figure) staff generating a €440M operating revenue (2001). Profits in 2001 were €15.6M. CNIM S.A. fully owns the British MES Environmental, MES SELCHP and LAB.

CNIM S.A.’s Dun & Bradstreet rating is ‘5A 1’, where ‘5A’ represents a financial strength of +€50M and ‘1’ minimal risk.

Spie Falla Ltd. is a Guernsey registered company with Spie Batignolles and RG Falla as its shareholders. This joint venture company has only just been established and accordingly the financial strength of the new Spie Falla Ltd. is as yet unknown.

### 2.2.2 Parent Company Guarantee (PCG)

The MES consortium’s letter to the States of 24 June 2003 states the following:-

*“we are proposing that the financial and/or parental warranties/guarantees are provided by the members (of the LLP) directly to the client for the scope and the value of the works that each member is responsible for under its Sub-Contract with the LLP”*

This proposal would therefore present the States with a number of considerable (and unwanted) problems including (a) that as the States/SPC will have no control over the terms of the members Sub-Contracts with the LLP, the value of any such financial and/or parental warranties/guarantees cannot be determined or relied upon (n.b. the Sub-Contracts would not be in the same terms as the main Contract and would be likely to exclude and/or greatly limit the liability of the sub-contracting members to the LLP) and (b) in order for the financial and/or parental

warranties/guarantees to be claimed against, the States would need to establish (via the LLP) which Sub-Contractor caused the breach or default (or their respective shares in the breach or default if several Sub-Contractors contributed to the breach or default) before being able to claim against only those financial and/or parental warranties/guarantees that are applicable to the defaulting Sub-Contractor (and the extent of the States' recovery would be limited by the exclusions and/or limitations of liability contained in the relevant Sub-Contract).

The ITT envisages that the Contractor's ultimate parent company will guarantee all of the obligations of the Contractor. However, if CNIM were appointed as the Contractor, a parent company guarantee would not be appropriate (given that CNIM S.A. has no parent company). However, the possibility that one of its main shareholders, namely Martin GmbH, could grant a guarantee cannot be explored until CNIM confirm that they would be willing to contract directly with the States/SPC.

### 2.3 Discussion

From the responses received to date, LURGI meet the overall requirement of accepting the key principles of the Contract and accepting the turnkey role. The proposed organisation is clear and in accordance with the intentions of the ITT.

As stated above, MES (CNIM) have proposed that an LLP be the Contractor, which deviates from the intentions of the ITT. The LLP proposal has not been presented to Guernsey's politicians and, as the proposed LLP does not yet exist (and would be an entirely separate legal entity from CNIM), the financial standing of CNIM, Spie Batignolles and RG Falla cannot be applied to the LLP (in respect of which no financial information can or will exist at present).

That said, the Dun & Bradstreet ratings of the two main companies supporting the Tenderers (CNIM and LURGI) are almost the same, albeit CNIM has obtained a slightly better risk score.

RAMBØLL would recommend to the States that a proper analysis of the financial strength of the Preferred Bidder and its financial back-up is carried out by a recognised firm of financial advisors.

The undertaking of further financial checks need not delay the entering into of the Letter of Intent with the Preferred Tenderer as the coming into effect of the Letter of Intent can be made to be conditional on the completion of such checks to the satisfaction of the States. However, we would recommend that the analysis be completed by 11 July 2003 (i.e. before the Billet is published).

### 3. Tender Evaluation Criteria

In the July 2002 ITT, a two-stage Tender Evaluation Model was presented to the Tenderers. The Model firstly required the Tenderers to pass an initial evaluation based on compliance with technical, management and financial requirements. None of the January 2003 Tenders passed stage 1 and so no Tenders were assessed against the stage 2 evaluations, which was a relatively simple score-based evaluation model.

In the April 2003 ITT, the Tender Evaluation Criteria were revised and formulated as follows:

“The Client has confirmed his priority in terms of balancing Capital costs against operational costs. The Client is looking for a sustainable solution to the island’s waste problems and a solution, which will prioritise minimising the Plant Lifetime NPV. This is in line with the previous instruction given.

Each of the Amended Proposals will be evaluated on the basis of (a) the capital cost elements, (b) the operational cost elements, (c) any qualifications to these and previous instructions, (d) the Plant Lifetime NPV and (e) robustness and successful track record of proposed technical solution.”

It is those evaluation criteria, which have been used in this report.

## 4. Technical Proposal

### 4.1 LURGI

LURGI technical proposal is based on the following key features:

- LURGI's own incinerator/furnace concept with roller grate technology.
- Tail-end type boiler with three empty passes prior to the horizontal convection part of the boiler.
- Wet flue gas treatment system with acid ash washing.
- Curved roof Architectural Concept prepared by Mott McDonald Ltd
- Four meter deep bunker with an option to increase to eight meters

Broadly speaking, LURGI's Technical Proposal complies with the main requirements set out in the various ITT documents. RAMBØLL can confirm that the proposed technology generally is well proven and that the proposed solution appears to have incorporated sufficient flexibility to allow for fluctuations in waste characteristics and waste supply.

During the Initial Period there will be a requirement to work further with the design of the plant prior to freezing it. The time allocated to this in the Letter of Intent appears to be adequate.

### 4.2 MES

MES's technical proposal is based on the following key features:

- Incinerator/furnace concept with Martin grate technology.
- Vertical bi-drum type CNIM boiler with platen superheaters in the second vertical pass. The proposed four-pass boiler is similar to the boiler installed in Stoke-on-Trent.
- Wet flue gas treatment system with acid ash washing
- Architectural Concept prepared by architectural firm Architrav
- 13 meter deep bunker

MES has proposed a €700,000 saving plus a further saving in Civil Works Element and administration costs for removing the Catalytic Ammonia Stripping system. It is our assessment that this should not be removed and in any event a similar piece of equipment is included in LURGI's Tender. For the purpose of comparing the two Tenders we shall therefore disregard this proposal.

Broadly speaking, MES's Technical Proposal complies with the main requirements set out in the various ITT documents. RAMBØLL can confirm that the proposed technology generally is well proven and that the proposed solution appears to have incorporated sufficient flexibility to allow for fluctuations in waste characteristics and waste supply.

During the Initial Period there will be a requirement to work further with the design of the plant prior to freezing it. The time allocated to this in the Letter of Intent appears to be adequate.

#### 4.3 Technical discussion

##### 4.3.1 Reception facilities

#### LURGI

The proposal for the tipping hall provides for three unloading bays. One of the unloading bays will allow for non-tipper lorries. The bunker has a capacity of 3,500 m<sup>3</sup>. It is possible to shut off each of the bays.

The proposed bunker is 4 meters deep. It is RAMBØLL's view that such a shallow bunker will not enable efficient bunker management and we do not believe it is in accordance with Good Engineering and Operating Practices. A shallow bunker will require the crane operator to constantly remove waste from the tipping area and if he fails to do so – the waste will build up and potentially end at the reception hall floor. The crane operator should concentrate on mixing the waste and hence generate a homogenous fuel for the plant and this is best done in a deeper bunker.

LURGI has given an option price for making the bunker 8 meters deeper at an additional cost of £565,600, which is recommended to be included in the design. The proposed bunker is approximately 12 m wide and 32 m long. It is recognised that if the bunker shall be 8 meters deep and have the same footprint then obviously, the capacity will be much larger. In the Capital costs capitalisation we have therefore included only two thirds of the proposed extra costs.

Bulky items can be discharged directly in the bunker. The waste crane will take the items to the shredder, which is located at the hopper deck.

#### MES

MES have proposed four unloading bays. One of the unloading bays will allow for non-tipper lorries. The fourth bay is reserved for a shredder (proposed as option, but has been included in the tender evaluation).

Their proposed bunker has a capacity of 3,500 m<sup>3</sup>. The bunker has a depth of more than 13 m, a width of approximately 12 m and a length of approximately 18 m. This is considered sufficient for performing a proper mixing of the waste.

#### Evaluation of Reception and Storage Facilities

- Bunker design of MES is given preference for the base proposal comparison. LURGI has proposed and priced an alternative bunker design, which will level out any differences and it will require review of the bunker footprint.
- Shredder design and location of shredder at hopper deck for LURGI is given preference compared to MES with a shredder at one of the unloading bays. Bulky items are handled more easily and safer in the proposed LURGI solution.
- In both cases the waste cranes will feed the baler. The bunker can therefore be used as a buffer. Both balers are movable for off-site use.
- Both Tenderers propose two waste cranes with a spare grab
- The reception hall proposed by MES is 24 meters long. The height does not appear from the drawings included in the tender. The reception hall proposed by LURGI is 16 meters long and provides the required free height of 9 meters. Both solutions provide unloading under dry conditions.
- Both reception halls are based on the entrance being parallel to the incineration line limiting the space available for turning vehicles.
- The weighbridge systems are only described to a limited extent in the proposals. The location of the weighbridges has not been included in the layout drawings. The entrance facilities and separation of traffic for trucks and domestic traffic should therefore be discussed further.

Item	MES	LURGI
Reception hall	Equal	Equal
Bunker design	Equal	Equal*
Shredder	-	+
Baler	Equal	Equal
Waste cranes	Equal	Equal
Spot check inspection	Equal	Equal
Waste oil incineration	Equal	Equal
Reception facilities etc.	Equal	Equal

\* Based on LURGI's alternative bunker design.

#### 4.3.2 Incinerator technology

##### LURGI

###### *Grate*

LURGI has proposed a roller grate type of LURGI's own design.

LURGI's proposed roller grate system consists of 6 cylindrical rollers arranged in series at an angle of 20°.

The rollers rotate at different controllable speeds and transport/cascade the waste from the waste inlet to the outlet – the slag chute and the succeeding wet slag discharger. The proposed roller grate is well proven and performs very well.

Some characteristics of the roller grate are among others a great flexibility to handle fluctuations in waste compositions, heating values and waste flow.

The roller grate is in general also characterized as a robust, reliable system including good burnout of gaseous and solid species – resulting in high quality of the bottom ash/slag.

It appears from the grate-data given by LURGI that the width of the grate is sufficient with a good margin to operation at all load points in the capacity/firing diagram. Thermal and mechanical loads on the grate are moderate at any load point in the Capacity Diagram.

*Waste Feed Hopper and Feed Chute, Ramfeeder, Wet Slag, Slag Discharger, Wet Chain Conveyor to Grate Riddling etc.*

The above-mentioned auxiliary main components/systems are, to a great extent LURGI's own standard design, well proven and reputable.

