



**Environmental Campaign Committee**  
**Educational Education and Community Action Projects**  
**(EE&CA)**



**Survey on Participants**

(To be filled out by participants)

The purpose of this survey is to assess the effectiveness of the activity for reference to future review and enhancement. Please “✓” the appropriate box that best describes your comment. Thank you.

Name of Project and activity : Waste Management Mission Study Tip to Singapore Workshop 2 – Cheung Chau

Date of activity :9 July 2012

(suggested to be filled out by recipient organization on behalf of participants)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. The activity has enhanced participants' environmental knowledge and understanding of environmental problems in Hong Kong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. The activity has enhanced participants' environmental awareness	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The activity has aroused participants' interest in joining other environmental activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. The activity helps participants' to put environmental knowledge into practice in daily life (e.g. waste reduction / separation and recovery of waste / energy saving / conservation of water resources)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. The activity helps participants to spread environmental messages to their families, schoolmates and friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Other comments / suggestions  (Please use supplementary sheets if the space provided is insufficient)	See below				
7. Other comments on improving the EE&CA activities	_____				

Don't be a tool for spreading propaganda!

(Please use supplementary sheets if the space provided is insufficient)

~ Thank you for your valuable comments ~

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The Singapore trip looked of very dubious value.

Much of what I saw / heard in the meeting reporting on trip to Singapore [held on Cheung Chau] was information akin to public relations material on behalf of the Singapore waste treatment authorities, including incineration.

[seems there was little interest in or effort regarding finding problems with incineration; not surprising given this trip looked like a nice cheap holiday for those invited along; and a holiday supporting the crazy policies from under Edward Yau / Donald Tsang – who between them did next to nothing on behalf of Hong Kong's environment]

By contrast, did hear of opposition to building incinerator by Shek Kwu Chau; and seemed there was no need to go to Singapore to know this is a **very bad idea**.

Probably very few people know results of the trip; seems to have involved a small circle. [Who or what is the Islands District Association anyway? Maybe viewed by some incinerator supporters as convenient organization for attempting to show support for the destructive plans for beside Shek Kwu Chau]

### **Avoid incinerators for better Hong Kong**

If you want a better environment for Hong Kong, avoid waste incineration. Easy enough to say why: you get poisonous emissions (including particulates), and toxic ash. Nothing positive produced except a little energy.

Instead, should have pro-active efforts towards reuse, recycle – and especially reduction. [never mind dealing with waste; should be a lot less of it in first place]

### **Hong Kong's recycling efforts are pathetic**

Hong Kong is pisspoor at recycling at present. Relies too much on old ladies making a pittance for scavenging from waste bins, and pushing trolley loads of cardboard etc towards under-supported recycling places.

“Islands District Recycling Scheme” may be good for a few people who perhaps make a bit of money from it; but near useless in terms of actual results. [Although may be good for incinerator proponents in EPD: they can say “Hey look, we have this recycling scheme, and not much happens; so we must have a massive and massively expensive incinerator” The folks who are anticipating massive money from building island, incinerator etc must be very happy with this too...]

For improved scheme: get those “involved” off their chairs during the few hours they are working on an island [8 hrs per week on Cheung Chau?], and moving around, helping stir up interest, and actually collecting recyclable material. Should also involve those already working on recycling on islands, and the waste collection people; consider some incentives, so the more that's collected, the more people might make.

Show a bit of imagination, get some enthusiasm!

For Hong Kong overall: likely need more legally, plus financial support, and actual action – not just money handed out, apparently by people who stay in their offices (Anissa Wong) or make lots of overseas trips (Edward Yau) without actually getting out and about, finding what's happening, and rolling up sleeves to do

~ **Thank you for your valuable comments** ~

something and help ensure more happens.

[has anyone asked the guys working on Islands District Recycling Scheme how the scheme can be improved? Offered any encouragement, incentives to them? Come out to the islands to see what the scheme looks like, and worked on it for any time? Hah, that is not Anissa Wong's style is it?!]

### **Alternatives to incineration and landfilling**

For food waste, aim for more than just baby steps with anaerobic digestion.

This may suit smaller projects, such as community level. For Cheung Chau, say, there's a lot of food waste from restaurants; if collected, could use to make compost [not just tiny amounts I know of at present], and generate some electricity.

There will still be waste to treat, or landfill. But no, this does not mean it's ok to use incineration.

Instead, turn to plasma arc treatment: can create jet fuel, or synthetic natural gas; or electricity thro hydrogen cells – so versatile.

And can do so with near zero / zero poison emissions, and zero toxic ash [instead, get glassy rock like material] Can site a plasma facility at a landfill; or facilities at landfills. And can mine the landfills, for products like jet fuel or gas or energy, as well as metals etc; and eventual restoration of landfill sites.

Yes, there are “arguments” plasma arc can't handle the quantities supposedly needed (yet if we recycled etc well, would not have any such quantities to treat!)

But consider this:

Incinerator: used large scale; certainly poisonous emissions and toxic ash.

Plasma arc: minimal/zero poison emissions, not large scale for waste but all technologies proven

[EU aims to stop incinerating recyclable material by 2020; New York City wants waste alternative excluding incineration, which is booming in China but not elsewhere – so we are a great target for those who still want profits from selling incinerator technology]

Should be an easy decision re which is the better “bet” if you want a sustainable future for Hong Kong

### **Vested interests**

But we have too much in form of vested interests that have already propelled crazy incinerator plans with great momentum – this momentum even leading to the Singapore cheap holiday to look at incinerators and come back with public relations info [for the most part]: issue too little about science and sustainability, but instead politics – and greed.

