

## Hong Kong OWTF phase 1 – Design Build Operate tender cost per tonne of treated food waste almost HK\$ 2,400

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EP/SP/61/10	Open	Organic Waste Treatment Facilities Phase 1	VENTURE 2801 Island Place Tower, 510 King's Road, North Point, Hong Kong	Build, plus 15-year Operation Contract	\$2,380.6M
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200 x 365 days x 15 years = 1,095,000 tonnes cost 2.3806 billion = HK\$ 2,174 per tonne  
 add transport cost min \$ 120 per tonne + tunnel fees HKI/Kln/NT we are looking at \$ 200 per tonne extra  
 \$2,374 per tonne less any beneficial electricity or glop sold

## UK OWTF example compared with Hong Kong food waste plant

Engineer Sent: to CTA Friday, March 28, 2014 3:32 PM

To: clearthear

Subject: RE: Unfair to compare one-stage UK example with Hong Kong waste plant

Perhaps Mr Elvis Au should be challenged as to what the UK does with the resulting sludge from the Hertfordshire bio-digester plant if it is not composted, as the HK waste is planned to be.  
 It shouldn't be too hard to find out whether or not it goes through tertiary treatment but the effluent is disposed of through the sewerage system once treated and the solids probably go to landfill.

### On the compost front....

I was constrained to pass through Victoria Park a few weeks back when the flower show was about to take place. The exhibits were being prepared at the time and, as well as the carefully nurtured plants all lined up in their pots awaiting planting out, there were a number of pallets at the side of the exhibits piled high with plastic bags full of..... compost and peat....all imported, and some of it from as far away as Holland and Spalding in Lincolnshire.

It is interesting to note that **local compost is not good enough for the gardening fraternity**, warranting the import of "crap" from half way around the world at great expense in terms of both cash and carbon footprint. **The reason lies in how low grade the compost is that complies with EPD's HK spec.** Perhaps we should question where LCSD buy their compost. I will place a small bet on the fact that the bulk of it is imported.

There is now very little home-made compost in HK, just that from the rotary composter operated for the Jockey club at the little plant in Ngau Tam Mei. That's since we stopped raising pigs locally and the Sha Ling plant was shut down. Ngau Tam Mei mainly processes horse crap while Sha Ling used to produce the best stuff for the roses made from pig s\*\*t.

As I said the best food waste processors are pigs who genuinely recycle food waste into a high quality product..... Bacon - On the basis that pigs eat 5kg / day ( a guess) we would need about 140,000 to consume 700 Tonnes per day of HK food waste .

Lets say a pig needs 3m x 2m to live comfortably ...so we would need 840,000 sqm of multi storey styes. Say 30 floors tall we would need a building that's 28,000 sqm or just 170m x 170m .. allowing some overhead for the farmer and the waste water treatment plant etc lets say a single building 250m x 250m would solve the whole of HK's food waste problem.. It might smell a bit though. Put it up between the fences at the border in place of the NENT landfill extension where traditionally there always were pig farms.

rgds

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## Unfair to compare one-stage UK example with Hong Kong waste plant

Friday, 28 March, 2014, 3:54am

Comment › Letters

### SCMP Editorial

I refer to the letter by Emily Lam ("Concerns over new organic waste plant", March 24) and the opinion expressed in Lai See ("Digesting the price", March 15). Ms Lam is right that despite food waste reduction efforts, adequate food waste treatment and recycling facilities are necessary to treat and recycle food waste.

