SolarHub API User Guide

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API Version 1.0

Contents

General Information

API keys

SolarHub.com provides APIs for qualified application providers to generate SolarTech Solar Energy Estimate (SEE) Reports from their applications. To access the APIs, an application must have a valid API key.

API keys can be requested from SolarNexus, Inc. Send an Email to Info@SolarHub.com including the following information:

- Organization name
- Contact name
- Contact phone number and email address

- Description of your intended use, including who will have access to, and use the features consuming the APIs

Request URLs

Live requests should be sent to:

https://solarhub.com/api/v1/your_api_key

For testing purposes, please use:

https://staging.solarhub.com/api/v1/your_api_key

Failed Requests

Failed requests will result in error response:

```
<status>error</status>
<error>
  <message>Description of the problem</message>
</error>
```

Examples

We have provided examples of API calls using cURL as the application used to call the APIs.

Note: *You might need to also use the* `-k` *or* `--insecure` *option for cURL if you don't have a CA certificate bundle. For further information, see http://curl.haxx.se/docs/sslcerts.html*

APIs

List Manufacturers Providing PV Modules

You can retrieve the name of all manufacturers providing PV modules.

GET from URL:

`https://solarhub.com/api/v1/your_api_key/module-manufacturers.xml`

GET parameter(s):

none

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<status>success</status>
<manufacturers>
  <manufacturer>
    <id>numeric-id-of-first-manufacturer</id>
    <name>name-of-first-manufacturer</name>
  </manufacturer>
  <manufacturer>
    <id>numeric-id-of-second-manufacturer</id>
    <name>name-of-second-manufacturer</name>
  </manufacturer>
    […]
</manufacturers>
```

Example, list manufacturers providing modules

Request, using cURL:

```
curl https://solarhub.com/api/v1/abcdef123456/module-manufacturers.xml
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<status>success</status>
<manufacturers>
  <manufacturer>
    <id>1</id>
    <name>Aavid Thermalloy</name>
  </manufacturer>
  <manufacturer>
    <id>3</id>
    <name>Advanced Renewable Energy</name>
  </manufacturer>
  <manufacturer>
    <id>4</id>
    <name>aleo solar AG</name>
  </manufacturer>
  […more manufacturers…]
</manufacturers>
```

List Manufacturers Providing Inverters

You can retrieve the name of all manufacturers providing inverters.

GET from URL:

```
https://solarhub.com/api/v1/your_api_key/inverter-manufacturers.xml
```

GET parameter(s):

none

Response:

On success, response has the same format as the PV module manufacturers listed above.

Example, list manufacturers providing inverters

Request, using cURL:

```
curl https://solarhub.com/api/v1/abcdef123456/inverter-manufacturers.xml
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<status>success</status>
<manufacturers>
   <manufacturer>
     <id>2</id>
     <name>Advanced Energy Industries</name>
   </manufacturer>
   <manufacturer>
     <id>5</id>
     <name>Alpha Technologies</name>
   </manufacturer>
   <manufacturer>
     <id>12</id>
     <name>Ballard Power Systems</name>
   </manufacturer>
   <manufacturer>
     <id>13</id>
     <name>Beacon Power</name>
   </manufacturer>
   [… more manufacturers]
</manufacturers>
```

List Modules by Manufacturer

You can retrieve the model numbers of all PV modules produced by a given manufacturer.

GET from URL:

```
https://solarhub.com/api/v1/your_api_key/manufacturers/<manufacturer_id>/modu
les.xml
```

Parameter(s):

`manufacturer_id` – id of the manufacturer

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<status>success</status>
<pvmodules>
```

```
   <pvmodule>
     <resource>
       <id>numerical-id-of-first-module</id>
       <manufacturer_model_number>model-number-1</manufacturer_model_number>
     </resource>
   </pvmodule>
   <pvmodule>
     <resource>
       <id> numerical-id-of-second-module</id>
       <manufacturer_model_number>model-number-2</manufacturer_model_number>
     </resource>
   </pvmodule>
[…more pvmodules…]
</pvmodules>
```

Example: Get the list of Sanyo modules

Request, using cURL:

```
curl https://solarhub.com/api/v1/abcdef123456/manufacturers/80/modules.xml
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<status>success</status>
<pvmodules>
   <pvmodule>
     <resource>
       <id>511</id>
       <manufacturer_model_number>HIP-180BA19</manufacturer_model_number>
     </resource>
   </pvmodule>
   <pvmodule>
     <resource>
       <id>512</id>
       <manufacturer_model_number>HIP-180DA3</manufacturer_model_number>
     </resource>
   </pvmodule>
   <pvmodule>
     <resource>
       <id>513</id>
       <manufacturer_model_number>HIP-186BA19</manufacturer_model_number>
     </resource>
   </pvmodule>
   <pvmodule>
     <resource>
       <id>514</id>
       <manufacturer_model_number>HIP-186BA3</manufacturer_model_number>
     </resource>
   </pvmodule>
   […more pvmodules…]
</pvmodules>
```

List Inverters by Manufacturer

You can retrieve the model numbers of all inverters produced by a given manufacturer.

