



## Submission to the Ombudsman on the Three-Colour Bin System by:

New Life Plastics Ltd

### Introduction

For over twenty years, Government has deployed Three-Colour Bins dedicated to the collection of paper, metal and plastics. The meagre results have caused the Ombudsman to investigate the effectiveness of the system, inviting recommendations for improvement.

New Life Plastics Ltd <https://www.nlplastics.com.hk/> is a partnership that is investing in the design, construction and long-term operation of a facility in Government's EcoPark to process used beverage (PET, type 1) and similar containers (HDPE, type 2 - cleaning product bottles etc) into high-grade recycled material ready for the manufacture of further PET and HDPE products.

### Background

Hong Kong has a well-established, tax-payer funded system for the collection, transfer and disposal of municipal solid waste. Also well-established was the international trading by Hong Kong entrepreneurs of vast quantities of waste materials that have financial value, such as ferrous metal and cardboard. Most high-value materials of these types generated in Hong Kong have been diverted from the waste stream and absorbed by the export market. In a sense, Hong Kong has been a victim of its own success: namely, there has been no compulsion to develop home-grown solutions to the recovery and re-use of post-consumer waste.

Nevertheless, in a series of strategic plans issued since the 'nineties, Government has expressed good intentions of reducing waste generation rates and increasing the recovery of valuable resources. Unfortunately, these have been to little avail. In all societies, there is a direct correlation between per capita GDP and the generation of waste. As Hong Kong's economy has slowly grown, waste generation rates have inexorably crept upwards. Compounding the problem, societies are not altruistic in their attitudes towards material recovery. Only when the polluter is hit in the pocket by Government-imposed charges, taxes or levies on waste disposal does attention turn

towards avoiding such penalties. However, the Hong Kong Government's intentions to introduce behaviour changers such as MSW charging remain unfulfilled.

Government has been aware that lower-value waste materials present even greater challenges. Government acknowledges that plastic, glass and food wastes possess unattractive financial values and there is little propensity to recycle them. The physical infrastructure to enable the populace conveniently to drop-off these materials is lacking.

Until 2017, there was only one endeavour, and that was limited in scope. Announced in 1998, the Three-Colour Bins ("TCB system") were distributed throughout Hong Kong as receptacles for plastics, paper and metals. These were to be for the convenience of people at large, rather than commerce and industry. The aims were part practical and part educational. On both fronts, the results have been lacklustre.

Progressively some 17,000 bins were located in residential, leisure and retail areas. Because most have been managed by the private sector in residential and retail complexes, there is no reliable data on the quantities of material that have been collected. Of the total, approximately <sup>1</sup>2,750 sets (each of 3 bins) have been in public places and these have been managed by <sup>2</sup>FEHD. The yield has been minimal, as is shown in Appendix I. The attitude of the public has been negative. As EPD candidly stated in its <sup>3</sup>2013 Blueprint:

*"People question whether their efforts in waste separation are helping to increase waste recovery. There are still public concerns about a range of inadequacies with the quantities, sizes and locations of the recycling bins. There are also doubts being raised whether some waste collectors just lump everything from the recycling bins together and take them to the landfill."*

### Issues Currently Faced

Twenty years have passed. The first result: 0.40kg per bin per day (in contrast to landfill intakes of municipal solid waste exceeding 11,000 tonnes per day). The second result: public apathy towards the TCB system.

How has this evolved?

Institutional arrangements and policy objectives dictate the means by which systems are implemented. If leadership is devolved to multiple parties, each with different goals, there will be unco-ordinated approaches leading to gaps and overlaps.

No single mastermind has controlled the design, configuration, deployment and servicing of the Three-Colour Bins across all Hong Kong's public areas. These public areas range across refuse collection points, housing estates, country parks, MTR stations and transport interchanges. Although the needs may vary slightly from one

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<sup>1</sup> 1,820 sets are kerbside (so on public streets), with the balance at schools and other restricted locations. Approx break down by area of the 2,750: HKI 690, NTE 830, NTW 600 KLN 630

<sup>2</sup> On October 1<sup>st</sup>, 2020, this contract moved from FEHD to EPD management.

