



*Meeting for Panel on Environmental Affairs on 15 November 2004*

Way forward for the Harbour Area Treatment Scheme (HATS) Stage 2

Subsequent to the commissioning of the Harbour Area Treatment Scheme (HATS) Stage 1, the improvement on the water quality has demonstrated that the marine environment of our precious Victoria Harbour can and should be restored. It was reported that some marine organisms have started to re-colonise in the Harbour areas. Nevertheless, more than 450,000 cubic metres of sewage, mainly from northern and western Hong Kong Island, still continue to enter the harbour untreated.

HATS Stage 2 has previously been discussed in this Panel in the previous term of Legislative Council (7 July 2004), and WWF expressed our grave concerns on this important sewage infrastructure, particularly on the Phased Approach and the Polluter Pays Principle. As we approach the end of the consultation period, WWF Hong Kong wishes to reiterate our views on some of these important issues.

**Phasing of HATS Stage 2**

Despite the fact that the biological treatment is recognised as essential for our harbour sewage, the Consultation Document suggests to phase the HATS programme into Stage 2A and 2B. The Biological Aerated Filters (BAF) treatment in Stage 2B would only be implemented **IF** it is found to be **necessary**. While supporting the connection of remaining sewage from northern and western Hong Kong Island to the Stonecutter Island Treatment Works, WWF considers it inappropriate to phase Stage 2 of HATS. We strongly urge the Government to plan the HATS Stages 2A and 2B as a whole, and set a firm time frame for implementation of both stages.

It is indisputable that Secondary/Biological Treatment is needed for the sewage of Victoria Harbours. We understand from the Consultation Document that the costs to implement the HATS Stage 2B may be significant, however, the Government should not underestimate the economic and environmental benefits from Stage 2B. As the Asia's "World City" and an internationally favoured tourist spot, Hong Kong has relied on Victoria Harbour to develop our tourism industry. Smelly and polluted water combined with the absence of marine life in the past decades has left terrible images to many tourists. This has also hampered the further potential development on the uses of the Harbour. To restore the degraded marine environment, Secondary Treatment is **necessary** as it not only removes ammonia, which is highly toxic to marine life, in the sewage but also reduces harmful bacteria, *E.coli* (will be discussed later).

WWF emphasizes again that the International Review Panel<sup>1</sup> (IRP) commented that the discharge of chemically enhanced primary treatment (CEPT) effluent into waters south of Lamma Island is neither a viable nor a sustainable option. The proposed HATS phasing arrangement with shorter outfalls within the Victoria Harbour, not only undermines one of

---

<sup>1</sup> IRP (2000). Review of Strategic Sewage Disposal Scheme, International Review Panel.



## ***Special Meeting for Panel on Environmental Affairs on 7 July 2004***

Way forward for the Harbour Area Treatment Scheme (HATS) Stage 2/Findings of the trials and studies relating to HATS Stage 2

the most important comments from IRP, but also jeopardises the concept of Sustainable Development.

### **Disinfection**

With all the primary treated effluent discharge located at the Stonecutter Island Treatment Work, concentration of bacteria including *E. coli* and other pathogens at the outfalls and nearby water is expected to increase. In order to meet the bathing water criteria, the Consultation Document proposed the use of Chlorine to disinfect these effluents.

Although chlorination could effectively remove *E. coli*, it may also create adverse impacts to the marine environment. Total Residual chlorine (TRC) and Chlorination By-Products (CBPs), which form in the disinfection process, are recognised as being highly toxic to marine organisms and humans. In order to disinfect huge volumes of sewage produced around the harbour, a large quantity of chlorine will be needed, and this in turn may produce much TRC and CBPs in the effluents. Hence, it is doubtful whether Chlorination is the best option for the disinfection of effluents of HATS.

Secondary Treatment could also remove *E. coli* and other harmful substances including viruses and protozoa but without such potential environmental hazards. This has been demonstrated in the Compact Sewage Treatment Technology Pilot Test Trails<sup>2</sup>. Should any disinfection process, such as Ultra-violet, be required to further reduce the *E. coli* level, it could be achieved at a much lower cost.

Beaches are not only for swimming but also for appreciating the diverse marine life. Disinfection with chlorine could effectively remove *E. coli* and hence meeting the bathing water quality for swimming. However, many families wish to enjoy a day out to a beach expecting to experience the beauty of nature, with soldier crab, fishes, and other interesting marine life, rather than just a visit to a giant chlorinated swimming pool.

As such, WWF considers the government should expedite the implementation of Stage 2A and 2B simultaneously to improve the marine environment of the Harbour, and to address the potential negative impacts of chlorination as disinfection technique.

---

<sup>2</sup> DSD (2003). *Harbour Area Treatment Scheme. Compact Sewage Treatment Technology Pilot Plant Trails at Stonecutters Island Sewage Treatment Works*. Drainage Services Department Government of the Hong Kong SAR.



In conclusion, WWF welcomes the HATS Stage 2, and is pleased to know that the HATS project has received wide support from the community. In response to the expectation and the concerns of the public, WWF urges the Government show a determined commitment to implement HATS Stage 2, and to:

- a). swiftly schedule an integrated Stage 2A and 2B plan with firm time frame,
- b). properly investigate and address the potential adverse effects of disinfection techniques

A world class city deserves a world class harbour, and a world class harbour needs our commitment to protect, restore and enhance its marine environment. A healthy marine environment could be easily demonstrated by sustaining a diverse marine ecosystem, and implementation of HATS Stage 2A and 2B will help to achieve the goal to attend a healthy harbour for all to enjoy and admire.