#### *Combustion Air Systems*

Primary air is supplied separately to each of the six grate rollers. Secondary air is injected to the furnace through nozzles to secure good turbulence and complete burnout of the flue gases.

The proposed systems are of LURGI's standard design and dimensioned for operation in all load points in the Capacity Diagram.

#### *Start-up and Support Burners*

Burners are installed to fulfil the requirements in the EU Waste Incineration Directive including the requirement concerning retention time of the flue gasses (Temperature 850 °C, min 2 seconds).

#### *Precautions against boiler corrosion*

LURGI has in the proposed design configuration of the boiler made an attempt to limit/minimize the risk for corrosion of boiler walls and super heater tubes.

In this respect it should be mentioned that an extension of the protection of the boiler walls in the 1<sup>st</sup> pass should be considered if LURGI should be selected as the Preferred Tenderer for further negotiations.

Apart from this remark the boiler design is considered conservative and optimised to a great extent to avoid, minimize to occurrence of corrosion.

## MES

### *Grate*

MES have proposed MARTIN's own designed "reverse acting" grate type. MARTIN's "reverse acting" grate is a well-proved, well-experienced grate implemented in many plants worldwide and with good operational results. MARTIN's grate operates effectively on a wide range of waste types, waste compositions, and waste heating values.

The grate secures a high quality of burnout of gaseous and solids and fulfils even strict requirements.

Operational experiences also show a long lifetime of the grate bars and grate components. It appears from the data forwarded by MES that the specific grate for the Guernsey Plant is dimensioned for moderate thermal and mechanical loads with a sufficient margin to all load points on the capacity diagram and to MARTIN's own design guidelines. The grate for Guernsey consists of two tracks arranged in an angle of 26°.

### *Waste Feed Hopper, Feed Chute, Water Ramfeeder, Wet Slag Discharger, Grate Riddlings Pneumatic Conveyor System*

The above-mentioned auxiliary main components/systems are, to a great extent, MES' own design, well proven and reputable.

### *Combustion Air System*

The proposed air combustion system is designed and dimensioned specifically for the Guernsey Plant and in accordance to MES' well proven and reliable technique.

### *Start-up and Support Burner*

MES have proposed one burner for the start-up purpose and for the purposes of complying with the EC Directive on flue gas emissions.

## Assessment of LURGI's and MES' Incinerator Systems

The proposed incinerator systems from LURGI and MES are both well-proven, reputable systems and (to a great extent) of the respective companies' own design. Despite essential differences in conceptual design not least concerning the grate design and functioning, both systems are expected to perform very well on the waste types and waste compositions specified for the Guernsey EfW Plant.

RAMBØLL's assessment of the proposed incinerator system is that despite essential differences in design etc. the two proposals are equal from a technical/functional point of view.

### 4.3.3 Boiler

## LURGI

LURGI have proposed a Tail-end type steam boiler with three open/empty vertical passes prior to the horizontal convective pass fitted with evaporator-, superheater-, and economizer tube bundles. The Tail-end boiler type is a well-known concept and operating experiences exists from many plants.

It appears from the comprehensive, detailed boiler data forwarded by LURGI that the specific Tail-end boiler proposed for the Guernsey Plant complies with and fulfils Good Engineering and Operating Practices inrelation to the configuration and dimensioning of this particular type of boiler.

In general the proposed Tail-end boiler also complies with the main requirements set out in the various ITT documents.

## MES

MES have proposed a 4-pass vertical bi-drum boiler of CNIM design.

The 1<sup>st</sup> pass of the boiler is an open, empty radiation pass.

The 2<sup>nd</sup> pass is fitted with platen superheaters.

The 3<sup>rd</sup> pass is a convective pass with vertical evaporator tube bundles connected to the upper and lower boiler drums.

The 4<sup>th</sup> pass is fitted with a section of the economiser.

The last economiser section is located downstream the Electrostatic Precipitator.

It should be mentioned that MES have decided to propose a vertical boiler instead of the originally offered Tail-end boiler. MES refers to the vertical boiler being compact and requiring less space, which has a knock-on effect on the costs of the building envelope.

MES have referred to numerous plants operating with this vertical type of boiler.

MES have recommended that the States contact the Stoke-on-Trent plant for information on their operational experiences with the CNIM boiler (which is of similar type). RAMBØLL therefore made contact with the Stoke-on-Trent plant operator. It appears from the information obtained from the Stoke-on-Trent Plant that a systematic “rolling” plan for the replacement of superheaters is both convenient and necessary. At the Stoke Plant the final superheaters are replaced in planned intervals of two years. The final superheaters in a Tail-end boiler normally have a considerably longer lifetime.

#### *Protective precautions against boiler corrosion*

MES have proposed protection of some parts of the boiler walls by lining with refractory/tiles and inconel cladding, some shielding of superheater tubes etc.

In their Tender, MES have stated (and defined) guarantees concerning the lifetime of boiler walls and platen superheaters (as was requested for in the amended ITT). However, MES do not guarantee a minimum lifetime 5 years for the final platen superheaters. MES will guarantee a minimum lifetime of 2.5 years for the platen superheaters. These guarantees appear to be in line with the information obtained from the Stoke-on-Trent Plant.

#### Assessment of LURGI's and MES' Boiler Systems

The boiler proposals from LURGI and MES are characterised by essential differences in design, configuration and also by physical size as the proposed vertical boiler from MES is considerably more compact than the tail-end boiler proposed by LURGI.

It appears from each Tenderer's forwarded comprehensive boiler data that the boiler heating surfaces are significantly greater in the tail-end boiler from LURGI than in the vertical boiler from MES.

This applies to the evaporator boiler heating surfaces and not least the heating surface area of the superheater, which is approx. three times greater than those of the vertical boiler.

RAMBØLL is aware that the reason for this great difference in superheater heating surface is primarily caused by the special platen radiation superheaters located in high gas temperature in the second pass of the vertical boiler.

Apart from the above-mentioned conceptual differences between the two boiler types, it appears from the boiler performance data that the steam production is at the same level.

Focusing on maintenance, including the replacement of superheaters due to corrosion, it appears from the lifetime guarantees stated by MES and the information obtained from the Stoke-on-Trent plant that replacement must be expected to occur more often in the case of the vertical boiler. According to the Stoke-on-Trent plant a "rolling program" is needed.

RAMBØLL's experience of the lifetime of superheaters in a tail-end boiler confirms the generally acknowledged fact that the lifetime of the boiler part – particularly the superheater section is considerably longer than the guaranteed

lifetime of the platen superheaters of the proposed vertical boiler for the Guernsey plant.

Assuming a reasonable “rolling” maintenance and replacement programme, a high rate of availability and acceptable travelling times can be achieved, also with the proposed vertical boiler.

In conclusion, RAMBØLL would, however, have a preference for the tail-end boiler.

#### 4.3.4 Energy recovery

The following expected/guaranteed values have been given for the electricity production:

<b>Supplier</b>	<b>LP1<sub>sott</sub></b>	<b>LP1<sub>eott</sub></b>
<b>MES</b>		
Gross output	6.662	6.662
Parasitic load	1.425	1.425
Export (Guarantee)	5.237	5.237
<b>LURGI</b>		
Gross output	6.367	6.236
Parasitic load	1.761	1.765
Export (Guarantee)	4.510	4.375

sott : start of travelling time

eott : end of travelling time

We would add the following comments to the table:

- MES’s Guaranteed electricity export is 727 kW higher than that of LURGI’s
- Whereas MES have proposed to guarantee the arithmetic difference between the calculated gross output and the calculated parasitic load, LURGI has incorporated a (100 kW) margin and further stated that it is subject to final confirmation.
- In MES’s most recent response, they have included a statement “the parasitic load of the plant is considered as being due to the incineration process only, that is to say that only pieces of equipment at once necessary for the process and continuously working will be taken into account”. Such statement could indicate that parasitic loads required for building services is excluded from the guaranteed figure, but it is not clear. This should be further discussed, should the States decide to identify MES as the Preferred Tenderer.

- LURGI takes out part of the steam (10 bar, 255 °C) from the turbine to reheat the flue gas upstream the bag house filter from 119 °C to 130 °C. The reheating will require approximately 0.47 MW of heat. The purpose of the proposed reheating is to raise the temperature to avoid condensation in the bag-house filter and at the same time reducing the plume visibility. LURGI notes that the operating temperature of the bag house filter may be reduced to a lower level after the commissioning phase thereby reducing the steam consumption. In addition LURGI uses steam to strip out the ammonia in the ammonia stripper. The consumption of the stripper plant is approximately 310 kW. MES's proposal does not have similar arrangement. In case no reheating is applied the electricity production of LURGI's proposal would increase by approximately 100 kW (160 kW if ammonia stripper were to be excluded).

### Summary

- On the face of it, there is a significant difference in the guaranteed net electricity productions given by MES and LURGI. LURGI have applied a 100 kW margin, whereas MES have no margin between expected power production and parasitic load.
- The gross electrical output is higher for the MES proposal. We believe this is mainly due to the fact that LURGI's proposal uses steam for the reheating of flue gasses upstream of the bag house filter for obtaining the right operating temperature and (as a side effect) to reduce the plume visibility.
- For the purpose of calculating expected power sales, we will use in the case of MES 5.237 MW and in the case of LURGI 4.51 MW. It should be stated though that the genuine difference between those figures probably is less.

#### 4.3.5 Flue Gas Treatment

It is RAMBØLL's assessment that both of the proposed systems will be able to meet the European Waste Incineration Directive air emission limit values with a good margin.

The proposed systems differ in various respects. Most noteworthy is that MES's proposal eliminates the NH<sub>3</sub> slip from the SNCR process already in the flue gas treatment system (see separate entry about NH<sub>3</sub> removal below), which has a definite impact on the boiler design and ESP sizing.

LURGI's proposal removes SO<sub>2</sub> with NaOH under formation of a NaSO<sub>4</sub> solution most of which eventually is discharged with the treated wastewater. MES uses CaCO<sub>3</sub>, which results in the formation of an additional quantity of solid residue consisting of gypsum. The extra cost for disposing of the additional amounts of

solid residue is less than the extra costs associated with using NaOH and hence, for an overall point of view, LURGI's solution at current market prices is significantly more expensive than the MES solution. This is reflected in the Operating Fee.

The consumables are priced at £8.35 / £19.01 per ton of Waste incinerated and hence the annual difference is in the order of £640,000. This is significant when compared to the total annual costs of operating the plant (£3-4M) and, in addition, it is a genuine difference.

