**Problem Statement/Title: Productive, cleaner and cost-effective refuse collection system**

**Desired Outcomes:**

A cost-effective, cleaner and less labour-intensive refuse collection system for older HDB blocks.

**Background of Problem:**

Older HDB blocks are fitted with Individual Refuse Chutes (IRCs) and have a refuse bin at the bottom of each chute to contain the refuse. The process of waste removal currently requires the use of two town council conservancy crew members to perform two manual transfers of the filled refuse bins between the IRCs and the bin centre as follows:

- IRCs: The filled bins are manually removed from IRCs and transferred onto small Battery-Operated Carts (BOC) before they are transported to the bin centres. The bin's size is about 0.3 metre cubic, and can sometimes weigh more than 100kg when full. This is very heavy for 2 workers.
- Bin centre: The filled bins on the Battery-Operated Carts (BOC) are carried down and pushed to the refuse compactors at the bin centre.

Very often, the activities involved in transferring waste from IRCs to refuse compactors results in refuse/sullage spillage as well as pest and smell nuisance which warrants further mitigation actions.

**Technical Requirements of the proposed solution:**

1. Simple and easy to operate
2. Easy to be deployed in existing estates with little or no major modification
3. Helps to reduce or eliminate spillage, vector problems and odour from waste collection.
4. Installation and operations to have minimal inconvenience to residents
5. Improve productivity through the use of mechanization
6. Cost effectiveness in terms of life-cycle cost analysis
7. The proposed solution must have minimal noise generation

**What solutions you are not interested in (if any)?**

Devices that require major modification to existing IRC and require high operation and maintenance cost.

**Timeframe for development of proposed solution/product**

a. Completion of site evaluation, equipment concept design & detailed drawings 3 months from start of project.
b. Working prototype ready for evaluation 10 months after start of project
c. Trial of working prototype on site for about 4 – 6 months.
d. Provide reports and findings on data collated during trial phase

**Requirements of prototype**

Prototype should minimally comply with the points listed under Technical Requirements.

**Costing and Procurement**

Interested applicants are to submit proposals with cost details including:

a. Development cost [i.e material cost, manpower cost, equipment/software cost, consultancy cost, other operating cost *(e.g. materials/consumables),* others];
b. IP, licensing cost (if any);
c. Unit cost of the solution(s);
d. Re-instatement cost to revert back to the previous system (if trial fails); and
e. Any other cost.

**Market Potential for proposed solution/product**

Proposed solution should be easily adopted by waste collectors facing similar problems or by town council cleaning crew currently performing IRC bin clearing operations.