



Room 924, 9th floor, Murray Building, Garden Road, Central, Hong Kong  
Tel: 2848 2606 Fax: 2530 5264  
香港中環花園道美利大廈9樓924室 • 電話: 2848 2606 傳真機: 2530 5264

**(ACE Paper 3/98)**  
**for advice**

## **Trade Effluent Surcharge Review**

### **PURPOSE**

This paper reports the outcome of the Administration's consideration of the recommendations made by the consultant in the Final Report of the Review of the Trade Effluent Surcharge (TES) Scheme.

### **BACKGROUND**

#### *The Charging Scheme*

2. The sewage charging scheme is an effort to improve the protection of our environment, based on the Polluter Pays Principle. The scheme comprises two components - a sewage charge (SC) and a Trade Effluent Surcharge (TES). SC is a general charge payable by all water consumers discharging waste water into the public sewerage system. It is currently charged at a flat rate of \$1.2 per cubic metre. In line with water charges, domestic consumers enjoy an exemption of the first 12 cubic metres of water consumed in a 4-month billing period. Certain trades and industries discharge effluent at a strength higher than that of domestic sewage. As a result, a TES which reflects the additional cost of treating the stronger sewage is payable by 30 trades and industries. Charges are calculated according to the volume and strength of wastewater discharged. The Sewage Services Trading Fund (SSTF) within the Drainage Services Department (DSD) was set up to collect the charges and to operate and maintain our sewage collection and treatment systems.

3. The sewage charging scheme is designed to be technically and administratively simple, thereby cutting the administrative costs which will eventually impact on the TES individual dischargers have to pay. This is in line with the request of the previous LegCo that the operating costs should be kept to a minimum.

4. The strength of effluent is measured by the Chemical Oxygen Demand (COD) readings of wastewater. This is considered as the most

suitable parameter as it measures well the strength of industrial and commercial sewage in Hong Kong. The higher the COD value, the higher the treatment cost and hence the higher the TES rate. For simplicity, an average COD value is assigned to a trade to represent the strength of wastewater discharged by it. The volume of effluent discharged is determined based on the metered water supply data. It is recognised that, for some trades, not all water supplied would be discharged direct to sewers because part of it may be used in products or lost to the atmosphere via evaporation. A system of discharge factors is therefore employed to allow for such losses.

5. Subsequent to the enactment of the Sewage Services Ordinance and the two regulations detailing the scheme, viz the Sewage Services (Sewage Charge) Regulation and the Sewage Services (Trade Effluent Surcharge) Regulation, the sewage charging scheme was implemented in April 1995.

#### *Impact on Trades*

6. According to an assessment carried out in 1996, for most manufacturing establishments, the existing SC and TES account for less than 0.3% of their operating costs. However, in the case of heavy users of water (such as the bleaching and dyeing, pulp and paper, stencilling and printing firms in the manufacturing sector; and Chinese restaurants and laundries in the services sector), the SC and TES account for 0.6% to 1.8% of their operating costs. Sewage charges thus represent an insignificant proportion of their total operating costs compared to their overall expenditure on salaries, rents and other overheads. However, some establishments claimed that it was difficult for them to absorb the charges because they were operating at a very low profit margin.

#### *Major Concerns*

7. Under the current system, traders can file an appeal against the COD value and discharge factor assigned to them by producing evidence. Certain trades have criticised that the appeal procedure is complicated and costly, particularly when they have to appeal on an annual basis since the appealed results would only stand for a year.

8. Some trades have also queried the fairness of using an average COD value to represent the strength of wastewater discharged by various establishments within a trade in view of their different scale of operation.

### *The Consultancy Review*

9. When introducing the sewage charging scheme in April 1995, the Administration undertook to conduct a review of the TES scheme after it has been implemented for one year. A consultant was commissioned by the Environmental Protection Department (EPD) to undertake the review which commenced on 2 October 1996.

10. As part of the review, a consultation programme was undertaken by the consultant from November 1996 to January 1997, during which meetings with trade associations affected by the TES scheme and concerned political parties were arranged and a public forum was held. The views and concerns expressed on these occasions have been considered in the review.

11. The consultant's Final Report was released in April 1997. Apart from examining the various aspects of the TES scheme, the consultant also carried out an analysis of the SSTF finances and made a projection of future costs and revenues.