A third distinction is that LURGI's proposal removes the dioxins in a bag house filter, which requires re-heating of the flue gas after the scrubber. Most of the re-heat is made in a gas/gas heat exchanger, but LURGI have also included an additional steam re-heater, cf. previous sections, with a consequent parasitic loss of steam from the boiler. MES, on the other hand, removes the dioxins in a wet scrubbing process without any re-heat. This difference should imply a higher overall thermal efficiency of the MES system and it is one of the reasons for the slightly higher power production guaranteed by MES.

#### 4.3.6 Plume Visibility

Because of the different ways of removing the dioxins, LURGI discharges the flue gas at a temperature of 130 °C, which will make the plume invisible in significant part of the year.

MES discharges it at 60 °C, saturated with water vapor and it will be visible whenever operating. MES could, of course, be asked to re-heat the gas to 130 °C, but clearly this would have an adverse effect on both capital and operating costs.

Therefore, if plume visibility is a genuine issue, LURGI have proposed the better solution.

#### 4.3.7 Wastewater Treatment

Both of the systems proposed are expected to ensure that the water emission limit values will be met. Both Tenderers are concerned about the NH<sub>3</sub> slip from the SNCR process, which - they state, if not removed - may make the subsequent precipitation of heavy metals more difficult. As stated above, MES's solution already removes the NH<sub>3</sub> in the flue gas treatment system, while LURGI have added a stripper in the wastewater treatment system.

#### 4.3.8 NH<sub>3</sub> removal

As there are no air or water emission limit values for NH<sub>3</sub>, it may be worthwhile considering whether it is in fact necessary to remove the NH<sub>3</sub> with the consequent capital and operating costs. However, both Tenderers strongly recommend that their NH<sub>3</sub> removal processes be kept.

We would recommend continuing discussing this issue with the Preferred Tenderer during the Initial Period.

#### 4.3.9 Residue Handling

The systems proposed both comply with the residue handling requirements specified in the Employer's Works Requirements. Both Tenderers propose an acid ash washing system integrated into the wastewater treatment system and - in the case of MES - also in the flue gas treatment system. The gypsum from the MES SO<sub>2</sub> removal process ends up in the ash; consequently, MES must be expected to produce a little more treated ash for landfill disposal at Longue Hougue than LURGI.

LURGI's proposal removes the Mercury (Hg) from the acid wastewater before the acid extraction and has - thus - a separate residue stream: activated carbon with Hg (and dioxins).

RAMBØLL assumes that this stream can be mixed with the hydroxide sludge from the wastewater treatment and thus be landfilled. MES's proposal does not remove the Hg. Undoubtedly, most of it will end up in the hydroxide sludge, but it cannot be precluded that some Hg may adhere to unburned carbon particles in the ash and hence follow the treated ash to the Longue Hougue.

None of the Tenderers are able to provide *guarantees* as to the leaching behaviour of the treated residues, but LURGI *expects* to fulfill the levels asked for, tested as specified. MES's proposal refers to another different test method identical to that established at the Fribourg plant.

The lack of firm guarantees on offer should be viewed in context with the fact that - after all - there is limited experience available with ash washing.

On the basis of the responses received we are not able to rank one of the Tenderers ahead of the other for their treatment of Residues.

#### 4.3.10 Architectural Solution

The Amended ITT allowed the Tenderers to deviate from the original Architectural Scheme as prepared by S'PACE. Both Tenderers have done so and submitted their own architectural solutions. Following the clarification meetings, Lurgi have, as requested submitted text outlining their architectural approach together with coloured drawings and perspectives. LURGI have also submitted an additional cost of £82,300 if aluminium wall cladding is used.

In terms of materials and workmanship and compliance with the Employer's Works Requirements regarding durability, both solutions are broadly equivalent. In their answers to the clarification questions, MES (CNIM) have been more 'emphatic' than LURGI regarding compliance with the Employer's Works Requirements Civil Works requirements (refer to 4.3.11).

Neither Tenderer consulted with the Planners or the IDC as part of developing their architectural solutions.

Both Tenderers are of the view that this consultation will happen during the Initial Period. Consequently, there is a risk going forward with either Tenderer in that failure to 'sell' their architectural solution to the IDC during the Initial Period may result in having to change their design and increase costs.

At this stage, the States will need to take account of their own subjective view on the relative merits of the proposed architectural schemes of both Tenderers.

#### 4.3.11 Civil Works

The Civil Works questions for both Tenderers were presented in order to clarify the following:

- 1) Specific technical questions that could be answered definitively. e.g. design life of materials, treatment of structural steelwork, handling of drainage and disposal of process waters, contaminated water, foul sewage and surface water etc.
- 2) The 'Robustness' of their tender offers in relation to the site Fill materials viz temporary works sub-structures, foundations and the construction of pavements and services. The purpose of the questions was to establish a view as to what degree the Tenderers anticipated that additional costs would be incurred as a result of the site investigations into the Fill materials, which will take place during the Initial Period.
- 3) The degree to which the Tender offer will comply with the Employer's Works Requirements for Civil Works.

In relation to 1) above both Tenderers responded clearly and precisely to the questions asked. Outstanding issues to be considered as a result of these questions are as follows:

#### **LURGI**

- Disposal of temporary foul sewage flows
- Failure to get approval for on site accommodation of personnel
- Confirm 40 dBA Leq at 20m will be complied with and is included in the Base Contract Price
- No visual impact screening on top of the breakwater included for in the Base Contract Price
- Clarify exposure of cladding purlin support system,
- Piles not permanently cased
- Clarify breakdown of the quoted additional cost of £1.65m to deal with Fill washout through the Breakwater (if required)

**MES (CNIM)**

- No swipe card access system for visitors and staff is included in the offer.
- Noise limit 40 dBA Leq at 20 meters does not appear to be met.
- 3000m<sup>3</sup> of 'selected' backfill to be supplied the States to make up levels following Fill compaction.
- Are costs for doing works as described in the clarification question answers to prevent washout of Fill materials included in the Base Contract Price?
- No visual impact screening on top of breakwater included for the Base Contract Base.

In relation to 2) above our view is that CNIM have been more affirmative as to the robustness of their offer in responding to this question. That said, both Tenderers do not appear to have excluded significant elements. The outstanding main issue is the degree to which they have made cost allowances for stabilisation/consolidation of the Fill materials and the degree to which these may prove inadequate during the Initial Period.

In relation to 3) above the Tenderers responses were as follows:

**Question:**

'Please confirm that the tender offer includes for compliance with all the requirements of Employer's Works Requirements Section 4 Civil Works except where such requirements are superceded by the Amended ITT in which case, the amended ITT requirements would apply and be included'.

**LURGI Answer:**

'The emphasis of the amended ITT was to reduce cost and result in a viable project. Consequently the requirements of the EWR have been restricted by this ethos'.

**MES (CNIM) Answer:**

'Our proposal is based on the Employer's Works Requirements and the amended ITT, taking into account the current answers to your questions'.

Our view is that the LURGI answer is less robust and the implications should be clarified with them.

## 5. Management Proposal

The Management Proposal is supposed to demonstrate the Tenderers capabilities with the following areas:

- Tenderers organisation
- Management of Public Relations
- Management of Health, Safety and Welfare
- Management of Quality Assurance
- Staff, recruitment and training
- Facility Management

Regarding each Tenderer's organisation, refer to section 2 of this report.

In relation to the remaining issues, both Tenderers have confirmed satisfactorily that (a) they understand the importance of Public Relations, (b) that they understand Health, Safety and Welfare requirements including the implications of working to CDM regulations, (c) that they operate in accordance with appropriate ISO standards for Quality Management and (d) that they would both propose that the Plant can be operated by a staff of 25 people.

If MES's LLP proposal was dropped, the two Management Proposals would otherwise be assessed to be equal and satisfactory.

## 6. Financial Proposal

The Financial Proposals comprise the following figures:

<b>Term</b>	<b>Explanation</b>
Maximum Initial Period Fee	The Preferred Tenderer's fee for providing services during the 9-month, which will result the Planning Permission and Environmental Licence, will be obtained.
Base Contract Price	The quoted turnkey price for building and commissioning the plant. This price may change during the Initial Period.
Testing Period Fee	A flat rate of £50 per tonne of waste for treating waste during the commissioning period.
Annual Fixed Fee	An annual fee to cover fixed costs for having the plant ready to be operated.
Operating Fee	A tonnage related fee to cover variable costs for receiving, storing and incinerating Waste and for transporting Final Residues to their Delivery Points.

Further to the defined term items in the Financial Proposals, Tenderers have been asked to submit optional extra prices for the following items:

- Strategic Spare Parts
- Payment Bond

The States has agreed to the Tenderers request to accept the exchange rate risks for any changes in the exchange rate between the Euro and the Pound. The two Tenderers have submitted their Financial Proposals in a mix of € and £ and the figures in this report assumes an exchange rate of €1=£0.725 On this basis, all figures have been converted into one currency - £ Sterling.

In the case of LURGI 57 % of the Base Contract Price is € whereas the same figure in the case of MES is 68 %.

It should also be stated that all prices other than the Maximum Initial Period Fee are given in 1<sup>st</sup> July 2003 level on the basis that future payments would be indexed from that date.

Based on the Tender returns we have calculated the following financial values:

- **Base Contract Price**, which is the sum presented in the Tenderers' latest responses to our clarifications.
- **Sub-total A**, which is the sum of the Base Contract Price and the Maximum Initial Period Fee and hence should be the best estimate for the total cost from the signature of the LOI and up to Take-Over Date
- **Sub-total B**, which includes our assessment of any differences between the two Tenders. It should be emphasized that it only includes those issues, which we can assess on the given basis.
- **Price for operating the Plant in 20 years**, which is a calculated indicative NPV price for operating the plant. In this calculation it has been assumed that there is no difference in the Annual Fixed Fee, whereas we have used the quoted figures for the Operating Fee element.

The Base Contract Price and the Sub-total A are straight forward and they have been taken directly from the Pricing Schedules.

