

Third-Party Technical Onboarding Document

Green Button Share My Data



conEdison



Orange & Rockland

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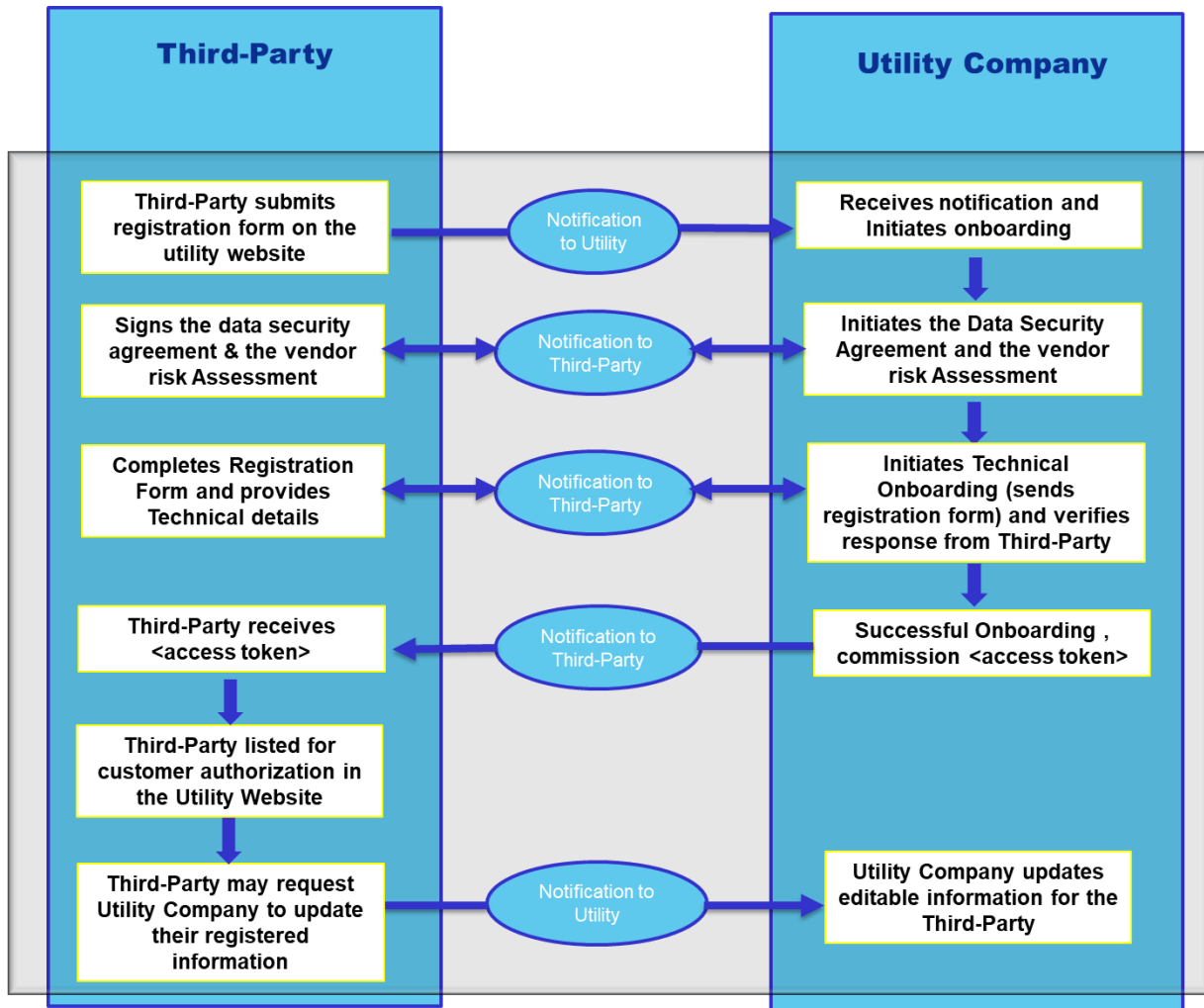
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1. OBJECTIVES

The purpose of this document is to describe the Technical Onboarding process to be followed by a Third-Party when registering with Con Edison/O&R for the Green Button Share My Data program.

