

Legislative Council Panel on Environmental Affairs
Supplementary Information on 233DS – Sludge Treatment Facilities

(a) *The Administration to provide actual and estimated statistics on the respective percentage increases in labour wages and construction material prices index of the project in each year from 2009 to 2018;*

Based on the actual statistics from the Census and Statistics Department which is presented in calendar year, we have prepared the table below showing the actual statistics and changes in labour wages and construction material prices applicable to the Sludge Treatment Facilities (STF) Contract from September 2009 to September 2014. There is no estimated figure for the years from 2015 to 2018.

Year	Actual Index number (year-on-year changes) in labour wages and relevant construction material prices						
	Labour (Civil Engineering)	Relevant construction material					
		Aggregates	Diesel fuel	Portland cement (ordinary)	Steel reinforcement	Timber formwork	Galvanised mild steel pipes
Sept 2009	94.2	123.9	168.0	113.3	187.6	140.8	165.7
Sept 2010	95.8 (1.7%)	110.8 (-10.6%)	179.4 (6.8%)	119.8 (5.7%)	217.9 (16.2%)	145.5 (3.3%)	171.4 (3.4%)
Sept 2011	101.9 (6.4%)	139.1 (25.5%)	222.2 (23.9%)	134.7 (12.4%)	249.5 (14.5%)	176.3 (21.2%)	183.4 (7.0%)
Sept 2012	108.9 (6.9%)	145.8 (4.8%)	230.6 (3.8%)	138.1 (2.5%)	209.5 (-16.0%)	179.8 (2.0%)	182.9 (-0.3%)
Sept 2013	122.6 (12.6%)	138.7 (-4.9%)	234.5 (1.7%)	138.3 (0.1%)	189.9 (-9.4%)	182.9 (1.7%)	182.6 (-0.2%)
Sept 2014	135.1 (10.2%)	195.8 (41.2%)	235.0 (0.2%)	144.5 (4.5%)	164.4 (-13.4%)	187.4 (2.5%)	182.6 (0.0%)

(b) *The Administration to provide information on the management of marine fill and marine disposal of dredged/excavated sediment;*

Sewage sludge is a by-product of sewage treatment process, which is generated by the Government's regional sewage treatment works. The STF is designed to treat sewage sludge by fluidized bed incineration. Sewage sludge, largely composed of organic matters, is suitable for incineration. It is not the same as mud generated by dredging activities which is managed differently.

For maritime safety and flood control consideration, it is necessary to conduct

maintenance dredging of harbour fairways, berths, anchorages, navigation channels or approaches, as well as drainage channels and watercourses. Marine sediments so generated, commonly referred to as marine mud, are largely composed of inert geological materials and they cannot be incinerated. They are disposed of at designated open sea disposal grounds or confined marine disposal facility depending on whether they are contaminated.

The Marine Fill Committee set up under the Civil Engineering and Development Department is tasked to identify and manage the supply and demand of marine fill resources as well as to provide and manage the disposal capacity of the dredged or excavated sediments.

We have briefed Panel Members on 14 June 2013 on the regulatory and management controls currently in place to minimise the impact on the marine environment arising from dredging and sediment dumping activities in the Hong Kong waters. Please refer to the Panel paper “Controlling the impact of dumping and dredging activities on the marine environment” (CB(1)1269/12-13(03)).

(c) The Administration to provide reasons for the differences between the "approved project estimate" and the "latest project estimate" as set out in Enclosure 3 of the Administration's paper;

The “approved project estimate” (APE) is the project estimate as approved by the Finance Committee on 5 June 2009 for the design and construction of the STF. The APE was primarily based on the advice of the expert engineering consultant commissioned by EPD prior to the tendering of the project. The consultant, in formulating the advice, has made reference to the project scope, the reference design of the facility as well as cost information etc.

The “latest project estimate”, on the other hand, is the latest cost estimate of the project taking into account, inter alia, awarded tender prices. STF is a Design-Build-and-Operate (DBO) project whereby tenderers were allowed to propose alternative design, construction and operation methodologies and approaches during tender stage so long as they could meet the technical specifications and requirements set out in the tender documents. Due to the different engineering and operational approaches proposed by the successful tenderer as compared with the advice from our consultant, there are differences in

the pricing of some items (viz. items (a) – (f)) shown under the “latest project estimate” in Enclosure 3 of the Administration's paper. We have explained in Enclosure 3 such differences. Albeit the differences in individual items, before price adjustment, the total “latest project estimate” is very compatible to the APE.

- (d) *The Administration to provide information on the different procurement approaches for public works projects, e.g. the Design-Build-and-Operate (commonly known as "DBO") approach and the Build-Operate-Transfer (commonly known as "BOT") approach, including the criteria for adopting individual approaches;*

As we have mentioned in the funding paper for the STF (PWSC(2009-10)16), the STF is implemented through a DBO contract. The delivery mode is adopted as it provides clear and singular responsibility and liability for the contractor to execute its obligations under the contract throughout the design, construction and operation stages which is warranted for a highly complex waste infrastructure project like STF. Under the DBO contract of STF, the contractor is responsible for the design, construction and operation of STF for a period of 15 years.

The DBO contract is financed by the Government and hence subject to standard public finance control and procedures. The contractor is paid for milestones achieved and services provided during the design, construction and operation stages. The ownership of the facility shall remain with the Government and the facility will be handed back to the Government after the expiry of the operation period.

In Hong Kong, the Build-Operate-Transfer (BOT) contract arrangement is used in public transportation projects. Under the BOT model, the project company of the private consortium will raise its own capital funds, build the public infrastructure and operate this project facility during the contract period. The project company will receive revenue generated from the project facility during the contract period. After the end of the contract period, the infrastructure in its entirety will be transferred to the Government.

- (e) *The Administration to explain why the Government has to bear the extra costs arising from the increases in labour wages and construction material prices given that the project was implemented under a DBO contract arrangement; and*

In capital works contracts, Contract Price Fluctuation (CPF) System is adopted to cover market fluctuation in labour and material costs between the time of tender submission and time of payment for the works completed. It is an equitable risk sharing mechanism between the Government and the contractor as payments to the contractors can be adjusted either upward or downward in response to changes in the material and labour costs. The CPF System helps remove the uncertainty of inflation or deflation during the contract period and hence the tenderers can submit more competitive bids based on the market value of the works at the time of bidding. Without the CPF provision, the tenderers may build in additional premium in their bids under an inflationary environment to avoid loss due to inflation.

In the case of the DBO contract for the STF, CPF provision has been adopted. Nevertheless, the contractor will not receive further price adjustment for any part of the construction works which has been delayed beyond the original works completion dates as stipulated in the contract or the extended completion dates as granted by the Government. There is therefore no question of the Government having to bear the extra costs arising from delay in construction works caused by the contractor.

(f) The Administration to explain what kinds of expenditure items can be utilized under the project contingencies, as well as whether the study on the treatment of bottom ash falls within the scope of project contingencies.

A provision for contingency is allowed in the project cost to cater for additional costs due to unforeseen circumstances and unexpected ground conditions, higher-than-expected tender price, additional works to meet local concerns during construction of the works, etc. Any expenditure items utilizing contingency must be within the approved project scope.

We consider that enhancement works to enable the beneficial reuse of bottom ash arising from the incineration process is within the project scope under paragraphs 3(a) and 10(c) of PWSC(2009-10)16. Indeed, the Government should take initiative to reuse or recycle the bottom ash generated from the incineration process of STF to further enhance the environmental performance of the STF and reduce the need for ash disposal.