<sup>3</sup> [https://www.epd.gov.hk/epd/english/environmentinhk/waste/prob\\_solutions/WFdev\\_intro.html](https://www.epd.gov.hk/epd/english/environmentinhk/waste/prob_solutions/WFdev_intro.html)

situation to another, there has been no common approach, no central theme, no unifying “brand”. On the contrary, the responsibility for the Three-Colour Bins has been divided among several Government departments, including FEHD, AFCD, LCSD and the Housing Authority.

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Ironically, these departments do share one feature which is that the maximisation of material recovery has NOT been a principal policy objective. The priority has been litter clearance, to keep areas clean and tidy. This is not surprising. It is consistent with EPD’s original (not present-day) waste management strategy, first set out in the ‘eighties, which was simply to get all waste away from generation points to landfills as rapidly as possible. Indeed, the resulting network of transfer stations, still in operation, did not incorporate material recovery facilities.

The fragmentation of responsibility resulted, among other things, in inconsistent designs and colours of bins and in haphazard changes in design over the years. The proliferation has been confusing. The deployment of bins does not follow a rational pattern: the configurations have not always matched the different generation rates in



housing estates, refuse collection points and kerbside locations. Some are neglected; some are under-resourced and overflowing. Some are scattered and do not appear to have been located with the convenience of the public being of uppermost importance.

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where general waste containers are absent, people throw contaminating rubbish in with the recyclable materials – not only in villages, but also in high-visibility tourist

<sup>4</sup> A typical TCB – and the picture to the right is an example of a TCB at a PMO. Unused. These can come in many shapes and sizes.

<sup>5</sup> Ha Yeung Village, Sai Kung. The TCB is located outside the village’s RCP.

areas. Some Bins welcome glass, others have no such provision. Some have invited all plastics, some are restricted to plastic bottles.

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The management of collection contractors has not been incisive. The contract terms do not incentivise the contractor to optimise bin configurations through active dialogue with the client department. Supervision has not ensured that the material collected always reaches the destinations intended.

Intra-government compartmentation has had negative consequences. FEHD sees itself as the body primarily responsible for the removal of waste, leaving EPD to worry about reduction and recycling, but there is no evidence of communication with EPD to ensure that recovered materials are delivered to appropriate

facilities. Lands Department has been notoriously inflexible: official applications for re-siting or adding Three-Colour Bins are addressed so tortuously that Lands Department has often to be ignored.

In Hong Kong's waste management infrastructure, the absence of publicly-owned sorting facilities is a glaring omission. Once waste has been co-mingled and compacted, the extraction of recoverable material is hugely complex and expensive. The obvious solution is to separate recoverable material at source, preventing it from entering the waste stream. Many cities have a "separation and recovery" system to parallel the waste system. Usually, mixed recyclables are taken to a network of Material Recovery Facilities ("MRF's"), which need not be large, sophisticated and costly. There, materials are sorted into their various categories and readied (e.g. compacted into bales) for onward transport to processing facilities. MRF's have another beneficial role. Boxes, cans, containers and plastic bottles are bulky and low-density: if uncompacted, they produce low vehicle payloads and are therefore expensive to transport. The insertion of MRF's into the chain between source and processing plant reduces long-haul transport costs.

MRF's should be located in urban areas close to the centroids of waste arisings. In Hong Kong, it is well-nigh impossible for the private sector to secure land for this purpose. To date, Government has not made systematic attempts to identify and manage suitable sites for MRF's.

Those private sector yards in the New Territories where materials were separated for export had neither long-term security of tenure nor permission to erect permanent structures, factors which deter investment in modern equipment for processing and environmental protection.

