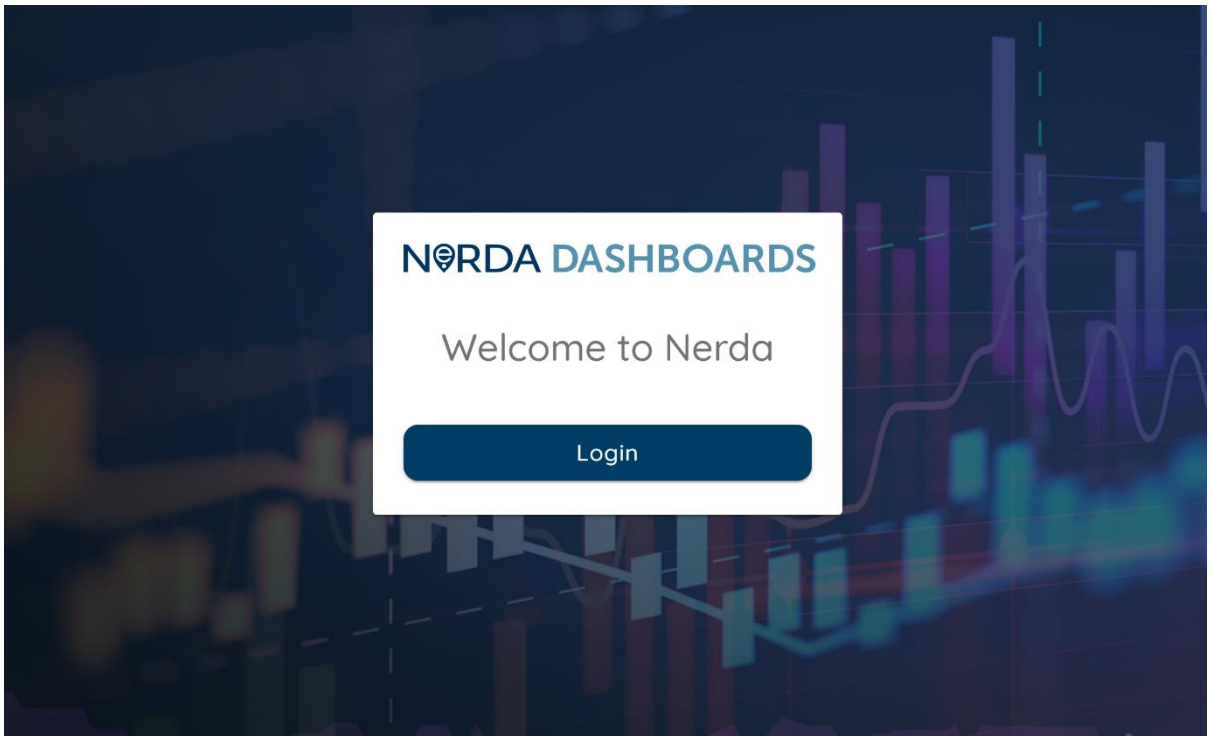
NeRDA API Guide

Creating an Account

Before being able to use the NeRDA APIs, you must create an account.

Click the "login" button.



After selecting this, you will be redirected to the SSEN login / registration portal where you are able to log in with an existing SSEN account or create a new account. Upon completion of the login / registration, you will be directed back to the NeRDA Portal.

Terms and Conditions

The Portal is configured to present current terms and conditions to users on first login or whenever the Terms and Conditions have been updated. To access any further features, you must accept the terms. If you do not accept the terms, you will be unable to proceed.