In Sub-total B, we have assessed and valued any differences between the two Tenders to ensure that we are in fact comparing like for like, as best we can on the current basis. The details are not presented in this report but below we have listed those elements, which we have included in our calculation of the Cap-ex capitalisation:

MES	LURGI
<ul style="list-style-type: none"> <li>• Insurance element taken out</li> <li>• Additional costs for shredder</li> <li>• Additional costs for Baling</li> <li>• Additional costs for Vacuum Cleaning System</li> <li>• Initial Period Fee not spent will be transferred to Contract Price. 15% of the Maximum Initial Period Fee has been added.</li> <li>• Optional price for Strategic Spare Parts</li> </ul>	<ul style="list-style-type: none"> <li>• Additional costs for deepening the bunker (2/3 of the option)</li> <li>• Additional costs for aluminium cladding on walls</li> </ul>

For LURGI, we were unable to take the insurance element out, as we do not have a breakdown of their Base Contract Price build-up. This is an issue, which should be further discussed with LURGI, should they be selected as Preferred Tenderer.

The DB20 Price is the sum of the 'Sub-total B' and the price of two years Annual Fixed Fees plus two years Operating Fee assuming that 60,000 tonnes of Waste is delivered to the plant every year. The value of the power production is calculated using 6,667 hours of operation per annum in each of the two first years and assuming a power sales price of 2.2 p/kWh.

## 6.1 LURGI

The following issues are relevant in relation to establishing a more complete picture of the robustness of LURGI's Financial Proposal, as it currently exists:

- No comments to the draft Contract other than that LURGI would want to finalise it during the (first month of the) Initial Period. As stated elsewhere in this report, this situation makes it virtually impossible to assess the value (and impact) of any qualifications that LURGI may have (but which have not so far been disclosed).
- (Comments and Questions, section 3, item 6) Additional £565,600 for providing an 8 meter deep bunker. This is required (and provided by MES).
- (Comments and Questions, section 16, item 5) Additional £82,300 for providing aluminium wall claddings and flashings. This is required and will have to be added to the Base Contract Price.
- Strategic Spare Parts are included in the Base Contract Price.
- Hourly rates for German engineers for providing assistance are considered to be unusually high. All engineers are to be charged at the same flat rate of €175 (£120) per hour regardless of experience. Even though we have asked for a breakdown of assumed engineering input during the Initial Period, LURGI have not provided the States with this breakdown.
- LURGI have not yet confirmed that they can/will provide Payment Bonds.
- The quoted price for operating the Plant is unexpectedly high. This is primarily due to some very high figures for personnel costs and we would recommend this to be further discussed should LURGI be selected as the Preferred Bidder.
- LURGI have responded in a less clear manner to the questions raised in relation to the Civil Works / Building Works, cf. section 4.3.11.

## 6.2 MES

The following issues are relevant in relation to establishing a more complete picture of the robustness of MES's Financial Proposal, as it currently exists:

- (LOI, para 5.8) Any part of the Maximum Initial Period Fee, which is not spent during the Initial Period, shall be transferred to the Base Contract Price. Further, the Maximum Initial Period Fee is not a fixed Fee but it can be increased. No such statement has been made by LURGI and to compare equally, we have added 15% of the proposed Maximum Initial Period Fee to MES's Cap-ex capitalisation.
- (Article 5) MES do not accept a limitation of the indexation of Milestone Payments as proposed at 6% p.a.
- (Article 6.1.2) MES will provide a Surety Bond rather than the Performance Bond currently proposed.

- (Article 6.1.3) MES do not wish to provide a Payment Bond (which, in any case, would be virtually impossible for their proposed LLP to obtain)
- (MES comments to Contract, item 14) MES will not provide a guarantee for M&E Elements as requested / revolving guarantee.
- (MES comments to Contract, item 33) MES will discuss Milestone Payments to ensure cash-flow neutral profile. There is no statement confirming that the Base Contract Price is based on the current Milestone Payment schedule.
- LLP Act 2000 approach suggested. If proceeded with, the Contract would require to be adjusted in a considerable number of areas, e.g. the Contract Price will have to be split into Process Works Portion and Civil Works Portion and this will flow through to Appendix 5, the Milestone payment principle.

Price for Strategic Spare Parts is additional €71,315.

### 6.3 Comparison

The table below sets out the summary of the Financial Proposals.

		MES	LURGI
1	Project Management	16.677.084	14.436.125
2	M&E	29.635.476	32.226.253
3	Civil Works	23.004.011	22.609.300
	<b>Base Contract Price</b>	<b>69.316.571</b>	<b>69.271.678</b>
	Maximum Initial Period Fee	2.483.897	2.982.500
	<b>Sub-total A</b>	<b>71.800.468</b>	<b>72.254.178</b>
	Cap-ex capitalisations	1.384.401	459.367
	<b>Sub-total B</b>	<b>73.184.869</b>	<b>72.713.545</b>

	Operating costs year 1 + year 2	6.215.175	8.199.406
	Value of power production	-1.536.187	-1.322.933
	<b>DB2O Price</b>	<b>77.863.857</b>	<b>79.590.018</b>

	Operating costs 20 years	36.646.138	43.747.261
	Value of power production	-10.438.639	-8.989.548
	<b>Price for operating 20 years</b>	<b>26.207.499</b>	<b>34.757.713</b>

The following comments can be added to the table:

- There is no significant difference in Capital costs between MES and LURGI
- Operating costs are lower in the MES Tender compared to the LURGI Tender.

- It should be noted that the calculated NPV for operating the plant should be considered as indicative only and not as accurate figures. It is recognised that there is a difference between the two Tenders as (a) the consumables required in the LURGI process are more expensive than those required for the MES proposal and (b) the power sales potential as per the MES proposal is larger than that of LURGI. On the other hand, (a) it is firmly believed that there will be a difference in maintenance costs for the two boilers and that difference, which would favour the LURGI proposal, has not been fully taken into account in the above indicative operating cost calculations and, of less significance, (b) the calculation is based on guaranteed power sales and MES appear to have no margin included, whereas LURGI have included a margin.

It is of key importance to the overall assessment of the financial strength, robustness and ranking of the Tenders that the following key issues have not been clarified with the latest Tender:

- MES have not given a price, which is based on the current LOI and the current draft Contract. Their price is based on the proposed alternative contractual arrangement (LLP). MES have informed the States during the June Tender clarification meetings that if they were to leave the LLP approach and sign the Contract with CNIM S.A. as the Contractor then their price would increase 'significantly'.
- LURGI have not given us any written statements summarising what their concerns are in relation to the Contract as it is currently drafted. LURGI's legal advisor, Richard Adams has explained to Alan Richards, the States Project Director, that this information would be available by Monday 30 July. It is unlikely that this programme allows for adequate time to assess the comments and establish a considered response, which can be agreed and incorporated into a Contract by the end of next week.
- None of the Tenderers have liaised with the Island Development Committee in relation to their preparation of amended Architectural Concept.

## 7. Legal

### 7.1 LURGI

#### 7.1.1 Comments on the draft Contract

LURGI's amended tender submission of 27 May 2003 contained no additional comments on the draft Contract other than positive statements affirming the contractual/commercial concessions offered by the States in its clarifications of November 2002 and in the Amended ITT (which clarifications are herein referred to as the "Commercial Clarifications"). However, equally, LURGI's amended tender submission did not contain any express confirmation that LURGI had no other comments to make on the Contract. At the tender meeting with LURGI held in Guernsey on 10 June 2003, LURGI were advised that it was the States' intention to enter into the Letter of Intent on the basis that the conditions of Contract would be finalised at the date of signing the Letter of Intent (with the form of Contract being annexed to the Letter of Intent) and that only the "Contract Deliverables" referred to in the Letter of Intent (e.g. the technical and pricing schedules) would be adjusted and agreed with the Preferred Tenderer over the 9 month Initial Period (such that as soon as the Contract Deliverables were agreed the Contract would be entered into). Accordingly, at the tender meeting:

- (a) LURGI were asked to clarify to the States (by 23 June 2003) all of LURGI's outstanding issues (if any) on the draft Contract (in general terms only); and
- (b) LURGI's legal adviser was asked to review the amendments made to the draft Contract by Tods Murray and confirm (by 23 June 2003) whether or not the amendments made to the Contract properly reflected the States' Commercial Clarifications.

Unfortunately, LURGI did not action either of these requests and have only responded on the terms of the draft Letter of Intent.

Accordingly, we harbour a significant concern that LURGI may have a number of undisclosed issues/comments in relation to the Contract that will not become apparent until after LURGI have been selected as the Preferred Tenderer.

#### 7.1.2 Comments on the draft Letter of Intent

We were disappointed by the nature and quantity of amendments made by LURGI's legal adviser to the draft Letter of Intent. However, we believe that a number of their comments arise from misunderstandings and suspect that LURGI did not "filter" their legal adviser's comments before they were sent to the States. That said, there are a number of key issues that would require to be resolved with LURGI before the Letter of Intent could be entered into with them, namely:-

- (a) **finalisation of the conditions of Contract** – LURGI (and MES) have had the draft Contract since the ITT was issued in July 2002 and have had three opportunities to comment in detail on its provisions. Most if not all of the comments made by LURGI to date have been accommodated by the States in its Commercial Clarifications (and reflected in the amended Contract which was issued to LURGI during the Amended Tender process). LURGI are aware of the States’ wish to finalise the conditions of Contract before the Letter of Intent is entered into in order to avoid protracted negotiations over the Contract following the selection of Preferred Tenderer. However, LURGI have amended the Letter of Intent to defer finalisation of the Contract until after the Letter of Intent is entered into. LURGI are aware that this is not acceptable and have been asked to clarify what further comments they wish to make on the Contract before the selection of Preferred Tenderer is made. Unfortunately, such clarification has not yet been provided.
- (b) **process leading up to signing the Contract** – The Letter of Intent lists the “Contract Deliverables” (i.e. the technical and pricing schedules to the Contract) that will require to be developed and agreed over the 9 month Initial Period before the Contract can be entered into. The Letter also sets out the timetable within which the parties will seek to agree the Contract Deliverables and, in the event of disagreement, the Letter of Intent (as originally drafted) entitles either party to refer the difference to an appointed expert for determination in order that the Letter of Intent’s objective (of finalising the Contract) is capable of being achieved within the 9 month Initial Period (without which the Letter of Intent would be rendered ineffectual, i.e. it would become simply an “agreement to agree” which is unenforceable). LURGI have stated that they are not agreeable to this process, although from their comments it would appear that they have misunderstood what is intended. In particular, LURGI have overlooked that the Preferred Tenderer’s Base Contract Price is fixed (as is their specification), such that only the financial impact of technical adjustments made to the specification (by mutual agreement) over the 9-month Initial Period will be subject of debate. If LURGI are selected as Preferred Tenderer we would seek to overcome their objections to this during the Letter of Intent negotiations.
- (c) **establishing the scope of the Initial Period Services** – In their comments LURGI state that they want the States to be more specific as to the nature and extent of the Preferred Tenderer’s design duties over the Initial Period (specifically the nature and quantity of Design Data to be produced). However, as LURGI were made aware, the level and quantity of design required during the Initial Period will largely be determined by IDC, Building Control and the Environmental Regulator and therefore

clarification of this will not be possible before the commencement of the Initial Period. The Letter of Intent entitles the Preferred Tenderer to charge all work done on an hourly basis and requires the States to issue clear instructions to the preferred Tenderer, so we would hope to alleviate LURGI's concerns over any apparent lack of clarity during the Letter of Intent negotiations should they be selected as Preferred Tenderer.

