

**立法會**  
**Legislative Council**

LC Paper No. CB(1)336/14-15(04)

Ref. : CB1/PL/EA

**Panel on Environmental Affairs**

**Meeting on 15 December 2014**

**Background brief on "Sludge Treatment Facilities"  
prepared by the Legislative Council Secretariat**

**Purpose**

1. This paper provides background information on the Sludge Treatment Facilities ("STFs"), and gives a brief account of the views and concerns expressed by Members on the subject.

**Background**

2. According to the Administration<sup>1</sup>, since the cessation of marine disposal of sludge in 1996, all sludge generated by the Sewage Treatment Works ("STW") is disposed of at the three strategic landfills. However, despite the application of dewatering process prior to its disposal, sludge still retains approximately 70% by weight of water and is a very soft substance. In order to avoid causing operational and slope stability problem at the landfills, the sludge is mixed with municipal solid waste and/or construction waste in a ratio of about 1:10 (sludge-to-waste) before their co-disposal at the landfills.

3. In view of the anticipated significant increase in the quantity of sludge requiring disposal due to the commissioning of Stage 1 of the Harbour Area Treatment Scheme ("HATS"), the Environmental Protection Department completed the "Sludge Treatment and Disposal Strategy Study" in 1999. The study recommended that all sludge in Hong Kong be incinerated in a centralized treatment facility. This recommendation was endorsed by the Advisory Council on the Environment in January 2000.

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<sup>1</sup> See LC Paper No. PWSC(2009-10)16.  
(<http://www.legco.gov.hk/yr08-09/english/fc/pwsc/papers/p09-16e.pdf>)

4. In 2003, the eastern end of the ash lagoon at Tsang Tsui near Nim Wan, Tuen Mun, was identified as the most suitable site for the construction of STF. The Administration is of the view that the site is remote from residential areas and there are no planned developments in the area. Besides, the site is accessible by both road and sea. Most importantly, the development of STF at the site would have no unacceptable impacts on air quality impact, water quality impact, marine ecology and fisheries impact, terrestrial ecology as well as landscape and visual aspects.

#### Project scope and nature

5. In June 2009, the Administration submitted a related funding proposal to the Finance Committee ("FC") after consultation with the Panel on Environmental Affairs ("the Panel"). The scope of works for the STF comprises –

- (a) design and construction of a STF of capacity of 2 000 tonnes per day;
- (b) provision of ancillary facilities<sup>2</sup>;
- (c) provision of environmental educational and associated facilities; and
- (d) environmental monitoring during the construction stage.

6. FC approved the upgrading of STF to Category A at an Approved Project Estimate ("APE") of \$5,154.4 million.

7. According to the Administration, the STF would be commissioned in two phases. Phase 1 with capacity of 1 600 tonnes per day would be commissioned in end 2012 while phase 2 to the full capacity of 2 000 tonnes per day would be commissioned in 2016. STF would provide treatment for sludge generated from HATS (i.e. Stonecutters Island STW) and 10 other regional STWs, including the Pillar Point STW, San Wai STW, Sham Tsang STW, Siu Ho Wan STW, Sai Kung STW, Shatin STW, Shek Wu Hui STW, Stanley STW, Tai Po STW and Yuen Long STW, by means of high temperature incineration technology to substantially reduce

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<sup>2</sup> Ancillary facilities include administration building, maintenance workshop, utility yard, gatehouse, chemical/fuel storage room, desalination plants, seawater pumping station and storage tank and sewage treatment plant.

the volume of sludge by 90%<sup>3</sup>. The incineration ash produced would be disposed of at landfills.

### **Deliberations by Members**

8. The major views and concerns expressed by Members at various meetings of the Panel, the Public Works Subcommittee and FC are summarized below.

#### Construction of obnoxious facilities in Tuen Mun

9. Members noted that the selection of site for the construction of obnoxious facilities such as the proposed STF had long been a subject of contention, in particular, the Tuen Mun District Council ("TMDC") had expressed grave concern about the environmental impacts arising from the incineration of sludge each day at STF. Members criticized that the Administration had placed too many obnoxious facilities which were highly polluting in the Tuen Mun West.

