

Recycling Fund

Guidance Notes:

A Theme-based Scheme on Supporting Residential Buildings in Adopting Smart Bins Technology in Food Waste Collection and Recycling

A. Introduction

In response to the needs and development trend of the recycling industry, theme-based schemes are introduced under the Recycling Fund to facilitate the enhancement of recycling capabilities and efficiency for sustainable development.

Food waste makes up a significant amount of the city's municipal solid waste, and over half of it comes from domestic households. To match the growing capability for food waste recycling, it is important to have appropriate measures to facilitate source separation and collection of food waste for the households.

The Recycling Fund has earmarked \$100 million for launching a scheme on "Supporting Residential Buildings in Adopting Smart Bins Technology in Food Waste Collection and Recycling" under the Industry Support Programme (ISP). The relevant details are set out in this set of Guidance Notes, which should be read in conjunction with the **Guide to Application for the Recycling Fund (Industry Support Programme) (Guide to Application (ISP))**. For areas not specifically mentioned in this set of Guidance Notes, the general requirements set out in the Guide to Application (ISP) will continue to apply. The Advisory Committee on Recycling Fund (RFAC) and the Secretariat of Recycling Fund (the Secretariat) reserve their right to change any requirements or to decide how requirements should be interpreted / implemented at any time without prior notice.

B. Theme

To carry out projects which will enhance the source separation and collection of food waste in the domestic sector by adopting smart bin technology. Smart bins technology refers to food waste collection bins equipped with intelligent designs, basically including the following aspects:

- computer software and computer-controlled hardware must support the

GREEN\$ cards and GREEN\$ Mobile App for user identification, and connection to the common communication platform of GREEN\$,

- computer-controlled locking system with access key such as smart card, QR code, etc.,
- smart sensors to measure weight, levels for alert signal, etc.,
- disinfection device/odour abatement system,
- data storage to record the basic information including weight of food waste collected from individual users, date, user ID etc. , and
- real-time communication to transmit quantity information, control information (e.g. availability, location and status) and alert signals to users or the management office.

*For the detailed functional specification of smart bins, please refer to Appendix I: Required Functional Specification of Smart Bins.

Smart bins technology for food waste collection has become more mature in recent years. It can enhance collection efficiency and collection quantities for recyclers while keeping the handling process in a hygienic manner. The smart bins can also provide real-time information for recyclers to optimise the collection route, thereby optimising operational efficiency and reduce carbon footprint.

C. Goal

The objectives of this solicitation theme are to encourage and facilitate food waste collection and recycling in the domestic sector such as residential buildings; to enhance the collection efficiency of food waste by using smart bins collection; and to raise awareness of residents.

D. Eligibility

Relevant residents' organisations or property management companies acting on their behalf can apply. Eligibility of the applicant follows the requirements of ISP in general and includes:

1. **Incorporated Owners (IO) or Owners' Corporation** registered under the Building Management Ordinance (Cap. 344) can act as applicant and should

demonstrate it is non-profit distributing in nature. In the absence of the registration document with relevant clauses to show that the organisation is non-profit distributing, other records of declaration such as meeting minutes will be considered as proof of its non-profit distributing nature. IO / Owners' Corporation may authorize the property management company to act as the applicant on their behalf.

2. Owners' Committee (OC), Owners' organisations (OO) or residents' organisations (RO) of residential buildings.

OC, OO or RO should authorize the property management company to act as the applicant on their behalf. The OC, OO and RO should also demonstrate it is non-profit distributing in nature. In the absence of the registration document with relevant clauses to show that the organisation is non-profit distributing, other records of declaration such as meeting minutes will be considered as proof of its non-profit distributing nature.

3. Property management companies (PMC) acting on behalf of the residents' organisations of residential buildings are also eligible if written agreement from the residents' organisation is obtained before making the application.

If an application is made by a PMC, the respective IO, Owners' Corporation, OC, OO or RO of the residential building(s) needs to sign an undertaking to continue the project to completion if the PMC is unable to complete the project.