- (d) **confidentiality undertaking** – LURGI have introduced strict confidentiality undertakings into the Letter of Intent. If LURGI are selected as the preferred tenderer, the acceptability of these provisions will require to be reviewed in order to ascertain what level of confidentiality undertaking can be granted by the States in the circumstances and particularly given the need for the States to make disclosures in order to obtain the Necessary Consents.
- (e) **limitation on right to use intellectual property** – In the event of the Contract not being entered into LURGI wish to considerably curtail the States' ability to use the Design Data produced by it during the Initial Period (notwithstanding that the States will have paid for it). The provisions would only apply where the Contract did not proceed and therefore, should LURGI be selected as the Preferred Tenderer, the States will require to consider the extent to which it will require rights in the Design Data produced during the Initial Period and seek to agree this prior to entering into the Letter of Intent.

## 7.2 MES

### 7.2.1 Comments on the draft Contract

MES have commented extensively on the draft Contract at each stage of the tendering process. In addition to their LLP proposal (which is commented on above), MES have consistently sought to significantly alter the risk allocation between the Employer and the Contractor (and, as an inevitable consequence, erode the Contract's price certainty). Notwithstanding the significant concessions offered in the States' Commercial Clarifications and the provisions of the Letter of Intent, MES's amended tender submission contained 18 pages of (mostly critical) comments on the amended draft Contract. Despite being requested to do so at the tender meeting on 11 June 2003, MES have not produced a detailed mark-up of the Contract (which they are aware is needed in order to establish the full implications of their desired amendments) and instead MES have (rather ominously) suggested, in their amendments to the draft Letter of Intent, that a period of 8 months be set aside to agree the conditions of Contract following the selection of Preferred Tenderer (despite having had the draft Contract since July 2002). Examples of particularly significant comments made by MES include the following (but this list is by no means exhaustive):-

- (a) MES wish there to be a much more limited definition of “Primary Waste” and that any waste delivered to site which does not conform with the definition will be “Unacceptable Waste” for which MES will be relieved of responsibility and the States will bear the additional cost of dealing with.
- (b) In addition to seeking undertakings from the States regarding the quality of waste, MES are seeking guarantees of weekly waste supplies from the States and contractual relief if either too much or too little waste is delivered to site (n.b. this is despite MES being provided with all available information on local waste composition and waste arisings and being aware that the States are unable to offer such guarantees as it does not own or have direct control of the island’s waste).
- (c) MES wish their plant performance guarantees to be conditional on the States complying with the waste quality and waste supply requirements proposed above. In addition, MES are seeking the dilution/relaxation of the strict compliance tests to be undertaken at Handover.
- (d) MES are seeking to completely cap their liability under the Contract (possibly even for their fraud, deliberate default and abandonment of the Works, all of which are industry-standard, besides logical, exclusions from any liability cap).
- (e) MES wish to significantly expand the list of circumstances which would entitle the Contractor to extensions of time, relief and compensation from the States/SPC (during both the construction and operation phases). If accepted, the resultant re-allocation of risk would allow MES a far greater opportunity to make claims, making major disputes more likely and seriously undermining the Contract’s price certainty.

The general impression given by the commercial commentary contained in MES’s tender submission is one of disinterest in ‘traditional’ turnkey projects coupled with a high degree of dissatisfaction with the proposed Contract terms. However, the representatives of the MES consortium who attended the tender meeting on 11 June 2003 gave a markedly different impression (which was positive, upbeat and accommodating) as if the MES representatives present at the meeting had little or no part in preparing MES’s legal/commercial comments. That said, despite the representatives’ stated willingness to accommodate the States, it was evident that CNIM wished to continue pushing their LLP proposal. As leader of the MES bidding consortium, CNIM were asked at the tender meeting if they would seriously reconsider their position and advise the States of the increase in price (if any) required in order for CNIM to be the sole Contractor (in place of their proposed LLP) and thereby assume 100% of the turnkey responsibilities (as this was the States’ express preference). As CNIM have not responded to the States on

this issue, one can only deduce that (unlike the other Tenderer) they are unwilling to contract with the States on the ‘traditional’ turnkey basis envisaged in the ITT (but are similarly unwilling to pass on the dramatic cost savings that would be justified if their LLP proposal was accepted).

#### 7.2.2 Comments on the draft Letter of Intent

Generally, the amendments proposed by MES to the draft Letter of Intent are fewer in number (and less extensive) than those proposed by LURGI. However, the proposed amendments of MES bear a number of similarities to LURGI’s comments and include the following:

- (a) **finalisation of the conditions of Contract** – MES wish to defer negotiation of the Contract terms until after the selection of Preferred Tenderer. Like LURGI, MES have had the draft Contract since the ITT was issued in July 2002 and have had ample opportunity to comment in detail on its provisions. MES are similarly aware of the States’ wish to finalise the conditions of Contract before the Letter of Intent is entered into in order to avoid protracted negotiations over the Contract’s terms. Despite this, MES have estimated that 8 months of the 9-month Initial Period may be needed in order to conclude Contract negotiations which, in addition to creating additional cost for the States, would necessarily divert significant amounts of time and resources (of the States’ project team and MES’s management) away from the achievement of the key Initial Period tasks. Having regard to the nature and extent of MES’s comments on the draft Contract (see above) we would not expect the Contract negotiations to be successfully concluded without a sea-change in MES’s commercial attitude and approach.
- (b) **process leading up to signing the Contract** – MES are resistant to the Letter of Intent containing a mechanism whereby the Contract Deliverables can be determined (by an expert) in the event of the parties failing to agree them by the target agreement dates. Due to the limited number of Contract Deliverables to be agreed and, in particular, the fact that the States will not be at liberty to open up discussion of the Base Contract Price or the Base Specification we, do not believe that these provisions should concern the Tenderers. However, the provisions are needed in order to focus the efforts of the parties on agreeing the deliverables and ensure a positive outcome to the process by the end of the Initial Period.
- (c) **confidentiality undertaking** – MES have introduced confidentiality undertakings into the Letter of Intent. If MES are selected as the Preferred Tenderer, the acceptability of these provisions will require to be reviewed in order to ascertain what level of confidentiality undertaking can be granted by the States in the circumstances (particularly given the

need for the States to make disclosures in order to obtain the Necessary Consents). That said, MES have incorporated confidentiality provisions that are akin to the confidentiality provisions contained in the Contract and which, consequently, are more acceptable than those proposed by LURGI.

- (e) **limitation on right to use intellectual property** – MES have made the entitlement of the States to use their intellectual property conditional upon MES being awarded the Contract at the end of the Initial Period. This is illogical because the Contract contains its own intellectual property provisions and the Letter of Intent would cease to be enforceable upon the Contract being entered into. The provisions exist in the Letter of Intent solely to cover the duration of the Initial Period and the possibility that the Contract may not proceed. As stated above, the States' need to make use of Design Data in the event of the Contract not proceeding will require further review and discussion with the party who is selected as the Preferred Tenderer.
- (f) **extension of Initial Period** – MES propose that the Initial Period can only be extended by mutual agreement.

In common with the respective positions of the Tenderers in relation to the Contract, the most significant difference between the MES and LURGI in relation to the Letter of Intent is that MES are proposing that an LLP (rather than CNIM) enter into the Letter of Intent with the States. Accordingly, we believe that MES's more positive response on the draft Letter of Intent is predicated upon (and should be interpreted against the background of) their LLP proposal. Regardless of our other considerable misgivings over MES's LLP proposal, we doubt that an LLP could be established by MES's consortium within the present timescale for concluding the Letter of Intent (i.e. by 4 July 2003) . In addition, as the proposed LLP will have no staff, we could not confidently state that the key personnel who are to be named in the Letter of Intent (none of whom will be employees of the LLP) will be kept available to deliver the Initial Period Services throughout the Initial Period.

Lastly, and most importantly, the States' contractual rights and remedies against the proposed LLP for any breach of the Letter of Intent would (in the absence of adequate bonds, guarantees or other performance security) not be sufficiently effective. Unsurprisingly, we could not recommend acceptance of this to the States.

## 8. Summary and Recommendation

### 8.1 Technical

Both Tenders are substantially in accordance with the Employer's Requirements and from an evaluation point of view there are only few differences between the two Tenders.

A summary of our findings is set out below, where:

'(+)' indicates 'slightly better than the other Tenderer',  
'+' indicates 'better than the other Tenderer' and

and vice versa for '(-)' and '-'.

Item	MES	LURGI
Reception facilities	Equal	Equal
Incinerator/furnace	Equal	Equal
Boiler	-	+
Flue Gas Treatment	(-)	(+)
Turbine	(+)	(-)
Architectural Appearance	(+)	(-)
Civil Works Standard	Equal	Equal

The details of the reasons for the indicative scores can be found in the earlier sections of this report.

In relation to the Architectural Concept it should be mentioned that the Island Development Committee (IDC) has expressed concerns over both of the proposed Architectural proposals.

Further, the IDC has expressed reservations in respect of how MES has prepared the plant layout on the Site for the Second Incineration Line (to be installed in a distant future).

Even though we have provided an indicative rating of the Architectural Concept, we would recommend that the final assessment of the Architectural Concept should be endorsed by the Competent Authority, IDC.

### 8.2 Management

No relevant differences between the Management Proposals have been identified. Both Tenderers appear to be able to provide a high standard of management skills and they both state that a total of 25 people can staff the Plant.

### 8.3 Financial

The capital costs of designing, building and commissioning the plant are almost identical for the two Tenderers.

The operating costs for the MES proposal are less than those proposed by LURGI.

MES's Tender is based on a Limited Liability Partnership approach, which is different from the intentions of the ITT. MES have stated that it would add significant costs to their price should they accept the obligation for CNIM S.A. to be the turnkey Contractor.