Meanwhile, the public has been left entirely in the dark on whether its efforts have been worthwhile. No information is proffered on the quantity of material collected or

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<sup>6</sup> The ubiquitous HK Orange bin. There are approximately 40,000 in Hong Kong, managed by the FEHD. All contents go straight to landfill.

its fate. Government indifference reinforces public scepticism. If no-one can find out what materials are collected or where they go, building public trust is a challenge.

### Opportunity for Improvement

Recently, there have been several major developments, international and domestic, which are stimulating radical changes to the ways in which Hong Kong will tackle the waste recycling challenge.

Launched in 2015, Government established a billion-dollar Recycling Fund <https://www.recyclingfund.hk/en/index.php#> The Fund has provided direct financial support, for both capital and operating expenditure, to waste reduction projects across a wide range of sectors. As importantly, substantial sums have been committed to the creation of neighbourhood recycling centres and pilot collection schemes, all with important educational effects.

In 2018, China's Operation Sword choked off the import of unprocessed waste materials from other countries. Hong Kong ceased to be a hub for cross-border trading of wastes and many trading companies terminated their business operations. As with other waste exporting countries, Hong Kong has been forced to re-evaluate its strategy. Control of imports into Hong Kong of unprocessed waste materials has also been tightened, there being a complete prohibition from January 2021 under the <sup>7</sup>Basel Convention unless the material is to undergo, at minimum, thermal processing or similar in Hong Kong.

In an international context, there has been a growing awareness of the adverse effects of the wanton discarding of plastic wastes and the seemingly unlimited consumption of finite natural resources. Campaigning has led to an array of legislative changes in numerous countries, one example being the introduction of Producer Responsibility Schemes. Under an enabling framework Ordinance of 2008, Hong Kong commenced a PRS for electrical appliances (the WEEE Scheme). Since 2018, this Scheme has been successfully collecting all kinds of appliances for processing at an impressive facility at EcoPark.

For the first time in Hong Kong, prominent companies have embarked on investments to process Hong Kong's waste plastics, transforming post-consumer wastes into genuine, marketable products. The investments are substantial, the sites have long-term security and processing plastic is the central business activity, not merely a sideline. The commitment is for the long term. The capacity is sufficient to deal with the total quantity of PET bottles generated in Hong Kong. Just as the WEEE PRS would have been futile unless underpinned by the EcoPark facility, Government, recovery enterprises and material transport companies can now all be confident that there are legitimate destinations for recovered plastic containers.

The TCB system operates within the broader context of Hong Kong's material recovery landscape in which the Environmental Protection Department has been spearheading several initiatives. For example, EPD is upgrading community recycling

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<sup>7</sup> [https://www.epd.gov.hk/epd/english/environmentinhk/waste/guide\\_ref/guide\\_wiec\\_tcs1.html](https://www.epd.gov.hk/epd/english/environmentinhk/waste/guide_ref/guide_wiec_tcs1.html)

centres, commencing pilot schemes for the collection of recyclable plastics and instituting reverse vending machines. A key development for the TCB system has been EPD's assumption in October 2020 of responsibility for its management. As the client department managing a single contractor charged with collecting materials from all 2,750 sets for a four-year term, EPD has the opportunity to reinvigorate the whole system.

### Recommendations

EPD will review the effectiveness of the TCBs in attracting recyclable materials but will also bring a new focus on the downstream half of the TCB system. EPD will ensure that collected recyclables are transported to, and processed at, genuine, approved facilities. EPD will more closely monitor the performance of all aspects of the system, proactively turning lessons learned into ongoing improvements. The following recommendations are tailored to support these initiatives.

#### 1. Data Management

Hitherto, the Contractor has had few reporting obligations other than submission of monthly written reports on the quantities of material collected and liaison to address any complaints from the public. The current Contractor has developed its own electronic system of data gathering, utilising unique QR codes on every set of Bins. The Contractor's supervisory team uses the data not only for client reporting, but also for scheduling collection vehicles and managing staff.

