

**For discussion on
21 January 2010**

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS**

**Cleaner Production Partnership Programme
Support of Effluent Reduction and Control**

PURPOSE

This paper invites Members' views on the Administration's proposal to revise the coverage of the Cleaner Production Partnership Programme (the Programme) to provide professional advice and technical support in the treatment and reduction of effluent discharges to Hong Kong-owned factories in the Pearl River Delta (PRD) region.

BACKGROUND

2. On 17 December 2007, the Administration consulted the Legislative Council Panel on Environmental Affairs vide CB(1) 418/07-08(06) on a proposal for rolling out a five-year Cleaner Production Partnership Programme to promote cleaner production¹ (CP) technologies and practices amongst Hong Kong-owned factories in the PRD region. Members in general are supportive of the proposal. On 11 January 2008, the Finance Committee (FC) approved vide FCR(2007-08)47 a funding commitment of HK\$93.06 million for implementation of the proposed Programme.

3. The Programme was launched by the Environmental Protection Department (EPD) in collaboration with the Economic and Information Technology Commission of Guangdong Province (formerly known as the

¹ Cleaner production approach is a preventive, integrated strategy that is applied to the entire production cycle to increase productivity by ensuring a more efficient use of raw materials, energy and water, and to promote better environmental performance through reduction at source of waste and emissions.

Economic and Trade Commission of Guangdong Province) on 18 April 2008. The Hong Kong Productivity Council (HKPC) is the executive agent. The Programme aims to encourage and facilitate Hong Kong-owned factories in the PRD region to adopt CP technologies and practices so as to help reduce the air pollutant emissions and energy consumption of these factories, thereby making a positive contribution to improving the regional air quality.

4. The Programme comprises four key initiatives, namely –
 - (a) awareness promotion activities;
 - (b) on-site improvement assessment for participating factories;
 - (c) demonstration projects on CP technologies and practices; and
 - (d) third party verification service on improvement projects implemented by participating factories.

Details of the key initiatives are at **Annex**. Through these initiatives, the Programme helps to introduce the CP concept to factory management and personnel. It also provides a useful platform for experience sharing in adoption of CP technologies and practices. As at 31 December 2009, a total of some 435 funding applications were approved while another 91 funding applications were under processing.

COVERAGE OF THE PROGRAMME

5. Since the launch of the Programme in April 2008, the feedback collected from industry associations as well as the participating factories indicates that there is considerable demand for technical support and know-how in applying CP technologies and practices in the area of water pollution, i.e. reduction, reuse, recycling and advanced treatment of wastewater arising from operation of factories. Moreover, the Guangdong authorities have been tightening up the requirements on industrial effluent discharges in recent years. In the light of this development, it was announced by the Chief Executive (CE) at the 2009 Policy Address that the Government intended to provide support to Hong Kong enterprises in the treatment and reduction of effluent discharge. Since the announcement of this initiative by CE, the general feedback from industries has been positive.

6. Our proposals for taking forward the initiative of revising the coverage of the Programme to include the area of effluent reduction and

control are presented in paragraphs 7 to 15 below. The cleaner production approach is applicable to the entire production cycle which covers, amongst other aspects, the treatment and reduction of effluent discharges arising from the operation of factories. The revised coverage of the Programme therefore does not entail a change in the ambit of the project commitment as approved by the FC on 11 January 2008.

PROPOSALS TO IMPLEMENT THE INITIATIVE

Enriching the Contents of Awareness Promotion Activities

7. In line with the primary objective of the Programme, the awareness promotion activities of the current Programme has thus far been focussing on the available CP technologies and practices in enhancing energy efficiency and mitigating air pollutant emissions. It is proposed that the awareness promotion activities should be enriched to include topics/contents on available CP technologies and solutions for reduction, reuse, recycling and advanced treatment of industrial wastewater.

8. Experts in the relevant field will be invited to share their knowledge and experience in seminars and workshops. Factory visits to industrial wastewater-related demonstration projects will be organised. The relevant knowledge and successful experiences will be disseminated through production of CP guidebooks and the Programme website. The coverage of the Programme will be publicised through trade and industry associations and other means to encourage wider participation to the Programme.

On-site Improvement Assessments

9. On-site improvement assessment services are provided by HKPC and other environmental technology (ET) service providers to identify and analyse the problems faced by the participating factories and to propose practical improvement solutions. At present, it is required that on-site assessments should include evaluation and identification of CP improvement measures on usage of raw materials, energy efficiency and reduction of air pollutant emissions. Other areas of improvement such as waste reduction or water treatment can also be covered if they form part of an all-rounded assessment. We propose that for those factories which are mainly concerned about their effluent discharge, they may also apply for funding support under the Programme to conduct on-site assessments for identification of CP

improvement measures with regard to reduction, reuse, recycling or treatment of effluent discharges.

