

Opening Remarks By Mr Raymand Fan, Deputy Director of Environmental Protection, HKSAR Government

I am delighted to have this opportunity to speak to you at this conference. The task given to me is to 'set the scene'. I will first talk about the waste problem in Hong Kong. Then I will go through the waste management strategy that the government adopts. I will also introduce to you some of the many measures that we are currently implementing and those that we are planning. Lastly we will look beyond the present and see what is there in future for waste management in Hong Kong.

We keep saying that the waste problem in Hong Kong is serious. But actually how serious is it and what exactly is the problem? Let us first look at some figures. In 2004, a total of about 6.4 million tonnes of waste were disposed of in our three landfills, that is, 17500 tonnes per day. Even if we exclude the construction and demolition waste and special waste, Hong Kong still produces 9 280 tonnes of municipal solid waste (MSW) per day - enough to fill about three Olympic-sized swimming pools. This is about 1.3 kg for every person.

We've been talking about waste all the time but still people seem unaware of the severity of the problem. This is because the Government has been doing such an efficient job in disposal of waste. When waste is out of sight the waste problem is out of mind. An average person, that means, people other than the professionals and experts we have here in this conference, would not see waste as posing any problem.

In addition to the sheer volume of waste generated and the suboptimal public awareness, the waste disposal method is also part of the problem. Currently we rely solely on landfills for waste disposal. We estimate that the existing landfills would only last six to ten years if waste continues to grow at the current trend. Relying solely on landfilling for waste disposal is definitely not a sustainable practice. You all know how difficult it is to find large pieces of land for such purpose in Hong Kong. Moreover, landfilling would bring about long-term burdens to our environment. We need to take great care of the landfill gas and leachate produced for protracted periods of several decades. There will always be a considerable amount of waste that needs to be disposed of. It is therefore clear that we need alternatives other than landfills.

Managing this waste problem is by no means simple. We must adopt a 'multi-pronged' strategy to tackle the problem on all fronts. A comprehensive waste management strategy comprises three key elements:

- (a) waste avoidance and minimisation;
- (b) recovery, recycling and reuse; and
- (c) bulk reduction and disposal of unrecyclable waste.

All three elements are essential but the government's focus have been, and will continue to be, on the first two.

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The first and foremost element to effectively deal with the waste problem is to avoid the production of waste and to minimize it where it is not possible to do so.

Environmental education and public participation play an important role in waste avoidance and minimization. We need to make people aware of the problem and translate the awareness to action. To this end, the Environmental Campaign Committee (ECC) and the Environmental Protection Department (EPD) have been promoting waste prevention and recovery through publicity and public education programmes.

To name a few of the programmes: EPD has administered a “Wastewi\$e” Scheme since 1999 to encourage businesses to adopt waste reduction measures. So far, over 770 companies and institutions have enrolled in the Scheme and 244 have been awarded the “Wastewi\$e” logo to commend their achievement of waste reduction targets. Under the Hong Kong Eco-Business Award organized by ECC, property management companies are commended for implementing effective waste management plans to reduce, reuse and recycle waste materials for the housing estates under their management. EPD, in collaboration with the Hong Kong Construction Association and the Real Estate Developers Association, has produced a set of publicity materials for promoting waste reduction in the construction industry. Publicity and community education programmes will continue to highlight the importance of waste avoidance and minimization.

The next step is to reuse, recover and recycle the unavoidable wastes. To encourage and facilitate the community to participate in waste recovery, the Environment and Conservation Fund (ECF) provides funding for waste recovery projects undertaken by green groups and community organizations. Since 2002, a total of \$19.6 million has been granted for such purpose.

In January this year, the government launched a territory-wide programme to make it more convenient for households to separate domestic waste at source by encouraging and assisting property management companies to provide waste separation facilities on each floor of the buildings. The programme also aims to expand the types of recyclables to be collected such as plastic bags, metal containers, old clothing and used electrical appliances.

To further enhance waste recovery, a regional collection centre for electrical and electronic appliances will be set up at the Kowloon Bay Transfer Station in the fourth quarter of 2005.

With better separation at source, the cost-effectiveness of the collection of recyclables will be highly improved, thus enabling more wastes to be reused and recycled. The same principle can be applied to all kinds of recyclable wastes such as expanded polystyrene, electronic goods, plastics, food wastes, beverage containers etc. The various collection activities will also enhance the educational aspects of the campaign, and households, having to separate waste at home, would be more conscious of the volume of waste they produced.

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These programmes and educational efforts need to be complemented by economic incentives. Product Responsibility Scheme (PRS) is one of the financial instruments that we are considering.

PRS is a shared responsibility tool to enhance recovery, recycling and reuse of waste. Under PRS, a host of stakeholders (the manufacturers, importers, distributors, retailers and consumers) are responsible for the waste collection, treatment and disposal of the end-of-life products. The responsible parties have to assume financial responsibility to fund the collection and recycling of the used products.