The below diagram provides a high-level overview of the process:



2. THIRD-PARTY TECHNICAL ONBOARDING PROCESS

Upon successful completion of the Data Security Agreement, the Con Edison GBC technical onboarding team will electronically send the Technical Onboarding welcome package to the third-party vendor. This package consists of the following:

1. GBC onboarding technical documentation
2. Registration Form
3. Endpoint Checklist (api lists)

A Customer Authorization is required to call the GBC APIs. Third-Party vendors are expected to create a website at their end to process customer authorizations and store responses from GBC.

The third-party must provide all technical details to the Con Edison GBC technical onboarding team to continue with the technical onboarding process. This team is a group of dedicated technical experts for the third-party vendors to communicate any encountered issues throughout the technical onboarding process.

Technical Onboarding Process

Third party vendors are required to maintain a test and production environment for GBC.

STAGE 1: Test environment

The GBC onboarding process requires vendors to create a customer authorization website and perform api testing in a test environment.

Phase 1: Customer Authorization Website Testing

1. A third-party portal (i.e. website) must be set up to enable the Authorization creation process for retail customers.
2. A third-party vendor must send the Con Edison GBC technical onboarding team information about this site using [this registration form](#).
3. After the third-party supplies the registration form, the Con Edison GBC technical onboarding team will set up the third-party on the GBC Share My Data platform and provide OAuth credentials and instructions via email to call the authorization token api.

4. The third-party must update their website and notify the Con Edison GBC technical onboarding team to start the customer authorization testing. (Currently third-party vendors are not allowed to access the GBC test environment. The Con Edison GBC technical onboarding team will assist in this process)
5. A third-party vendor's website must complete both of the information flows of customer authorization (section 3.1)

NOTE: Third-party vendors can request a mock customer authorization application code via an email to the Con Edison GBC technical onboarding team if needed.

Phase 2: API Testing

1. After a successful customer authorization in phase 1, the third-party can proceed to test the Share my Data APIs.
2. Third-parties are required to send the completed status of API testing to the Con Edison GBC technical onboarding team for review.

STAGE 2: Production

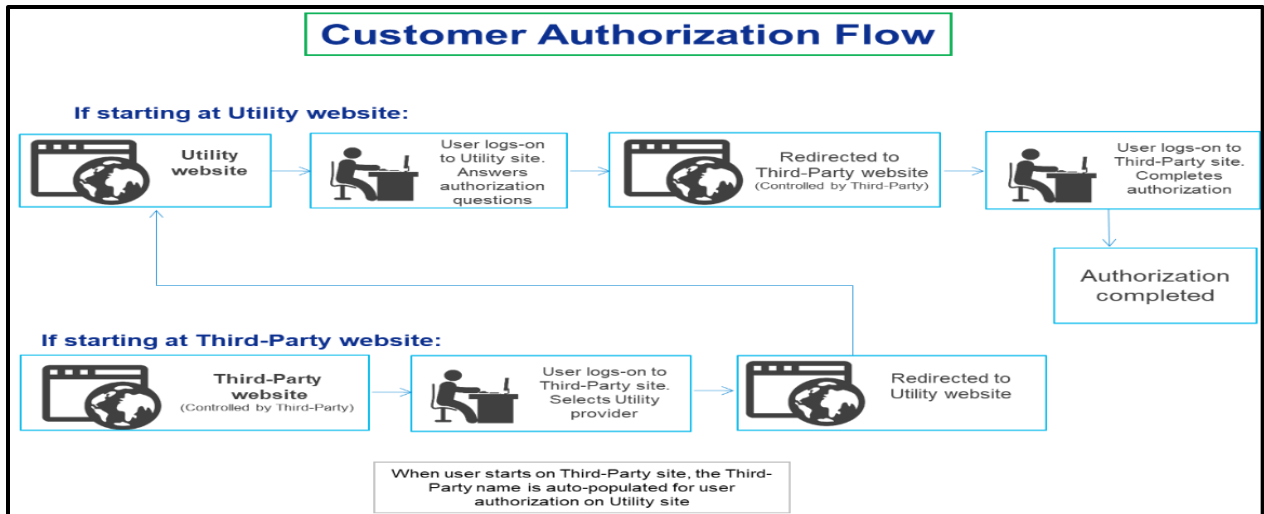
Once all testing stages have been completed, third-party vendors are ready for the production stage. To set up the production environment, steps 1-4 listed above from the Phase 1 testing phase should be repeated for production.