As stated above, LURGI have not yet come back with their detailed comments to the Contract, as requested. They are expected early next week.

We are unaware of what amount of insurance costs have been included in LURGI's Base Contract Price and this value should be taken out of their Base Contract Price, as the States will provide the majority of the insurances required. If LURGI were to be selected as the Preferred Bidder they should be asked to state this amount, so it can be taken out of their Base Contract Price.

None of the Tenderers have firmly confirmed that their Base Contract Price as currently tendered is in fact based on the Milestone Payment profile, as currently set out in the draft Contract.

We recommend that the financial strength of the proposed Preferred Bidder be properly examined by a firm of financial advisors and that the coming into effect of the Letter of Intent be stated to be conditional upon the States' financial checks being satisfactorily concluded .

### 8.4 Legal

Until the return of amended tenders in May 2003, over the course of the tendering process there had not been much to differentiate between MES and LURGI in relation to their commercial/legal positions. However, differentiation on a legal/commercial basis has not been difficult since the date that MES first proposed to form an LLP for the purpose of entering into the Contract with the States/SPC. We have carefully studied all of the information produced by MES and their legal advisers on their LLP proposal (together with the specific Contract amendments which MES issued in support of their proposal). Despite the project team's initial "gut reaction", we approached MES's proposals with an open mind in the expectation (and hope) that MES had somehow managed (i) to circumvent the obvious difficulties and problems associated with their LLP proposal in the context of a turnkey project and (ii) to provide adequate contractual protections for the client. However, our detailed review of MES's proposal has served only to increase our concerns rather than reduce them. As stated earlier in this report, the

purpose (and effect) of the LLP proposal is not only to materially limit the exposure of the LLP's members to liability but also to strictly confine the members' responsibility to the extent of their respective input (such responsibility in turn being limited by the terms of Sub-Contracts to which the States/SPC will not be a party nor have any control over). We can see nothing of benefit to the States/SPC in MES's LLP proposal and MES's tender price does not reflect the commercial advantages/benefits that the LLP structure would give them. LURGI are not proposing an LLP and are willing to contract in their own name (in compliance with the ITT). In consideration of this, the States asked CNIM to confirm that they would be prepared to do likewise, but CNIM have (for whatever reason) chosen not to give such confirmation. Had CNIM given such confirmation we would have experienced much greater difficulty in differentiating between the two Tenderers on a legal/commercial basis (the tenders being otherwise extremely close). Clearly, there are several grounds on which the Tenderers are evaluated although, in light of our foregoing comments, our evaluation of the tenders as regards legal/commercial matters is that LURGI's tender is (on the basis of the information so far disclosed to us by both Tenderers) the better of the two.

To sound a final cautionary note, it should be borne in mind that LURGI have not yet fully disclosed the amendments that they desire to make to the draft Contract (which amendments are expected shortly). Only once these amendments have been seen and reviewed by us will LURGI's full legal/commercial position be known. However, we would not expect this to dramatically alter the outcome of our legal/commercial evaluation.

## 8.5 Summary

The States have received two comprehensive Tenders.

The result of the analysis of the Technical Proposals is that, albeit there are significant differences between the proposed technical solutions, both Tenders meet the overall technical requirements and they are considered to be of equal quality and robustness.

Subject to our comments on the LLP proposal, the Management Proposals confirm that both Tenderers have the capability and track record to be able to manage the project. Both companies propose that – in the long term - a staff of 25 shall run the plant.

The result of the analysis of the Financial Proposals is that the two Tenders are equal in Capital Costs but the MES proposal is the more advantageous to the States in terms of operating costs.

The result of the legal/commercial analysis reveals a more significant difference as LURGI have confirmed that they will accept the role as (turnkey) Contractor whereas MES state that they have based their price on a Limited Liability

Partnership (LLP) arrangement, which is considered to be disadvantageous to the States. Even though MES have been encouraged to price the Contract as currently drafted they have not provided the States with such pricing.

Both Tenderers propose that the detailed drafting of the Contract will have to take place during the Initial Period as they are unable to provide the States with their detailed comments at this stage. We do not consider this to be acceptable and the situation will require early discussion with the Preferred Tenderer. MES have attempted to summarise the key findings whereas LURGI have not yet given their detailed comments.

On the basis of the above analyses, the main project-specific risks with the Tenders are as follows:

MES	LURGI
<b>Shared risks</b>	
Reluctance/inability to finalise the drafting of the Contract prior to the date of the Letter of Intent	
Inability to obtain adequate bonds	
Unavailability of guarantees for quality of washed ash	
Additional costs as a result of objections/adverse comments from Competent Authorities, in particular, IDC, in relation to the proposed Architectural Concept.	
Reluctance/inability to agree the Contract Deliverables within the Initial Period	
<b>Specific risks</b>	
Adverse consequences of the LLP proposal	Higher operating costs
Additional operating costs for the successor operator as a result of a requirement for more frequent replacing of superheater bundles.	Additional costs as a result of requirement for additional boiler protection in 1 <sup>st</sup> and 2 <sup>nd</sup> pass
	A more detailed discussion of the Civil Works / Building Works could reveal caveats originating from the less clear answers to the latest questions.

## 8.6 Recommendation

Whilst the competition has been extremely close, from our detailed analysis of the tenders we would recommend to the States that they invite LURGI to participate in the next stage of the process (i.e. the negotiation, finalisation and entering into of the Letter of Intent by 4 July 2003) on an exclusive basis.

However, we would recommend that such invitation to LURGI be stated to be issued on the basis that if the parties fail to successfully enter into the Letter of Intent by 4 July 2003, the States reserve the right to terminate such exclusivity arrangement and re-open a dialogue with MES.

# GUERNSEY TECHNICAL SERVICES

Guernsey EfW Project  
Addendum to Tender Appraisal Report  
Executive Summary

August 2003

Job 157003K  
Ref.No. 834-031386  
Edition Final  
Date 08 August 2003

Prepd. KJJ  
Checked RDC

## Background

Following receipt on 23/24 June 2003 of the Tenderers' responses to the Board of Administration's clarification questions of 16/17 June 2003, the Board of Administration's advisors prepared and issued a Tender Appraisal Report, (ref. 834-031226) dated 30 June 2003.

After considering the contents and findings presented in the Tender Appraisal Report, the Board of Administration identified that the Tender submitted by LURGI (U.K.) Ltd. (in conjunction with Hochtief (UK) Construction Ltd., Lurgi Energie & Entsorgung AG and Cyclerval (UK) Ltd.) represented the most attractive Tender.

As a result, LURGI (U.K.) Ltd. (hereinafter referred to as "LURGI") was invited (on an exclusive basis) to attend further meetings for final clarification of the outstanding technical & financial issues and to negotiate and finalise the terms of the draft Contract and the draft Letter of Intent.

In tandem with the final clarification and negotiation meetings, the Board of Administration have separately procured an analysis of the financial robustness of LURGI.

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<sup>1</sup> Other than those Appendices that are to be developed and agreed during the Initial Period.

## Legal Clarification

Discussions between the Board of Administration and LURGI in relation to the outstanding legal/commercial issues were concluded on 4 August 2003 (and a further revised draft Contract reflecting the outcome of those discussions was issued to LURGI later that same day).

On 6 August 2003, the Board of Administration announced that LURGI's Risk Board had approved the Contract (although written confirmation of this is still awaited from Lurgi). In addition, we are awaiting confirmation from Lurgi that the draft Letter of Intent and draft Contract (as issued) are finally agreed, although we expect to receive such confirmation later this week (together with confirmation that one of Lurgi's Directors, David Porter, will be attending the Letter of Intent signing meeting to be held at Sir Charles Frossard House at 12 noon on Friday 15 August 2003).

### Summary of Legal/Commercial developments

In general, neither the Contract's structure nor the parties' risk sharing has materially altered since our Tender Appraisal Report was issued.

#### Letter of Intent

The Preferred Tenderer letter issued by the Board of Administration to LURGI on 10 July 2003 records the key principles agreed between the parties which are now reflected in the draft Letter of Intent, namely:-

- (a) **Expert determination** – In the event of any of the Contract Deliverables not being agreed by its “Target Agreement Date” the matter in disagreement may be referred by either party to the Expert for resolution, with the intent that (save in the unlikely event that the Project is cancelled by the States or the Letter of Intent is terminated) the provisions of the Letter of Intent will enable (a) each of the Contract Deliverables to be finalised before the expiry of the 9 month Initial Period and (b) the Contract to thereafter be completed and entered into. (Para 7.1.2b, Tender Assessment Report)
- (b) **Scope of Initial Period Services** – The Letter of Intent now annexes a list of “Particular Services”(being the core services that LURGI will perform over the Initial Period together with key milestones for the completion of such services). The services listed as “Particular Services” may be supplemented and refined by written instructions issued by the Board of Administration either at or following the regular monthly Progress Meetings and/or Design Workshops during the Initial Period. (Para 7.1.2c, Tender Assessment Report)

- (c) **Confidentiality** – In recognition of the fact that the Letter of Intent (and the activities of the parties during the Initial Period) will, to a large extent, be in the public domain, the States’ confidentiality obligations in the Letter of Intent focus on the non-disclosure of LURGI’s industrial secrets and commercially sensitive information to third parties (such information being defined in the Letter of Intent as “Waste to Energy Technology”). (Para 7.1.2d, Tender Assessment Report)
- (d) **Intellectual Property Rights** – The parties have agreed that Design Data provided for or on behalf of LURGI during the Initial Period may be used by the States in connection with the construction, commissioning, use, operation and maintenance of the Plant (but no other waste incineration facility) whether or not the Project proceeds beyond the expiration of the Initial Period, provided that any use of such Design Data following termination of the Letter of Intent will (i) be done so solely at the States’ risk and without recourse to LURGI and (ii) be subject to any third party rights restricting the use of such Design Data. (Para 7.1.2e, Tender Assessment Report)
- (e) **Termination of Letter of Intent** – The States may terminate the Letter of Intent at any time until the expiry of the 9 month Initial Period if:
  - (i) LURGI wholly or materially (a) suspends or delays the carrying out of the Initial Period Services (or any of them) or (b) fails to proceed regularly and diligently in the performance of the Initial Period Services (or any of them) in accordance with the Letter of Intent;
  - (ii) LURGI fails to comply with any of its obligations under the Letter of Intent and fails to remedy the breach in question within 14 days of its receipt of a written notice from the States’ Representative specifying the relevant default;
  - (iii) an Insolvency Event (as defined in the Contract) occurs in relation to LURGI;
  - (iv) the States consider (acting reasonably) that the Environmental Licence and/or the Planning Permission will not be granted by the relevant Competent Authorities in terms satisfactory to the States (as to which the States will be the sole judge) before the expiry of the Initial Period;
  - (v) the Project or any part thereof is cancelled by the States or the Project cannot proceed for reasons beyond the reasonable control of the States; and/or

- (vi) the States give 14 days' notice to the Preferred Tenderer of their intention to terminate the Letter of Intent on the date of expiry of such notice period and makes payment to LURGI of the sums due (but unpaid) to LURGI under the Letter of Intent up to the date of such termination.