10. At present, funding support for on-site assessments under the Programme is being provided on a matching basis, i.e. the assessment costs will be shared between the Government and the participating factories on a fifty-fifty basis, subject to a ceiling of \$15,000. Experience gained from implementation of the Programme indicates that the amount of \$30,000 per project is in general sufficient for conducting a reasonable on-site assessment for a small to medium size factory. It is therefore proposed that the existing arrangement should continue. To avoid duplication of funding support, those factories which have already obtained funding support under the Programme for conducting on-site assessment should not be eligible for another on-site assessment under the revised coverage of the Programme. In other words, each eligible factory will be entitled to funding support for one on-site assessment only. It remains our objective to provide funding support to some 800 – 1,000 factories to conduct on-site assessment.

Demonstration Projects

11. Under the current arrangement of the Programme, funding support is only provided to those demonstration projects which involve CP technologies for achieving energy efficiency and/or reduction of air pollution emissions. The intention was to conduct some 90 demonstration projects through installation of equipment and/or modification of production processes. A total funding of \$15 million has been allocated in the current Programme for this purpose. It is proposed that funding support should also be given to demonstration projects on wastewater related CP technologies, for example –

- (a) reduction, recycling and reuse of industrial wastewater;
- (b) optimization or upgrade of wastewater treatment facilities to reduce treatment costs and/or effluent pollutants;
- (c) recovery of waste heat and materials (such as metals, caustics, solvent and etchant) from industrial effluent; and
- (d) advanced treatment of high-strength wastewater, etc.

12. Demonstration of the above technologies will help Hong Kong-owned factories to overcome confidence barriers they may have in investing in CP technologies in respect of at source reduction of wastewater generation

as well as advanced treatment of wastewater for reuse, recycling and improvement of effluent quality.

13. Like on-site assessments, funding support for demonstration projects is provided on a matching basis. The project costs should be equally shared between the Government and the participating factories on a fifty-fifty basis, subject to an average funding ceiling of \$160,000 per project. This matching arrangement has proven to be reasonable as indicated by the good response from the trades in applying for funding support to conduct demonstration projects. It is proposed that the existing arrangement for Government funding support to demonstration projects should continue.

14. As at 31 December 2009, 50 demonstration projects on energy efficiency and reduction of air pollutant emissions with a committed expenditure of \$7.26 million have been approved, which involve a total project sum of \$23.71 million with contributions from the participating factories. Based on the original plan, the Programme will support another 40 demonstration projects. With the proposed coverage of the demonstration projects on wastewater related CP technologies (paragraph 11 above), it is proposed that 30 additional CP demonstration projects should be supported under the Programme. These, together with some 40 demonstration projects that can be supported by the balance of the original budget for demonstration projects, will add up to a total of around 70 demonstration projects available for application by factories. This should be able to give a good coverage on various technologies relating to effluent reduction and control, as well as energy efficiency and reduction of air pollutant emissions. In selecting demonstration projects for funding support, the Project Management Committee (PMC) of the Programme will take into account of, *inter alia*, the relative merits of the technologies to be demonstrated. While no specific quota will be imposed on the number of demonstration projects that can be undertaken by each factory, due consideration will be given to factors such as maintaining a balanced participation from factories from various industries and the geographical spread of the participating factories, etc.

Verification Projects

15. Under the Programme, full funding support is provided for factories which seek third-party verification services on the effectiveness of improvement projects completed at their own costs. Such services are now mainly provided by HKPC, which are confined to improvement projects for reduction of air pollutant emissions or enhancement of energy efficiency. It

is proposed that the verification services should also include those improvement projects in respect of effluent reduction and control. The initial quota for verification service remains 500. Subject to response, the number can be increased up to 1,000 verification projects.

FINANCIAL IMPLICATIONS

16. It is estimated that \$5 million will be required for funding the 30 additional demonstration projects proposed in paragraph 14 above. The total committed funding of HK\$93.06 million for the Programme as approved by the Finance Committee will be sufficient to meet the requirement.

CONSULTATION

17. In drawing up the above proposals, the Administration consulted the Project Management Committee (PMC) which has been set up to oversee the implementation of the Programme and comprises representatives from the four major trade and industry associations, namely, the Hong Kong General Chamber of Commerce, the Federation of Hong Kong Industries, the Chinese Manufacturers' Association of Hong Kong and the Chinese General Chamber of Commerce and an academic, as well as government representatives from the Trade and Industry Department and the Innovation and Technology Commission. PMC members in general welcome the Administration's initiative and support revising the coverage of the Programme to provide professional advice and technical support in the area of effluent reduction and control.

