CLOSING THE WASTE LOOP (CTWL)
RESEARCH & DEVELOPMENT (R&D) INITIATIVE

REQUEST FOR PROPOSALS (RFP) ON LANDFILL CONSERVATION:
UTILISATION OF INCINERATION ASH

Q&As on 13 March, 13 April, 25 May 2018

Reference Values for Incineration Ash

Q1: How were the reference values for the environmental criteria of incineration bottom ash (IBA) applications derived? (asked on 13 March 2018)

A: The reference values were derived based on overseas standards and consultation with relevant Singapore government agencies, including PUB. The values should be used in relation to the specified leaching test. Treated ash samples that meet the reference values are taken to satisfy the environmental criteria. Nonetheless, treated ash samples will still need to demonstrate that they concurrently meet relevant technical standards before being utilised.

Scope of RFP

Q2: Is there a limit on the amount of incineration ash that can be incorporated in the product? (asked on 13 April 2018)

A: There is no limit on the amount of incineration ash that can be incorporated for the research purpose, however the products should comply to the relevant technical requirements (e.g. compressive strength, density, etc).

Q3: Is the RFP seeking solutions before or after metals recovery? (asked on 13 April 2018)

A: NEA is open to all proposals. Interested parties can specify the state of the ash (e.g. with or without metals removed) that the proposed treatment technology will require.

Q4: Is the RFP seeking solutions for separated streams of Incineration Bottom Ash (IBA) and/or Incineration Fly Ash (IFA)? (asked on 13 April 2018)

A: Yes.

Sampling and Composition of Incineration Ash
Q5: Can Institute of Higher Learnings (IHLs) / companies request for IBA samples for analysis? (asked on 13 March 2018)

A: Interested parties may contact NEA to initiate the sample collection process. The requestors shall be responsible for obtaining approval from the competent authority of the receiving country if they intend to ship the IBA samples out of Singapore.

Q6: What to expect for the sample collection and which pants will be covered? (asked on 13 April 2018)

A: Interest applicants may write to bai_yihao@nea.gov.sg or seow_teow_gay@nea.gov.sg to request for samples.

The samples will be collected from the designated WTE plant and interested applicants would be required to bring their own containers.

Interested applicants who wish to collect IBA samples after metals extraction may make it known in their application.

Q7: Will NEA be providing the chemical analysis of the IBA samples? (asked on 13 March 2018 and 13 April 2018)

A: Interested parties can refer to the range of chemical composition values of Singapore-generated IBA published by local universities and research institutes in the following papers:


Please note that these papers may not fully reflect all possible IBA’s chemical composition due to the fluctuating and heterogeneous nature of the material.
CTWL R&D Grant Call

Q8: How many projects will be awarded and what is the maximum budget for each project for this round of RFP? (asked on 13 March and 13 April 2018)
A: Cap for budget and number of proposals were not set for this grant call.

Q9: Is there a research roadmap on the recovery of specific elements within IBA and for the Closing the Waste Loop R&D Initiative? (asked on 13 March 2018)
A: The focus of this RFP is to explore feasible solutions on IBA and IFA. After which, possible upstream solutions can be explored to improve the quality of the ash. Under the Closing the Waste Loop R&D initiative other key waste streams such as plastic waste, e-waste and food waste may also be targeted in the future.

Q10: For this RFP, are collaborations between companies and IHLs required? (asked on 13 March 2018)
A: It is preferred that companies and IHLs to collaborate and put up joint submissions. In addition to novel technologies, NEA is also keen on exploring technologies that are proven overseas that can be test-bedded and demonstrated with the IBA produced in Singapore.

Upcoming Demonstration Tender

Q11: For the tender on demonstrating technologies, which state of IBA should the proposed treatment be targeted at (i.e. post-incineration or post-metals recovery)? (asked on 13 March 2018)
A: NEA is open to all proposals. Interested parties can specify the state of the IBA feedstock (e.g. with or without metals removed) that the proposed treatment technology will require.

Application Instructions

Q12: Do I need to register my organisation if I am submitting a proposal as part of a consortium? (added on 25 May 2018)
A: Yes. Interested applicants would be required to create accounts and subsequently register their organisation in the IGMS (through NEA for the
CTWL grant calls) regardless of whether they are participating in a local consortium or not.

Please refer to the Annex 3 in the document titled “Information on CTWL Landfill Conservation 20 Mar 2018” for the registration instructions.