

For Information

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS**

**Cleaner Production Partnership Programme
Progress Report for 2020-21**

This paper reports on the progress of the Cleaner Production Partnership Programme (the Programme) for the period from 15 June 2020 to 31 March 2021.

BACKGROUND

2. The Environmental Protection Department (EPD) launched the Programme in April 2008 in collaboration with the then Economic and Information Commission of Guangdong Province (GDEIC), now the Department of Industry and Information Technology of Guangdong Province (GDDIIT). The Programme aims to encourage and facilitate the adoption of cleaner production technologies and practices by Hong Kong-owned factories through funding support and technology promotion activities, thereby improving the regional environment¹.

3. In light of the continuous environmental benefits brought about by the Programme, the Government committed \$311 million in 2020 to extend the Programme for five years until 31 March 2025. The new phase of the Programme was launched on 15 June 2020, and continues to encourage Hong Kong-owned factories to adopt new technologies for reducing emission of air pollutants, reducing and controlling effluent discharge, and improving energy efficiency, etc. The Hong Kong Productivity Council (HKPC) is the implementation agent of the Programme.

¹ The Programme covers Hong Kong-owned factories in Hong Kong and the Guangdong Province.

4. The Programme comprises four key initiatives (details at **Annex A**) –
- (a) to assist participating Hong Kong-owned factories in carrying out on-site improvement assessments;
 - (b) to support Hong Kong-owned factories to carry out demonstration projects on cleaner production technologies and practices;
 - (c) to support relevant trade and industry (T&I) associations of Hong Kong to carry out trade-specific promotion and publicity activities (the Organisation Support Initiative (OSI)); and
 - (d) to organise cross-trade technology promotion activities by the HKPC.

MANAGEMENT OF THE PROGRAMME

5. A Project Management Committee (PMC) has been set up to oversee the implementation of the Programme. The PMC comprises representatives from four major chambers of commerce (i.e. the Chinese General Chamber of Commerce, the Chinese Manufacturers' Association of Hong Kong, the Federation of Hong Kong Industries and the Hong Kong General Chamber of Commerce) and an academic, as well as representatives from the EPD, the Trade and Industry Department, and the Innovation and Technology Commission. During the reporting period, the PMC held three meetings to provide steer regarding the operation of the Programme, and consider funding applications submitted by Hong Kong-owned factories and the relevant T&I associations in Hong Kong.

6. The HKPC has established a programme management team and a programme technical support team to co-ordinate the effective implementation of the Programme. In addition, a support team has been set up in Shenzhen to manage local liaison work and co-ordination of programme activities.

PROGRESS DURING 15 JUNE 2020 – 31 MARCH 2021

7. The number of approved applications for on-site improvement

assessments (APs), demonstration projects (DPs) and OSI activities, as well as the number of cross-trade technology promotion activities organised by the HKPC during the reporting period are set out in the table below.

Key Initiative	Approved Applications / Activities (as at 31 March 2021)
AP	90
DP	55
DP (I)	25
DP (II)	30
OSI Activities	4
Cross-trade Technology Promotion Activities	22

On-site Improvement Assessments

8. During the reporting period, 90 APs were conducted for Hong Kong-owned factories under the Programme to identify areas for improvement and suggest practical solutions. These assessments focused on reduction of air pollutant emissions, energy saving as well as effluent reduction and control.

Demonstration Projects

9. Under the new phase of the Programme, DPs are categorised into two types, namely DP (I) to promote wider adoption of proven effective cleaner production technologies; and DP (II) to support research and innovation in cleaner production technologies. Among the 55 approved DPs, 25 were DP(I) and 30 were DP(II). 34 approved DPs involved technologies on reduction of air pollutant emissions, 13 on energy saving and 8 on effluent control and reduction. A summary of the key technologies demonstrated under the Programme during the reporting period is at **Annex B**.

Organisation Support Initiative

10. During the reporting period, one OSI application involving four trade-specific promotion and publicity activities by Hong Kong T&I association was approved. The activities included four physical seminars with simultaneous webinar broadcasting on the topic of carbon reduction and energy saving in the manufacturing industry.