*\*The electronic system (or one jointly-developed by EPD and the Contractor) should share data between EPD and the Contractor in real time.*

This will lead to meaningful, ongoing dialogue so that, with more data and proper analysis, the number and configuration of Bins at every collection point can rapidly be adjusted according to need and, similarly, the frequency of collection can be increased or reduced as required. This will ensure that Bins do not overflow and that vehicle routing and scheduling become more efficient. "On demand" pick-ups for exceptional circumstances will decrease.

One benefit is that the appearance of Bin locations will always be tidy and hygienic, bringing to an end the frustration experienced by members of the public when confronted by containers so full that no more material can be introduced. A second benefit is that stable and efficient vehicle utilisation lowers costs, savings being shared between client and contractor over the long term.

See Point #10 too.

#### 2. Locating TCB's

Data analysis is key to Bin deployment but, in waste management, the understanding of human behaviour is equally important. Not all people in Hong Kong behave in the same way, any more than in other countries. As a simple example, attitudes towards recycling differ in the varying types of residential areas. Hong Kong people are

acquiring positive attitudes towards source separation and material recovery, but there are different practices in rural villages and single-block buildings from those in housing estates. Some people will store and bring uncontaminated, high-quality recyclables to the TCB's – even if the TCB's are not in prominent locations – but others will not take as much trouble. More problematic is the behaviour of the casual users, the visitors in heavily trafficked tourist areas. They are more likely to treat TCB's as bins for litter and general waste.

EPD is keenly aware of such differences and the consequences, not only for the quantity of recyclables deposited, but also the quality. EPD is conscious that there cannot be a single prescription for TCB configuration and positioning throughout Hong Kong.

*\* EPD systematically review TCB configuration and positioning and, trusting its own judgement in what serves the best interests of material recovery, update TCB locations accordingly.*

### 3. Increase the number of TCBs

#Drink Without Waste conducted a PORI survey in 2020 [https://drinkwithoutwaste.org/wp-content/uploads/2020/11/03\\_Survey-Plastic-Bottle-Recycling-Public-Attitudes-and-Behaviours-PORI-WoF.pdf](https://drinkwithoutwaste.org/wp-content/uploads/2020/11/03_Survey-Plastic-Bottle-Recycling-Public-Attitudes-and-Behaviours-PORI-WoF.pdf) which clearly stated that Convenience and Trust are key drivers for recycling participation. 60% of non-participants mentioned the lack of collection points as a key reason for not recycling.

*\* If 3kgs of plastic bottles (40,000 PET bottles equate to approximately 1 ton, so 3kgs equals 120 PET bottles) could be generated from each set of TCBs each day (not an unreasonable calculation), and if there were 5,000 sets of TCBs vs 2,500 sets of today, 25t of plastic bottles would be Collected per day. This would equate to <sup>8</sup>18% of the PET bottles consumed a day in Hong Kong. This point feeds into points #1 and #10.*

### 4. Co-location with General Waste Bins

In some situations, particularly in villages and tourist areas, people carry both recyclables and general waste when they approach a set of TCB's. If a container for general waste is not available immediately adjacent to the TCB's, the obvious temptation is to discard the general waste into a recycling container. The consequences are (a) bin capacity for recyclables is reduced; (b) contamination must be removed at the processing facility. Observably, unwanted residues collected from some areas account for up to 40 per cent by weight of the total.

The institutional arrangement within Government is, put simply, that FEHD is responsible for waste collection and EPD is responsible for recycling. FEHD makes

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<sup>8</sup> #DWW estimate via a Deloitte Report, that 5.2m PET bottles are consumed a day in HK. <https://drinkwithoutwaste.org/wp-content/uploads/2020/04/deloitte-cn-ra-drink-without-waste-en-181204.pdf>

its own decisions on the location of general waste containers, not necessarily seeing them as complementary to TCB clusters. This is counter-productive.