NOTE: Third-party vendors are required to fill in the registration form with the production data.

Upon completion of all the steps above, the Con Edison GBC technical onboarding team will then activate the third-party vendor in production.

2.1 Third-Party website URIs required for Customer Authorization process

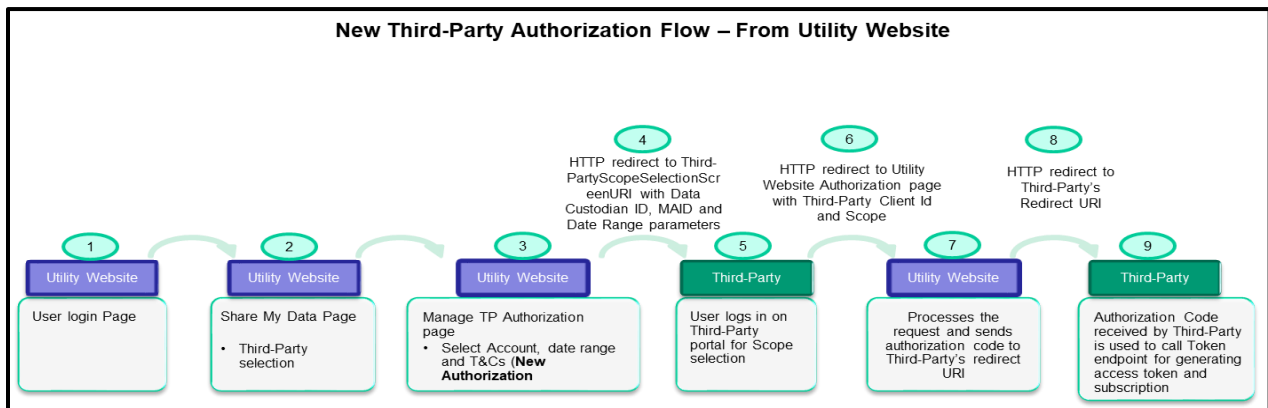
The following diagram displays the customer authorization flow.



A customer can start the authorizations of data from either the utility website or the third-party vendor's website. The flow of the information is explained in the following sections.

2.1.1 If Customer starts authorization at the Utility Company's website:

The following diagram outlines the steps that need to be followed when the customer authorization begins at the utility's website.



- 1. Customer Login:** Customer logs into the Utility's website
- 2. Third-Party Selection:** Customer navigates to the Share My Data page and selects a registered third-party to give an explicit authorization to share data.
- 3. Manage Third-Party Authorization:** Customer selects an account to share data with the third-party, a date range and accepts the Terms and

Conditions for authorization (the third-party's name is auto-populated as per selection in previous step)

Share this service account data

Account Number: [REDACTED]

With this third-party application

GBC 2 Third-Party
GBC 2 Mock Up

Select Timeframe

Share it until I revoke it

Select Timeframe

Share this one time

Share it until I revoke it

Share until a specific date

Submit

4. **Redirection to Third-Party:** Customer is redirected to the third-party website (i.e. Scope Selection URI):

- Utility will redirect customer to Third-Party Scope Selection Screen URI
- Customer logs onto Third-Party website

NOTE:

- A customer's registration/ user authentication/ user authorization process will be controlled by the third-party portal
- Along with the registration details, the third-party will have to capture a customer's account type details i.e. CECONY or ORU, which will be used in the Share My Data's authorization process.

As part of this redirection, the Utility will pass the following parameters along with the scope selection screen URI:

<<ThirdPartyScopeSelectionScreenURI>>?accountid=<<Customerselectedaccount>>&startdate=<<MM/DD/YYYY>>&enddate=<<MM/DD/YYYY>>&DataCustodianID=ConEdison

Note:

- 'DataCustodianID=ConEdison' parameter is a static parameter-value pair to help the third-party identify the customer's Utility to display the appropriate scope list

5. **Authorization Confirmation at Third-party website:** A customer can select one or more scopes from the Scope selection screen and confirm authorization in the third-party website while creating or updating the authorization.