ADVICE SOUGHT

18. Members' views are sought on the proposals for revising the coverage of the Programme as set out in paragraphs 7 to 15 above.

Environmental Protection Department
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Key Features of the Cleaner Production Partnership Programme

The overall objective of the Programme is to encourage and facilitate Hong Kong-owned factories in the Pearl River Delta (PRD) region to adopt cleaner production technologies and practices, thereby making a positive contribution to a cleaner environment by reducing emissions and energy consumption. The Programme targets at eight industry sectors² of Hong Kong-owned factories which contribute to air pollutant emissions in the PRD region and are most likely to yield positive improvements.

Key Initiatives

2. The key initiatives of the Programme include –
 - (a) *awareness promotion* – this comprises structured briefings, study missions, training seminars and workshops, conferences and exhibitions, in Hong Kong and cities in PRD region. Participation in the awareness promotion activities is normally free of charge;
 - (b) *on-site improvement assessment for about 800 to 1 000 factories (subject to response)* – the Hong Kong Productivity Council (HKPC), in conjunction with other environmental technology (ET) service providers, provide guidance and conduct on-site assessment for participating factories to identify and analyse the problems they face and propose practical improvement solutions. The Government will sponsor 50% of the assessment cost, subject to a ceiling of \$15,000. Any cost exceeding the ceiling has to be met by the participating factories;
 - (c) *demonstration projects* – HKPC will work closely with ET service providers to conduct some 90 demonstration projects through installation of equipment and/or modification of

² The eight industry sectors include textiles, non-metallic mineral products, metal and metal products, food and beverage, chemical products, printing and publishing, furniture and paper/paper product manufacturing.

production processes. The cost is shared between participating factories and Government on a fifty-fifty basis. The average contribution of Government funding is estimated to be around \$160,000 per project; and

- (d) *verification of the effectiveness of 500 to 1000 improvement projects(subject to response)* – for those factories which have implemented improvement measures, HKPC will provide an independent third-party service to verify the effectiveness of the improvement projects. This service is provided free of charge to participants, capped to a ceiling of \$15,000 per project.

Guiding Principles and Targeted Approach

3. The following guiding principles have been adopted in designing the programme –

- (a) the programme will focus on encouraging and facilitating HK-owned factories in PRD region to contribute to a cleaner environment by reducing air pollution/emissions and enhancing energy efficiency;
- (b) targeted sectors and participating factories are to be selected by taking into consideration, *inter alia*, the level of their power consumption and emissions, and potential in achieving environmental improvement;
- (c) participation by factories should be voluntary and by application;
- (d) the findings of and experience gained by adopting CP technologies and practices will be shared by the trades;
- (e) the benefits of the cleaner production technologies and practices so pursued under this programme will be verified so that factories and the trades would be encouraged to adopt such technologies and practices on their own;
- (f) there will be no direct subsidy on the cost of hardware or installation of cleaner production equipment exclusively for the use by the factories concerned;

- (g) ET service providers will be encouraged to participate in carrying out the programme activities (e.g. conducting on-site improvement assessment and demonstration projects); and
 - (h) credible mechanisms on monitoring and control would be drawn up to ensure the best use of public money.
4. The programme will target at industry sectors which –
- (a) involve production processes resulting in substantial emission of air pollutants;
 - (b) use large quantities of potentially environmentally damaging chemicals or materials;
 - (c) consume large quantities of fuel and energy; and
 - (d) have a good potential for achieving environmental improvement.
5. Eight industry sectors which have contributed to air pollutant emissions to various extents and are most likely to yield positive improvement are identified. They are, namely, textiles, non-metallic mineral products, metal and metal products, food and beverage, chemical products, printing and publishing, furniture and paper/paper product manufacturing. It is estimated that there are close to 15 000 Hong Kong-owned factories in these eight sectors in the PRD region.
6. In selecting participating factories, due consideration will be given to the need in creating a “critical mass” while maintaining a balanced participation from all the targeted industry sectors; and also the geographical spread of the selected factories. Priority will be given to –
- (a) small and medium-sized enterprises which might not have adequate technical expertise or resources to identify or implement CP technologies and practices;
 - (b) factories with production processes that are representative or common to the specific trade sector, and have the potential for environmental improvements. Their participation will help create a multiplying effect to incentivise other factories in the

same trade to adopt CP measures; and

- (c) factories which have indicated a willingness to pursue CP technologies and practices.