

## **Administration's Assessments of the Consultant's Findings and Proposals**

The following paragraphs outline the consultant's findings and proposals (these are in *italic* and underlined), the trades' views and the Administration's assessments and recommendations.

### **Proposals Recommended for Acceptance**

2. We recommend the continuation of the following features of the TES scheme :

- (I) *Continue to use Chemical Oxygen Demand (COD) as the sole parameter for measurement of the strength of effluent in the short term*

#### **Trades' Views**

- (a) The proposal is generally supported.
- (b) The hotel trade has argued for the use of Biochemical Oxygen Demand (BOD) as the charging parameter.

#### **Assessment**

The consultant has already pointed out that while BOD is an alternative measure of oxygen demand of an effluent, COD has advantages over BOD in that COD tests are simpler, less time consuming and less sensitive to interferences from nitrification.

- (II) *Continue to apply existing generic COD values to all trades*

#### **Trades' Views**

No specific comments from the trades except for the restaurant trade which has argued for a lower generic COD value.

#### **Assessment**

- (a) The consultant has conducted an assessment of available monitoring data and concluded that there is no sufficiently robust basis for the revision of existing generic COD values. Because of the importance of the restaurant trade, particular attention was paid to the assessment of data for this trade, but it was found that there is insufficient evidence to justify changing the current generic value for restaurants.

- (b) Establishments are allowed to appeal against their assigned generic value if they can produce evidence to show that the COD concentration of their effluent is lower.

(III) Continue to use volume and quality of effluent as the technical basis of charging

Trades' Views

No specific comments received.

Assessment

Volume and quality of effluent are the most appropriate parameters for a charging scheme which is based on the Polluter Pays Principle.

(IV) Continue to charge mixed accounts

Trades' Views

The only comments came from the hotels which claimed that since the hotel industry is a trade on its own, Government should not charge hotels as "mixed accounts".

Assessment

- (a) The "mixed account" is an account with one water meter serving several water outlets for different uses, some of which e.g. restaurants, laundry and bakery, attract TES.
- (b) The hotel trade has repeatedly made representations to the Government against charging hotels as "mixed accounts" and queried the legal basis of having "mixed accounts" under the TES scheme, despite our explanations. As a matter of fact, DSD has sought legal advice on "mixed accounts" in 1995 and been advised that "where any part of the premises is used for a prescribed trade business or manufacture, the rate of sewage charge appropriate to that use can be applied to the premises as a whole. Similarly where any part of the discharge is trade effluent, the TES can be applied in respect of the whole discharge". The legal basis for charging mixed accounts has, therefore, been confirmed. In practice, DSD has suggested hotel owners to install separate water meters or private check meters, otherwise assessment will be made according to factors such as floor area and number of employees of each type of business

inside the hotel, hotel owner's own assessment and kitchen floor area. If a hotel owner does not agree to this assessment, the hotel owner can submit evidence to substantiate an alternative assessment for the calculation of TES charges. Bills will only be issued to mixed account holders after the above process has been completed.

- (c) The spirit of "mixed accounts" is in line with the Polluter Pays Principle. We therefore recommend the current procedures be continued.

- (V) Continue to take the measure of supplied fresh water as an indicator of the volume of wastewater discharged

#### Trades' Views

No specific comments received.

#### Assessment

This is recommended in the absence of any reliable meters that can measure effluent discharge directly.

- 3. We recommend the following proposed changes to the current TES scheme :

- (I) Simplify the appeal procedure; introduce "grab sampling" to make the sampling procedures easier and cheaper to carry out; allow sampling to be undertaken without advance notice to overcome concerns about changes in practice during sampling; allow DSD to initiate appeals; allow the duration of validity of the successful appeal results, subject to checks, to stand for much longer than a year; change the style of the current procedure from that of an "Appeal" to one of "Reassessment" reflecting the special attention being paid rather than the finding of fault; and allow group reassessment

#### Trades' Views

- (a) The proposal is widely supported by those who have sent in their comments.
- (b) One suggested to extend the validity of the appeal result to 5 years.
- (c) One suggested that the successful appellant should be reimbursed the cost of appeal.