*\* EPD should be the lead Department in judging the appropriate mix of TCB's and general waste containers at all collection points.*

In certain locations, the availability of general waste containers will enhance the achievement of the central objective: namely, the separation of recyclables from waste at source.

EPD should liaise closely with FEHD on the collection of general waste from containers at TCB clusters. Consideration could be given to EPD taking responsibility for this element of waste collection, the EPD TBS contractor possibly providing co-ordinated collection services.

## 5. Container design

Recyclables containers should be inviting and easy to use. The inherited arrays should be phased out and replaced with modern, bright, easily-distinguishable containers.

The design should maximise operability for the public and for the collection contractor. Today, containers differ enormously: some are static, others movable; some are letter-box type (some of these with swinging flaps, others open), others are top-loading. All require inner linings of single-use transparent plastic bags. Experience shows that foot pedal-operated, top-opening containers are preferred by the public. If these containers are 110-litre or 240-litre “wheelie bins”, they would enable the collection contractor to use compartmentalised compaction vehicles with all the inherent efficiency gains and also to dispense with the transparent plastic bag bin liners.

A fresh approach should be taken to the appearance of the containers so that the colours and the labelling are clear and distinctive. With imagination, the phasing in of a uniform brand will be appealing and will enhance the yield from the TCB system.

*\* EPD should roll out a programme of placing re-designed and re-branded containers at all locations*

## 6. Co-ordination with other EPD initiatives

Since 2017, EPD has awarded a flurry of contracts for the collection of glass (3 five-year contracts) and paper (17 twenty-three-month contracts) in addition to two-year contracts for the Collection and Recycling of Plastic Materials (Plastic Waste Collection Pilot Schemes), and for the Operation of Community Recycling Centres, plus a one year – possibly extendable for the operation of 60 x RVMs. The EPD has also established a mobile material recovery service for mixed plastics, vehicles covering approximately 150 collection points.

When tendering for the contracts for the “Green” Centres, the Contractors set out their operating plans in respect of material separation and onward transport to designated

processing plants. Having been approved by EPD, these plans become the performance objectives to be monitored by EPD.

These contracts cover large swathes of the urban areas and, although the targets for the quantities of recovered materials are modest, they do have significant educational value.

However, these contracts overlap, geographically and functionally. For collection, one EPD service competes with another, risking the cannibalisation of the TCB system. Having three contractors collect from essentially the same routes is not financially or environmentally sensible. For processing, particularly of plastics, there is little recognition that investment in a facility requires economies of scale: in approving and designating processing plants, EPD needs carefully to assess their long-term viability.

While drawing lessons from these contracts, EPD should consider the strategy for the future. There should be a holistic approach, including a move towards the consolidation of services. Competition will ensure cost-effectiveness and costly overlap will be eliminated.

*\* EPD should produce a master plan showing the “radius of influence” of each of the new Green Centres and their effects on the TCB system.*

*\* For the longer term, consider a combined service for recyclable materials, thus minimising duplication, cost and inconsistencies.*

Again referencing the PORI survey [https://drinkwithoutwaste.org/wp-content/uploads/2020/11/03\\_Survey-Plastic-Bottle-Recycling-Public-Attitudes-and-Behaviours-PORI-WoF.pdf](https://drinkwithoutwaste.org/wp-content/uploads/2020/11/03_Survey-Plastic-Bottle-Recycling-Public-Attitudes-and-Behaviours-PORI-WoF.pdf) half of the respondents wanted return solutions near their homes.

