

**API document for connection between Central
Communication Platform (GREEN\$)
and
Food Waste Recycling system**

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30 June 2023



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1 API DOCUMENT

This API document describes the API used to interface with EPD centralized database, including the description of the API endpoint, required input and expected result of the API call. The target users of this API are the contractors of the Food Waste Recycling System and this document will focus on API method request for System Management Service and Transaction Service for Supplier.

You can also obtain the latest API document in the URL below.

URL of Testing environment	https://hkpcdev.greenycoins.gov.hk:5000/api-docs
URL of Production environment	https://hkpc.greenycoins.gov.hk:5000/api-docs

The API is used for system management service – Generic data and Real time health status for food waste recycling system. The URL of the Testing environment and Production environment are as below.

URL of Testing environment	https://hkpcdev.greenycoins.gov.hk
URL of Production environment	https://hkpc.greenycoins.gov.hk

The API is using the following API method.

API Methods	Functions
GET	Retrieve data from server at the specified resource.
POST	Send data to the API server to create a resource.

The summary of API method requests is as below, each API method request will be explained in this API document.

Transaction Service		
Path Parameter	GET	POST
/user/getUserwithcount/{id}	✓	
/user/latestTransactions/{id}	✓	
/transaction/recycle		✓
/token		✓
/machine/status		✓
/heartbeat		✓

The list of response code is as follows.

Code	Description
200	Search results matching criteria.
201	Action completed/ Transaction created.
400	Bad input parameter/ Invalid input, object invalid.
401	Invalid Response/ Invalid contractor token.
403	Error: Forbidden.
404	Bad input parameter. Please make sure the input type is correct and ID should be unique.
409	An existing item already exists.

The Schemas of each resources, Member, Transaction, RequestToken and MachineStatusBody are as below.

Member

Parameter	Type	Description
memberID	string	The user ID
username	string	The username
status	boolean	Result acknowledgement of the status success
balance	number(\$float)	Remaining \$GREEN of the member

Transaction

Parameter	Type	Description
machineID	string	The registered machine ID (To be provided by EPD)
memberID	string	The user ID
locationID	string	The location ID of registered machine (To be provided by EPD)
transactionTime	ISODate	Time in format YYYY-MM-DDTHH:MM:SS. <i>Note: The saved record have been added 8 hours.</i>
recycleableType	string	The recycleable type (FOODWASTE)
weight	boolean	No. of recycle in the same date (0 – No recycle record on the date; 1 – Conducted the recycling record once or

		more times on the date)
greenScore	number(\$float)	\$GREEN earn or spend in this transaction
status	string	Result acknowledgement of the status success
remarks	string	Any remark of the transaction

RequestToken

Parameter	Type	Description
contractorID	string	The contractor ID
password	string	The password for contractor

MachineStatusBody

Parameter	Type	Description
machineID	string	The registered machine ID (To be provided by EPD)
timestamp	ISODate	Time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
level	integer(\$int32)	The emergency level of the bin (0 – Normal 1 – Warning 2 – Alarm)
code	string	The preset codes and self-defined codes
message	string	The message of the sign

2 USER CRUD OPERATIONS

User Crud Operations are API method get request for generic user data.

2.1 Path Parameter: /user/getUserwithcount/{id}

API Method:

- GET [Search user with recycle count by ID.]

Request message for GET/ user/getUserwithcount/{id}:

Parameter	Type	Required	Description
memberID	string	Yes	The user ID

Response message for GET/ user/getUserwithcount/{id}:

Response	Type	Description
success	boolean	The status of request
memberID	string	The user ID
membership	boolean	The validation of member
username	string	The username
balance	number(\$float)	Remaining \$GREEN of the member
redemptionTotal	number(\$float)	The accumulative redemption score
recycleTotal	number(\$float) & number	The accumulative recycle weight, quantity, and number of visits
recycleCount	number	The recycle count of FOODWASTE ¹ , Regulated electrical equipment (REE), Fluorescent lamps and tubes (FLT) and Small electrical appliances (SEA)

