

STATES OF JERSEY



ASH DISPOSAL (S.R.20/2012): RESPONSE OF THE MINISTER FOR TRANSPORT AND TECHNICAL SERVICES

Presented to the States on 8th March 2013
by the Minister for Transport and Technical Services

STATES GREFFE

**ASH DISPOSAL (S.R.20/2012): RESPONSE OF THE MINISTER FOR
TRANSPORT AND TECHNICAL SERVICES**

Ministerial Response to: S.R.20/2012

Ministerial Response required by: 28th January 2013

Review title: Ash Disposal

Scrutiny Panel: Environment

INTRODUCTION

The Minister for Transport and Technical Services welcomes the Environment Scrutiny Panel study on the disposal of residues from the new Energy from Waste Plant. The new plant is built to meet international emissions standards, but to do this the flue gases are scrubbed to remove pollutants, giving rise to Air Pollution Control Residues (APCr), which require disposal as hazardous waste. The Minister is delighted that the Duly Reasoned Request (DRR) for export of this waste has recently been approved by the UK authorities, allowing the waste to be exported for the next 3 years. The backlog of bagged APCr, which is currently held in bags at La Collette will be exported. Arrangements to export the APCr will take time to procure, however the process has started. The new plant now produces Incinerator Bottom Ash (IBA) of a higher quality than the old plant, and the prospect of recovery of some of the IBA is now better. Testing which is already underway will determine whether the IBA is of sufficient quality and low enough in contaminants to recycle. If there is a need to exclude more wastes, such as batteries, that contaminate the ash, to achieve the required low contamination levels, this will need to be pursued.

FINDINGS

| | Findings | Comments |
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| | Findings: Incinerator Bottom Ash (IBA) | |
| 1 | The review has shown that approximately 18,000 tonnes of IBA generated by the operation of the EfW plant at current levels (approximately 70,000 tonnes of waste per annum) could be recovered through a relatively straightforward process including crushing, metal separation, weathering and grading into IBA aggregate (IBAA), which would no longer be classified as waste and would be suitable for use by the construction industry, in either bound or unbound form. This would require limited investment by TTS in appropriate infrastructure including a concrete base, drainage, and additional fixed and mobile equipment for crushing, grading and metals extraction. | The Minister is keen to recycle bottom ash as soon as is practicable. Trials to separate out metals from the ash have already been started and this could be a first step towards recycling IBA. Trials have commenced on the stabilisation of the IBA and need to continue to establish if the leachability of the ash can be reduced sufficiently for use in construction. The mechanical processes are straightforward; however the chemical stabilisation is a complex issue to resolve. The Minister is optimistic that recycling can be achieved, and has a capital bid of £1.5 million for a recycling facility to be constructed in 2014, subject to the success of trials this year. The use of the material is dependent on the regulator agreeing the use |

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| | | of the waste in construction, as there is no UK Quality Protocol for end of waste for IBA. The market for the aggregated is being investigated with local aggregate, concrete and asphalt producers. There will always be some residual waste that is not suitable for recovery which would require disposal locally. |
| 2 | Successful recovery of IBA would require the development of a local market for processed IBAA appropriate to the needs of the construction industry. For this purpose it is anticipated that a commercial partnership between TTS and a local quarry operator (or operators) would be the best way forward. Initial approaches have already been made by TTS to the industry. More substantive progress will require confirmation of the chemical make-up of IBA that can be produced consistently by the EfW, and subsequently the operator would have to satisfy the regulator that IBAA products derived from it are safe for use in the local environment in whatever form is eventually selected. | The Minister agrees that the development of IBAA as a product will require the Department to work with construction industry product suppliers, once the chemical properties of stabilised ash have been established. Regulator agreement on the beneficial use of IBAA in construction will be essential. |
| 3 | The TTS decision to appoint a new operator for the vehicle scrap-yard and relocate it using alternative methodologies will result in the removal of vehicle shredder residues and other contaminated wastes which have up to now adversely affected the chemical profile of the ash from EfW plant; these must be removed for recycling to succeed. | The Minister is delighted that the new waste metals contractor, Hunts (Jersey) Ltd., is now operating and will not be generating vehicle shredder residues that require disposal at the new EfW plant. The intention is to assess the reduction in pollutants in bottom ash as a result of this change. |
| 4 | To further ensure that significant sources of toxic metals and other waste components do not enter the EfW plant waste-stream, contaminating the ash and thus preventing successful recycling into IBAA, it is essential that improvements are made to the separation of wastes at source. In particular it is important that batteries, WEEE (Waste Electrical and Electronic Equipment) and other potential contaminants are separated from the domestic waste-stream derived from parish refuse collections. This may point to a need for improved kerbside separation on an Island-wide basis. | The Minister supports initiatives by the Department to reduce electrical goods entering the EfW waste-stream, such as the 'electrical amnesty' project last year. The States Waste Strategy supports separation of waste at source and the contribution that kerbside collection can make, as adopted by some parishes. The key to better separation is the change in mindset of everyone who decides not to segregate when they discard items and campaigns to achieve this are ongoing. |

