For discussion
on 3 April 2001

Legislative Council Panel on Environmental Affairs

Trade Effluent Surcharge Scheme

Purpose

This paper, prepared at the request of Members, sets out the operation of the Trade Effluent Surcharge scheme.

Background

2. A Sewage Charging Scheme was introduced on 1 April 1995. At present, the Scheme recovers about half of the recurrent cost for the provision of sewage services. Capital investment in sewerage infrastructure is funded from general public revenues.

3. Certain trades and industries discharge effluent at a strength higher than that of domestic sewage. The strong effluents, if discharged directly into rivers or the sea, are more damaging to the environment than effluents discharged by domestic and other commercial/industrial premises. They also incur additional costs in maintaining sewers and providing treatment. To put a value on water quality, to reflect the additional costs, and to provide an incentive for producers of the pollution to find ways to reduce or avoid that pollution, a trade effluent surcharge (TES) is levied on 30 trades and industries that produce strong effluent in addition to the basic sewage charge (SC).

4. The TES scheme was designed to be technically and administratively simple, thereby cutting administrative costs. At present, there are about 14 700 TES-payable accounts. 71% of them pay less than $1 000 a month.

Basis for Charging TES

5. The charging rate for TES is based on the strength and the volume of effluent discharged. The strength of effluent discharged is measured in Chemical Oxygen Demand

(COD) values. This measurement was selected because it is simple, and consequently less costly, and provides a reliable indicator of the strength of the effluent. The higher the COD values, the higher the treatment cost and hence the higher the TES rate. To reduce the administrative cost of measuring the discharge at each premises, the 30 prescribed trades and industries liable to pay TES are each assigned a set of generic COD values to represent the average strength of wastewater discharged by their particular types of operation. These generic values were developed from samples taken in 1991 to 1992. The prevailing TES rates, which are based on these generic COD values, are set out at **Annex I**.

6. The volume of effluent discharged is based on the volume of water supplied to a trader. For some trades and industries, some of the water supplied would be consumed, used in products or lost via evaporation instead of being discharged to sewers. Eight TES chargeable trades and industries (including the restaurant trade) have their charges discounted to reflect this consumption. All eight trades eligible for a discount at present are charged for only 80% of their water consumption.

Appeal Mechanism

7. While generic values have been assigned to each trade and industry, any individual operator who considers that his or her own business is discharging effluent which is less polluting than the generic values suggest can appeal for a lower TES rate. The appeal procedures prescribed in the Sewage Services (Trade Effluent Surcharge) Regulation are:

- At his own cost, an operator must arrange for collection and then testing of his trade effluent by an approved laboratory and submit the results to the Drainage Services Department (DSD);

- Where DSD is satisfied that the COD value of the trade effluent is less than the generic value assigned to the trade concerned, the TES rate of the appellant will be reduced accordingly.

- The reduced rate is valid for one year.[1]

Details on the appeal procedure are at **Annex II**.

[1] The COD reassessment results only last for one year in consideration of the fact that the strength of trade effluent depends largely on the quality of management of the operation. Changes in circumstances (e.g change in management or mode of operation) can have substantial changes in the effluent quality.

8. As at the end of February 2001, 370 accounts, including 349 restaurant accounts, are paying reduced TES rates following COD reassessment. In the past 12 months, 37 appeals on COD values have been rejected and five were withdrawn by the applicants.

9. A consumer may also apply to DSD for a reduction in TES if the volume of wastewater being discharged is not more than 85% of the volume of water on which the TES is based. The applicant is required to provide sufficient evidence for DSD to make a determination. As at the end of February 2001, 33 accounts have been given a lower discharge factor.

Impact of SC and TES on Restaurants

10. At present, 10 551 restaurants are paying TES. This makes up about 72% of all TES accounts. A table showing the average SC and TES paid by restaurants is as follows:

Average SC and TES paid in a month	Estimated percentage of all restaurant account holders	Remarks
Less than $310	25%	-
$310 to $820	25%	i.e. 50% paid less than $820 a month
$820 to $2,500	31%	i.e. 81% paid less than $2,500 a month
$2,500 to $9,730	14%	i.e. 95% paid less than $9,730 a month
Over $9,730	5%	-

11. Based on the 1998 Annual Survey of Wholesale, Retail and Import and Export Trades, Restaurants and Hotels compiled by the Census and Statistics Department, our estimate is that on average sewage charges (including TES) account for about 0.87% of the operating cost of restaurants.

Main Issues Raised by the Trades on the TES Scheme

12. In the past, some trades, in particular the restaurant trade, stated that the COD value of the effluent that they discharge is lower than the generic COD value assigned to them. Certain trades have pointed out that the procedures for COD reassessment are complicated and costly, particularly when the reassessed COD values were only valid for

one year. They claim that the cost to appeal is greater than the TES they have to pay, and that has created a disincentive to appeal.

Administration's Responses and Proposals

13. The Government commissioned a consultancy to review the structure and operation of the TES scheme in 1996. The review endorsed the basic features of the TES scheme, namely:

- the use of volume and strength of effluent discharged as the technical basis of charging;

- deducing the volume of effluent discharged on the basis of the volume of fresh water supplied;

- the use of COD as the parameter for the strength of effluent; and

- the application of generic values for effluent strength to all trades.

The Consultant also analysed the results of a survey on the strength of the effluent discharged by restaurants conducted by the catering industry in late 1995 and found that the mean COD value of the survey samples (2,250 mg/L) was somewhat higher than the generic value of 2,000 mg/L assigned to the restaurants. It concluded that there was not a strong case for lowering the generic value assigned to restaurants.