Example of request message for GET/ user/getUserwithcount/{id}:

```
curl -X 'GET' \  
  'https://hkpcdev.greenycoins.gov.hk:5000/user/getUserwithcount/1000XXXXXX' \  
  -H 'accept: application/json'
```

Example of Response Body for GET/ user/getUserwithcount/{id}:

(i) For zero recycling record on the date

```
{  
  "success": true,  
  "data": {  
    "memberID": "1000xxxxxx",
```

¹ For multiple food waste recycling records in the same day, the recycle count of FOODWASTE will be 1.

```
{
  "membership": true,
  "username": "HKPCTEST",
  "balance": 770185.22,
  "redemptionTotal": 0,
  "recycleTotal": {
    "kg": 32928.97,
    "piece": 30,
    "visit": 340
  },
  "recycleCount": {
    "FOODWASTE": 0,
    "REE": 0,
    "FLT": 0,
    "SEA": 0
  }
}
```

(ii) For once or more recycling records on the date

```
{
  "success": true,
  "data": {
    "memberID": "1000xxxxxx",
    "membership": true,
    "username": "HKPCTEST",
    "balance": 770185.22,
    "redemptionTotal": 0,
    "recycleTotal": {
      "kg": 32928.97,
      "piece": 30,
      "visit": 340
    },
    "recycleCount": {
      "FOODWASTE": 1,
      "REE": 0,
      "FLT": 0,
      "SEA": 0
    }
  }
}
```

or

```
{
  "success": false,
  "message": "Cannot find member"
}
```

2.2 Path Parameter: /user/latestTransactions/{id}

API Method:

- GET [Get user 10 latest transactions with balance by memberID.]

Note:

This method is used to retrieve the last 10 transactions of the member and display on the screen on the food waste bin. For the display information, please refer to Section 5.

Request message for GET/ user/latestTransactions/{id}:

Parameter	Type	Required	Description
memberID	string	Yes	The user ID

Response message for GET/ user/latestTransactions/{id}:

Response	Type	Description
success	boolean	The status of request
memberID	string	The user ID
membership	boolean	The validation of member
username	string	The username
balance	number(\$float)	Remaining \$GREEN of the member
redemptionTotal	number(\$float)	The accumulative redemption score
recycleTotal	number(\$float) & number	The accumulative recycle weight, quantity and number of visits.
_id	string	The transaction ID
locationID	string	The location ID of registered machine (To be provided by EPD)
transactionType	string	The type of transaction (recycle or redemption)
type	string	FOODWASTE
transactionTime	ISODate	Time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
weight	number(\$integer)	Any recycle record on the date (0 – No recycle record on the date; 1 – Conducted the recycling record once or more times on the date)
greenScore ²	number(\$float)	\$GREEN earn or spend in this transaction

² For multiple food waste recycling on the same day, the green score should be 0.

status	string	Result acknowledgement of the status success
source	string	The source of transaction (BATCH, MACHINE and MANUAL)
remarks	string	Any remark of the transaction
updatedAt	ISODate	The update time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
transactionID	string	The transaction ID

Example of request message for GET/ user/latestTransactions/{id}:

```
curl -X 'GET' \
  'https://hkpcdev.greenycoins.gov.hk:5000/user/latestTransactions/1000xxxxxx' \
  -H 'accept: */*'
```

Example of Response Body for GET/ user/latestTransactions/{id}:

(i) For first time recycling record on the date

```
{
  "success": true,
  "data": {
    "memberID": "1000xxxxxx",
    "membership": true,
    "username": "HKPCTEST",
    "balance": 769936.22,
    "redemptionTotal": 0,
    "recycleTotal": {
      "kg": 32904.07,
      "piece": 30,
      "visit": 340
    },
    "transactions": [
      {
        "_id": "6482d15f1907419c75bc6d4e",
        "locationID": "YTM/PVH/TWATERFRONT/001",
        "transactionType": "RECYCLE",
        "type": "FOODWASTE",
        "transactionTime": "2023-06-09T15:14:37.000Z",
        "weight": 1,
        "greenScore": 50,
        "status": "valid",
        "source": "MACHINE",
        "remarks": "nil",
        "updatedAt": "2023-06-09T15:14:39.399Z",
        "transactionID": "6482d15f1907419c75bc6d4e"
      }
    ]
  }
}
```