Public rental housing estates owned by the Hong Kong Housing Authority (HA) and the Hong Kong Housing Society (HKHS) will not be included because they may receive other forms of Government funding.

E. Project Duration

In order to encourage residential communities to maintain the habit of food waste collection continuously, the minimum duration of a project is 24 months (including 6 months of preparation works), and the maximum is 48 months. Prior to project commencement, the applicant has to provide evidence of support by at least 200 participating households.

F. Funding Limits

The maximum funding for each project under this solicitation theme is \$2,500,000. Funding support includes rental of smart bins and related system, recruitment of additional workers, promotion and education as well as audit fee. Applications with a budget of over \$2,500,000 will be considered on a case-by-case basis under normal ISP assessment mechanism. If an applicant or housing estate is making more than one application, applications will also be considered on case-by-case basis.

Applicants will rent (not purchase) smart bins that fulfilled the requirements stated in Appendix I under the project. As an example, one smart bin could handle approximately 120 kg of food waste per day (with four 120L purple bins (550mm (L) × 480 mm (W) × 940 mm (H)) for collecting food waste), the applicant should solicit the support from at least 200 participating households per smart bin; a trial project targeting 2,000 participating households could require around 10 smart bins after acquiring signatures from 2,000 participating households.

The applicant should note that the Advisory Committee on Recycling Fund (RFAC) / Government is not bound to approve the application or grant the full amount requested by the applicant for the project during the application assessment and consideration of the actual funding subject to the actual situation and reasonableness of the applications among others; and the applicant may have to bear the unrecognizable cost of the project.

G. Expense Items

Applicants shall follow the prevailing requirements as detailed in the Guide to Application (ISP) (e.g. with adequate number of quotations) in conducting the procurement process. Expense items eligible for funding support and the funding caps for respective items¹ are listed below, with an example shown in Appendix II:

1. Rental cost for smart recycling bins for food waste including software system support, smart card system (shall use GREEN\$ for user identification) and regular maintenance, stickers for the bins, small works items (such as installation of power supply, lighting, etc.) and associated equipment to facilitate food waste sorting from individual household, etc. The applicant should also indicate how many standard 120L bins (also known as “purple bins”) are proposed to work with the smart recycling bins. (The proposed smart bin compartment should be capable of accommodating a 120L purple bin of

¹ The funding caps are applicable to applications received on or after 1 June 2023.

dimensions 550mm (L) × 480mm (W) × 940mm (H). The number of bins approved is subject to project progress or other conditions.)

2. Recruitment of additional workers for the transfer of food waste (e.g. transfer of the purple bins from the smart bins to the main refuse room for temporary storage or loading, where appropriate), cleansing of the smart bins and purple bins after unloading, fixing of liner bags to bins, other movements of the bins, etc.; or the expense to outsource the above activities (not exceeding 38% of the total approved funding amount)
3. Promotion, education activities and administrative overheads, for example, to cover additional work by existing staff members of the PMC (not exceeding 14% of the total approved funding amount)
4. Audit fees

Applicants should pay attention to the followings:

- (a) Applicants should obtain quotations directly from suppliers as far as possible to ensure the authenticity of the quotations;
- (b) If, under unavoidable circumstances, the applicant obtains quotation through an agent, such agent cannot be one of the suppliers. The applicant should also ensure that the agent has no interest in any supplier that provides the quotation;
- (c) Regardless of how quotations are obtained, applicants are also responsible for ensuring the authenticity of all quotation documents.

H. Assessment Criteria

All applications received would be assessed and submitted to the RFAC for consideration in six months starting from the receipt date according to the merits of individual applications, and the applicants would be notified of the results. Applicants are also required to submit all supplementary information within 4 months after application submission or the applications may be rejected. The vetting criteria for all applications received under this solicitation theme will be similar to ISP in general, with the following criteria used in assessing the merits of individual applications:

1. The project must demonstrate increase in quantity and enhancement in quality of food waste (i.e. measurable as Key Performance Indicators among the Project Deliverables), and must facilitate the residents and occupants in these premises to participate in recycling (a minimum of 200 households' participation would be required for each smart bin and the collected food waste should meet O-PARK1's intake quality control; i.e. <20% impurities as one of the quality

requirements of the collected food waste).