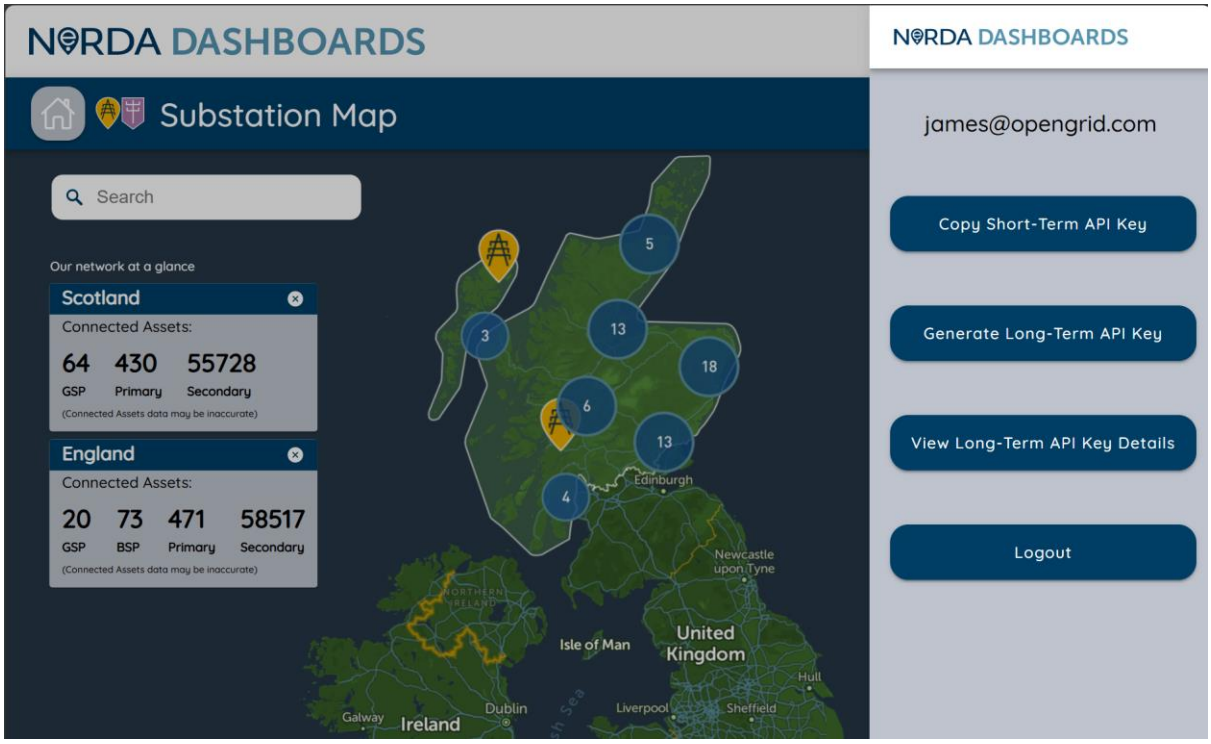
Retrieving your API Key

There are two options to retrieve an API key. You can choose either a short-term API key (this is tied to your login session and will expire 1 hour from the moment you log in). Or you can generate a long-term API key (this will last for 90 days and must be kept secure; it cannot be retrieved after being generated).

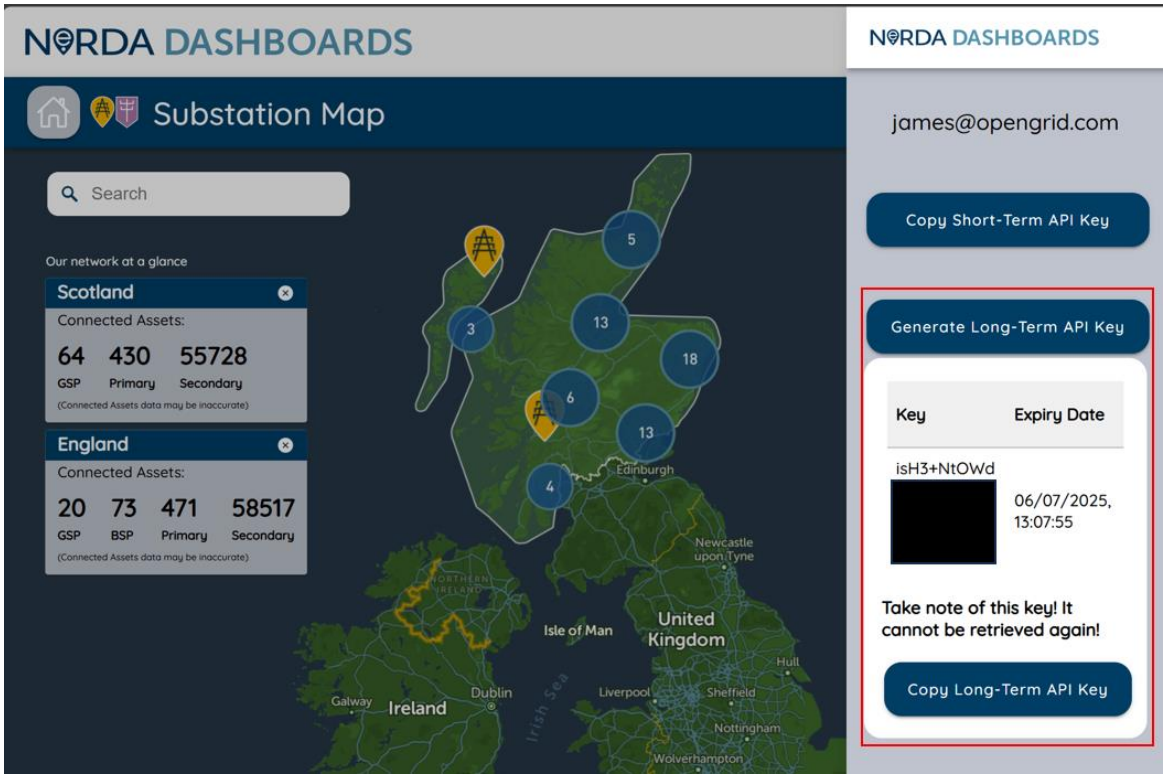
After accepting the Terms and Conditions for accessing NeRDA, the portal will automatically start to use your SSEN login credentials to retrieve short-term API access tokens. You can extract a short-term access token from within the browser as follows:

Navigate to the menu within the Nerda Portal (three lines in the top-right corner).

Click on ‘Copy Short-Term API Key’ - this will copy the API key to your clipboard.



Alternatively, if you plan to use the APIs for long running programs, you can generate a 90-day API key by clicking ‘Generate Long-Term API Key’.



We recommend copying this key as soon as it is generated as it cannot be retrieved again.

If you wish to generate a new long-term API key as it is expiring, this can be done programmatically by sending a request to the following endpoint.

[POST] https://nerda-prod-apis-v2.azurewebsites.net/api/GenerateApiKey

You must send your request to this endpoint with a valid long-term API key and username in the request body, as outlined below. If your API key has expired, you must log in to the NeRDA portal to generate another one.

API Authentication

APIs requests must include valid authentication keys to be accessed. How you send your authentication key depends on the type of key you wish to use.

If using the Short-Term API Key

Please authenticate your API requests using the short-term API key copied from the NeRDA portal as a Bearer Token in the request header. I.e. with the request, add the following to the header.

Authorization: Bearer YOUR_ACCESS_TOKEN

If using the Long-Term API Key

In the request header, include:

Content-Type: application/json

In the request body, format as below:

```
{
 "username": "{YOUR_EMAIL_ADDRESS}",
 "apiKey": "{YOUR_API_KEY}"
}
```

Using the APIs

NeRDA makes data available within the NeRDA portal, but also provides a number of APIs that can be used to query the system for substations, find the measurement points and retrieve data.

The NeRDA system holds around 800m data points and ingests live data, so the APIs allow the following actions to be undertaken:

- Find substations – can be GSPs, BSPs, Primaries or Secondaries, and the lines or measurements points for the substation

- Find the measurements available for each line / point – these are limited to a maximum of x entries per request but can be queried using a start date and / or end date so you can make multiple requests to pull historical data required