(ii) For second or more recycling records on the date

```
{
  "success": true,
  "data": {
    "memberID": "1000xxxxxx",
    "membership": true,
    "username": "HKPCTEST",
    "balance": 769936.22,
    "redemptionTotal": 0,
    "recycleTotal": {
      "kg": 32904.07,
      "piece": 30,
      "visit": 341
    },
    "transactions": [
      {
        "_id": "6482d15f1907419c75bc6d4e",
        "locationID": "YTM/PVH/TWATERFRONT/001",
        "transactionType": "RECYCLE",
        "type": "FOODWASTE",
        "transactionTime": "2023-06-09T15:20:47.000Z",
        "weight": 1,
        "greenScore": 0,
        "status": "valid",
        "source": "MACHINE",
        "remarks": "Warning. No Green$ for same day transaction.",
        "updatedAt": "2023-06-09T15:20:49.399Z",
        "transactionID": "6482d15f1907419c75bc6d4e"
      }
    ]
  }
}
```

or

```
{
  "success": false,
  "message": "Cannot find member"
}
```

3 TRANSACTION CRUD OPERATIONS

Transaction Crud Operations are API method post request for generic transaction data.

3.1 Path Parameter: /transaction/recycle

API Method:

- POST [Add a recycle transaction.]

Request message for POST/ transaction/recycle:

Parameter	Type	Required	Description
machineID	string	Yes	The registered machine ID (To be provided by EPD)
memberID	string	Yes	The user ID
locationID	string	Yes	The location ID of registered machine (To be provided by EPD)
transactionTime	ISODate	Yes	Time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
recycleableType	string	Yes	The recycleable type (FOODWASTE)
weight	boolean	Yes	Any recycle record on the date (0 – No recycle record on the date; 1 – Conducted the recycling record once or more times on the date)
greenScore	number(\$float)	Yes	\$GREEN earn or spend in this transaction
status	string	Yes	Result acknowledgement of the status success
remarks	string	Yes	Any remark of the transaction
token	string	Yes	The latest generated token

Response message for POST/ transaction/recycle:

Response	Type	Description
success	boolean	The status of request
machineID	string	The registered machine ID (To be provided by EPD)
memberID	string	The user ID
transactionID	string	The transaction ID
locationID	string	The location ID of registered machine (To be provided by EPD)
transactionType	string	The type of transaction (recycle or redemption)
type	string	FOODWASTE
transactionTime	ISODate	Time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
weight	boolean	Any recycle record on the date (0 – No recycle record on the date; 1 – Conducted the recycling record once or more times on the date)
greenScore	number(\$float)	\$GREEN earn or spend in this transaction
status	string	Result acknowledgement of the status success
source	string	The source of transaction (BATCH, MACHINE and MANUAL)
remarks	string	Any remark of the transaction
updatedAt	ISODate	The update time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
balance	number(\$float)	Remaining \$GREEN of the member

redemptionTotal	number(\$float)	The accumulative redemption score
recycleTotal	number(\$float) & number	The accumulative recycle weight, quantity and number of visits.

Example of request message for POST/ transaction/recycle:

[illegible]

Example of Response Body for POST/ transaction/recycle:

```
{
  "success": true,
  "data": {
    "machineID": "FW-XXXXXXX-XXXXX",
    "memberID": "1000xxxxxx",
    "transactionID": "648683d61907419c75bcd1af",
    "locationID": "SHATIN-01",
    "transactionType": "RECYCLE",
    "type": "FOODWASTE",
    "transactionTime": "2021-08-29T09:30:33.001Z",
    "weight": 1,
    "greenScore": 20,
    "status": "valid",
    "source": "MACHINE",
    "remarks": "nil",
    "updatedAt": "2023-06-12T10:32:54.804Z",
    "__v": 0
  },
  "member_info": {
    "balance": 4713,
    "redemptionTotal": 0,
    "recycleTotal": {
      "kg": 75.96,
      "piece": 1,
      "visit": 4
    }
  }
}
```

3.2 Path Parameter: /token

API Method:

- POST [Get the token.]