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| 5 | It is anticipated that capital investment would be required by TTS to initiate these arrangements by 2014–15. Once the market for Jersey’s own IBAA was proven and IBAA reliably recycled within the Island, the processing of Guernsey’s waste could also be considered. However, firm assurances would be needed of a market for the additional volumes of IBAA produced as a result. The Panel considers that one way to achieve this might be by means of an agreement for Guernsey to import a proportional volume of recovered IBAA product(s) for use in their construction industry. | Regulator approval and development of the use of IBAA for construction will take a number of years, and will be dependent on construction activity, as Jersey has a small market for secondary aggregates. If Guernsey seek processing of waste at the new EfW, the Minister will need to decide whether to take this to the States for consideration. This could be at a point when the development of IBAA use is still ongoing and only a portion of the output is being recycled. The potential for IBA to be returned to Guernsey for their disposal, recovery, or as processed IBAA would need to be considered. |
| 6 | It is noted that there may still be a requirement for limited landfill capacity for a small quantity of material (fines) unsuitable for use as aggregate. | IBA recovery may be possible for much of the waste-stream; however there will always be some residual waste. |
| | Findings: Air pollution control residues (APCr) | |
| 1 | The review found differing views on options for the disposal of hazardous APCr. The Minister for Planning and Environment appears to favour investment in plant to enable on-Island processing of APCr for recovery using vitrification technology, which is a highly technical and energy-intensive option that locks contaminants into a stable glass-like substance. Both TTS and the Panel’s advisers consider that this would be a very expensive option for Jersey, which would be uneconomic compared with existing alternatives that are available either for recovery or disposal off-Island. It is also risky, involving relatively unproven and complex technology. A further concern is that it would produce at very high cost a specialised aggregate material which would have to compete in the market with other forms of inexpensive aggregate, including IBAA, which could be produced at much lower cost from the greater proportion of waste produced by the EfW. | The Minister agrees that processes for the disposal or recovery of APCr should be economically viable and sustainable, particularly in respect of proven technology with as low as possible energy demand. Plasma arc vitrification is not considered viable at present; however, developing technology will need to be reviewed prior to the end of the current DRR period. |