### Assessment

- (a) Our current appeal procedure is no more complicated than similar systems in other places. The procedure is a scientific process to verify a trader's claim of the strength of his/her discharges. To do so, sufficient evidence must be established. The appeals system is there to ensure the fairness of the charging scheme, but if the procedure is too simple, it will become unreliable, lead to abuses and eventually render the scheme very unfair. We, therefore, have to strike a balance between convenience for the appellants and the benefit to the community as a whole.
- (b) The proposed introduction of a form of "grab sampling" with no prior notice of sampling time/days could allow a reduction in manpower input in measurements, without significant loss in the statistical reliability of the results, and also reduce the scope of manipulation of the sampling process and the costs of reassessment. The reliability of "grab sampling" hinges on "sampling without prior notice" and shorter sampling period. To achieve this, DSD would need to take responsibility for sampling as it is not advisable to allow the private sector (accredited laboratories) to do so without giving advance notice to the establishment being studied. To simplify the process further, it is recommended that DSD should also carry out the analysis work.
- (c) It follows that the appellant will have to pay DSD for sampling and analysis instead of employing an accredited laboratory as required under the current practice. It is estimated that under the new procedure, the cost of each reassessment would be reduced from the present \$20,000 - \$40,000 to \$12,000 - \$24,000 depending on the discharge volume.
- (d) As regards the duration of validity of the reassessed results, we suggest to extend it from the present 1 year to 3 years. This will further reduce the cost to the appellant. With things moving so fast in the business world in Hong Kong, we think 3 years is a reasonably long period for the reassessment value to stand. Furthermore, this proposal should be considered together with (b) above as a package. The reason is that if we continue to use the current sampling method, there is little we can do to minimise the scope of manipulation of the sampling process which will in turn reduce the reliability of the reassessment results and reduce Government's revenue unnecessarily. We expect that the 3-year period would be generally accepted by the trades.

- (e) Under the current appeal system, the appellant has to employ an accredited laboratory to prepare sampling plan, carry out the sampling and analyse the samples. Also, DSD incurs costs in assessing sampling plan, inspecting the site before sampling, witnessing sample collection and analysing samples for auditing purpose. The proposed reassessment procedure, by having DSD to take over from the accredited laboratory the sampling and analysis work, will simplify the process and achieve better economy.
  - (f) As regards the suggestion to reimburse the successful appellants, we are of the view that the appellant must bear the cost of appeal irrespective of its outcome because reimbursement would impact on the administration cost and this is unfair to other customers. Afterall, the cost to the appellant will be significantly reduced if the proposed changes to the appeal system are implemented.
  - (g) Details of implementing the proposed changes have to be carefully worked out and spelled out in relevant legislation. We also have to consider other related issues such as transitional arrangements.
- (II) Change the existing charging basis on the cost of treatment to one based on the operation and maintenance costs including the costs of administration and collection/conveyance/treatment of sewage

#### Trades' Views

- (a) No specific views on this recommendation.
- (b) Two commented that Government should not overcharge and one commented that Government should not seek to recover the operation and maintenance (O&M) costs in full. One proposed that the TES rate should be set at a level higher than the cost of recycling waste water.

#### Assessment

- (a) Coverage of the O&M costs through the sewage charging scheme is a stated objective of the Government. However, the existing charging rates are based solely on the cost of primary and secondary treatment of sewage and on the consumption that all sewage receives 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 TES revenue over TES costs in the first two years of the operation of the scheme.

- (b) The new charging basis would now 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 TES revenue over TES cost should be viewed against the rapid rise in the latter in future years. As pointed out by the consultant, in the absence of appropriate increase in TES charges, the balance will change in the next two years, and TES traders will be considerably under-paying by 2000/01. The effect of adopting the new charging basis on the TES rates can be further addressed in the Administration's future review of TES rates.
- (c) The new charging basis will provide a good reference of the correct level of the O&M costs. It will also improve public acceptability of the charging scheme by providing a more accurate estimation of the costs of service provision.

(III) Introduce an annual adjustment factor to the charging rate to recover the rise in costs due to inflation and improvements to sewage services, and to provide incentives for Government to improve efficiency

#### Trades' Views

One supported the application of the factor to encourage Government efficiency. Two objected to the inclusion of an adjustment factor to recover additional costs as a result of improvements to sewage services as it would jack up the annual increase to higher than inflation.

#### Assessment

- (a) On the basis of full cost (O&M) recovery, the consultant has suggested that the rise in O&M costs should be recovered from the charges. On the other hand, to provide incentives for the Government to improve its efficiency in administering the sewage services, the consultant has suggested that the costs should be reduced by a pre-determined efficiency factor. To combine these effects into a single adjustment factor, it has been suggested that the costs are adjusted annually by the following formula:

$$(PI - X) + Y$$

where

PI = the annual increase in the appropriate price index;

X = a reduction to provide efficiency incentives;

Y = a new service factor which could be expressed as a percentage of existing service costs.

- (b) The consultant has suggested to apply an X factor of between 1-2% points similar to that applied in the UK. The Y factor would need to be determined following a review of the particular structure to be installed and the level of standards and operation to be applied in future.
  - (c) This recommendation, if implemented, will provide a good basis for revising the charging rates every year. It will also satisfy public anxieties about perceived Government "inefficiencies".
- (IV) Expand the scheme to cover more trades, with the printing, garage and tobacco trades being strong potential candidates

#### Trades' Views

- (a) The three trades identified by the consultant as "strong potential candidates", i.e. printing, garage and tobacco objected strongly to the proposal, claiming that their operations are clean. The other four trades identified as "potential candidates" have not sent in their comments.
- (b) Six others supported the proposal.
- (c) One suggested that there should be regular review of the types of trades to be included in the TES scheme.