2. The proposed site should be technically feasible in consideration of factors such as space availability and suitability of space for setting up the bins, project management capability and commitment of the applicant. Layout plan(s) showing locations of the smart bins with indication of essential infrastructure support (e.g. power source, temporary storage, etc.) is required.
3. The project should be cost-effective in consideration of the number of smart recycling bins to be set up, the number of households to participate and the number and details of promotion and education activities to be organised.
4. Applicants should provide education and promotion on food waste recycling, including food waste separation guideline, recycling procedures etc..
5. The proposed schedule of implementation should be well-planned and practicable with reasonable project duration.
6. For food waste collection from the smart bins, the proposed project is required to work with EPD on the arrangement on food waste collection, such as coordination of the collection time, frequency, location or specific suggestions. Or the applicant shall make its own arrangement for collection and proper treatment while the transportation cost would not be covered in the Scheme.
7. For food waste delivery, the proposed project is required to deliver the collected food waste to O-PARK1 or other food waste treatment facilities with consent given by EPD.
8. The project should choose smart bins that fulfilled all essential requirements stated in Appendix I. Applicant could also include additional features according to their individual needs. In either way, proper specifications (e.g. make and model, capacity, outside dimensions, utility requirements, etc.) for the proposed smart bins should be provided in detail as each vendor may provide a selection of different models of smart bins and may continue to add new products to its catalogues. The applicant may also propose to use conventional food waste collection bins (purple bins) to collect food waste in 1 or more residential buildings while the smart bin(s) will be adopted in other participating buildings in the project. Details on such manual collection of food waste should be provided in the application.
9. The smart recycling bins system should have the ability to connect to the common communication platform of GREEN\$, and have an adaptable output channel to transfer the collected data (without any personal information) steadily and accurately to a government data platform. The Secretariat and the

Government should be granted access rights to the data collected by the applicant at any time.

10. Applicant should ensure the outlook design and display panel of smart bins should fulfill “Recycling Fund RSB Project Design Specification” and acquire the approval from the Secretariat before adoption.
11. The financial ability of the applicant to undertake the project, for example the current-year/last-year audited accounts/financial statements, bank statements, and the latest month/quarter unaudited accounts/financial statements etc..

I. Application Procedures

Applicants should submit the following documents:

1. Completed Application Form in one hard copy and one soft copy (in MS Word format)
2. Photocopies of the supporting documents listed out in Application Form.

Application Form and Guides:

- Please complete the Application Form for Project for Supporting Residential Buildings in Adopting Smart Bins Technology in Collection of Food Waste Collection and Recycling
(http://www.recyclingfund.hk/images/app_isp/solicitation_application_e.docx)
- Please make reference to Guide to Application (ISP)
(http://www.recyclingfund.hk/images/app_isp/guide_e.pdf)

J. Financial Arrangements

Please refer to Section 3 of Guide to Application (ISP).

K. Reporting Requirements

Please refer to Section 4.2 of Guide to Application (ISP).

L. Recordkeeping Requirement

The grantee shall also keep proper and separate books and records for project expenses incurred during the project period and retain the books and records for at least 7 years after the completion of the project and submit or make available all such supporting documents to the Secretariat upon request.

M. Suspension or Termination of Funding Support

Please refer to Section 5.3 of Guide to Application (ISP).

Enquiries:

Enquiries regarding the Recycling Fund can be addressed to -

The Secretariat, Recycling Fund

Address: HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong

Hotline: 2788 5658

Fax: 3187 4559

Enquiry: enquiry@recyclingfund.hk

Website: www.recyclingfund.hk

Appendix I: Required Functional Specification of Smart Bins

The applicant is required to submit smart bins specifications for endorsement by the Environmental Protection Department.