Request message for POST/ token:

Parameter	Type	Required	Description
contractorID	string	Yes	The contractor ID
password	string	Yes	The password for contractor

Response message for POST/ token:

Response	Type	Description
success	boolean	The status of request
token	string	The latest generated token
message	string	The result of token creation

Request URL for POST/ token:

<https://hkpcdev.greenycoins.gov.hk:5000/token>

Example of data for POST/ token:

[illegible]

Example of Response Body for POST/ token:

[illegible]

or

```
{
  "success": false,
  "message": "Please check the contractor ID or password"
}
```

4 SYSTEM MANAGEMENT SERVICE

System Management Service is API method post request for generic system data.

4.1 Path Parameter: /machine/status

API Method:

- POST [Add a machine status.]

Request message for POST/ machine/status:

Parameter	Type	Required	Description
machineID	string	Yes	The registered machine ID (To be provided by EPD)
timestamp	ISODate	Yes	Time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
level	integer(\$int32)	Yes	The emergency level of the bin (0 – Normal 1 – Warning 2 – Alarm)
code	string	Yes	The preset codes and self-defined codes
message	string	Yes	The message of the sign

Response message for POST/ machine/status:

Response	Type	Description
success	boolean	The status of request
machineID	string	The registered machine ID (To be provided by EPD)
timestamp	ISODate	Time in format YYYY-MM-DDTHH:MM:SS.Timezone <i>Note: The saved record have been added 8 hours.</i>
level	integer(\$int32)	The emergency level of the bin (0 – Normal 1 – Warning 2 – Alarm)

code	string	The preset codes and self-defined codes
message	string	The message of the sign

The list of preset codes at level 0 is as follows.

Level	Code	Message	Description
0	550	Food waste collected/ Food waste bin empty	Food waste is collected / Food waste recycling bin is empty
0	601	In service	Food waste recycling bin is in service

The list of preset codes at level 1 is as follows.

Level	Code	Message	Description
1	551	10% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 10% full
1	552	20% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 20% full
1	553	30% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 30% full
1	554	40% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 40% full
1	555	50% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 50% full
1	556	60% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 60% full
1	557	70% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 70% full
1	558	80% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 80% full
1	559	90% full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 90% full

The list of preset codes at level 2 is as follows.

Level	Code	Message	Description
2	559	Full (Food waste bin) [FOODWASTE]	Food waste recycling bin is 100% full
2	601	Out of service	Food waste recycling bin is out of service

The remark of self-defined codes

- Self-defined codes are assigned by contractors
- Contractors can only assign the code > 1000 with level and message, as code 0 to 1000 are reserved for internal use

Request URL for POST/ machine/status:

<https://hkpcdev.greenycoins.gov.hk:5000/machine/status>

Example of data for POST/ machine/status:

```
curl -X 'POST' \
'https://hkpcdev.greenycoins.gov.hk:5000/machine/status' \
-H 'accept: application/json' \
-H 'Content-Type: application/json' \
-d '[
{
  "machineID": "FW-XXXXXXX-XXXXX",
  "timestamp": "2022-04-08T05:42:00.000Z",
  "level": 0,
  "code": 601,
  "message": "In service"
},
]
```

Example of Response Body for POST/ machine/status:

(i) Level 0 (e.g. In service)

```
{
  "success": true,
  "data": [
    {
      "machineID": "FW-XXXXXXX-XXXXX",
      "timestamp": "2022-04-08T05:42:00.000Z",
      "level": 0,
      "code": 601,
      "message": "In service"
    }
  ]
}
```