- The scope selection screen will list all the available scope strings for a retail customer to give access to a third-party. It could be a checkbox or any preferable html tag.
- Below is a sample representation of scopes on a third-party portal.

The screenshot shows a web interface titled "Third Party". Under the heading "Select Authorization Scope:", there are four unchecked checkboxes with associated scope strings:

- Consumption Scope: FB=1_3_4_5_7_10_13_14_18_32_33_35_37_38_41_44;IntervalDuration=Monthly_3600_900_300;BlockDuration=Monthly_Daily;HistoryLength=63113904;
- Billing Information Scope: FB=1_3_6_10_13_14_15_16_28_32_33_35_37_38_41_44;IntervalDuration=Monthly;BlockDuration=Monthly;HistoryLength=63113904;
- RealTime Scope: FB=1_3_4_5_7_13_14_18_32_33_35_37_38_41_44;IntervalDuration=900_300;BlockDuration=Daily;HistoryLength=86400;
- RetailCustomer Scope: FB=1_3_13_14_46_47;

Below the scopes, there is a label "Select Company for this Authorization:" followed by a dropdown menu showing "CE". A "Continue" button is located below the dropdown. At the bottom of the page, there is a footer with links: Green Button for America, Terms of Service, Usage Policy, About, Sponsors, and © EnergyOS.org 2013, 2014.

Scope Name	Scope Value
------------	-------------

Consumption Scope	<u>FB=1 3 4 5 7 10 13 14 18 32 33 35 37 38 41 44;IntervalDuration=</u> <u>Monthly 3600 900 300;BlockDuration=Monthly Daily;HistoryLength=63113904;</u>
Billing Scope	<u>FB=1 3 6 10 13 14 15 16 28 32 33 35 37 38 41 44;IntervalDuration=</u> <u>Monthly;BlockDuration=Monthly;HistoryLength=63113904;</u> <u>;</u>
Real-Time Scope	<u>FB=1 3 4 5 7 13 14 18 32 33 35 37 38 41 44;IntervalDuration=</u> <u>900 300;BlockDuration=Daily;HistoryLength=86400;</u>
Retail Customer Scope	FB=1_3_13_14_46_47;

Note: The Share My Data system will accept ONLY the above scope strings.

- Third-Party should pass selected scopes separated by a ' | ' pipe symbol to the Utility after the customer has selected which scopes they want to share with the third-party. For example:

```
scope= <<selected scope 1 value>> | <<selected scope 2 value>> | <<selected scope 3 value>>
```

- If a third-party does not pass the valid scope values, the authorization process will fail. The customer can select a minimum of 1 and a maximum of 4 scope strings at the third-party scope selection screen.

6. **Redirect Customer back to Utility:** The third-party portal will internally invoke the Utility's siteCoreAuthorizationPageRedirectUri along with its Client ID and user selected scope string as mentioned below:

Test Environment:

Utility CECONY website URL for redirection.

Please redirect to the following in test environment:

```
https://uat10-core.coned.com/en/accounts-billing/dashboard/billing-andusage/share-my-data-connections/third-partyauthorization/redirect?client_id=Thirdparty_CLIENT_ID_HERE&scope=FB%3D1_3_4_5_7_10_13_14_18_32_33_35_37_38_41_44%3BIntervalDuration%3DMonthly_3600_900
```

_300%3BBlockDuration%3DMonthly_Daily%3BHistoryLength%3D63113904%3B%7CFB%3D1_3_6_10_13_14_15_16_28_32_33_35_37_38_41_44%3BIntervalDuration%3DMonthly%3BBlockDuration%3DMonthly%3BHistoryLength%3D63113904%3B%7CFB%3D1_3_4_5_7_13_14_18_32_33_35_37_38_41_44%3BIntervalDuration%3D900_300%3BBlockDuration%3DDaily%3BHistoryLength%3D86400&state=1234&redirectUri=http%3A%2F%2Fhost%3F323%2Fapi%2Fappinfo%2Fcallback&MAID=XXXXXXX&accountNumber=XXXXXX&startDate=MM/DD/YYYY&endDate= MM/DD/YYYY&response_type=code