10. The Administration responded that it was well aware of the sentiment and concerns of local residents towards the placing of certain unwelcome facilities in their districts. The Administration had exercised due care in the selection of sites, carry out environmental impact assessment and conduct public consultation before proceeding with the construction of environmental protection facilities. It was the prevailing policy to adopt stringent emission standards and a better design for the facilities concerned.

11. Members noted that, in response to the suggestion of establishing an inter-departmental group to discuss with TMDC the development of the proposed STF, the Environment Bureau ("ENB") had set up the Tuen Mun Development Liaison Working Group ("the Working Group") to discuss the overall planning and development of Tuen Mun. Members requested the Administration to obtain consensus from the Working Group before taking forward any future expansion of the proposed STF.

12. The Administration assured Members that future expansion of STF, if any, would be undertaken in a gradual manner and the Working Group would be consulted in the process.

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<sup>3</sup> The remaining 10% dry and inert ash can be disposed of at landfills without causing the landfill stability problem.

13. Members were concerned about the environmental impact of the proposed STF while noting that there would be emission control to minimize the release of dioxin and other harmful emission from the proposed STF. They considered that the Administration should continue to explore other options for the treatment of sludge in the long run, and search for possible sites for landfill disposal of sludge. Some other Members expressed concern about the cumulative environmental impact of the various obnoxious facilities in Tuen Mun. There was a suggestion that the operators should regularly assess the emission performance of the facilities and publish the latest data on their websites monthly.

14. The Administration advised that the emission performance of the proposed STF would be disclosed for public information and the Administration would consider the method for disclosure, e.g. display of data at the facility, or uploading the data onto the website. As measurement of the dioxin level had to undergo specific laboratory tests, real-time data would not be available instantly, but could be provided on a regular basis.

15. There was also the concern about the environmental and traffic impacts arising from marine transport of sludge from the Stonecutters Island to STF. The Administration advised that the construction of STF at the ash lagoon at Tsang Tsui, Tuen Mun would not cause any unacceptable impact on the surrounding environment. In particular, there would be no reclamation works involved. Moreover, no new pier would be required for the transport of sludge which could use the existing pier at the West New Territories Landfill.

#### Compensatory measures for the Tuen Mun district

16. Some Members urged that the Working Group led by ENB should not be disbanded after the proposed STF was approved. The Working Group should continue its work and follow up on other projects impacting on Tuen Mun. There should also be a liaison group to monitor the STF project and discuss issues arising from its construction or operation in future.

17. The Administration responded that it would work closely with TMDC through the platform of the Working Group and follow up on the provision of facilities to enhance the development of Tuen Mun. The Working Group was meant to facilitate partnership with TMDC to map out strategies and measures to promote the development of Tuen Mun on a long-term basis.

18. Some Members suggested that, as a compensatory measure, electricity generated by the incineration of sludge should be made available for use by the Tuen Mun residents, such as the provision of a heated swimming pool. Some other Members requested the Administration to

undertake that the proposed STF project would include recreational facilities for enjoyment by local residents. The Administration said that it would consult TMDC on the environmental education or recreational facilities to be provided at the site in order to make good use of the energy generated from STF.

### Technologies of STF

19. Some Members doubted whether STF proposed by the Administration was the best option for the treatment of sludge. Noting the comparison of STF emission standards with other international standards, Members enquired how the Administration would ensure these targets would be met, in order to convince TMDC and local residents that the facility was environmental-friendly.

20. The Administration advised that the proposed treatment using incineration method would adopt the most stringent target emission standards (i.e. equivalent to the European Union Standards). It would perform better in terms of carbon emission when compared to other methods such as biological treatment.

21. Members expressed concern about the emergency plan in case of system failure, given that the proposed STF were the only facilities for incineration of the large quantity of sludge in the territory. They reminded the Administration of the need to ensure safe delivery of sludge by land transport to STF. They also requested the Administration to ensure that malodour would not be emitted during delivery.

22. The Administration advised that the sludge would be transported in sealed containers to mitigate problem of spillage and malodour. It was envisaged that containers with improved design would be commissioned in future adapting to the specific needs of transporting sludge.

### **Council questions**

23. At the Council meetings on 3 November 2010 and 19 January 2011, Hon WONG Kwok-hing raised questions relating to STF. Issues covered in the questions include whether the Administration would make communal compensation to meet the aspirations of both the residents and TMDC prior to setting up various waste disposal facilities, as well as the progress of the 10 compensatory measures proposed by TMDC to improve the image and development of Tuen Mun. Details of the Council questions and the Administration's responses are hyperlinked in the **Appendix** for ease of reference.