Substations Endpoint

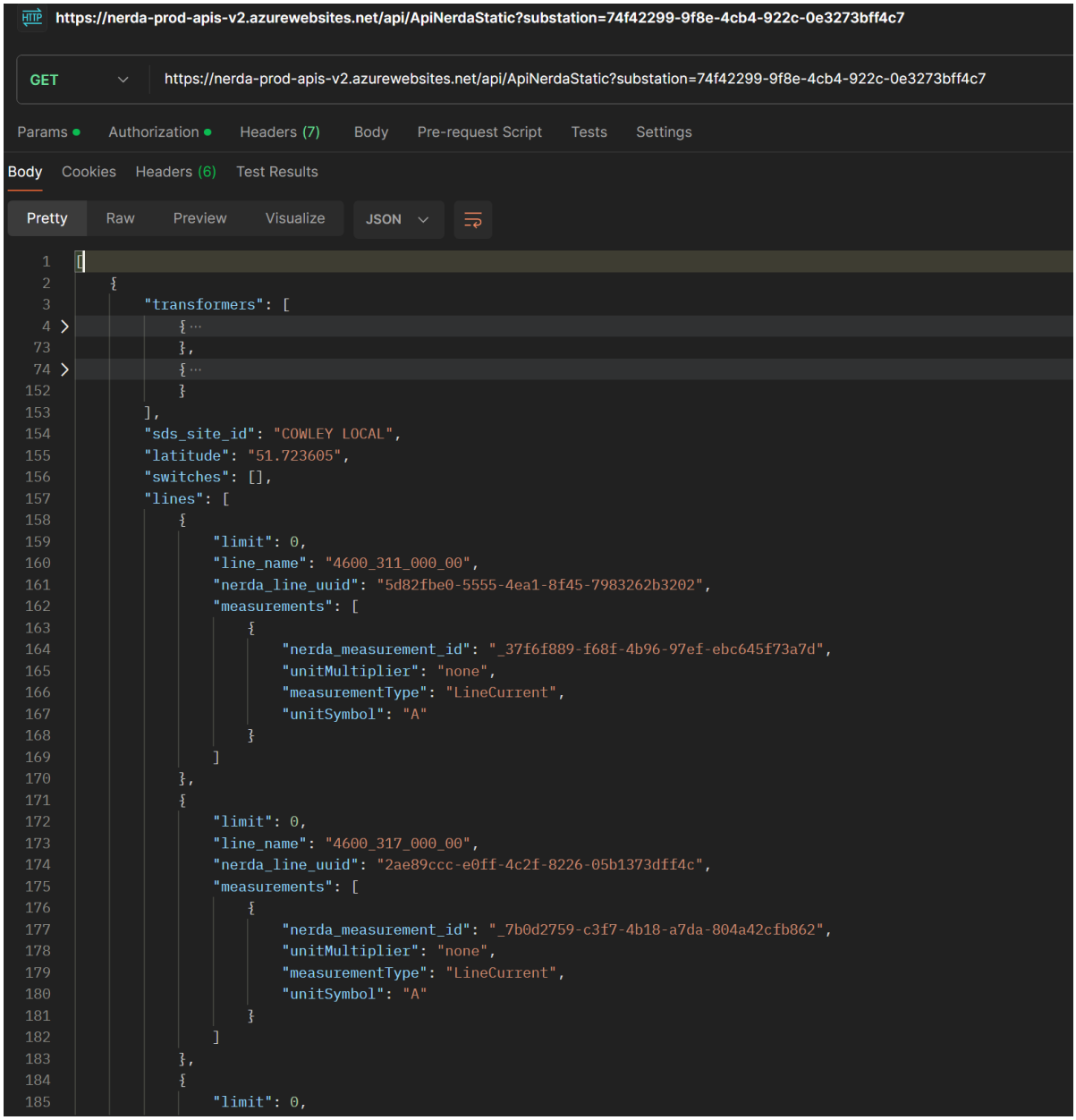
[GET] https://nerda-prod-apis-v2.azurewebsites.net/api/ApiNerdaStatic

The substations static endpoint can be accessed in two ways, directly through the API, or through the Portal. By default, the API will return all substation items. You can also append a substation unique ID – found in the URL of the various substation pages – to return a specific substation.

For example, to retrieve static data for Cowley Local BSP (unique ID: 74f42299-9f8e-4cb4-922c-0e3273bff4c7), the endpoint is:

[GET] https://nerda-prod-apis-v2.azurewebsites.net/api/ApiNerdaStatic?substation=74f42299-9f8e-4cb4-922c-0e3273bff4c7

Accessing this URL returns a record containing details on the lines and transformers at the station, the location of the station and the measurements available on those lines. The "nerda_measurement_id" on the individual measurements can then be used to retrieve time-series data.



Retrieving Time Series Data

Once a measurement of interest is identified, time series data is retrieved using the nerdart_after or nerdart_between endpoints.

