



**Australian Government**  
Clean Energy Regulator

**RENEWABLE  
ENERGY  
TARGET**

# REC Registry API specifications

V1.2 1/12/2020

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## Introduction

### Purpose

In the current system, external users use public registers so that they can perform market analysis. This high load has had a negative impact on system performance.

In the new system, R3 will provide a public register API so that external users can use this API to build their system without any negative impact on the production system

### Scope

The scope of this file includes:

- usage description of API, and
- data dictionary for payload.

### Intended audience

This document is intended to be used by external users who will use it to integrate their own system(s) to automate the market analysis.

## API specification

### Overview

This API is built to help the market analysis done based on the REC registry data. This JSON API provides each certificate actions and related details for a particular day.

The API is for software developers to load data from the REC Registry public registers into their own systems.

For each certificate action if multiple ranges of certificates are involved then all certificate ranges will be returned in the API – data will be returned per certificate action per certificate range

Each query will return all transactions that completed during that day. If a transaction commences one on day and completes on the next, it is included in the result for the latter query only.

### Detailed specification

#### URL


<https://rec-registry.gov.au/rec-registry/app/api/public-register/certificate-actions?date=<user provided date>>

- The date part of the URL should be provided by the user
- Date format should be YYYY-MM-DD
- User can provide only 1 date at a time in the URL
- API has 1 day latency i.e. on 07-08-2014, user should call the API with 06-08-2014

#### Payload structure

The payload consists of the following attributes:

- The timestamp of when the action completed
- The type of action
- The following certificate attributes per certificate range involved in the action:
  - » The type of certificates
  - » Registered person number
  - » Accreditation code
  - » Generation year
  - » Generation state

- 
- » Serial number / range
  - » Fuel source
  - » Owner account
  - » Owner account ID
  - » Status

The content of the API is described in detail below in the [data dictionary](#). The example is provided in appendix – [3.1 sample response](#).

## Data dictionary

The data dictionary uses the following typographical conventions:

1. The Data type “Int” is for integers, i.e. whole numbers.
2. The Data type “Decimal(X,Y)” is for decimal numbers, where “X” is the total number of digits and “Y” is the number of digits to the right of the decimal place.
3. The Data type “String (X)” is for character data that must have no more than “X” number characters and including white spaces. The default encoding is UTF-8. The valid sets of characters include Printable UTF-8 [32 to 126].
4. The Data type “Date” is for calendar date in the format DD-MM-YYYY.
5. The Data type “Select List” is for specific list of values that must exist within the defined reference data.

## Data Dictionary – Public register API

(Order of column)	Field name	Array field name	Data type	Mandatory	Reference data	Description
1	actionType	-	String (60)	Yes	Action type	The certificate action happened. The full list of certificate action is listed in the reference data.
2	completedTime	-	String (25)	Yes	NA	UTC date time when the action is completed.
3	certificateRanges	-	Array	Yes	-	If multiple certificate ranges are involved this block will appear multiple times.
4	-	certificateType	String (10)	Yes	NA	Type of certificate—STC or LGC.
5	-	registeredPersonNumber	Int (16)	Yes	NA	Registered person unique ID
6	-	accreditationCode	String (255)	Yes	NA	Unique identifier for accreditation of the installation.
7	-	generationYear	Int (16)	Yes	NA	Year when the certificate is created.
8	-	generationState	String(3)	Yes	State/Territory	The state where the systems are installed.
9	-	startSerialNumber	Int (16)	Yes	NA	Certificate range starting serial number.
10	-	endSerialNumber	Int (16)	Yes	NA	Certificate range ending serial number.
11	-	fuelSource	String (255)	Yes	Fuel source	Fuel source or type of system.
12	-	ownerAccount	String (255)	Yes	NA	Who owns the certificate after the action happened.
13	-	ownerAccountID	String(19)	Yes	NA	Unique identifier for the owner account.
14	-	status	String (50)	Yes	Certificate status	Status of the certificate after the certificate action.

## Response codes

Response code	Description
500	Internal server error
200	Success

## Reference data

Action type
LGC created
STC created
LGC audit passed
LGC audit failed
STC audit passed
STC audit failed
LGC registered
STC registered
STC to LGC conversion requested
STC to LGC conversion accepted
STC to LGC conversion rejected
STC to LGC conversion withdrawn
Transfer offer
Transfer accept

Action type
Transfer reject
Transfer withdraw
STC clearing house buy
STC clearing house sell offer
STC clearing house sold
STC clearing house withdrawn
STC clearing house transfer offer
STC clearing house transfer accept
STC clearing house transfer reject
STC clearing house transfer withdraw
STC clearing house transfer cancelled
LGC surrender offer
LGC surrender offer accepted
LGC surrender offer rejected
LGC surrender offer withdrawn
STC surrender offer accepted
STC surrender offer rejected
STC surrender offer
STC surrender offer withdrawn
Voluntary surrender offer