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| 2 | The Panel therefore favours the preferred option of the Minister for Transport and Technical Services and his Department, which would involve exporting the backlog of approximately 4,000 tonnes of APCr currently stored in Cell 33 for disposal, followed by a similar volume annually thereafter. TTS have advised the Panel that they consider the costs of shipping, landfill taxes and gate fees could be contained within the £1 million budget currently allocated for construction of the cells needed to safely contain APCr at La Collette, making export a viable option. | The Minister agrees that export for disposal is the most likely option that the current procurement process will conclude with; however, the Minister is keen, if the option is available and economic, to send the APCr output over the next 3 years to the UK for recovery. The procurement process will identify the cost of shipping and disposal/recovery, and it is hoped that budgets currently predicted as available will be sufficient. |
| 3 | In the first instance, it is considered that the backlog of APCr could be disposed of in former salt mines which are now appropriately permitted to accept the material either in the UK, where this is classified as disposal, or in Germany, where it is currently viewed as a recovery process. Alternatively, it could be pre-treated by acid stabilisation in the UK for disposal into non-hazardous landfill. | The Minister agrees that the most likely destination for the bags of APCr which have solidified would require disposal/recovery in salt mines in the UK or Europe; however, the procurement process will seek out the most economic solution to shipping and disposal/recovery. |
| 4 | The 'legacy' APCr in Cell 33 was bagged with a view to facilitating its removal, should a suitable treatment or alternative disposal option later become available. Whilst this has enabled TTS to retain the option of removal from La Collette, some treatment processes cannot handle bagged APCr; and some processes cannot treat APCr that has been exposed to the elements for any length of time, as it can become hardened in storage. | The Minister agrees that export for disposal is the most likely option that the current procurement process will conclude with; however, the Minister is keen, if available and economic, to send the APCr output over the next 3 years to the UK for recovery. |
| 5 | Once the backlog has been dealt with, APCr subsequently generated by the EfW plant could be stored temporarily, using suitable infrastructure, and then shipped at economic intervals to the same facility under conditions approved by the regulator. | APCr is likely to be accumulated for export in dry powder form, which could be in a silo at the new EfW or in powder tanker shipping containers/lorries. This will be explored in the current procurement process. |
| 6 | The initial options of disposal in salt mines or use of acid stabilisation should be periodically reviewed against any available alternatives of export for recovery, including accelerated carbonation, vitrification, and acid-washing to recover | The Minister agrees that export for disposal is a likely option that the current procurement process will conclude with; however, the Minister is keen, if available and economic, to send the APCr output over the next 3 years to the UK for |

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| | gypsum substitute. Should these alternatives be proved to offer viable solutions for Jersey's hazardous APCr in due course, there should be an automatic presumption that export for recovery would be favoured over disposal, following the principles of the waste hierarchy. There would be an expectation that export for recovery should be adopted as soon as it proved feasible on practical and economic grounds. | recovery. The development of other processes in the future would be considered for adoption in the next APCr management contract. |
| 7 | Export for disposal requires Jersey to make application to the UK Department for Environment, Food and Rural Affairs (Defra) for approval on the grounds that Jersey does not have existing facilities to adequately process or safely landfill this hazardous waste. This has already been done and the response is currently awaited. | The Minister is delighted to have recently been granted the DRR for export of APCr from the UK Authorities. |
| | Implications for the importation of Guernsey's waste | |
| | The potential importation of a significant quantity of Guernsey's domestic waste for incineration at Jersey's EfW plant has been under discussion for some time. The figure of 30,000 tonnes is seen as a practical proposition, as this would bring the plant to its full operating capacity of 105,000 tonnes per annum. The benefits to Jersey would be in the form of any payment received and an increased ability to generate electricity for local consumption. | If Guernsey seeks processing of waste at the new EfW, the Minister will need to decide whether to take this to the States for consideration, which will be informed by the contribution to the capital and operating overheads of the plant, as well as electricity revenue. Additional revenue from waste acceptance fees have the potential to be used to support environmental improvements. |
| | However, it is clear that processing Guernsey's waste would also generate additional quantities of ash. From its investigation, the Panel is aware that the general presumption under the Basel Convention against the export of such wastes would render the popular solution of sending a proportionate volume of ash back to our sister Island impractical. This would leave Jersey with the problem of how to deal with some 1,700 tonnes of extra APCr and 8,000 additional tonnes of IBA annually, which would clearly need to be factored into any potential agreement. | IBA recovery may be possible for much of the waste-stream; however, there will always be some residual waste. Regulator approval and development of the use of IBAA for construction will take a number of years, and will be dependent on construction activity, as Jersey has a small market for secondary aggregates. If Guernsey seeks processing of waste at the new EfW, it could be at a point when the development of IBAA use is still ongoing and only a portion of the output is being recycled. The potential IBA to be returned to Guernsey for their disposal, recovery or as processed IBAA, would need to be considered. The DRR allows the export of |