Functional Specifications for Food Waste Smart Bins

Specifications
<p>Essential:</p> <ul style="list-style-type: none">• Collection capacity: able to accommodate a 120 L mobile waste container (“purple bin”) with dimensions specified as 550mm (L) x 480mm (W) x 940mm (H), conforming to European Standards (EN) 840-1:2012 or equivalent for installation at residential estate.• Weight sensor• Weight record of each instance of food waste disposal• Fill-level sensor• Disinfection device/ odour abatement system• Technology for user identification: [GREEN\$ smart cards and barcode/QR code, mobile apps, RFID etc.]• Electronic locking system [unlocked through user identification]• Telecommunication: [e.g. Mobile network (3G/4G/5G) and/or Wi-Fi and/or cable broadband]• Top opening infeed door [should have enough space for easy disposal of food waste]• Leakage proof and water proof design• Enclosed design (i.e. full enclosure of the 120L purple bin)• Fault sensing and notification• Safety detection• Display panel• Multi-language system [must include Chinese and English]• Data storage to record the collected amount from individual users• Real-time communication to transmit quantity information, control information [e.g. availability, location and status] and alert signals to users or administrator.• Output channel should have the adaptability to transfer collected data to the designated common communication platform (Necessary certified supporting documents to substantiate its claim on their capability to connect with the common communication platform of GREEN\$ should be provided.)• Power saving model <p>Additional features:</p> <ul style="list-style-type: none">○ CCTV○ Lighting○ User input type: [e.g. keypad/touchpad/touchscreen]○ Disabled-friendly features: [e.g. Voice guidance, braille display, etc.]○ Other safety detection device [e.g. temperature sensor, smoke detector etc.]

Remarks:

- i. The above specification may be adjusted when necessary.
- ii. Quotations for smart bins should include a buyout clause or buyout option, stating how much more (if any) it would cost to acquire ownership of the smart bins after completion of the rental period.

(Latest Version: October 2023) – This version supersedes the June 2023 and all prior versions.

- iii. Quotations for smart bins should include the cost (if any) for the uninstallation and removal of the smart bins after completion of the rental period.
- iv. Applicant may make reference to the list of selected food waste smart bin suppliers of approved projects on Recycling Fund website. (website: https://www.recyclingfund.hk/en/news_approved.php?item=8)
- v. For details on the API tests and connection, please contact Mr. Andrew Mou at 2788 5550 or andrewmou@hkpc.org.
- vi. Applicant should ensure the outlook design and display panel of smart bins should fulfill “Recycling Fund RSB Project Design Specification” (which could be downloaded from Recycling Fund website) and acquire the approval from the Secretariat before adoption.

Appendix II: Budget Example

Expense items in an application for a residential housing estate with 400 participating households

Item	Key information of project - Rental of 2 smart bins for food waste collection; - Project period : 48 months (including 3 months of preparation)	Unit	Total (HK\$)
1	Smart bins for Food Waste (Rental Cost × 45 months) including software system support, smart card system for users and regular maintenance, small works items (such as installation of power supply, lighting, etc.)	2	280,000
2	Additional workers: must not exceed 38% of the total approved funding amount		256,200
3	Promotion, education activities (e.g. manpower and direct expenses incurred by the applicant or by the PMC, cost of hiring a NGO to execute these activities, etc.) & administrative overheads : must not exceed 14% of the total approved funding amount		98,000
4	Audit fees and Bank confirmation charge	4	67,000
		TOTAL	701,200

Remarks:

- i. Supplementary documents will be required when claiming expenses on “Additional workers”, “Promotion and education activities” and on “Administrative overheads”, including but not limited to named salary slips (signed by recipients), receipts, delivery notes, declaration forms, etc. Copies of such documents have to be submitted along with the progress reports or completion report in order to substantiate actual project expenditure. Please be reminded that double claims is not allowed, i.e. a staff member’s salary expense claimed for “Administrative overheads” cannot be claimed again for “Promotion and education activities”, and vice versa.
- ii. Reference utilities cost per smart bin system is HK\$120/ month.