Action type
Voluntary surrender offer accepted
Voluntary surrender offer rejected
Voluntary surrender offer withdrawn

<b>Fuel source</b>
Agricultural waste
Bagasse
Bagasse co-generation
Biomass-based components of municipal solid waste
Black liquor
Crop waste
Energy crops
Food and agricultural wet waste
Food processing waste
Food waste
Geothermal-aquifer
Hot dry rock
Hydro
Landfill gas
Municipal solid waste combustion^
Ocean
Photovoltaic
Regulator created (deemed)
S.G.U. - hydro (deemed)
S.G.U. - solar (deemed)

S.G.U. - wind (deemed)
S.W.H. - air source heat pump (deemed)
S.W.H. - solar (deemed)
Sewage gas
Sewage gas and biomass-based components of sewage
Solar
Solar water heater (deemed)
Tide
Waste coal mine gas
Waste from processing of agricultural products
Wave
Wind
Wood waste

<b>Certificate status</b>
Registered
Invalid due to STC clearing house deficit
Invalid due to surrender
Pending transfer
Pending surrender
Invalid due to audit

Pending audit
Pending creation fee payment
Pending STC clearing house sale
STC clearing house pending transfer
Pending voluntary surrender
Invalid due to voluntary surrender

State/Territory	Code
Australian Capital Territory	ACT
New South Wales	NSW
Northern Territory	NT
Queensland	QLD
South Australia	SA
Tasmania	TAS
Victoria	VIC
Western Australia	WA

## Appendix

### Sample response

A sample response for the API is provided below:

```
1. {
2.   "status": "Success",
3.   "result":
4.     [
5.       {
6.         "actionType": "STC created",
7.         "completedTime": "2014-09-17T05:21:42.625Z",
8.         "certificateRanges":
9.           [
10.            {
11.              "certificateType": "STC",
12.              "registeredPersonNumber": 1,
13.              "accreditationCode": "PVD0000001",
14.              "generationYear": 2014,
15.              "generationState": "VIC",
16.              "startSerialNumber": 1,
17.              "endSerialNumber": 11,
18.              "fuelSource": "S.G.U. - solar (deemed)",
19.              "ownerAccount": "ACCOUNT1",
20.              "ownerAccountId": 102,
21.              "status": "Pending audit"
22.            }
23.          ]
24.       },
25.       {
26.         "actionType": "STC created",
27.         "completedTime": "2014-09-17T05:21:42.731Z",
28.         "certificateRanges":
29.           [
30.            {
31.              "certificateType": "STC",
32.              "registeredPersonNumber": 1,
33.              "accreditationCode": "PVD0000002",
34.              "generationYear": 2014,
35.              "generationState": "NT",
36.              "startSerialNumber": 1,
37.              "endSerialNumber": 15,
38.              "fuelSource": "S.G.U. - solar (deemed)",
39.              "ownerAccount": "ACCOUNT1",
40.              "ownerAccountId": 102,
41.              "status": "Pending audit"
42.            }
43.          ]
44.       },
```

The following example shows example with one certificate action involving multiple ranges:

```
{
  "actionType": "STC clearing house transfer offer",
  "completedTime": "2014-10-22T03:16:43.474Z",
  "certificateRanges":
  [
    {
      "certificateType": "STC",
      "registeredPersonNumber": 21,
      "accreditationCode": "PVD0000004",
      "generationYear": 2014,
      "generationState": "VIC",
      "startSerialNumber": 4,
      "endSerialNumber": 6,
      "fuelSource": "S.G.U. - solar (deemed)",
      "ownerAccount": "All in one",
      "ownerAccountId": 110,
      "status": "STC clearing house pending transfer"
    },
    {
      "certificateType": "STC",
      "registeredPersonNumber": 21,
      "accreditationCode": "PVD0000004",
      "generationYear": 2014,
      "generationState": "VIC",
      "startSerialNumber": 20,
      "endSerialNumber": 23,
      "fuelSource": "S.G.U. - solar (deemed)",
      "ownerAccount": "All in one",
      "ownerAccountId": 110,
      "status": "STC clearing house pending transfer"
    }
  ]
},
```

## Glossary

<b>STC</b>	Small-scale technology certificates
<b>LGC</b>	Large-scale technology certificates
<b>REC</b>	Renewable energy certificate
<b>SGU</b>	Small generation unit
<b>SWH</b>	Solar water heater
<b>ASHP</b>	Air source heat pump