#### Assessment

- (a) The consultant has advised that a comprehensive confirmatory sampling and data analysis be carried out before making a final decision on this recommendation because their findings were based on very limited available data.
- (b) In principle, we support the recommendation to expand the coverage of the current scheme to make it more equitable. It should be noted, however, that potential trades would likely object to any proposal to include them under the scheme. It is therefore essential that we take a cautious approach and obtain sufficient evidence to justify the addition of more trades. Subject to resources being available, EPD will undertake a detailed investigation on possible expansion of the scheme to cover the

seven trades identified by the consultant. We will consult these trades prior to any detailed sampling.

(V) Reassess the discharge factors for six particular trades

Trades' Views

The restaurant trade claimed that their assigned discharge factor should be better than 0.8.

Assessment

- (a) The consultant has found that discharge factors of those trades with data are quite close to the assigned value with the exception of six particular trades where the observed discharge factors were below those assigned. However, the consultant has admitted that their findings were based on limited available data because they had run into great difficulties in seeking cooperation of the trades and finding suitable sites for measurements. The consultant has therefore suggested that further investigation be carried out for these particular trades.
- (b) Subject to resources being available, EPD will undertake a study on this. We will consult the relevant trades prior to any detailed sampling.

Proposals Not Recommended for Acceptance

4. We do not recommend the following proposals :

- (I) Introduce another pollution parameter called Total Suspended Solids (TSS) to replace that part of the existing COD parameter which reflects the cost of primary treatment to measure the cost of treatment more accurately

Trades' Views

Of the five organisations which have commented, only one supported the use of TSS.

Assessment

Our assessment is that the introduction of a new parameter (TSS) will complicate the charging scheme, will require very significant amount of extra work (in TSS data compilation and analysis, redistribution of



effluent load and consequently revising the TES attributable costs) and yet offer no practical advantage.

(II) Introduce EPD licence data as a means of agreeing COD levels

Trades' Views

Of the three organisations which have commented, two supported the proposal.

Assessment

- (a) All commercial and industrial discharges in Hong Kong are subject to licence control by EPD under the Water Pollution Control Ordinance (WPCO). Each licence stipulates the standards of the discharges including a list of upper limits of pollution parameters which must not be exceeded in order to protect water quality.
- (b) Our assessment is that this recommendation will have very significant impact on EPD resources, particularly in enforcement of the licence conditions. Moreover, the TES scheme and EPD licence control are developed under two different regimes and with completely different philosophy, statistical approach and implementation requirements. For example, the current WPCO monitoring data may not contain the necessary parameters for TES charging purposes and may not be statistically precise enough for it to be used as a means of agreeing COD values.
- (c) Overall, we consider that converging the two schemes would significantly impede the control function under the WPCO.

(III) Accept measurements provided by individual traders, provided that DSD would undertake random audits of submitted results and impose penalties for falsification of data

Trades' Views

Only one support for this proposal.

Assessment

This proposal, if implemented, could be easily abused and will impose tremendous burden on DSD in monitoring/auditing submitted measurements and prosecution cases.

(IV) Unify the Discharge Factors under the Sewage Charge and TES schemes

Trades' Views

One support for unifying the Discharge Factors under the Sewage Charge and TES schemes.

Assessment

- (a) TES chargeable trades are levied both SC and TES. At present, a Discharge Factor (DF) of 0.7 is used as the basis of the SC for 10 trades, 8 of which also enjoy a DF of 0.8 under the TES scheme. The 0.8 DF used in the TES scheme was based on the estimates of wastewater discharged from establishments of selected trades whereas the 0.7 DF for the SC scheme was the result of various discussions between the Government and the water intensive industries and the previous LegCo.
- (b) The unification of the DF would result in very significant financial implications.

(V) Consider two alternative charging schemes, namely the Trade Effluent Charge and Universal Sewage Charge Schemes

Trades' Views

- (a) Only one support for the proposed Trade Effluent Charge Scheme, and one for the Universal Sewage Charge Scheme. The other five who have also commented did not support the proposal.
- (b) Two ITDC members proposed an alternative scheme under which trades will be put into 3-4 trade brackets with tariff on a sliding scale. Businesses in a trade should be charged according to the tariff applicable to that trade. However, businesses discharging effluent of quality better than the trade's effluent strength would apply for lower tariff.

Assessment

- (a) The consultant has proposed two major revisions to the TES scheme. One is to move to a Trade Effluent Charge where all trades and industries have a unified charge matrix (SC plus TES), whilst the existing SC is retained for domestic users. The other proposal goes a stage further to propose a Universal Sewage

Charge that would encompass every customer discharging to sewers.

- (b) As the two proposed schemes would still be based on volume and quality of the wastewater discharged, they would not bring any practical advantage or generate any significant increase in revenues, but there will be very significant additional costs involved in reclassifying and determining generic effluent strengths for all the estimated 210,000 businesses (about 200 different trade categories compared to the current 30 trades) and administering the 210,000 accounts (compared to the current 12,000 TES accounts).
- (c) The charging method suggested by ITDC members is considered to be too simplistic and much less equitable than the existing scheme.

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