(ii) Level 1 (e.g. 80% full)

```
{
  "success": true,
  "data": [
    {
      "machineID": "FW-XXXXXXX-XXXXX",
      "timestamp": "2022-04-08T05:42:00.000Z",
      "level": 1,
      "code": 558,
      "message": "80% full (Food waste bin) [FOODWASTE]"
    }
  ]
}
```

(iii) Level 2 (e.g. Full)

```
{
  "success": true,
  "data": [
    {
      "machineID": "FW-XXXXXXX-XXXXX",
      "timestamp": "2022-04-08T05:42:00.000Z",
      "level": 2,
      "code": 559,
      "message": "Full (Food waste bin) [FOODWASTE]"
    }
  ]
}
```

4.2 Path Parameter: /heartbeat

API Method:

- POST [Send a heartbeat.]

Request message for POST/ heartbeat:

Parameter	Type	Required	Description
token	string	yes	The latest generated token

Request URL for POST/ heartbeat:

<https://hkpcdev.greenycoins.gov.hk:5000/heartbeat>

Example of data for POST/ heartbeat:

```
curl -X 'POST' \
  'https://hkpcdev.greenycoins.gov.hk:5000/heartbeat' \
  -H 'accept: */*' \
  -d ''
```

Example of Request Body for POST/ heartbeat:

[illegible]

5 Supplementary information for display on food waste recycling bins

recycleableType	Description	描述	Unit 單位
WP1	Paper	紙張	Per kilogram 每公斤
METAL1	Metals	金屬	Per kilogram 每公斤
PLASTIC1	Plastic Bottles	膠樽	Per kilogram 每公斤
PLASTIC2	Other Plastics	其他塑膠	Per kilogram 每公斤
GB	Glass Bottles	玻璃樽	Per kilogram 每公斤
SEA	Small Electrical Appliances	小型電器	Per kilogram 每公斤
FLT	Fluorescent Lamps and Tubes	慳電膽及光管	Per kilogram 每公斤
BAT	Rechargeable Batteries	充電池	Per kilogram 每公斤
REE	Regulated Electrical Equipment	四電一腦	Per piece 每件
FOODWASTE	Food waste	廚餘	Per Visit 每件
bonus	Bonus	獎賞	Per time 每次

Sample of API Test Result (Basic API Tests)



Food waste recycling bin system and HKPC API test (Connectivity and Basic test)

Testing server IP: <https://hkpcdev.greenycoins.gov.hk:5000>

Server port: 5000

Company name: _____

Tender ref.: _____

System name : _____

Tested by: _____

Date: : _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
1	Check the membership and open the lid for valid member with no food waste recycling record today	<p>1. Food waste recycling bin sends the request to HKPC server with valid member ID</p> <p>GET request: https://hkpcdev.greenycoins.gov.hk:5000/user/getUserwithcount/{memberID}</p> <p>2. Food waste recycling bin receives the response from HKPC server with message</p> <pre>{ "success": true, "data": { "memberID": "xxxxx", "membership": true, ... }, "recycleCount": { "FOODWASTE": 0, ... } }</pre>	<p>Food waste recycling bin opens the lid to valid member after membership validation check in the condition:</p> <ul style="list-style-type: none">- The user is valid member ("membership": true)- No food waste recycling record today ("FOODWASTE": 0)				



Food waste recycling bin system and HKPC API test (Connectivity and Basic test)

Testing server IP: <https://hkpcdev.greenycoins.gov.hk:5000>

Server port: 5000

Company name: _____

Tender ref.: _____

System name : _____

Tested by: _____

Date: : _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
2	Check the membership and no action for invalid member	<p>1. Food waste recycling bin sends the request to HKPC server with invalid member ID</p> <p>GET request: https://hkpcdev.greenycoins.gov.hk:5000/user/getUserwithcount/{memberID}</p> <p>2. Food waste recycling bin receives the response from HKPC server with message</p> <pre>{ "success": true, "data": { "memberID": "xxxx", "membership": false, ... }, "recycleCount": { "FOODWASTE": 1, ... } }</pre>	Food waste recycling bin takes no action after membership validation check in the condition.				