Phase 1 of the organic waste treatment facility (OWTF) at Siu Ho Wan in North Lantau will recycle food waste into biogas for electricity generation and compost. The compost produced shall be required to meet the compost and soil conditioner quality standards promulgated by the Hong Kong Organic Resource Centre, which is the compost standard adopted in Hong Kong. Our pilot composting plant at Kowloon Bay has demonstrated that the compost products are of good quality. The compost quality produced by OWTF phase 1 can meet the centre's standards. The average demand for compost in Hong Kong is about 20,000 tonnes per year, therefore, 7,000 tonnes of compost each year from the OWTF phase 1 could be absorbed. As regards the issue of cost raised in Lai See, the scale, scope, type and site conditions for the food waste treatment plant in Hertfordshire, UK, are very different from those of OWTF phase 1. The Hertfordshire plant is only a single-stage process using anaerobic digestion to produce electricity only. OWTF phase 1 is a two-staged process using anaerobic digestion and composting to produce electricity and good quality compost and is designed to operate every day throughout the year. The Hertfordshire plant is located in an industrial area of approximately six hectares. OWTF Phase 1 has to fit into a very compact site of about 2.2 hectares and meet very challenging engineering conditions and stringent environmental standards. The cost figure for the Hertfordshire plant refers to the construction cost only, excluding, for example, the costs of design, contract administration and supervision, and technology supply. **The project estimate for OWTF phase 1 accounts for the total project cost of the design, construction and commissioning.** The Hertfordshire plant is privately owned and does not carry a public education function. The OWTF phase 1 will include public educational facilities. As indicated in our food waste policy blueprint, we will continue to reduce food waste and develop modern large-scale organic waste treatment facilities in phases. (CTA: *hang on, it was supposed to be Design Build Operate starting out at HK\$489 million, and the total for this is now HK\$2.3806 billion!*)

*Elvis W. K. Au, assistant director of environmental protection*

More on this:

[Letters to the Editor, March 24, 2014](#) [1]

[Digesting the price](#) [2]

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Source URL (retrieved on Mar 28th 2014, 5:42am): <http://www.scmp.com/comment/letters/article/1458785/unfair-compare-one-stage-uk-example-hong-kong-waste-plant>

Links:

[1] <http://www.scmp.com/comment/letters/article/1455783/letters-editor-march-24-2014>

[2] <http://www.scmp.com/business/article/1448917/digesting-price>

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**Engineer** Sent to CTA: Friday, March 14, 2014 11:54 AM

To: cleartheair

Subject: RE: Funding proposal for food waste treatment plant passes first hurdle in Legco

Jim - Unfortunately you must compare Apples with Apples.

I don't think you should knock Veolia and SITA, they just respond to the tender invitations they are given... and do very well at it. **For the sludge incinerator the specs included saunas, fountains and education facilities, offices, canteens, landscaping, bus parks, wavy green roofs and the works, none of which Joe public will ever see.** It's a real showcase facility to extol the virtues of EPD.

**Did you know- Most incredibly EPD failed to get WSD to provide water to the site in adequate quantities so the plant included a reverse osmosis desalination plant. Search out the costs for this one.**

The bio digester plant in the UK will not have included state of the art odour control fitted ... it's located on a farm somewhere and the smell doesn't matter, unlike the site at the entrance to the DB tunnel. (CTA: *WRONG – see UK press release below*) It probably doesn't have such stringent air quality controls (*WRONG*) and certainly will not have offices for an army of EPD supervisory staff, viewing galleries and lecture theatres for school kids and a garden shop to sell 100g packs of the compost. I

also doubt that there were specified requirements for curved architectural roofs. It would have been housed in a simple tin clad industrial building. You forget we build things in HK to Rolls Royce standards because that's what's specified and expected when you work for EPD!!! Half the cost is for the bling, same as RTHK's new building.  
Regards

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From: James Middleton  
Sent: **Friday, March 14, 2014 1:14 AM**  
To: [wklo@engineer.com](mailto:wklo@engineer.com); [panel\\_ea@legco.gov.hk](mailto:panel_ea@legco.gov.hk); [f\\_pwsc@legco.gov.hk](mailto:f_pwsc@legco.gov.hk)  
Subject: **Funding proposal for food waste treatment plant passes first hurdle in Legco**