Cross-trade Technology Promotion Activities

11. To facilitate sharing of knowledge and successful experience in adopting cleaner production technologies and practices adopted by Hong Kong-owned factories, the Programme does not only support Hong Kong T&I associations to carry out trade-specific promotion and publicity activities (i.e. the OSI activities mentioned in paragraph 10 above). The HKPC also organises various kinds of cross-trade technology promotion activities for the Hong Kong-owned factories. During the reporting period, the HKPC held a total of 22 such activities as tabulated below. These activities were well received and attracted over 2,200 participants.

Cross-trade Promotion and Publicity Activities	Number of Activities
Factory Visit	4
Seminar/ Workshop	15
Environmental Exhibition	2
Others	1
Total	22

12. The HKPC also promoted the Programme through various channels, including interviews and reports by the media as well as briefings for T&I associations. To provide different trades with information about completed DPs or proven technologies, the HKPC compiled 144 case reports which have been uploaded to the website of the Programme. The HKPC also produced promotional leaflets and videos to publicise the launch of the new phase of the Programme, and placed advertisements on the journals of the relevant T&I associations. The HKPC also operates two enquiry hotlines with one in Hong Kong and one in Shenzhen to enhance communication with the trades and to share experience.

13. The above cross-trade technology promotion activities have been well received and effective in enhancing Hong Kong-owned factories' awareness of cleaner production and facilitating their adoption of such technologies in their operations.

PARTNERSHIP WITH ENVIRONMENTAL TECHNOLOGY SERVICE PROVIDERS

14. With substantial experience and expertise in various areas of cleaner production technologies, Environmental Technology (ET) service providers play an important role in the Programme by offering professional advice and technical services to participating factories on the design and implementation of cleaner production technologies for APs and DPs. Since the launch of the Programme in 2008, a total of 275 ET service providers have registered under the Programme. Among them, 111 are based in Hong Kong, 158 in the Guangdong Province and 6 from other regions or overseas countries. The HKPC conducts quality checks on the work of registered ET service providers from time to time to ensure their service quality.

COLLABORATIONS WITH THE MAINLAND

Collaboration with the authorities in the Guangdong Province

15. The Programme has fostered regional collaboration with the relevant Mainland authorities in reducing pollution arising from industrial activities. We have worked with various authorities in the Guangdong Province in publicising the Programme and promoting cleaner production. Of the 15 seminars and workshops held during the reporting period as mentioned in paragraph 11 above, five were jointly organised with the Mainland authorities to reach out to Hong Kong-owned factories in the Guangdong Province, attracting over 460 participants.

The Hong Kong-Guangdong Cleaner Production Partners Recognition Scheme (JRS)

16. To encourage participation of Hong Kong-owned factories in the Programme and recognise their efforts in pursuing cleaner production, we have been launching the JRS since 2009 with the then GDEIC (now the GDDIIT). JRS commendations were given to 168 Hong Kong-owned manufacturing enterprises, 11 ET service providers and 2 sourcing enterprises in 2020.

The Hong Kong-Guangdong Joint Working Group on Cleaner Production (JWGCP)

17. Promoting cleaner production has been one of the priority co-operation areas of the Hong Kong and Guangdong governments to improve the regional environment. To strengthen collaboration and exchange on cleaner production with Guangdong, the two sides signed the Hong Kong-Guangdong Co-operation Agreement on Cleaner Production in 2014, and established the JWGCP under the Hong Kong-Guangdong Co-operation Joint Conference. The JWGCP has been promoting the adoption of cleaner production technologies and practices by the industries in the region. Key efforts include publicising the use of energy saving technologies in the energy-intensive industries; encouraging adoption of cleaner production technologies to reduce and control VOC emission and effluent discharge; and engaging Hong Kong-owned enterprises in the training on and practice of cleaner production audits.

WAY FORWARD

18. Members are invited to note the latest progress of the new phase of the Programme. We will continue to provide this Panel with annual progress reports.