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| | | APCr to the capacity of the EfW plant and would not constrain the export of this residue. |
| | If the Minister for Transport and Technical Services adopts the recommendations for ash disposal in this report, a similar additional volume of 8,000 tonnes of IBAA would be produced, which would require a larger market for IBAA construction materials in due course. Permission would also need to be sought in the short to medium term for export of the additional APCr. Because of these factors it is recommended that a new ash disposal strategy is allowed time to settle in and prove itself in operation before a decision on importing Guernsey's waste is made. | IBA recovery may be possible for much of the waste-stream; however, there will always be some residual waste. The regulator approval and development of the use of IBAA for construction will take a number of years, and will be dependent on construction activity, as Jersey has a small market for secondary aggregates. If Guernsey seeks processing of waste at the new EfW, it could be at a point when the development of IBAA use is still ongoing and only a portion of the output is being recycled. The potential for IBA to be returned to Guernsey for their disposal, recovery or as processed IBAA, would need to be considered. The DRR allows the export of APCr to the capacity of the EfW plant and would not constrain the export of this residue. |

RECOMMENDATIONS

| | Recommendations | To | Accept/ Reject | Comments | Target date of action/ completion |
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| | Incinerator Bottom Ash (IBA) | | | | |
| 1 | The current policy of permanently burying IBA in sealed cells at La Collette should cease, and all IBA produced in future at the EfW plant should be processed into IBAA (incinerator bottom ash aggregate) of a consistent quality suitable for use by the local construction industry. | TTS/ ENV | Accept in principle subject to practical constraints | Subject to future budgetary constraints, IBA should be processed and stabilised for use as potential aggregate in the future. IBA recovery may be possible for much of the waste-stream; however, there will always be some residual waste. The regulator approval and development of the use of IBAA for construction will take a number of years, and will be dependent on construction activity, as Jersey has a small market for secondary aggregates. It is likely that there will be a | |

| | Recommendations | To | Accept/ Reject | Comments | Target date of action/ completion |
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| | | | | stockpile of IBA at La Collette from the new plant production to date for some time into the future. | |
| 2 | Transport and Technical Services should prioritise discussions with potential commercial partners to develop a local market for recycled IBAA product(s), with the aim of ensuring that the full volume of aggregate produced at La Collette can in future be utilised in preference to continued importation or local extraction of raw materials for aggregate. | TTS | Accept | A dialogue with commercial partners has commenced with a view to achieving IBAA usage development with a potential benefit of a small reduction in the quarrying of virgin aggregates. | |
| 3 | The Department should investigate possibilities for reducing the legacy of existing ash cells at La Collette by mining any cells filled with IBA since the start of operation of the new EfW plant, if ongoing tests prove that the quality of this ash makes it suitable for processing into IBAA. | TTS | Accept | It is accepted that the IBA from the new plant in the new IBA-only cells could potentially be recovered for use, in part. However, it is likely that there will be a stockpile of IBA at La Collette from the new plant production to date for some time into the future, as the construction market demand for secondary aggregates is limited. | |
| | Air Pollution Control Residues (APCr) | | | | |
| 4 | An alternative to the current storage of APCr in Cell 33 should be agreed between TTS and the regulator as a matter of urgency, to avoid the need for construction of a second cell for APCr storage. | TTS/ ENV | Superseded | The approval of the DRR now means that export will be possible for the next 3 years and that a successor cell to Cell 33 will not be required during that period. | |
| 5 | Subject to acceptance of the Duly Reasoned Request (DRR) recently applied for by the | TTS/ ENV | Agreed | The Minister is very keen to export the backlog of APCr in Cell 33 and has initiated a procurement process to seek a | |