Note: (1) If, before the expiry of the 9 month Initial Period, the Contract has not been entered into and the States have not extended the duration of the Letter of Intent, the Letter of Intent will automatically terminate on the date of expiration of the Initial Period, (2) LURGI will be entitled to terminate the Letter of Intent if the States are in material breach of their obligations and have not remedied such breach within 28 days of being notified by LURGI and (3) either party will be entitled to terminate the Letter of Intent if performance of their obligations under it is prevented by the occurrence of a Force Majeure Event for 6 months or more.

Whilst the final Contract Price, Annual Fixed Fee and Operating Fee are all "Contract Deliverables" that are to be agreed or determined in accordance with the Letter of Intent during the 9 month Initial Period, the Letter of Intent will also include a warranty by LURGI to the States as to the robustness/reliability of their Base Contract Price, the Base Annual Fixed Fee and the Base Operating Fee as at the date of the Letter of Intent.

## Financial Clarification

### Maximum Initial Period Fee

The clarifications have not identified any changes to the proposed Maximum Initial Period Fee. Lurgi have confirmed that the rates for the German engineers providing assistance during the Initial Period are correct even though the States' Consultants considered them to be unusually high.

LURGI has identified applicable hourly rates for each staff member (both in the UK and in Germany) who is envisaged to provide services in the Initial Period.

### Project Insurances

The Board of Administration intends to take out an all-inclusive insurance package for the Project, covering not only the Employer but also the Contractor, as required. (Para 8.3, Tender Assessment Report )

During the clarification and negotiation meetings, Lurgi has informed the Board of Administration, that an amount of €400,000 provisionally has been included in their Base Contract Price to provide "top up" insurance cover for any risks that may not be covered by the Project insurances taken out by the Employer/Board of Administration, but which cover is considered necessary by Lurgi. Lurgi has further confirmed that that amount will be taken out - in whole or in part as relevant - from their Base Contract Price once the Project's insurance arrangements have been settled (with Marsh) during the Initial Period.

### Testing Period Fee

The Contract will allow the Contractor to receive a fee for receiving and incinerating Waste at the Plant during the Commissioning Period (i.e. from the date at which deliveries of Waste to the Plant begin). The fee has been specified as a flat rate of £50 per tonne of Waste incinerated. Income from the sale of power generated by the Plant in the same period will be payable to the Employer. The value of this fee to the Contractor minus the income from power sales is expected to amount to £400,000-£440,000.

### Base Annual Fixed Fee

As a result of the joint analysis of the Base Annual Fixed Fee Lurgi has managed to reduce its Base Annual Fixed Fee, but not by much.

As a result, the Base Annual Fixed Fee is now £2,816,503 / £2,515,003 in the 1<sup>st</sup> / 2<sup>nd</sup> year of operation of the Plant.

## Base Operating Fee

Also as a result of the joint analysis of the Base Operating Fee a number of misunderstandings have been cleared away.

As a result, the Operating Fee value has been reduced considerably from its previous value of £23.65 per tonne to £18.18 per tonne of Waste, representing an expected reduction in the costs of operating the Plant over the 2-year Services Period of approximately £600,000 and a substantially larger reduction of the costs of operating the Plant over its lifetime.

## Summary

A summary of the development in costs in the period between the date of issuing the Tender Appraisal Report and 5 August 2003 has been made using the £/€ exchange rate as per 27 May 2003 (0.725£/€), which was the date of return of Tenders in response to the Amended ITT, as issued 2 April 2003.

The exchange rate for Sterling against the Euro has improved and (at the date of this report) stands at 0.70175£/€ As a result, the Base Contract Price for the LURGI tender has decreased in Pounds Sterling by £1.3M.

In the June 2003 Tender Appraisal Report it was assumed that the additional price for providing a deeper (8m) bunker would be £377,066. Clarifications have identified that this additional price is more likely to be £460,000. This figure has therefore been included in the present report and, hence, a commensurate increase is required in the 'cap-ex capitalisation' row within the financial summary table of the Tender Appraisal Report.

The combined consequences of the improved £/€ exchange rate together with the impact on the Base Contract Price (as well as on the operating costs) of the matters clarified with Lurgi during the clarification meetings are set out in the table below.

<b>Capital Costs</b>				
		<b>June 03</b>	<b>August 03/A</b>	<b>August 03/B</b>
1	Project Management	14.436.125	14.436.125	14.173.519
2	M&E	32.226.253	32.226.253	31.203.563
3	Civil Works	22.609.300	22.609.300	22.609.300
	Base Contract Price	69.271.678	69.271.678	67.986.382
	Maximum Initial Period Fee	2.982.500	2.982.500	2.905.789
	Sub-total A	72.254.178	72.254.178	70.892.172
	Cap-ex capitalisations	459.367	542.300	542.300
	Sub-total B	72.713.545	72.796.478	71.434.472

<b>Operating Costs</b>				
		<b>June 03</b>	<b>August 03/A</b>	<b>August 03/B</b>
	Annual Fixed Fee, year 1 and 2	5.361.406	5.331.506	
	Operating Fee, year 1 and 2	2.838.000	2.181.600	
	Costs payable to the Contractor	8.199.406	7.513.106	
	Value of power production	-1.322.933	-1.322.933	
	Cost of operating year 1 and 2	6.876.473	6.190.173	

The 'August 03/A' column is based on the exchange rate of 0.725£/€ as per 27 May 2003. The 'August 03/B' column is based on the exchange rate of 0.70175/€ as per 5 August 2003.

It can be seen that whilst there is negligible effect on the Base Contract Price, there is a significant difference on the Operating Costs.

## Technical Clarification

### Reception Facilities

LURGI has provided the Board of Administration with two optional prices for building the bunker down to eight metres depth instead of four metres.

For an unchanged footprint the additional costs to the States would be £565,600, which amount will be reduced to £460,000 if the States decide to reduce the bunker footprint from its current 12x32 metres to 12x25 metres.

### Incinerator Technology

We have discussed the boiler design with LURGI and in particular the necessity of providing further protection (inconel cladding) to the boiler walls in the 1<sup>st</sup> pass as well as at the roof of both the 1<sup>st</sup> and 2<sup>nd</sup> passes. LURGI has provided the Board of Administration with an additional price of €280,000 for supplying this additional boiler protection.

### Leachability Testing / Plant Ash Quality Guarantee

The Board of Administration and LURGI have agreed to refer to appropriate and recognised European Standards for the determination of the quality of the Plant Ash, which means that LURGI has now agreed to provide a guarantee for the quality of the Plant Ash.

It should be mentioned that LURGI's Guarantee in respect of Plant Ash quality is qualified by a number of conditions but is reasonable.

In order to determine the quality of the Plant Ash, it is a requirement that the Plant Ash has been intermediately stored ('weathered') for a minimum of 90 days. The States will therefore require to provide a facility for the intermediate storage of Plant Ash for 90 days (possibly located at Longue Hougue).

### Civil Works Elements Clarification

Separate discussions have taken place with LURGI's proposed sub-contractor for the Civil Works Element, Hochtief (UK) Construction Ltd. The key purpose of those discussions was to better understand the robustness of LURGI's tender in relation to the civil works, cf. the concerns expressed in the Tender Appraisal Report.

As a result of those discussions, the Board of Administration and its advisors have now established a fairly clear understanding of the robustness of Lurgi's tender in relation to the civil engineering elements of the project. A number of issues have been clarified and, for the record, we would mention the following.

- The Base Contract Price includes for an enriched and developed architectural solution and it also includes for attractive landscaping with a combination of hard and soft landscaping.
- The structural engineering solution for the building foundations proposed by Lurgi will not require raking piles.
- Lurgi has confirmed that their Base Contract Price does allow for satisfying all of the requirements set out in the Base EWRs (the Employer's Works Requirements).
- Lurgi has confirmed to what extent consolidation/compaction of the Site is included in its Base Contract Price. The implications of this are that compaction/consolidation in relation to roads, hardstandings and parking areas are included in the tender whereas, to the extent that compaction/consolidation under the building footprint is required, such costs are not included in the Base Contract Price. Lurgi has provided unit prices for providing additional compacting/consolidation under the building footprint and an upper limit (estimate) for additional costs as a result of this caveat is £250,000.
- The Base Contract Price allows for 'foreseeable Fill issues' such as obstacles (bricks, smaller concrete blocks etc – not major obstacles), which - in the light of the Norwest Holst report - are likely to be met on Site.
- Lurgi has identified one area only where additional costs - in relation to the Site conditions - could be incurred during the Initial Period namely in the event that the site conditions in the eastern end of the Site are significantly different from those in the western end of the Site (which was the area investigated by Norwest Holst).

## Summary and Recommendation

### Legal

Given the limited time available between the date of selection of the Preferred Tenderer by the Board of Administration (on 10 July 2003) and the requirement to complete all contract negotiations by 1 August 2003 (in order to enable LURGI to obtain its Risk Board's approval and enable the parties to sign the Letter of Intent on 15 August 2003), reaching agreement with LURGI on the provisions of a 30-page Letter of Intent and a 255-page Contract presented a very considerable challenge, not least because of (a) the significantly changed construction marketplace since tenders were invited, (b) a general lack of interest in turnkey projects in the present marketplace and (c) the traditionally cautious and risk-averse nature of process engineering contractors. That said, both the Board of Administration and LURGI adopted a pragmatic and realistic approach to the contract negotiations and made available the necessary personnel to enable a consensus to be reached within the required timescale, without an adverse impact on the tendered Contract Price, Annual Fixed Fee or Operating Fee and with minimal deviation from the original risk allocation sought by the Board of Administration. Accordingly (on the basis that LURGI's Risk Board has now approved the Contract terms) the Contract conditions, in the form negotiated to date, will remain true to the turnkey principles of the Project and should (following the finalisation of (i) the Contract Price, Annual Fixed Fee and Operating Fee and (ii) the technical Appendices to the Contract during the Initial Period) provide a high degree of price certainty. As previously discussed with the Board of Administration, in advance of the Letter of Intent being signed, both the Letter of Intent and the Contract will also be reviewed and checked by Collas Day for compliance with Guernsey law. We would also recommend that the final draft of the States' Guarantee be submitted to the Law Officers of the Crown for their review and comment (in order that the Law Officers are aware of the proposal that the States will guarantee the SPC's financial obligations, as Employer, under the Contract and in case the Law Officers are aware of any legal or constitutional issues that may have arisen in relation to previous financial guarantees granted by the States).