We need, too, more honest and open discussions; and should be more open to ideas – much as New York City has requested proposals for dealing with its waste. [Not just come up with its own idea, and tried to stick with it never mind all the opposition, and the science that says the idea sucks]

~ Thank you for your valuable comments ~

Below is a column I wrote on issue for South China Morning Post. I can supply more info if anyone's interested; unlike EPD which has claimed to have been in touch with plasma arc companies etc, I actually have had direct contact [leading to a little more contact by EPD].

## **Ideas for a Cleaner, Healthier, Smarter Hong Kong**

By Dr Martin Williams

You've probably seen reports on plans for building a mega waste incinerator on an artificial island beside Shek Kwu Chau. Though rejected by a Legislative Council panel, the plans have not been abandoned. After four Hong Kongers were this month given permission for a judicial review of the plans, the government responded there is no alternative to building the incinerator at Shek Kwu Chau.

Is this true? Can Hong Kong find no better way of dealing with waste than shipping it to a beautiful coastal area and setting fire to it? I've been deeply involved in opposing the incinerator plans, and have learned there's a range of alternatives, ranging from straightforward to one that seems verging on science fiction.

At first, I believed reports that the planned incinerator technology is so advanced that the emissions would be wonderfully clean. After all, Hong Kong used to have four waste incinerators, but closed them all down by 1997 because of concerns over air pollution – and the government would not be so crazy as to plan a similarly dangerous facility today, would it?

Yet information on incinerators reveals that even the best of them emit significant quantities of particulates, which were a key concern with the past incinerators, and have been shown to have more adverse health impacts than earlier realised. Improved techniques might reduce dioxins, yet incinerators produce an array of toxic molecules, along with mercury and cadmium. And chemicals not emitted to the air are trapped in chimney ash so toxic it can qualify as hazardous waste.

Given such issues, incineration looks an unwise, even irresponsible way to proceed. But doing nothing is not an option. We're among the world's most throwaway societies, each day dumping over 13,000 tonnes of waste in landfills that will soon reach capacity.

This profligacy means there is immense scope for reduction, reuse and recycling. Though the government claims a high, 52 percent recycling rate, this figure is well below the 70 percent rate achieved in Germany, and we set our sights low compared to San Francisco, which aims for zero waste to landfills by 2020. Currently, Hong Kong's recycling efforts are prone to being so passive as to verge on being useless; a more proactive approach is needed.

Even with massive boosts to recycling, we will need to treat remaining waste. One technique involves using bacteria to process food waste, and produces biogas that can be burnt to generate electricity, together with material suitable for use as compost. But though widely adopted by some cities such as Toronto, it may be best suited to small scale applications.

What, then, of the "science fiction" technique? This seems far-fetched when you first hear of it, as it involves treating waste using plasma – the fourth state of matter – that can be hotter than the surface of the sun. It may, however, be a technique whose time has come. Indeed, *Scientific American* included it among 20 "world changing ideas" for making our planet cleaner, healthier, and smarter.

**~ Thank you for your valuable comments ~**

Plasmas are so energised that they abound with charged particles. They make up stars, and occur in lightning. Plasmas have also been harnessed for an array of uses by forming them in arcs between electrodes – and it's these plasma arcs that are now being deployed for transforming waste.

Though plasma arc torches originated in the late 19th century, their main development stems from the 1960s, when NASA deployed them for generating the extreme temperatures needed to test heat shields for re-entry vehicles. Their applications include destroying medical waste, recovering metals from electronic waste, rendering asbestos harmless – and treating municipal waste.

Plasma waste treatment differs from incineration in several important ways. Notably, incineration means burning: oxygen reacts with organic chemicals to form smaller molecules that might themselves react together, leading to hundreds of compounds being found in incinerator emissions. Incinerator ash, particularly the fly ash from chimney stacks, contains the dangerous chemicals that are not emitted.

Plasma processes are much hotter, perhaps well over 4000°C. These temperatures, coupled with intense ultraviolet light, blast molecules apart; organic chemicals disintegrate to simple components. The resulting gas mixture called syngas, is mainly carbon monoxide and hydrogen. Other material forms something like lava, which can be solidified into a glass-like material with metals and other toxins so effectively “locked” within that Japanese incinerators treat fly ash with plasma arc torches.

The syngas can be burnt to generate electricity, rather as incinerators may be used for “waste-to-energy”. But in another marked contrast to incineration, the syngas has other possible uses.

One company, Solena Fuels, is working with airlines and a shipping company to develop projects that transform syngas into jet fuel and ship fuel from waste. Advanced Plasma Power, which specialises in plasma arc treatment of municipal waste, is exploring ways to synthesise natural gas.

Here in Hong Kong, the Environmental Protection Department has fielded an array of objections to plasma arc treatment. One objection is correct: there are no large scale plasma arc waste treatment facilities in operation. However, several projects are being planned or built worldwide, and set to become operational well before Hong Kong could complete its outdated incinerator.

Contrary to an EPD assertion, there are plasma arc companies willing to work on treating Hong Kong waste. Solena Fuels has suggested building waste to jet fuel facilities at landfill sites. Advanced Plasma Power has formed a consortium prepared to financially guarantee a large-scale facility, and first build a pilot plant – just as they hope to build a pilot project for New York City.

New York City closed its last waste incinerator in 1999. It too has a serious waste problem, but instead of looking backwards for solutions, it is seeking proposals for waste-to-energy projects that exclude mass burn incineration. Under Donald Tsang and Environment Minister Edward Yau, Hong Kong has been fixated on a return to incineration. With the Legislative Council giving the thumbs-down to Shek Kwu Chau plans, and the advent of a new leadership team, perhaps we can instead look to the future, and to ideas for building a cleaner, healthier and smarter Hong Kong.

*Martin Williams is a writer specialising in conservation and the environment, with a PhD in Physical Chemistry from Cambridge University, UK.*

**~ Thank you for your valuable comments ~**