#### ANAEROBIC DIGESTION PLANT:

HONG KONG 200 TONNES PER DAY PLANT COST = HKD 1.5 BILLION ++ operation for 15 years = **\$2.3806bn**

UK 181 TONNES PER DAY PLANT COST = HKD 187.5 MILLION at MOD price

[HTTP://WWW.WASTE-MANAGEMENT-WORLD.COM/ARTICLES/2014/02/IMTECH-WINS-14-5M-CONTRACT-FOR-3MW-FOOD-WASTE-TO-BIOGAS-AD-PLANT-IN-HERTHS.HTML](http://www.waste-management-world.com/articles/2014/02/imtech-wins-14-5m-contract-for-3mw-food-waste-to-biogas-ad-plant-in-herths.html)

#### **IMTECH WINS £14.5M CONTRACT FOR 3MW FOOD WASTE TO BIOGAS AD PLANT IN HERTS**

24 February 2014 By Ben Messenger Managing Editor

UK biogas facility developer, Tamar Energy has awarded a £14.5 million (@12.934) = **HK\$ 187.5 million** contract to Imtech Water, Waste and Energy to build a 3MWe Anaerobic Digestion plant to process food waste in Hertfordshire. According to the developer, the plant located in Hoddesdon, Hertfordshire will handle some 66,000 tonnes per year (181 tonnes per day) of unavoidable food waste, while generating enough energy to power 6,000 homes and producing 18,000 tonnes per year of renewables.

**The facility will include equipment to depackage waste materials, sanitisation systems that meet Animal By-Product regulations, equipment to clean the biogas prior to use by the gas engine generators, odour control equipment and a biological wastewater treatment plant that will enable the recycling of process water.**

Tamar Energy's strategy is to develop a UK network of up to 40 plants over the next five years. Imtech said that it was selected to deliver this project due to its track record of effective Engineering, procurement and construction delivery of renewable energy projects in the waste and water sectors.

**"The ex-power station site is exceptionally complex, with numerous challenges, including a flood plain location, ecological considerations, high pressure gas main through the centre of the site, adjacent 400kVa high voltage overhead power lines, in ground power lines and an adjacent historic asbestos landfill,"**

explained Tony Wilson, director of construction and operations at Tamar Energy.

#### Clear the Air says:

**Where is the Hong Kong legislation on separation of food waste at source ?**

**Where is the HKG Green bin collection system for food waste and yard waste as exists elsewhere in the modern world (such as Santa Monica where Christine Loh has her home)?**

This is all very well to spend taxpayer money but think of the cost. Let us assume the plant lasts for 25 years. That's HK\$1,500,000 / 25 years = 60 million per year plus 75 million per year operating cost (which will increase over the lifetime of the facility) ... total HK\$135 million per year min for treating 200 tonnes a day

That works out at \$135,000,000 / 200 tonnes / 365 = \$1,849 / tonne... less the value recovered from the electricity (14million kWh at say \$1 per kwh) = \$1,657/ tonne.

Low grade foodwaste @ 78% - 90% water content = that is pretty costly and we then still have 50 tonnes of low grade compost a day that nobody wants so it will still have to be handled and transported to go in the landfill at \$450 per tonne (@), once the airport grass is full of the stuff, assuming the compost does not become Foreign Object Debris (FOD) , that is.

So for every tonne of food waste processed in this way it will cost \$1657 + (50 tonnes @ \$450 landfilling) = \$1,770 / tonne compared with \$450 per tonne to handle, transport and put it in a landfill. We only gain 1.5 MW at best, not enough for 1 large commercial building. This is not the right way to go...is it ?? Are Legco going to agree to pay for this when they find out how much it will cost **when a similar plant in UK in a difficult location and higher labour costs is 800% less expensive ?**

#### **Solution is available:**

High water content HKG waste food should go through the sewers at minimal cost to garburate it, whether digested or not and the remaining dry MSW with the high calorific and recyclable value after picking out the true recyclables should go to, recycling,

not burning - as directed by the Legco Panel on Environmental Affairs in 2012 when addressing the Administration's request for landfill extensions and an incinerator.