Environmental Protection Department
June 2021

Cleaner Production Partnership Programme

The Programme aims to encourage and facilitate Hong Kong-owned factories to adopt cleaner production technologies and practices with focus on reduction of air pollutant emissions, energy saving and effluent reduction and control, thereby contributing to the improvement of the regional environment. The Programme focuses on eight industry sectors, i.e. textiles, non-metallic mineral products, metal and metal products, food and beverage, chemical products, printing and publishing, paper and paper products, and furniture.

Key Initiatives

2. The new phase of the Programme runs from 15 June 2020 to 31 March 2025. The key initiatives during the five-year period are as follows –

- (a) *on-site improvement assessments*: to assist about 550 Hong Kong-owned factories to identify and analyse the problems they face and propose practical improvement solutions. The Government supports 50% of the assessment cost, subject to a ceiling of \$45,000;
- (b) *demonstration projects (DPs)*: to encourage participating Hong Kong-owned factories to adopt cleaner production technologies and share the experience in DPs with other factories. There are two types of DPs in the new phase of the Programme, namely DP(I) and DP(II).
 - (i) *DP(I)*: to support Hong Kong-owned factories to carry out around 280 projects for assisting factories in adoption of proven effective cleaner production technologies. The Government supports 50% of the project cost, subject to a ceiling of \$450,000;
 - (ii) *DP(II)*: to support Hong Kong-owned factories to carry out around 100 projects in research and innovation of cleaner production technologies. The Government supports 50% of the project cost, subject to a ceiling of \$650,000;

- (c) *organisation support initiative*: to support relevant trade and industry associations and professional organisation of Hong Kong that are non-profit-making to carry out around 70 to 80 trade-specific promotion and publicity activities. The Government sponsors up to 90% of the project cost and the applicant has to contribute at least 10% of the project cost; and
- (d) *cross-trade technology promotion*: the Hong Kong Productivity Council to organise around 140 to 170 activities, mainly to facilitate sharing of knowledge and successful experience in cleaner production technologies and practices. These activities comprise seminars, workshops, factory visits, conferences and exhibitions in Hong Kong or key industrial cities in the Guangdong Province.

**Cleaner Production Technologies Demonstrated
Under the Cleaner Production Partnership Programme**

The key cleaner production technologies demonstrated under the Programme during the reporting period are summarised below.

(a) Air Pollutant Emissions Reduction

- to reduce volatile organic compounds emissions through the use of activated carbon concentrator and catalytic oxidation, chemical scrubbing system, chemical scrubbing and ultraviolet (UV) photocatalytic oxidation system, direct thermal combustion, regenerative thermal oxidiser (RTO), UV photocatalytic oxidation and activated carbon adsorption, UV degradation, UV degradation and activated carbon adsorption, UV photocatalytic oxidation and chemical scrubber, zeolite adsorption and bag filter, zeolite adsorption and catalytic oxidation, bio-filtration, or UV printing and curing machine.
- to reduce sulphur dioxide and nitrogen oxides emission through flue gas recirculation technology.

(b) Energy Saving

- to save energy through the use of oil-free magnetic-bearing centrifugal blower, water-cooled chiller equipped with oil-free magnetic-bearing centrifugal compressor, dynamic voltage regulation on three phase asynchronous motor, rotary screw air compressor with permanent magnet and variable frequency drive, or Pilger mill;
- to optimise the overall energy efficiency of the factory through the applications of centralised vacuum system; and
- to reclaim waste heat through the use of waste heat recovery system on compressed air system, or coal-fired hot blast oven.

(c) Effluent reduction and control

- to reduce water and chemical consumptions through the use of air sprayer and automatic sponge adsorber, multi-flow dyeing machine, or open width-type washing machine;
- to recycle wastewater through the use of electro Fenton reaction with Membrane Bioreactor system (MBR), combined Reverse Osmosis (RO) and electrodialysis with bipolar membranes (EDBM) or low-temperature evaporation; and
- to reduce wastewater discharge through the use of IFAS-MOX wastewater treatment process.