Food waste recycling bin system and HKPC API test (Connectivity and Basic test)

Testing server IP: <https://hkpcdev.greenycoins.gov.hk:5000>

Server port: 5000

Company name: _____

Tender ref.: _____

System name : _____

Tested by: _____

Date: : _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
3	Obtain/Renew the token	Food waste recycling bin sends the request to HKPC server for latest token POST request: https://hkpcdev.greenycoins.gov.hk:5000/token Request body: { "contractorID": "xxxxx", "password": "xxxxx" } Note: The contractorID and password will be provided to individual contractor.	N/A. The token will be used and tested in other API call. Note: The token will be renewed in every 4 hours. The contractor should have the mechanism in place to renew the token before expiry or invalid token exists during API call.				
4	Send the transaction to GREEN\$ platform Note: For food waste recycling in the same day, the greenScore should be 0.	Recycleable collected and Smart bin sends the transaction to HKPC database POST request: https://hkpcdev.greenycoins.gov.hk:5000/transaction Request body: { "machineID": "FW-XXXX-XXX (To be provided)", "memberID": "xxxxx", "locationID": "test01 (To be provided)", "recycleableType": "FOODWASTE", "transactionTime": "2021-08-29T09:12:33.001Z (Real time)", "weight": 1, "greenScore": 10, "status": "valid", "remarks": "optional", "token": "token generated in item 4" } 	The transaction record can be located in HKPC database. Check transaction record in database: [] Correct machineID [] Correct memberID [] Correct locationID [] Correct recycleableType [] Correct transactionTime [] Correct weight [] Correct greenScore [] Remarks recorded in database Check member record in database: [] Correct qtyFoodWaste [] Correct balance				

Sample of API Test Result (Full API Tests)



Food waste recycling bin and HKPC API test (Full test)

Testing environment: <https://hkpcdev.greenycoins.gov.hk:5000>
Server port: 5000

Company name: XXXXXXXXXX

Tested by: _____

Date: _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
1	Check the membership and open the lid for valid member with no food waste recycling record today	<p>1. Food waste recycling bin sends the request to HKPC server with valid member ID GET request: https://hkpcdev.greenycoins.gov.hk:5000/user/getUserwithcount/{memberID}</p> <p>2. Food waste recycling bin receives the response from HKPC server with message { "success": true, "data": { "memberID": "xxxxx", "membership": true, ... }, "recycleCount": { "FOODWASTE": 0, ... } }</p>	<p>Food waste recycling bin opens the lid to valid member after membership validation check in the condition:</p> <ul style="list-style-type: none">- The user is valid member ("membership": true)- No food waste recycling record today ("FOODWASTE": 0)				
2	Check the membership and no action for invalid member	<p>1. Food waste recycling bin sends the request to HKPC server with invalid member ID GET request: https://hkpcdev.greenycoins.gov.hk:5000/user/getUserwithcount/{memberID}</p> <p>2. Food waste recycling bin receives the response from HKPC server with message { "success": true, "data": { "memberID": "xxxx", "membership": false, ... }, "recycleCount": { "FOODWASTE": 1, ... } }</p>	<p>Food waste recycling bin takes no action after membership validation check in the condition.</p>				



Food waste recycling bin and HKPC API test (Full test)