### **Latest development**

24. The Administration will seek the Panel's support for its proposal to increase APE to cover additional costs arising from the increase in provision for contract price adjustment for the construction works at the meeting on 15 December 2014.

### **Relevant papers**

25. A list of relevant papers is set out in the **Appendix**.

Council Business Division 1  
Legislative Council Secretariat  
9 December 2014

## List of relevant papers

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	30 March 2009	<p>Administration's paper on "233DS - Sludge Treatment Facilities" (LC Paper No. CB(1) 1123/08-09(03)) <a href="http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea0330cb1-1123-3-e.pdf">http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea0330cb1-1123-3-e.pdf</a></p> <p>Minutes of meeting (LC Paper No. CB(1)1627/08-09) <a href="http://www.legco.gov.hk/yr08-09/english/panels/ea/minutes/ea20090330.pdf">http://www.legco.gov.hk/yr08-09/english/panels/ea/minutes/ea20090330.pdf</a></p> <p>Administration's supplementary paper on "233DS - Sludge Treatment Facilities" (LC Paper No. CB(1)1278/08-09(01)) <a href="http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea0330cb1-1278-1-e.pdf">http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea0330cb1-1278-1-e.pdf</a></p>
Public Works Subcommittee	20 May 2009	<p>Funding proposals on Head 705 – Civil Engineering 233DS – Sludge treatment facilities (LC Paper No. PWSC(2009-10)16) <a href="http://www.legco.gov.hk/yr08-09/english/fc/pwsc/papers/p09-16e.pdf">http://www.legco.gov.hk/yr08-09/english/fc/pwsc/papers/p09-16e.pdf</a></p> <p>Minutes of meeting (LC Paper No. PWSC113/08-09) <a href="http://www.legco.gov.hk/yr08-09/english/fc/pwsc/minutes/pwsc20090520.pdf">http://www.legco.gov.hk/yr08-09/english/fc/pwsc/minutes/pwsc20090520.pdf</a></p>
Public Works Subcommittee	25 May 2009	<p>Funding proposals on Head 705 – Civil Engineering 233DS – Sludge treatment facilities (LC Paper No. PWSC(2009-10)16) <a href="http://www.legco.gov.hk/yr08-09/english/fc/pwsc/papers/p09-16e.pdf">http://www.legco.gov.hk/yr08-09/english/fc/pwsc/papers/p09-16e.pdf</a></p> <p>Minutes of meeting (LC Paper No. PWSC114/08-09) <a href="http://www.legco.gov.hk/yr08-09/english/fc/pwsc/minutes/pwsc20090525.pdf">http://www.legco.gov.hk/yr08-09/english/fc/pwsc/minutes/pwsc20090525.pdf</a></p>

<b>Council/ Committee</b>	<b>Date of meeting</b>	<b>Paper</b>
Finance Committee	5 June 2009	Recommendations of the Public Works Subcommittee made on 7, 20 and 25 May 2009 (LC Paper No. FCR(2009-10)19) <a href="http://www.legco.gov.hk/yr08-09/english/fc/fc/papers/f09-19e.pdf">http://www.legco.gov.hk/yr08-09/english/fc/fc/papers/f09-19e.pdf</a>  Minutes of meeting (LC Paper No. FC7/09-10) <a href="http://www.legco.gov.hk/yr08-09/english/fc/fc/minutes/fc20090605.pdf">http://www.legco.gov.hk/yr08-09/english/fc/fc/minutes/fc20090605.pdf</a>

Hyperlinks to relevant Council Questions:

<b>Date</b>	<b>Council Question</b>
3 November 2010	Council question raised by Hon WONG kwok-hing <a href="http://www.info.gov.hk/gia/general/201011/03/P201011030148.htm">http://www.info.gov.hk/gia/general/201011/03/P201011030148.htm</a>
19 January 2011	Council question raised by Hon WONG kwok-hing <a href="http://www.info.gov.hk/gia/general/201101/19/P201101190176.htm">http://www.info.gov.hk/gia/general/201101/19/P201101190176.htm</a>