Utility’s ORU website URL for redirection:

https://uat10-core.oru.com/en/accounts-billing/dashboard/billing-andusage/share-my-data-connections/third-partyauthorization/redirect?client_id=Thirdparty_CLIENT_ID_HERE&scope=FB%3D1_3_4_5_7_10_13_14_18_32_33_35_37_38_41_44%3BIntervalDuration%3DMonthly_3600_900_300%3BBlockDuration%3DMonthly_Daily%3BHistoryLength%3D63113904%3B%7CFB%3D1_3_6_10_13_14_15_16_28_32_33_35_37_38_41_44%3BIntervalDuration%3DMonthly%3BBlockDuration%3DMonthly%3BHistoryLength%3D63113904%3B%7CFB%3D1_3_4_5_7_13_14_18_32_33_35_37_38_41_44%3BIntervalDuration%3D900_300%3BBlockDuration%3DDaily%3BHistoryLength%3D86400&state=1234&redirectUri=http%3A%2F%2Fhost%3F323%2Fapi%2Fappinfo%2Fcallback&MAID=XXXXXXX&accountNumber=XXXXXX&startDate= MM/DD/YYYY&endDate= MM/DD/YYYY&response_type=code

Production Environment:

Please redirect URI to the following in production.

Utility’s CECONY website URL for redirection:

https://www.coned.com/accounts-billing/dashboard/billing-and-usage/share-my-data-connections/third-party-authorization/redirect?client_id=<<Third-Party Client ID>>&scope=<<Scope strings selected by user separated by ' | '>>&state=<<STATEVALUE>>&redirectUri=http%3A%2F%2Fhost%3F323%2Fapi%2Fappinfo%2Fcallback&MAID=XXXXXXX&accountNumber=XXXXXXX&startDate= MM/DD/YYYY&endDate= MM/DD/YYYY&response_type=code

Utility’s ORU website URL for redirection:

https://www.oru.com/accounts-billing/dashboard/billing-and-usage/share-my-data-connections/third-party-authorization/redirect?client_id=<<Third-Party Client ID>>&scope=<< Scope strings selected by user separated by

' | '>>&state=<<STATEVALUE>>&redirectUri=http%3A%2F%2Fhost%3F323%2Fapi%2Fappinfo%2Fcallback&MAID=XXXXXXX&accountNumber=XXXXXXX&startDate= MM/DD/YYYY&endDate= MM/DD/YYYY&response_type=code

NOTE: The third-party must provide their "Client_Id" and customer selected scope string "scope" in the URI query parameters when to re direct to utility.

- 7. Authorization Code generation at Utility:** Upon receiving the above request, the Utility will process it and generate a one-time use authorization code (OAuth token).
- 8. Authorization Code to Third-Party:** The Utility sends a generated authorization code to the third-party on their registered redirect URI.



- 9. Access Token Generation:** The third-party uses this authorization code to generate an access token and complete the authorization process.
 - The third-party should be able to process the response received on their redirect URI (i.e. Authorization code sent by Utility).
 - The authorization code needs to be sent to the Share My Data's "Token" API endpoint, along with the Third-Party's Client Id and Client secret to generate an access token, refresh token, subscription ID that can be used for future data exchange purposes.
 - [Refer to the Third-Party [Exposed APIs list](#) and sample request below]

Request/Response for Access Token generation:

Request: The third-party vendors are required to generate the Third party User Token (i-e Access Token) during the authorization process:

API: https://apit.coned.com/gbc/v1/oauth/v1/Token

Body:

```
{  
  "grantType":"authorization_code",  
  "clientId":"<<Third-Party Client ID>>",  
  "clientSecret":"<<Third-Party Client Secret>>",
```

```
"redirectUri": "<<Third-Party registered redirect URI>>",
"authCode": "<< code parameter you receive in the link from coned
>>"
}
```

Header:

Content-Type	application/json
ocp-apim-subscription-key	(retrieve from developer's portal profile)

NOTE: Please use <https://api.coned.com/gbc/v1/oauth/v1/Token> for the production environment.