We are focusing on studying the feasibility of introducing PRS on four products, namely, vehicle tyres, rechargeable batteries, electrical and electronic appliances, and beverage containers. This is because there is successful overseas experience on introducing PRS for these products; and having taken into account local circumstances, we consider it more likely to launch successful programmes for these products in Hong Kong.

I am happy to see that voluntary recovery programmes are being organized. A voluntary programme for rechargeable batteries was launched in April with 33 manufacturers and importers contributed to the scheme. Recovery programmes for used electrical and electronic appliances and computers are being run by two charitable organizations. These programmes facilitate recovery and recycling. We can also gain experience from them.

Another financial instrument that is vital to a sustainable waste management strategy is charging. Disposal of waste at landfills in Hong Kong has always been free of charge. Taxpayers are now subsidizing the waste producers \$2.2 million every day in handling waste disposed of at landfills. Implementing the "polluter-pays" principle is an essential part of a sustainable waste management strategy as it provides economic incentives for waste producers to reduce waste and carry out sorting to facilitate reuse or recycling.

We will first start with construction and demolition waste by introducing a disposal charging scheme for such waste. The relevant legislation has been passed by the Legislative Council. We are now actively undertaking necessary preparatory work for implementing the scheme, including upgrading existing waste disposal facilities, providing sorting facilities, dry-runs, and education and publicity programmes. We aim to implement charging this year.

While the overall rate of MSW recovery and recycling is 40 %, the recovery rate for domestic waste is only 14 %. Our target is to achieve a recovery rate of 20 % for domestic waste by 2007 and an overall MSW recovery rate of 50% by 2014. As mentioned above, fiscal measures are crucial to the achievement of these targets. Since an MSW charging scheme will be more complicated and will directly affect the whole community, the operational arrangements and charging method of such a scheme will require careful study.

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Drawing on the experience of the construction waste charging scheme, we will study the feasibility of an MSW charging scheme.

The programmes and initiatives mentioned above would increase the amount of recyclables that can be collected. They will also enhance the efficiency of collection. We are therefore developing measures to promote the environmental industry in Hong Kong. This will provide greater incentive to collect recyclable wastes locally.

Apart from improving the collection network through separation of waste at source, availability of land at an affordable cost is very important to the environmental industry of Hong Kong. The allocation of suitable land through short-term tenancy (STT) has been one of the management tools to support the local waste recyclers.

As at May 2005, 29 STT sites with a total area of around 5.6 hectares have been leased for waste recovery and recycling operations since 1998. There were six new STT sites at the planning (pre-tender) stage which will provide some 2.6 hectares of additional land in the near future.

We have also earmarked 20 hectares of land for the development of an EcoPark in Tuen Mun Area 38. The EcoPark will be fully equipped with proper vehicular access, utilities, waste and water treatment, and other common facilities. The availability of 460 m of waterfront for berths can further reduce the operating cost of the recyclers. The provision of these facilities, together with long land tenure made available at reasonable prices, will greatly facilitate the development of the local environmental industry and encourage recycling operators to invest in the most up-to-date and efficient recycling technologies. Our target is to commission first phase of the EcoPark in late 2006.

The development of local environmental industry cannot succeed without research and development. The Government has been supporting the environmental industry in this regard. Apart from the \$ 19.6 million granted for community recovery projects, the ECF has also granted \$ 32 million to 96 research and development projects. The Innovation and Technology Fund (ITF) also contributes to the development of the environmental industry. Up to March 2005, a total of \$ 63.1 million has been granted to 28 projects to promote the environmental industry.

I am delighted to report that with all these measures, solid progress has been made. The recycling rate of MSW increased from 36% in 2002 to 40% in 2004. The intake of MSW at landfills stabilized for four consecutive years since 2000. This compares favourably with the 3.5% annual growth rate before 2000.

While waste reduction and recovery have been and will continue to be our main focus in the overall waste management strategy, there will still be large volumes of waste which cannot be recycled and need to be properly disposed. Adopting landfill as the only waste disposal method is clearly not sustainable. Even

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the most environmentally advanced country in the world cannot rely solely on landfilling to deal with its wastes. There is a need to establish alternative waste treatment methods to reduce the volume of waste before final disposal.

We are identifying the viable technologies to be adopted with a view to developing state-of-the-art, cost-effective and environmentally friendly large-scale waste treatment facilities to reduce the volume of waste before final disposal in Hong Kong. There are many different technologies available that could reduce the volume of waste and make waste treatment more effective and sustainable. To ensure that we will not miss out any potential technologies that are suitable for Hong Kong, particularly some new and innovative ones that have emerged in recent years, an expression of interest (EoI) exercise was launched to invite local and overseas suppliers and facility operators to propose waste treatment technologies for the development of Integrated Waste Management Facilities (IWMF) in Hong Kong. A total of 59 submissions were received. An Advisory Group comprising mainly non-officials, including academics and professionals, has been set up to assist and advise the Government in selecting the most appropriate technologies based on environmental, technological, social, economical as well as consumer considerations.