### *Public Consultation*

12. A six-week consultation on the TES Review Final Report was conducted from April to June 1997. The Executive Summary of the Final Report was sent to 110 organisations representing relevant trades and industries and interested parties, to invite their views on the outcome of the Review. A copy of the Final Report was also deposited at EPD for public inspection.

13. 47 organisations sent in their comments. These were mostly of a general nature against the TES scheme, the whole sewage charging scheme and the SSTF. Three trades identified by the consultant as being "strong candidates" for inclusion into the TES scheme have raised strong objection to the consultant's findings. Only a few organisations/individuals made specific comments on the consultant's recommendations and these are summarised in the Annex.

14. The Advisory Council on the Environment (ACE) was consulted on the Final Report in April and May 1997. The previous LegCo Panel on Environmental Affairs was consulted in April and June 1997. Comments of ACE and the Panel were mostly of a general nature. But the Panel indicated

particular concern about the appeal system and urged the Administration to introduce measures to improve it.

### *Future of the Sewage Charging Scheme*

15. Since its introduction in April 1995, the sewage charging scheme has been operating smoothly. There is general public acceptance of the scheme, and no problem has been encountered in the collection of sewage charges. In the first two years of its operation, the revenue from the SC and TES has practically covered expenditure. However, with the completion and commissioning of major sewerage facilities, the operating costs are expected to go up significantly in the current year and the next few years. Because of the low level at which the SC has been set, large percentage increases in future years would be required if the SSTF were to meet its statutory obligation of balancing its receipts with spending.

16. On 19 November 1997, the Provisional Legislative Council passed a resolution that the Sewage Services Trading Fund should be closed at the end of the day on 31 March 1998. Although sewage services would thereafter be operated under vote funding with government subsidies, this would not affect the SC and TES. We have made known our position of preserving the Polluter Pays Principle under which polluters are expected to continue to pay for a proportionate share of the direct operating and maintenance costs of running the sewage services, and that the SC and TES would still need to be increased in future years in order to reflect the expected rising costs.

### *Administration's Recommendations*

17. A detailed assessment of the consultant's findings and proposals and the Administration's recommendations are at the Annex. The recommendations are highlighted in the following paragraphs.

#### **(A) Basic Features to be Maintained**

18. The Review has generally endorsed the basic features of the current scheme and we recommend that they be maintained. These include :

- (a) **the use of COD as the pollution parameter** - it reflects the strength of effluents discharged by trades in Hong Kong and COD tests are simple and inexpensive;

- (b) **the application of existing generic COD values to all trades** - it enables us to maintain a simple scheme and establishments are allowed to appeal against the assigned generic value;
- (c) **the use of volume and quality of effluent as the technical basis of charging** - these are considered to be the most appropriate parameters for a charging scheme based on the Polluter Pays Principle;
- (d) **mixed accounts** - the spirit is consistent with the Polluter Pays Principle; and
- (e) **determination of the volume of wastewater discharged from the volume of fresh water supplied** - there are no reliable meters available for measuring effluent discharge directly.

## **(B) Proposals Recommended For Acceptance**

19. The proposed changes recommended for acceptance are outlined in paragraphs 20 to 29 below.

### **(a) Simplify and Streamline the Appeal Procedure**

20. We accept the proposal to introduce a different sampling method, with no advance notice, to make the sampling procedures easier and cheaper to carry out; and to delegate the responsibility for sampling and analysis solely to DSD. The latter obviates the need for DSD to monitor the work of the laboratory employed by the appellant under the current system. The appellant will continue to bear the full but lower cost of the appeal under the new procedure. We also recommend to extend the validity period of the appealed results from the current one year to three years. At present, establishments operating common processes, such as chain restaurants, have to appeal separately. To streamline the procedure, we are prepared to accept the application of group reassessments on a case by case basis.

21. The proposed changes to the appeal system will address the two major concerns of the trades. **Firstly**, they will simplify the appeal procedure and significantly reduce the cost of appeals. **Secondly**, the recommended procedure provides the possibility of developing a system whereby Government and the trades arrive at individually assessed effluent strength for charging purposes. The importance of generic values will therefore be gradually reduced and replaced by individually assessed COD levels.

22. Details of implementing the proposed changes to the appeal procedure will have to be spelled out in the Sewage Services (TES) Regulation and the related Technical Memorandum.