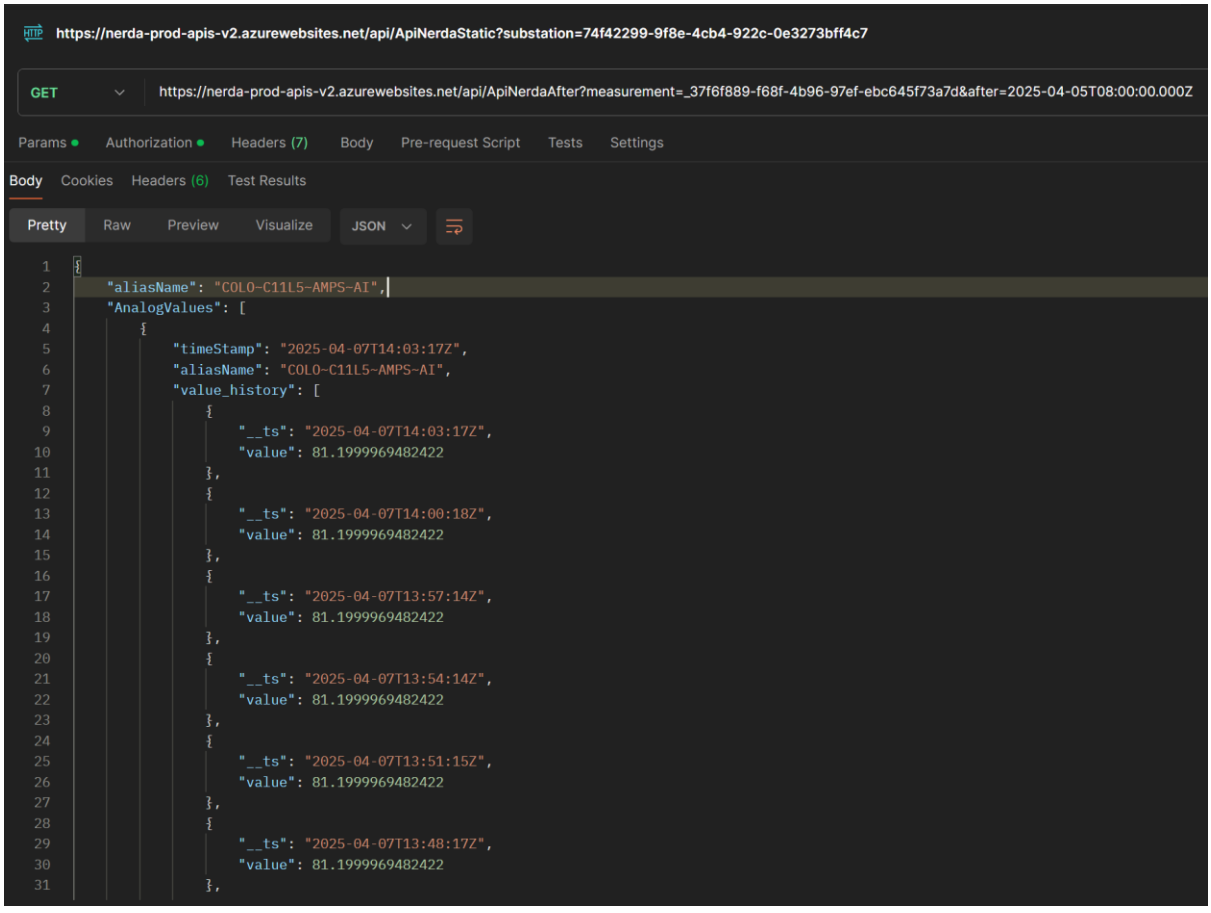
The following parameters can be used on these endpoints:

Parameter	Description	Required / Optional
measurement	nerda_measurement_id to request data for, from the static endpoint	Required

after	Start date to obtain data from in yyyy-MM-dd'T'hh:mm:ss.SSS'Z' format	Required on both endpoints
before	End date to obtain data to in yyyy-MM-dd'T'hh:mm:ss.SSS'Z' format	Required on nerdart_between

In the example payload shown the nerdastatic API, the LineCurrent measurement for line "4600_312_000_00" has a nerda_measurement_id of "_37f6f889-f68f-4b96-97ef-ebc645f73a7d", so, the "nerdart_after" endpoint URL can be constructed to be:

[GET] https://nerda-prod-apis-v2.azurewebsites.net/api/ApiNerdaAfter?measurement=_37f6f889-f68f-4b96-97ef-ebc645f73a7d&after=2025-04-05T08:00:00.000Z



When this endpoint is accessed, the payload similar to above is received.

In this case, data covering available data on the measurement alongside relevant readings is returned. Note that for some figures, a minimum, maximum and RMS analog value exists within the measurement reading representing the appropriate values for the measurement.

The API user should select the appropriate measurement, identified by the name of the analog value, and then use the “value_history” array to retrieve the individual values for each timestamp.

The “nerdart_between” endpoint functions in the same manner but allows end-time of the query to be specified in addition to the start-time.

E.g.
[GET] https://nerda-prod-apis-v2.azurewebsites.net/api/ApiNerdaBetween?measurement=10655be4-2bb7-4d36-8127-30956ad45951&after=2025-04-05T08:00:00.000Z&before=2025-04-07T08:00:00.000Z

Measurements are presented identically.