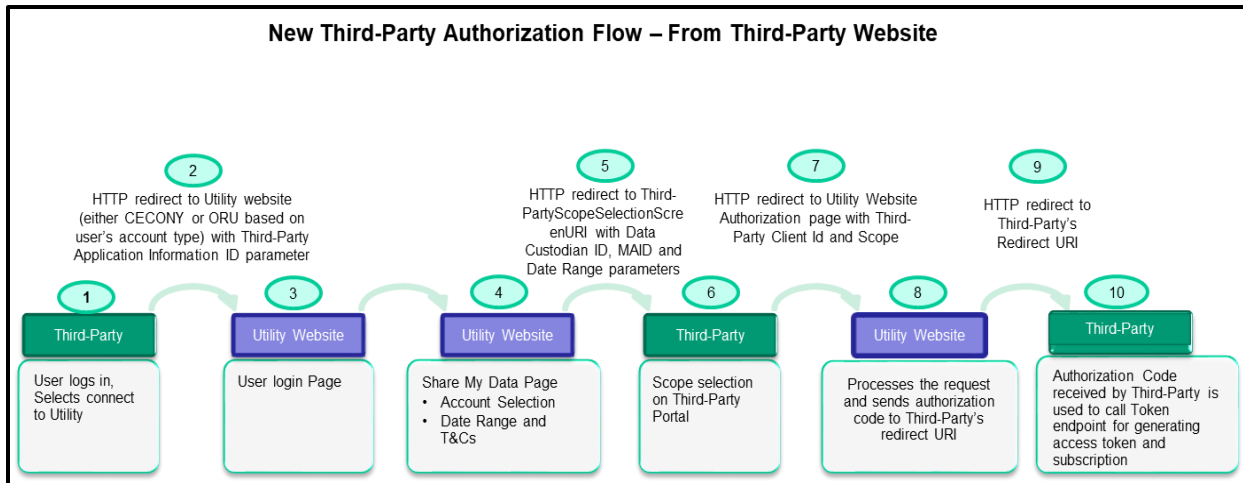
Response:

```
{
"access_token": "<<Access token for data exchange which will be valid for 1
hour from the time it is generated>>",
"refresh_token": "<<token used to generate new access token once it is
expired>>",
"token_type": "Bearer",
"expires_in": 3600,
"scope": "<<Customer selected scope string>>",
"resourceURI":
"https://api.coned.com/gbc/v1/resource/Batch/Subscription/<<subscription
id used for data exchange>>",
"authorizationURI":
https://api.coned.com/gbc/v1/resource/Authorization/<<authorization id
used for viewing or updating authorization details>>
"AccountNumber": "<<encoded customer account number.>>"
}
```

NOTE:

- Processing and storing the response will be controlled by the third-party.
- The access token will be active for 1 hour from the time of its creation. The Third-Party will have to invoke the token API along with the refresh token, their client credentials and scope to generate a new access token. [Refer to the below section 3.2 item number: 2 in this document for more details on how to create an access token using a refresh token.]

2.1.2 If Customer starts authorization at Third-Party's website:



1. **Customer Login:** The customer logs into the third-party website and selects the Utility provider

2. **Select Utility:** The customer selects their Utility provider. (CECONY or ORU)

NOTE:

- A customer's registration/authentication/authorization process will be controlled by the Third-Party portal.
- Along with registration details, the third-party will have to capture the customer's account type details i.e. CECONY or ORU, which will be used in the Share My Data's authorization process.

3. **Redirection to Utility website:** The customer is redirected to the Utility's website.

- As per the next step in the process, the retail customer will be redirected to the appropriate Utility's website for login, once they select the Utility provider.