14. The review recommended measures to address traders' concerns about the cost of COD reassessment by simplifying and streamlining the methods and procedures for COD reassessment. Legislative amendments to the Sewage Services Ordinance, the TES Regulation and the Technical Memorandum issued under the Ordinance are required for implementing the revised COD reassessment proposals. The proposals were discussed at a previous meeting of the Panel on Environmental Affairs on 20 December 1999. Proposed amendments concerning the mechanism of COD reassessment include:

- to change the sampling method from "flow proportional composite sampling" which lasts throughout the operation hours (about 15 hours a day) for 3 to 6 consecutive days to random "grab sampling" with 4 to 10 half-hourly samples collected randomly and without prior notice by DSD over a period of 2 to 4

months;

- to entrust DSD with the responsibility for sampling and testing work, instead of by private laboratories, with full costs being recovered from applicants for reassessments, so that DSD could collect samples without prior notice in order to ensure the statistical reliability of the samples;

- to allow DSD to initiate a COD reassessment and take samples without giving prior notice to traders who are enjoying reduced TES rates as a result of successful reassessment of COD values;

- to allow chain group business to apply for "group" COD reassessment with fewer samples being collected for each individual premises; and

- to extend the validity period of COD reassessment results from one to three years.

15. Our assessment is that the proposed procedures could reduce the cost of COD reassessment from the present $20,000 to $40,000 per annual COD reassessment to $14,000 to $25,000 per three yearly COD reassessment (or around $4,700 to $8,400 each year). This would significantly reduce the cost of reassessing COD values and minimize the disturbance caused to the traders' business during the collection of samples.

Reaction of the Trades

16. We consulted the trades and industries in September 2000. They are generally in support of the proposed "group" reassessment and extension of the validity period from one to three years. Some however suggested that the validity period of the reassessment results should be longer than three years.

17. Traders generally have no strong views on the "random grab sampling" method. However, some major chain restaurant groups objected to the new sampling method as they would have to bear extra cost in sample-collection which is currently performed by their own technical staff without additional operation cost. The trades generally objected to allowing DSD to perform the effluent sampling and testing work because they believed that DSD would be biased in the effluent sampling process and, without competition, the cost charged on them for effluent sampling and testing may not be reasonable.

Latest Position

18. The Administration met some restaurant operators on 27 March 2001 to listen to the views of the trade on the TES scheme. We are now considering ways to revise the proposals in the light of the views collected during the public consultation exercise and will revert to the trades shortly.

Advice Sought

19. Members are invited to note the content of this paper.

Environment and Food Bureau
March 2001

Annex I

Generic TES rates of the 30 prescribed TES-prescribed trades

Item	Trade, business or manufacture	Generic TES rates ($/m^3)
1.	yarn sizing	3.78
2.	washing new garments, excluding laundries	0.82
3.	bleaching and dyeing of garments	0.64
4.	bleaching and dyeing of knitted fabric	1.01
5.	bleaching and dyeing of woven fabric	1.73
6.	textile stencilling and printing	1.32
7.	knit outerwear	1.01
8.	wearing apparel other than knit outerwear	1.80
9.	spinning cotton	0.34
10.	laundries	0.60
11.	soap and cleaning preparations, perfumes, cosmetics	3.78
12.	medicines	3.78
13.	paints, varnishes and lacquers	1.16
14.	basic industrial chemicals	3.78
15.	tanneries and leather finishing	2.56
16.	pulp, paper and paperboard	4.09
17.	soft drinks and carbonated waters industries	1.49
18.	breweries and manufacture of malt liquor	3.29
19.	distilling, rectifying and blending spirits	0.11
20.	cocoa, chocolate and sugar confectionery	3.78
21.	vermicelli, noodles, and similar farinaceous products	3.29
22.	bakery products	3.29

Item	Trade, business or manufacture	Generic TES rates ($/m^3)
23.	grain mill products	5.98
24.	vegetable oil, peanut oil, peppermint oil and aniseed oil	3.78
25.	canning, preserving and processing of fish and crustaceans	1.73
26.	canning and preserving fruit and vegetables	3.63
27.	dairy products	3.78
28.	slaughtering, preparing and preserving meat	3.78
29.	soy and other sauces	3.78
30.	restaurants	3.78

Annex II

Current Chemical Oxygen Demand (COD) Reassessment Procedures

The trader prepares and sends to Drainage Services Department (DSD) a written proposal describing the drainage layout, sampling arrangement and other details as required in the Technical Memorandum (TM) on the Procedures and Methods for Sampling and Analysis of Trade Effluents for the Trade Effluent Surcharge Scheme. The trader can appoint an approved laboratory to act on his/her behalf.

2. DSD will conduct site inspection to confirm the sampling arrangement. Sampling date will then be fixed and agreed amongst the trader, the sampler (who is usually an approved laboratory) and DSD.

3. The sampling which is conducted by the trader or his/her agent, will comprise 3 to 6 days of whole-day sample collection (depending on water consumption rates). The flow proportion composite sampling method will be adopted. Detailed procedures for sampling, testing and reporting are stipulated in the TM. When sampling is completed, the approved laboratory will carry out COD tests on the samples and submit a formal test report to DSD. DSD may conduct surprise 're-grab' to verify whether the COD values submitted are sufficiently representative.

4. If DSD considers that the COD reassessment results are adequately representative, the COD values will be approved. If the approved COD values are lower than the generic values, a new TES rate will be derived from the COD values and applied to the relevant TES account(s) for one year.

5. In accordance with the TM, all testing shall be performed by a laboratory accredited within the Hong Kong Laboratory Accreditation Scheme (HOKLAS). There are currently 9 private HOKLAS accredited laboratories available for providing the service to the public. Our understanding is that the average cost for the reassessment payable by the trades to the laboratories is about $25,000.