GET from URL:

```
https://solarhub.com/api/v1/your_api_key/manufacturers/<manufacturer_id>/inverters.xml
```

GET Parameter(s):

`manufacturer_id` – id of the manufacturer

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<status>success</status>
<inverters>
   <inverter>
     <csi_weighted_efficiency>efficiency-value-
   percentages</csi_weighted_efficiency>
     <resource>
       <id>numerical-id-1</id>
       <manufacturer_model_number>model-number-1</manufacturer_model_number>
     </resource>
   </inverter>
   <inverter>
     <csi_weighted_efficiency></csi_weighted_efficiency>
     <resource>
       id>numerical-id-2</id>
       <manufacturer_model_number>model-number-2</manufacturer_model_number>
     </resource>
   </inverter>
   [... more inverters...]
</inverters>
```

Example: Get the list of PVPowered inverters

Request, using cURL:

```
curl https://solarhub.com/api/v1/abcdef123456/manufacturers/75/inverters.xml
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<status>success</status>
<inverters>
<inverter>
  <csi_weighted_efficiency>95.5</csi_weighted_efficiency>
```

```
  <resource>
    <id>1163</id>
    <manufacturer_model_number>PVP100kW</manufacturer_model_number>
  </resource>
</inverter>
<inverter>
  <csi_weighted_efficiency>96.0</csi_weighted_efficiency>
  <resource>
    <id>1164</id>
    <manufacturer_model_number>PVP100kW</manufacturer_model_number>
  </resource>
</inverter>
<inverter>
  <resource>
    <id>1165</id>
    <manufacturer_model_number>PVP1100</manufacturer_model_number>
  </resource>
</inverter>
<inverter>
  <resource>
    <id>1166</id>
    <manufacturer_model_number>PVP1100EVR</manufacturer_model_number>
  </resource>
</inverter>
```
[… more inverters …]
```
</inverters>
```

Create a Solar Energy Estimate (SEE) Report

You can get a SEE Report returned in PDF format.

POST to URL:

`https://solarhub.com/api/v1/your_api_key/see_reports`

POST parameter(s):

`project_name` – name of the project (mandatory)
`site_street1` – site street address, first line (mandatory)
`site_street2` – site street address, second line
`site_city` – site city (mandatory)
`site_state` – code of site state, 2 characters (mandatory)
`site_zip` – ZIP code of site - format: 00000 or 00000-0000 (mandatory)
`inverter_resource_id` – resource ID of the selected inverter, integer (mandatory)
`number_of_inverters` – inverter quantity, integer (mandatory)
`pvmodule_resource_id` – resource ID of the selected PV module, integer (mandatory)
`number_of_inverters` – module quantity, integer (mandatory)
`inverter_efficiency` – percentage value, decimal with 1 precision, between 0 and 100, mandatory if the used inverter has no csi_weighed_efficiency , else it's ignored

`azimuth` – azimuth value, integer between 0 and 360 inclusive (mandatory)
`tilt` – tilt value, integer between 0 and 90 inclusive (mandatory)
`mounting_method` – one of the mounting method options below, integer (mandatory)

- 0: 0" average standoff (flush mount or BIPV)', 0]
- 1: >0" to 1" average standoff
- 2: >1" to 3" average standoff
- 3: >3" to 6" average standoff
- 4: > 6" average standoff

`include_provider_info` – 0 or 1 – indicates if PDF should contain provider information
`company_name` – company name (mandatory if include_provider_info = 1)
`contact_name` – contact person's name (mandatory if include_provider_info = 1)
`contact_phone` – contact person's phone, 9 digits (ignored if include_provider_info = 0)
`contact_email` – a valid e-mail address (ignored if include_provider_info = 0)
`company_logo` – binary data, should be a valid JPG, PNG, TIFF or GIF image content (ignored if include_provider_info = 0)
`solar_access_1`
`solar_access_2`
…
`solar_access_12` – solar access percentages during the year's months (1 – January, 2 – February, etc.), integer between 0 and 100 inclusive. Optional, will use 100 for the omitted values.

Example: Get a SEE Report without provider information

Get a SEE report containing no provider information, use one SMA America SB 3000US inverter and 30 Sanyo Electric HIP-200BA3 modules, specifying a solar access of 60% for January and 100% for other months. Output will be available in see_test_project.pdf.

```
curl -d"project_name=A Test Project" -d"site_street1=1600 Amphitheatre
Parkway" -d"site_city=Mountain View" -d"site_zip=94043" -d"site_state=CA" -
d"inverter_resource_id=1260" -d"pvmodule_resource_id=520" -
d"number_of_pvmodules=20" -d"number_of_inverters=1" -d"azimuth=200" -
d"tilt=30" -d"solar_access_1=60" -d"mounting_method=0"
https://solarhub.com/api/v1/abcdef123456/see_reports > see_test_project.pdf
```

Example: Get a SEE Report without provider information

Get a similar SEE report and have full provider information with logo (NOTE - must have logo file in the current directory, and must include the leading "@" before the logo filename):

```
curl -F"project_name=A Test Project" -F"site_street1=1600 Amphitheatre
Parkway" -F"site_city=Mountain View" -F"site_zip=94043" -F"site_state=CA" -
F"inverter_resource_id=1260" -F"pvmodule_resource_id=520" -
F"number_of_pvmodules=20" -F"number_of_inverters=1" -F"azimuth=200" -
F"tilt=30" -F"solar_access_1=60" -F"solar_access_12=65" -F"mounting_method=1"
-F"include_provider_info=1" -F"contact_name=John Doe" -F"company_name=Test
Solar Inc" -F"contact_phone=1234567890" -F"contact_email=test@solar.net" -
Fcompany_logo=@solartest_logo.jpg https://solarhub.com/api/v1/
abcdef123456/see_reports > see_test_project.pdf
```