**(b) Change the Existing Charging Basis**

23. The objective of implementing the sewage charging scheme is to recover the operation and maintenance (O&M) costs which should include administration, collection, conveyance and treatment of sewage discharged into the public sewerage system, whilst Government finances all capital costs.

24. Notwithstanding the above, the existing TES charging rates are based solely on the cost of primary and secondary treatment of sewage and on the assumption that all sewage receive both primary and secondary treatment, even though the latter takes place in only five major secondary treatment plants. The consultant found that this simplified charging basis has resulted in excess of revenue over cost in respect of the TES in the first two years of implementation. To be in line with the Polluter Pays Principle and the objective of the charging scheme, we support the proposal to revise the existing charging basis.

25. The new charging basis would take into account the costs of administration, collection and conveyance of sewage in addition to primary treatment cost and the lower secondary treatment cost attributed to TES. The current apparent excess of revenue over cost should be viewed against the rapid rise in the latter in future years. Our recent projections indicate that the balance would change in the next two years even if TES charges were to be increased in line with inflation, and TES traders would be considerably under-paying by 2000/01. We will address this issue again in connection with our review of the sewage charging rates in future.

**(c) Introduce an Annual Adjustment Factor to the Charging Rates**

26. The O&M costs of running the sewage services will inevitably rise with inflation and the introduction of new and improved services. We therefore support the proposal to introduce an annual adjustment factor to the charging rates to recover these cost increases. We also support the proposal that the adjustment should include a pre-determined efficiency factor so as to provide incentives for Government to improve its efficiency in administering the sewage services.

27. The new charging basis and the annual adjustment factor will together provide a good reference of the correct level of the costs of running the sewage services. It should also improve the transparency and public acceptability of the charging scheme by providing a more accurate estimation of the costs of service provision. These two proposals would be adopted to work out the full O&M costs for reference in reviewing the TES charges for future years.

**(d) Consider Incorporating More Trades into the TES Scheme**

28. The consultant has found that of the 210,000 businesses estimated to be operating in Hong Kong, only some 12,000 or less than 6% are included in the current TES scheme (but in terms of volume discharge this represents 30-40% of the trade waste treated). While many of the other trades are considered not to produce effluent at greater than domestic strength, it is likely that some strong effluent producers have not been covered by the current scheme. The consultant has therefore identified seven trades, including three "strong candidates", for possible inclusion under the current scheme, and recommended that a comprehensive confirmatory sampling and data analysis be carried out before making a final decision. They are printing, garage, tobacco manufacture, petrol stations, markets, medical laboratories and barber/beauty shops. Subject to resources being available, EPD will undertake a detailed study on this.

**(e) Reassess the Discharge Factor for Six Particular Trades**

29. The consultant has found that for six TES-payable trades, the observed discharge factors were below those assigned and suggested further investigation be carried out for these particular trades. Subject to resources being available, EPD will undertake a study on this.

**(C) Proposals Not Recommended for Acceptance**

30. The proposed changes not recommended for acceptance, together with the Administration's evaluation, are outlined as follows :

- (a) **introduce another pollution parameter called total suspended solids** - it is unnecessary to do so; it will complicate the charging scheme and yet offer no practical advantage;
- (b) **introduce EPD licence data as a means of agreeing COD levels** - the TES scheme and EPD's licence control scheme are

developed under two different regimes; converging the two schemes will have very significant impact on EPD resources and seriously impede the control function of the licence scheme;

- (c) **accept measures of COD values provided by individual traders** - this proposal, if implemented, will have very significant impact on DSD resources in monitoring and auditing the submitted COD values;
- (d) **unify the discharge factors under the sewage charge and TES schemes** - this proposal, if implemented, will have very significant financial implications; and
- (e) **consider two alternative charging schemes** - the two alternative schemes suggested by the consultant would not bring any practical advantage or generate any significant increase in revenues, but there would be very significant additional costs involved.

## **THE WAY FORWARD**

31. Action will be taken to :
- (a) draft amendments to the relevant legislation and Technical Memorandum to effect the proposed changes to the appeal system outlined in paragraphs 20 - 22; and
  - (b) bid for additional funds to carry out a study on possible expansion of the TES scheme and discharge factor as proposed in paragraphs 28 and 29 respectively. The estimated cost is about \$14 million. We will consult the relevant trades prior to conducting any detailed sampling.

## **ADVICE SOUGHT**

32. Members are invited to comment on the Administration's recommendations outlined in paragraphs 18 to 30.

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