## Meanwhile dare we ask why there is such a vast disparity between a new plant in UK in a highly difficult location and one proposed in Hong Kong of almost the same capacity ?

@ \$450/ tonne of compost is approximately what it really costs, i.e. the total construction cost plus the total operating cost over the life of the facility / gate tonnage received and transportation to landfill or airport for use ....not the subsidized rate that is charged at the facility gate

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### Funding proposal for food waste treatment plant passes first hurdle in Legco

Thursday, 13 March, 2014, 12:07pm News> Hong Kong ENVIRONMENT

Cheung Chi-fai [chifai.cheung@scmp.com](mailto:chifai.cheung@scmp.com)

Legislators are concerned about rising construction costs but believe the plant is essential

Lawmakers today threw their support behind a government funding request for the city's organic waste treatment plant in Siu Ho Wan – despite the estimated cost having been tripled.

At the special meeting of the environmental affairs panel this morning, legislators were concerned about the sharp rise of construction **cost from HK\$489 million to over \$1.5 billion**, but they believed the facility was essential.

“The government must admit that they might have underestimated the costs as officials might not have a deep understanding about the facility. But the money is still worth spending,” said lawmaker Lo Wai-kok, from the engineering sector.

Helena Wong Pik-wan, from the Democratic Party, Elizabeth Quat from the Democratic Alliance for the Betterment and Progress of Hong Kong, Frankie Yick Chi-ming from the Liberal Party, Kenneth Chan Ka-lok also said they supported the funding in principle.

The only lawmaker opposed to the facility was Albert Chan Wai-yip, from People's Power. He was absent from the meeting but his written submission said it was wrong to place the plant on the proposed location.

Despite the support, officials still have to get approval from the Public Works Subcommittee and a final approval from the Finance Committee.

The plant in Siu Ho Wan, north Lantau will have a daily capacity of 200 tonnes. It is scheduled to open by 2016. About a third to 40 per cent of waste being dumped in landfill is food waste.

Elvis Au Wai-kong, assistant director of environmental protection department, said about a third of the cost rise was attributed to the rising construction costs, while another third due to extra environmental mitigation requirements. The rest was caused by additional facilities such as pre-waste screening to the plant.

“We have tried to lower the cost as far as possible. But we still believe this centralised facility will be a cost effective one,” he said.

Christine Lo Kung-wai, Undersecretary for the Environment, said the Siu Ho Wan plant will cater for the business sector first because it was easier for “professional kitchen” to sort out food waste. She said they would look at how best to collect and transport the food waste to minimise environmental impacts.

But Loh refused to comment on how the “polluter pay” principle would be applied when it came to recovering the costs of the plant and its annual operating cost of \$74 million. Au added that the charging issue would be considered together with the overall waste fee. The plant will also generate about 14 million kilowatt per hour residual energy from the food waste treatment process, which was **only half the level that lawmakers were previously told**.

Au said part of the power will go to the sewage treatment centre and water treatment facility nearby, and **the rest would be put to the grid of CLP Power**. (CTA: *is any offtake agreement with CLP in place or more Elvis pie in the sky??*)

More on this:

Hong Kong government to propose cutting food waste by 40 per cent by 2022 [1]

Two-thirds of companies in Oxfam survey dump HK\$60m in surplus food [2]

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Source URL (retrieved on Mar 13th 2014, 5:35pm): <http://www.scmp.com/news/hong-kong/article/1447674/funding-proposal-food-waste-treatment-plant-passes-first-hurdle-legco>

Links:

[1] <http://www.scmp.com/news/hong-kong/article/1431357/hong-kong-government-propose-cutting-food-waste-40-cent-2022>

[2] <http://www.scmp.com/news/hong-kong/article/1429835/two-thirds-companies-oxfam-survey-dump-hk60m-surplus-food>