Six major technology types that would have potential applications in Hong Kong were identified from the submissions. They include composting, anaerobic digestion, mechanical-biological treatment (MBT), incineration, gasification, and co-combustion. Based on these technologies, the AG has further short-listed eight strategy options that appear to be suitable for Hong Kong. Some options comprise more than one technology, and they include -

- ◆ Incineration with energy recovery
- ◆ Gasification
- ◆ Close-coupled gasification-combustion
- ◆ Material Recovery and combustion of refuse derived fuel for cement production
- ◆ Mechanical-Biological Treatment
- ◆ Composting and Incineration
- ◆ Anaerobic Digestion and Incineration
- ◆ MBT and Gasification

These strategy options have been evaluated against a set of comprehensive criteria using a quantitative and qualitative approach. The evaluation result indicates that each option has its strengths and weaknesses that need to be taken into account when formulating the strategic implementation plan. Some options have also proposed more than one technology. In the light of the heterogeneous nature of our domestic and commercial & industrial waste, the AG recommended that the facilities should adopt a multi-technology approach so that the most suitable technology could be applied to deal with different waste streams.

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For example, mixed MSW may be treated by MBT. Experience in Europe suggests that some 50 - 60% of the residues will need to be disposed of at landfills if MBT technology alone is adopted. Hence, for the future IWMF, MBT cannot be used as the only method to treat mixed MSW, and its scale would depend on the available outlets for its residues.

For the remaining portion of the mixed waste, which is not treated by MBT, thermal technology should be considered. Amongst various thermal technologies identified, namely, incineration, gasification and co-combustion, incineration is considered the preferred technology.

At this point I would like to respond to two most common criticisms during the discussion on alternative waste disposal methods. The first one is that the government is only working on the final waste disposal but ignoring waste reduction and recycling. This is not true. As I have said at the outset, waste reduction and recycling are the main parts of our waste management strategy. But focusing on waste reduction and recycling does not mean that we can do without bulk reduction and final disposal. The multi-technology approach of bulk reduction of waste will be built upon and complement the existing efforts to promote waste reduction and recovery.

The second common criticism is that the government is hard selling incineration, which is labelled by some as a dangerous technology. Firstly, the government is not 'selling' any technology. We believe that the decision should be made based on scientific facts and thorough analysis. Secondly, incineration is a technologically well-proven method adopted by many advanced countries in Europe and Asia. About 130 million tonnes of MSW are combusted annually in over 600 waste-to-energy (mostly incineration) facilities worldwide. Most of these facilities are in the more advanced countries such as Japan, US and the EU countries. Many countries have adopted stringent standards for emissions from incinerators. As emission controls have become progressively more stringent across Europe in recent years, smaller scale incinerators are being phased out and are replaced by fewer, but larger and more advanced incinerators capable of achieving the new emission limits. To meet the emission limits for dioxins and furans, most MSW incinerators now operate an air pollution control system based on the injection of materials such as activated carbon powder to absorb these pollutants, and a filter system to remove the injected materials with the trace contaminants. No matter which technology is to be employed, the environmental control standards, including emission standards, to be adopted for the IWMF will be one of the most stringent standards among these technologically advanced countries.

In view of the urgency and seriousness of the waste problems that we face, a definitive and agreed way forward to resolve them is vital. The solution lies in a multifaceted plan that tackles the issues from all fronts. While we will continue to further our community education efforts to encourage the public to participate in the territory wide programme on separation of domestic waste at source and other waste reduction and recycling programmes mentioned above, we would need to draw up an overall strategy for the management of



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municipal solid waste. We are working towards publishing the policy document later this year.

The Government cannot work on solving the waste problem alone. The community needs to take on a more direct responsibility for and to play a more active role in addressing our environmental problems. The sustainable development of our society needs participation of us all.

In Hong Kong it is particularly encouraging to see the significant role played by the private sector here in promoting waste reduction and recycling, and environmental protection in general. Businesses can and must play a large part in dealing with our environmental challenges. We are glad to see that businesses and NGOs are not just responding enthusiastically to our initiatives, but are also taking an active role in environmental protection. It is most encouraging to notice that there are actually more and more ideas and actions originated from them.

'Save the Environment for Future Generations' is our common goal and mission. The Government will continue to play an important role in environmental protection. But results could be achieved only when we have the full support from and participation by the community and the business sector. I urge all of you to join us in this partnership to solve the waste problem. With the concerted effort of all, I am confident that Hong Kong will be a place fit for our children to live and prosper in the years ahead.

Thank you very much.