Testing environment: <https://hkpcdev.greenycoins.gov.hk:5000>

Server port: 5000

Company name: XXXXXXXX

Tested by: _____

Date: _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
3	Display the 10 latest transactions with balance on screen (Optional)	<p>1. Food waste recycling bin sends the request to HKPC server with valid member ID GET request: https://hkpcdev.greenycoins.gov.hk:5000/user/latestTransactions/{member ID}</p> <p>2. Food waste recycling bin receives the response from HKPC server with message { "success": true, "data": { "memberID": "1000212827", "membership": true, "balance": 178, "redemptionTotal": 0, "recycleTotal": { "kg": 8.53, "piece": 0, "visit": 0 }, "transactions": [{ "_id": "626966217c9d66788f309f41", "greenScore": 4, "memberID": "1000212827", "type": "Food Waste", "source": "BATCH", "staffID": "RF01", "status": "valid", "transactionTime": "2022-04-19T09:41:00.000Z", "transactionType": "RECYCLE", "contractorID": "xxxxxx", "password": "xxxxxx" }] } }</p>	The transaction records show on the screen correctly.				
4	Obtain/Renew the token	<p>Food waste recycling bin sends the request to HKPC server for latest token POST request: https://hkpcdev.greenycoins.gov.hk:5000/token</p> <p>Request body: { "contractorID": "xxxxxx", "password": "xxxxxx" }</p> <p>Note: The contractorID and password will be provided to individual contractor.</p>	<p>N/A. The token will be used and tested in other API call.</p> <p>Note: The token will be renewed in every 4 hours. The contractor should have the mechanism in place to renew the token before expiry or invalid token exists during API call.</p>				



Food waste recycling bin and HKPC API test (Full test)

Testing environment: <https://hkpcdev.greenycoins.gov.hk:5000>
Server port: 5000

Company name: XXXXXXXX

Tested by: _____

Date: _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
5	Checking the heartbeat	Food waste recycling bin sends the heartbeat to HKPC server in every 2 minutes POST request: https://hkpcdev.greenycoins.gov.hk:5000/heartbeat Request body: { "token": "token generated in item 4" }	HKPC to confirm the heartbeat is received. Note: If HKPC server cannot obtain any heartbeat in 6 minutes, HKPC server will assume that there is a connection failure between the systems.				
6	Send the transaction to GREEN\$ platform Note: For food waste recycling in the same day, the greenScore should be 0.	Recycleable collected and Smart bin sends the transaction to HKPC database POST request: https://hkpcdev.greenycoins.gov.hk:5000/transaction Request body: { "machineID": "FW-XXXX-XXX (To be provided)", "memberID": "xxxxx", "locationID": "test01 (To be provided)", "recycleableType": "FOODWASTE", "transactionTime": "2021-08-29T09:12:33.001Z (Real time)", "weight": 1, "greenScore": 10, "status": "valid", "remarks": "optional", "token": "token generated in item 4" }	The transaction record can be located in HKPC database. Check transaction record in database: [] Correct machineID [] Correct memberID [] Correct locationID [] Correct recycleableType [] Correct transactionTime [] Correct weight [] Correct greenScore [] Remarks recorded in database Check member record in database: [] Correct qtyFoodWaste [] Correct balance				



Food waste recycling bin and HKPC API test (Full test)

Testing environment: <https://hkpcdev.greenycoins.gov.hk:5000>

Server port: 5000

Company name: XXXXXXXXXX

Tested by: _____

Date: _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
7	Update the machine status to GREEN\$ platform [Out of service]	Food waste recycling bin sends "Out of service" to HKPC server POST request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status -H 'Authorization: Bearer token generated in item 4 Request body: [{ "machineID": "FW-XXXX-XXX (To be provided)", "timestamp": "2022-04-08T05:42:00.000Z (Report time)", "level": 2, "code": 601, "message": "Out of service" }]	HKPC to confirm the machine status is received. GET request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status/(machineID) [] Correct machineID [] Correct timestamp [] Correct level (2) [] Correct code (601) [] Correct message				
8	Update the machine status to GREEN\$ platform [In service]	Food waste recycling bin sends "In service" to HKPC server to clear the fault in item 7 POST request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status -H 'Authorization: Bearer token generated in item 4 Request body: [{ "machineID": "FW-XXXX-XXX (To be provided)", "timestamp": "2022-04-08T05:42:00.000Z (Report time)", "level": 0, "code": 601, "message": "In service" }]	HKPC to confirm the machine status is received. GET request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status/(machineID) Error "601" cleared (No record in the return message)				
9	Update the machine status to GREEN\$ platform [50% full] (Optional)	Food waste recycling bin sends bin status to HKPC server POST request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status -H 'Authorization: Bearer token generated in item 4 Request body: [{ "machineID": "FW-XXXX-XXX (To be provided)", "timestamp": "2022-04-08T05:42:00.000Z (Report time)", "level": 1, "code": 555, "message": "50% full (Food waste bin) [FOODWASTE]" }]	HKPC to confirm the machine status is received. GET request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status/(machineID) [] Correct machineID [] Correct timestamp [] Correct level (1) [] Correct code (555) [] Correct message				