| | Recommendations | To | Accept/ Reject | Comments | Target date of action/ completion |
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| | Department of the Environment on behalf of TTS, the backlog of APC residues currently stored in Cell 33 should be exported to an approved disposal facility as soon as possible. | | | contractor to remove the material for disposal/recovery as soon as possible, subject to budgetary constraints. | |
| 6 | Once the backlog is exported, appropriate infrastructure should be constructed to enable temporary storage of APCr subsequently generated by the plant, prior to export for disposal at the same facility at economic intervals. | TTS/ ENV | Agreed | APCr is likely to be accumulated for export in dry powder form, which could be in a silo at the new EfW or in powder tanker shipping containers/lorries. This will be explored in the current procurement process. | |
| 7 | Export for disposal should only continue for the duration of the initial approval provided under the DRR (understood to be 3 years). | TTS/ ENV | Agreed in principle subject to economic recovery options availability | The Minister agrees that export for disposal is a likely option that the current procurement process will conclude with; however, the Minister is keen, if available and economic, to send the APCr output over the next 3 years to the UK for recovery. The development of other processes in the future would be considered for adoption in the next APCr management contract. If economic recovery options are not available for the next DRR period, an application to extend the DRR for APCr would be needed. | |
| 8 | Options for export to recovery rather than disposal in the UK and elsewhere should be reviewed at regular intervals, with particular attention to developing technologies such as accelerated carbonation, | TTS/ ENV | Agreed subject to commercial contract obligations | The development of other processes in the future would be considered for adoption in the next APCr management contract. | |

| | Recommendations | To | Accept/ Reject | Comments | Target date of action/ completion |
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| | thermal processes, including vitrification, and acid-washing to recover gypsum substitute. | | | | |
| 9 | In the event that export of the bulk of Jersey's APCr production to a proven recovery process becomes viable (even during the period of the DRR approval), subject to any contractual obligations TTS should take steps to divert exported APCr to a recovery process rather than disposal as soon as practicable. | TTS/ ENV | Agreed subject to commercial contract obligations | The Minister agrees that export for disposal is a likely option that the current procurement process will conclude with; however, the Minister is keen, if available and economic, to send the APCr output over the next 3 years to the UK for recovery. The development of other processes in the future would be considered for adoption in the next APCr management contract. | |
| 10 | The Department should continue to investigate possibilities for the recovery of APCr rather than disposal, to ensure that within 3 years all APCr produced can be recovered (either on- or off-Island) via a recognised process that takes into account the principles of the waste hierarchy, best practice and prevailing EU, UK and local legislation. | TTS/ ENV | Agreed in principle subject to market recovery options | Developing recovery options for APCr will continue to be considered by TTS. Developing processes would be considered for adoption in the next APCr management contract. | |
| | Importation of Guernsey's Waste | | | | |
| 11 | Prior to any decision on the importation of waste from Guernsey for incineration at Jersey's EfW plant, the new policy for ash disposal including recovery of all IBA and a sustainable solution for APCr waste should be fully proven. | TTS/ ENV | Reject | IBA recovery may be possible for much of the waste-stream; however, there will always be some residual waste. The regulator approval and development of the use of IBAA for construction will take a number of years, and will be dependent on construction activity, as Jersey has a small market for | |

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| | | | | secondary aggregates. If Guernsey seeks processing of waste at the new EfW, it could be at a point when the development of IBAA use is still ongoing and only a portion of the output is being recycled. The potential for IBA to be returned to Guernsey for their disposal, recovery or as processed IBAA would need to be considered. The DRR allows the export of APCr to the capacity of the EfW plant and would not constrain the export of this residue. | |
| 12 | Any contractual arrangement for the acceptance of Guernsey's waste for treatment should be conditional, not only on a proven ability to successfully treat all additional waste volumes arising, but also on confirmation of a viable market for the resulting products. This might require agreement from Guernsey to accept a suitable proportion of IBAA, either as bulk aggregate or in the form of manufactured product(s). | TTS/ ENV | Reject | If Guernsey seeks processing of waste at the new EfW, it could be at a point when the development of IBAA use is still ongoing and only a portion of the output is being recycled. The potential for IBA to be returned to Guernsey for their disposal, recovery or as processed IBAA would need to be considered. | |

CONCLUSION

The Minister is pleased that a balanced review of the Ash Strategy has been carried out, which informs and generally supports the Department's approach to APCr and IBA management. The recommendations are generally accepted, except as stipulated above.