*\* Ordinance should be put in place requiring Property Management Organisation (PMO's) to install TCBs - of the right capacity – issue communiques to the apartment inhabitants requesting separation of recyclables from general waste, and have dedicated service contracts in place which take these Recyclable materials to approved recyclers. Lastly that these PMO's be obligated to publish this data.*



*Note: Dec 2020: Fairlane Tower, 2B Bowen Road, 82 apartments, Savills as the PMO. 2 glass recycling bins plus 1 plastics, 1 metals and 1 paper & cardboard recycling bins.*

## 7. Mixed Plastics

The TCB system does not accept plastics other than plastic bottles (predominately PET and HDPE). The public, excepting the casual users, has become attuned to this discipline. On the one hand, it is argued that it would be a retrograde step to allow the public to place mixed plastics into a single receptacle. On the other, the public does wish to recycle all plastics, but (a) cannot distinguish different types of plastics, and (b) feels that there is nowhere to put them. Actually, the Community Centres do accept mixed plastics, but space constraints mean that the quantities handled are insignificant. Also, it should be noted that for one type of plastic, namely HDPE, there are facilities in Hong Kong that process recovered material and which do produce high-grade granules.

The subject is complex. Presently, there is no clear policy on mixed plastics, no plan regarding their collection, separation or processing.

Conceivably, a fourth Bin for mixed plastics could be added to TCB clusters, for example, in residential areas.

*\* EPD should formulate a policy and plan for mixed plastics and consider the effect on the TCB system.*

## 8. Co-ordination with other Government Departments

TCB clusters are placed in many locations controlled by different Government organs, including schools, leisure facilities and transport interchanges. Just as FEHD has its own objectives, as discussed above, different Government departments hold different views on TCB's. District Councillors also express particular views on TCB's.



Having taken responsibility for the TCB system, EPD has the task of co-ordinating views that may conflict. EPD will need to defend its own objectives, carefully insisting upon TCB positioning and configurations that achieve those aims. Consistency is of key importance.

*Note:* This TCB is in a basketball court, under the control of LCSD. Note the overflowing plastic bottle receptacle – and a dedicated plastic bottle bin.

*\*EPD should take the lead in liaising with other Government departments to ensure that the TCB system maximises material recovery.*

## 9. Downstream Processing

Dealing with metal and paper collected from the TCB system is relatively straightforward. The public is less convinced about the fate of recovered plastic bottles. In fact, purpose-built thermal processing facilities are now being commissioned.

To enhance public confidence and for sound “chain of custody” reasons, Government should formulate its criteria for the approval of legitimate processors (using its Basle Convention stipulations as a baseline), inspect applicants’ facilities and operations, register and publish details of approved processors. It should then be a contractual obligation for EPD’s various material recovery contractors to ensure and verify that all material is delivered to a registered processing facility.

*\*EPD should establish a system to register approved processing facilities*

## 10. Public Relations Campaign

When EPD is satisfied that it has got to grips with the TCB system and that proper processing facilities are up and running, EPD should launch a public relations campaign. Describing how the system is being revitalised, the campaign should boldly urge the public to make full use of the system. An initial campaign would be reinforced by ongoing public education techniques.

Reinforcing the point from Recommendation #1 and #3 – TRUST is key to reinforcing behavioural change.

[https://drinkwithoutwaste.org/wp-content/uploads/2020/11/03\\_Survey-Plastic-Bottle-Recycling-Public-Attitudes-and-Behaviours-PORI-WoF.pdf](https://drinkwithoutwaste.org/wp-content/uploads/2020/11/03_Survey-Plastic-Bottle-Recycling-Public-Attitudes-and-Behaviours-PORI-WoF.pdf)

The private sector players who are actively involved in the system would no doubt be keen to support such a campaign.

*\*Release Collection and Recycling data to the public in a timely manner – dedicated website and a small lag time (say a month)*

*\*Launch a Three-Colour Bins Public Relations Campaign*

## 11. Application of the concept of “Approved Processors” to all TCB collectors

Under its TCB contract, EPD has full control in determining the destinations to which its Contractor delivers collected materials. Obviously, EPD will not allow collected materials to be delivered to EPD transfer stations or landfills.

That logic can be applied to the collectors of materials from the thousands of TCB’s located in housing estates, many of those Bins having been originally supplied by EPD.