NOTE:

- The Utility has a separate website for its CECONY and ORU retail customers. Based on the retail customer's account type, the Third-Party will have to redirect the retail customer to the appropriate website. The redirection URL is mentioned below:

Utility's CECONY website URL for customer redirection:

<https://www.coned.com/accounts-billing/dashboard/billing-and-usage/share-my-data-connections/third-party-authorization?ThirdPartyId={applicationInformationId}>

Utility's ORU website URL for customer redirection:

<https://www.oru.com/accounts-billing/dashboard/billing-and-usage/share-my-data-connections/third-party-authorization?ThirdPartyId={applicationInformationId}>

*Replace the following in **Test** environment:

- https://www.coned.com with **https://uat10-core.coned.com**
- https://www.oru.com with **https://uat10-core.oru.com**

"applicationInformationId" is the unique Third-Party registration ID received from the Utility post upon successful registration. A dummy value can be passed up until the third-party receives the registrationID.

4. Please follow **steps 3 – 9 in section 2.1.1** until the end.

2.1.3 Third-Party Mockup: For reference

Mock-up code can be shared with third party vendors upon request to the Con Edison GBC technical onboarding team.

NOTE: This code is for reference purpose only and cannot be reused.

2.1.4 Share My Data API Testing

Once successfully registered with the Utility, the third-party can verify the initial connection set up and Share My Data APIs on the Utility's test environment. They can do this by importing the following POSTMAN collection and environment variables:

POSTMAN Collection:

<https://www.getpostman.com/collections/ed7df4694355c4831bd6>

Environment Variable: [download here.](#)

The third party vendors are required to do the testing of APIs listed in [this document](#). After successful testing they are required to submit the status of each API tests to Con Edison Share My Data GBC Team to mark the successful completion of the Share My Data testing:

⋮

2.2 Requirements for Batch Data Exchange (Third-Party Notify URI)

For an Asynchronous Data Exchange request, a Notification API should be created and exposed by the third-party. This API should be accessible to the Utility once a batch request's response is processed. The response to the notification uri from the utility includes the response and request ids for downloading the data.

Failing to be accessible will result in the response being deleted from the source location.

- API's URI should be provided by the third-party in 'third_party_notify_uri' field during registration
- This URI will be invoked by ConEdison internally once the Batch API's request (called by Third-Party Admin) is processed.
- This Third-Party API (Method: POST) request body will include one or more download links in ATOM feed format – one in each entry. Each file will contain data up to 25 Mbs
- The Notification API should return a response code of 200 OK (on successful execution) to the Utility, which will mark the request 'completed' in the Share My Data system
- Response file processing by the third party must be asynchronous. The 200 OK response from the Third Party's Notification URI should not attempt to download all response files before returning a 200 OK response code to the Share My Data API, since a notification could contain multiple 25 Mb files.

- Response files will be available for processing only for 48 hours from the time it is generated, after which the third-party will have to re-initiate the Share My Data asynchronous request to access the required consumption data.

NOTE: The download API is required to have the same type of token as its batch request (**CAT /TPAT**)

Sample Response Body:

```
<espi:batchList xmlns:espi="http://naesb.org/espi">
  <espi:resources>
    https://api.coned.com/gbc/v1/resource/Batch/Download?requestId=4684ca5f-bebd-488d-bd15-ed0bbd7e9de9&responselId=52b85da3-ef19-460b-acf6-eabc41cd8ab8
  </espi:resources>
  <espi:resources>
    https://api.coned.com/gbc/v1/resource/Batch/Download?requestId=4684ca5f-bebd-488d-bd15-ed0bbd7e9de9&responselId=0576224d-b1fa-4942-a5e3-c3fed5b1f3a9
  </espi:resources>
  ...
</espi:batchList>
```

NOTE: The subscriptionId value helps link the subscription with the data contained in the file it is associated with.

Example:

<https://api.coned.com/gbc/v1/resource/Batch/Download?subscriptionId=12345&requestId=abcdef-fcf8-478c-b062-d98b58aa29dd&responselId=nghsjsshij-4fdd-8763-d2f34522ed22>

3. POST ONBOARDING UPDATES

3.1 Third-Party Registration Update

In the event a third-party needs to update any fields associated to their registered information in the registration form, they need to update those fields and [resend the completed registration form](#) with any updated fields.