### Financial

The clarification meetings have not had any impact on the Base Contract Price. A reduction of up to €400,000 of the Base Contract Price is to be expected once the insurance issues have been resolved during the Initial Period. At the same time, the Board of Administration will be paying the Testing Period Fee to the Contractor prior to Take-Over for treating Waste. The effect of the Testing Period Fee is expected to be in the order of £400,000-£440,000.

The operating costs have been reduced significantly primarily as a result of clearing away some misunderstandings.

The development of the £/€ exchange rate in the period from 27 May 2003 and up to 5 August 2003 has reduced the Base Contract Price in Pound Sterling value by £1.3M.

## Technical

The clarification meetings have considerably improved the understanding of the robustness of the Lurgi Tender. In many areas Lurgi has confirmed (to the Board of Administration's satisfaction) that certain items, which we were not sure were included in Lurgi's tender, were in fact included.

Lurgi has agreed to provide additional boiler protection in the form of additional inconel cladding without any impact on the Base Contract Price.

The risks associated with the ground conditions have been clarified in the sense that the main risks for incurring additional costs have now been limited to (a) costs associated with compacting/consolidating the Site under the building footprint and (b) costs incurred as a result of the western end of the Site being significantly different from the eastern end of the Site (which end of the Site was investigated to some extent by Norwest Holst).

The risks associated with obtaining Planning Permission and the Environmental Licence, and in particular with obtaining approval of the architectural concept, have not been further addressed and these risks therefore remain unchanged.

## Summary

The Tender Appraisal Report listed some key areas of concern in relation to LURGI's tender and commercial position. Over the course of the discussions and negotiations with LURGI during the period since their selection as Preferred Tenderer, these matters have been addressed and (having regard to the marketplace and prevailing circumstances) in our opinion the result is satisfactory.

## Recommendation

We would recommend that the Board of Administration be authorised to enter into the Letter of Intent with LURGI on 15 August 2003 and issue instructions to Guernsey Technical Services to continue developing the project (and finalise the outstanding Contract Deliverables) during the Initial Period.

The President  
States of Guernsey  
Royal Court House  
St Peter Port  
Guernsey  
GY1 2PB

27 August 2003

Dear Sir,

I refer to the letter dated 9 August 2003 addressed to you by the President of the Board of Administration on the subject of the provision of an Energy from Waste facility.

The Advisory and Finance Committee supports the Board of Administration's proposals which it considers offers the best long-term approach to deal with the Island's putrescible waste in a sustainable manner. In supporting the proposals the Committee acknowledges that the cost and size of the facility is significantly greater than originally indicated when the decision to investigate the feasibility of an Energy from Waste facility was first taken. However the Committee considers the principles behind the original decision remain valid.

The Committee has, of course, also considered the impact on the local construction industry of carrying out this major project at a time when the local industry is overheating. The Committee was advised that the majority of the work would originate off island and that approximately 20% of the work could be said to impact directly on the local construction industry. The Committee has also been advised that analysis of the project within the economic model of the local construction industry indicates that the States should consider delaying or reprioritising other capital projects to make capacity available for the Energy from Waste plant.

The Committee agrees with the Board of Administration's conclusions that the alternatives of increasing landfill capacity or the adoption of different untried technologies are unacceptable. The Committee also agrees that the principle of user pays should apply and that charges should reflect the true cost of waste disposal, albeit that those charges will be significantly higher than at present.

The Committee welcomes the reduction in cost achieved and expects the Board and its advisors to ensure that standards are not lowered during the design stage. The Committee has recommended that the project be funded by means of a loan from the States Treasury central funds made up of various balances on which interest is both paid and received. The loan would have to be repaid with interest over the estimated life of the facility. Therefore to achieve this the charges would have to be set at a level that fully covers the facility's capital, interest and running costs. The Committee will only approve the contract for the construction of the facility if it is satisfied that the long-term interests of the States have been safeguarded in the final design and the financial arrangements are robust enough to ensure that the borrowings are fully safeguarded.

The Committee regrets that a Waste Management Plan has not yet been considered by the States and it asks the Board of Administration to make the preparation of the plan a high priority. Nevertheless the Committee accepts that the absence of an agreed plan does not affect the fundamental requirement for an Energy from Waste facility. The consequences of delaying the project would be so significant as to prevent the Island dealing with its solid waste in the medium and long term.

The States have a fundamental duty to ensure that the Island's waste is treated in an efficient and sustainable manner. The Energy from Waste facility will be a significant and integral part of the Island's strategy for dealing with solid waste for the foreseeable future.

The Advisory and Finance Committee supports the Board's recommendations that the States approve the proposals.

Yours faithfully,

L.C. Morgan  
President  
Advisory and Finance Committee

The States are asked to decide:-

Whether, after consideration of the Report dated the 18<sup>th</sup> June, 2003, of the States Board of Administration, they are of the opinion:-

1. To reaffirm its previous in principle decision to procure an Energy from Waste facility under a Design Build and Two year operate contract.
2. To direct the States Board of Administration to proceed in accordance with the provisions of the Letter of Intent signed with Lurgi as set out in section 9.14 of that report and to commence the Initial Services period at a sum not to exceed £2,982,500 (€1 = £0.725).
3. To direct the States Board of Administration to obtain all necessary approvals from the States Board of Health and Island Development Committee as part of the plant design process.
4. Following completion of the Initial Services period, to authorise the States Board of Administration either directly or through its SPC, subject to the approval of the States Advisory and Finance Committee, to contract with Lurgi, for the construction of an EfW facility at the capital sum being not more than the negotiated figure of £69,813,978 (Base Contract Price plus + Cap Ex Capitalisation, €1 = £0.725) excluding contingency inflated as set out in section 9 of that report.
5. Following completion of the initial services period, to authorise the States Board of Administration either directly or through its SPC, subject to the approval of the States Advisory and Finance Committee, to contract with Lurgi, for the two year operation of the EfW facility at the negotiated sum of £7,513,106 (€1 = £0.725) inflated as set out in section 9 of that report.
6. To approve as a contingency sum a figure of 10% of the tendered capital sum in respect of the design and construction phases of the facility.
7. To direct the States Board of Administration, to procure, subject to the approval of the States Advisory and Finance Committee, project specific insurances and consultancy services, as set out in section 9.16 and 9.17 respectively of that report.
8. To authorise the States Advisory and Finance Committee to advance to the States Board of Administration or the SPC a loan to the maximum sum of £80 million for the purpose specified in that report; such loan to be advanced in stages as necessitated by the contract requirements and repaid over a 25 years amortisation period and attracting interest at the Treasurer's interest rate.

9. To resolve a general exclusion of liability against any director, member or officer of the Special Purpose Company as set out in section 11 of that report.
10. (1) That the provisions of section 65 of the Housing (Control of Occupation) (Guernsey) Law 1994, shall be suspended in respect of the temporary accommodation referred to in section 9.5 of that report.  
  
(2) To direct the preparation of such legislation as may be necessary to give effect to their above decision.

DE V. G. CAREY  
Bailiff and President of the States

The Royal Court House,  
Guernsey.  
The 5th September, 2003

IN THE STATES OF THE ISLAND OF GUERNSEY

ON THE 24TH DAY OF SEPTEMBER, 2003

The States resolved as follows concerning  
Billet d'Etat No. XX dated 5th September, 2003

**STATES BOARD OF ADMINISTRATION**

**ENERGY FROM WASTE FACILITY- STATUS AND WAY FORWARD**

After consideration of the Report dated the 18th June, 2003, of the States Board of Administration:-

1. To reaffirm its previous in principle decision to procure an Energy from Waste facility under a Design Build and Two year operate contract.
2. To direct the States Board of Administration to proceed in accordance with the provisions of the Letter of Intent signed with Lurgi as set out in section 9.14 of that report and to commence the Initial Services period at a sum not to exceed £2,982,500 (€1 = £0.725).
3. To direct the States Board of Administration to obtain all necessary approvals from the States Board of Health and Island Development Committee as part of the plant design process.
4. Following completion of the Initial Services period, to authorise the States Board of Administration either directly or through its SPC, subject to the approval of the States Advisory and Finance Committee, to contract with Lurgi, for the construction of an EfW facility at the capital sum being not more than the negotiated figure of £69,813,978 (base Contract Price plus + Cap Ex Capitalisation, €1 = £0.725) excluding contingency inflated as set out in section 9 of that report.
5. Following completion of the initial services period, to authorise the States Board of Administration either directly or through its SPC, subject to the approval of the States Advisory and Finance Committee, to contract Lurgi, for the two year operation of the EfW facility at the negotiated sum of £7,513,106 (€1 = £0.725) inflated as set out in section 9 of that Report.

6. To approve as a contingency sum a figure of 10% of the tendered capital sum in respect of the design and construction phases of the facility.
7. To direct the States Board of Administration, to procure, subject to the approval of the States Advisory and Finance Committee, project specific insurances and consultancy services, as set out in section 9.16 and 9.17 respectively of that report.
8. To authorise the States Advisory and Finance Committee to advance to the States Board of Administration or the SPC a loan to the maximum sum of £80 million for the purpose specified in that report; such loan to be advanced in stages as necessitated by the contract requirements and repaid over a 25 years amortisation period and attracting interest at the Treasurer's interest rate.
9. To resolve a general exclusion of liability against any director, member or officer of the Special Purpose Company as set out in section 11 of that report.
10. (1) That the provisions of section 65 of the Housing (Control of Occupation) (Guernsey) Law, 1994, shall be suspended in respect of the temporary accommodation referred to in section 9.5 of that report.  
  
(2) To direct the preparation of such legislation as may be necessary to give effect to their above decision.

D. R. DOREY  
HER MAJESTY'S DEPUTY GREFFIER