By applying existing ordinances or developing new regulations, EPD could require all collectors to deliver collected materials to specified locations. Following the model of its well-established construction waste charging scheme, EPD could prohibit, or deter by the imposition of gate fees, materials collected from TCB's being delivered to waste facilities.

*\* EPD should affect measures to steer into EPD-approved facilities all materials collected from TCB's by private sector contractors.*

## 12. Sorting Facilities

Hong Kong has a network of large-scale transfer stations for municipal solid waste. Because waste collection vehicles are designed for a door-to-door local service and not for long journeys, transfer stations are inserted into the system so that waste is containerised for cost-effective haulage to distant disposal facilities.

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Hong Kong's plastics processors are located remotely from population centres, so the logic should apply also to recovered materials, which are bulky and less dense than waste. However, Hong Kong has no organised facilities for material sorting and compaction. The neighbourhood recycling centres have some baling machines suitable only for certain materials. The private sector has developed a few informal facilities, but these are temporary and uncontrolled.

Government controls all land availability in Hong Kong. Lands Department, through its Short Term Tenancy mechanism, holds the only practical means of establishing "Mini-Material Sorting Facilities". Such facilities would be too small to trigger the EIA Ordinance procedure. They would accept material

from the TCB system and from recycling centres, undertake first-stage sorting, and compact material for onward transport.

In a dialogue between EPD and Lands Department, selected sites would be allocated to EPD solely for the specified purpose. The duration of the Tenancy would be sufficient to give security of tenure to enable investment in appropriate equipment and

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<sup>9</sup> The Photo shows Baguio's Fan Ling manual sorting line for the bags which come from TCBs – Dec 2020.

facilities. Under the Lands Department’s Engineering Conditions, it would be mandatory to install suitable site infrastructure to provide defined environmental protection. EPD could then mount DBO tender exercises, setting out its customised specifications and contract conditions.

*\*EPD should establish a network of mini-sorting facilities*

### 13. Producer Responsibility

The TCB system will be influenced by the introduction of a carefully structured Extended Producer Responsibility Scheme. This is not to suggest that the TCB system could be adapted to incentivise plastics recycling by issuing financial rewards, but the overall awareness of the public and its propensity to recycle can only be enhanced by the early launching of a plastics PRS.

Much work has been done to prepare a PRS for plastic beverage containers and it is not necessary to repeat in this submission the points advocated elsewhere.

*\* Introduce a Producer Responsibility Scheme for plastic containers immediately*

### 14. Co-ordination within EPD

The hallmark of EPD’s successful design-build-operate contracts was “Unity of Responsibility”. EPD would not allow a contractor to fragment responsibility among partners or sub-contractors either across the scope or the duration of a contract. Accountability has always been clear.

In contrast, responsibility within EPD for Hong Kong’s recycling mission is not clear. Internally, EPD should adopt the proven discipline it imposes on its service providers. For the formulation of a holistic, strategic recycling policy and for the implementation of cost-effective programmes, one Deputy Director should have oversight over one Division of professional staff. This will bring greater clarity of vision.

*\* EPD should review its organisation structure, bringing all aspects of the recycling mission into a unified body.*

***December 30<sup>th</sup>, 2020***  
***NLP Ltd***

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Glossary: The expression “recycling” is often used loosely. Products are not “recycled” until they have been *collected* (sometimes having been kept separate at source, sometimes having been sorted from a mix of materials, sometimes having been recovered from general waste), transported to a facility for *processing* and thereby transformed into a product which is *sold* either in finished form or as feedstock for the manufacture of another product. Ideally, all the steps would be completed within one country, if the economies of scale allow.