3.2 Third-Party Token Generation

1. Third-Party Admin Access Token [CAT]

- a. The Third-Party can generate this token following the successful completion of the onboarding process.
- b. This token can be used to retrieve data for all the customers who are actively authorized with the Third-Party. The type of data could be Usage, Billing, Real-Time and Account Details (Account number and Address) based on the scope of authorization granted to the Third-Party. [Refer to the Third-Party [Exposed APIs list](#) and sample request below]

Sample Request Body:

Example API request body below depicts the usage of client Id and client secret by the Third-Party to generate the Third-Party Admin - Access Token (i.e. Client Access token):

```
{
  "grantType":"client_credentials",
  "clientId":"<<Third-Party Client ID>>",
  "clientSecret":"<<Third-Party Client Secret>>",
  "redirectUri":"<<Third-Party registered redirect URI>>",
  "scope":" FB=3_35_47"
}
```

2. Third-Party User Access Token [TPAT]

- a. The Third-Party receives this token following the completion of the Customer Authorization process.
- b. This token can be used to retrieve a specific customer's Usage / Billing / Real-Time / Retail Customer data based on the scope provided during authorization. This token cannot be shared across multiple authorizations.

[Refer to the Third-party [Exposed APIs list](#) and sample request below]

Sample Request Body:

Example API request body below depicts usage of Client Id and client secret to generate Third-Party User – Access Token (i.e. Access token):

```
{
  "grantType":"refresh_token",
  "clientId":"<<Third-Party Client ID>>",
  "clientSecret":"<<Third-Party Client Secret>>",
  "refreshToken":"<<Refresh token received during authorization>>",
  "subscriptionId": <<Valid subscription id of this authorization>>
}
```

4 KEY RESPONSIBILITIES – THIRD PARTY

The following are the Key responsibilities to be taken care of by the Third-Party during the Technical Onboarding process:

#	Key Responsibilities
1	The Third-Party will receive a Notification from the Utility to provide the required registration details.
2	The Third-Party will be responsible for: <ul style="list-style-type: none"> • Ensuring the registration form contains the correct details and their website is set up as per the process mentioned above in this document • Notifying the Utility representative with the completed registration form
3	The Third-Party Admin Token and user level access tokens are active only for 1 hour. The Third party should cache the token value for an hour and reuse it. After an hour, the Third-Party will have to request a new token by providing the refresh token, once the Client credentials and Subscription ID is received after successful authorization.
4	The Retail Customer API provides Account ID information (Account number, Address – street, city, state, postal code) for the corresponding subscription ID. The Third-Party is required to map and maintain the Account ID for its usage data.
5	The Third-Party will always receive up to the last two years of historical usage / billing data. They can apply a date filter to select the time range for requesting any customer's data within a 2 year time frame. Real-Time data only corresponds to electricity usage data for the last 24 hours with a latency of 45 minutes from the request processing time.
6	The Third-Party, upon data exchange requests, will be provided with "NET" consumption data for Solar accounts and only "consumption" data for Non-Solar accounts.
7	ESCO charges, if available, are applicable for the customer and included in the total bill displayed in the billing information.
8	The Third-Party, as part of Data exchange for NYPA customer(s) can access historical and real-time consumption data.

APPENDIX

Exposed Share My Data APIs

Please refer to the URL below and click 'DCX GBC API' to get details on the Green Button Share My Data REST API interfaces. This list of APIs details the standard Green Button Share My Data APIs in scope for an authorized Third-Party to request a customer account information.

Production Environment:

<https://cedcx.portal.azure-api.net/docs/services>

Test Environment:

<https://cedcxpoc.portal.azure-api.net/docs/services>

DOCUMENT REFERENCES

#	Document	Document link / Reference ID
1	REQ.21 – Energy Services Provider Interface, NAESB 2010,	http://www.naesb.org/ESPI_Standards.asp
2	The OAuth 2.0 Authorization Framework, RFC 6749	http://www.ietf.org/rfc/rfc6749.txt
3	The OAuth 2.0 Authorization Framework: Bearer Token Usage, RFC 6750	http://www.ietf.org/rfc/rfc6750.txt
4	RESTful Web services: The basics”, IBM Developer Works	https://www.ibm.com/developerworks/webser vices/library/ws-restful/