Food waste recycling bin and HKPC API test (Full test)

Testing environment: <https://hkpcdev.greenycoins.gov.hk:5000>
Server port: 5000

Company name: XXXXXXXX

Tested by: _____

Date: _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
10	Update the machine status to GREEN\$ platform [90% full] (Optional)	Food waste recycling bin sends bin status to HKPC server POST request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status -H 'Authorization: Bearer token generated in item 4' Request body: [{ "machineID": "FW-XXXX-XXX (To be provided)", "timestamp": "2022-04-08T05:42:00.000Z (Report time)", "level": 1, "code": 559, "message": "90% full (Food waste bin) [FOODWASTE]" }]	HKPC to confirm the machine status is received. GET request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status/{machineID} [] Correct machineID [] Correct timestamp [] Correct level (1) [] Correct code (559) [] Correct message				
11	Update the machine status to GREEN\$ platform [Full]	Food waste recycling bin sends bin status to HKPC server POST request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status -H 'Authorization: Bearer token generated in item 4' Request body: [{ "machineID": "FW-XXXX-XXX (To be provided)", "timestamp": "2022-04-08T05:42:00.000Z (Report time)", "level": 2, "code": 559, "message": "Full (Food waste bin) [FOODWASTE]" }]	HKPC to confirm the machine status is received. GET request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status/{machineID} [] Correct machineID [] Correct timestamp [] Correct level (2) [] Correct code (559) [] Correct message				



Food waste recycling bin and HKPC API test (Full test)

Testing environment: <https://hkpcdev.greenycoins.gov.hk:5000>
Server port: 5000

Company name: XXXXXXXXXX

Tested by: _____

Date: _____

Test ID	Test description	Test procedure	Acceptance criteria	Pass	Partially accepted	Fail	Remarks
12	Update the machine status to GREEN\$ platform when food waste collected/ bin empty	Food waste recycling bin sends bin status to HKPC server POST request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status -H 'Authorization: Bearer token generated in item 4 Request body: [{ "machineID": "FW-XXXX-XXX (To be provided)", "timestamp": "2022-04-08T05:42:00.000Z (Report time)", "level": 0, "code": 550 , "message": "Food waste collected/ Food waste bin empty" }]	HKPC to confirm the machine status is received. GET request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status/{machineID} [] Correct machineID [] Correct timestamp [] Correct level (0) [] Correct code (550) [] Correct message				
13	Update the machine status to GREEN\$ platform with self-defined error codes	Food waste recycling bin sends bin status to HKPC server POST request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status -H 'Authorization: Bearer token generated in item 4 Request body: [{ "machineID": "FW-XXXX-XXX (To be provided)", "timestamp": "2022-04-08T05:42:00.000Z (Report time)", "level": X, "code": 3xxx , "message": "Food waste collected/ Food waste bin empty" }]	HKPC to confirm the machine status is received. GET request: https://hkpcdev.greenycoins.gov.hk:5000/machine/status/{machineID} [] Correct machineID [] Correct timestamp [] Correct level [] Correct code [] Correct message Note: 1. The contractor should provide the list of self-defined error codes for testing (with error code, level and error messages) 2. Code 0 to 1000 are reserved for internal use. The contractor can only assign the error code > 1000. E.g. 3XXX				
14	Configuration of alternative DNS	Configure the alternative DNS as per the recommendation from OGCIO as below: ns01.scig.gov.hk 192.16.16.5 & 192.16.16.6 ns02.scig.gov.hk 156.154.64.83 & 156.154.65.83	Show to HKPC that DNS is correctly configured				