<sup>10</sup>APPENDIX I  
QUANTITIES COLLECTED FROM THREE-COLOUR BINS PER YEAR

Year	Paper (tonnes)	Aluminium cans /Metal containers (tonnes)	Plastic bottles / Plastics (tonnes)	Total (tonnes)
2003	690	10	210	910
2004	550	20	160	730
2005	323	23	142	488
2006	518	25	94	637
2007	504	10	109	623
2008	511	7	99	617
2009	551	9	126	686
2010	573	16	162	751
2011	546	16	171	733
2012	525	15	165	705
2013	519	17	174	710
2014	526	63	357	946
2015	555	19	732	1307
2016	584	68	721	1373
2017	463	50	770	1283
2018	405	56	675	1136

<sup>11</sup>APPENDIX II  
THREE-COLOUR BINS PLACED

Year	2008	2009	2010	2011	2012	2013	2014
No. of Sets (3 bins per set)	10,570	12,560	14,580	15,100	15,670		

Year	2015	2016	2016	2017
No. of Sets (3 bins per set)				

<sup>10</sup> Figures derived from LegCo papers bar years 2015 to 2018, which came from Baguio.

<sup>11</sup> Figures derived from LegCo papers.

<sup>12</sup>APPENDIX III  
RECYCLABLE PLASTICS IMPORTED AND EXPORTED

(Tonnes)

Year	2008	2009	2010	2011	2012
Imports	4,489,000	4,696,000	4,799,000	3,962,000	3,200,000
Exports	4,178,000	4,127,000	4,223,000	3,453,000	3,237,000

(Tonnes)

Year	2013	2014	2015	2016	2017	2018
Imports						
Exports	2,414,000	3,048,000	2,824,000			

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<sup>12</sup> Figures derived from LegCo papers.

## APPENDIX IV NEW LIFE PLASTICS LTD

New Life Plastics Ltd is a Joint Venture between ALBA Group, Baguio Green Group and Swire Coca-Cola Ltd. Each company has equal equity, and the company's mission is:

1. To drive high Collection rates in HK via Baguio for primarily soft drink PET bottles and general usage HDPE plastic bottles and general HDPE plastic bottles
2. To make sure these Collected volumes are Recovered at source, so are uncontaminated which provides high quality feedstocks
3. To process these feedstocks with as little yield loss as possible into food grade quality flake (rPET) and high quality pellet (rHDPE)
4. To provide transparency and validation on Collected, Recovered and Processed volumes of PET and HDPE – providing stakeholders with a Chain of Custody
5. Lastly, to aspire to zero harm and a constant culture of continuous improvement in our plant, we operate with full ISO accreditation



### **About ALBA Group**

The ALBA Group, one of the leading recycling and environmental services companies as well as raw material providers worldwide, operates with its two brands - ALBA and Interseroh - within Germany, Europa and Asia. In 2018 its divisions generated an annual turnover of 2.1 billion Euros and employed a staff of more than 8,000 employees. In 2017 alone ALBA Group saved almost 4.1 million tonnes of greenhouse gases compared to primary production and at the same time about 30.2 million tonnes of primary raw materials through its recycling activities

### **About Baguio Green Group**

Baguio Green Group Limited is a leading integrated environmental service provider in Hong Kong. Baguio's services include professional cleaning, integrated pest management, horticulture & landscaping, waste management, collection & recycling. Baguio Green Group Limited is a listed company on the Main Board of The Stock Exchange of Hong Kong Limited (stock code: 1397)

### **About Swire Coca-Cola Limited**

Swire Coca-Cola is a division of Swire Pacific Limited, which is a listed company on the Main Board of The Stock Exchange of Hong Kong Limited (stock code: 00019/ 00087). As the fifth largest Coca-Cola bottlers by volume in the world, Swire Coca-Cola has the exclusive right to manufacture, market and distribute products of The Coca-Cola Company in Hong Kong, Taiwan, 11 provinces and the Shanghai Municipality in Mainland China and an extensive area with the acquisition by Swire of the majority shareholding in the Hong Kong bottling company. Swire Coca-Cola manufactures over 60 beverage brands and distributes them to a franchise population of over 720 million people