



SolarEdge Monitoring Server API

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SolarEdge API

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General

Purpose and scope

The purpose of this document is to outline the Application Programming Interface (API) available via SolarEdge Cloud-Based Monitoring Platform.

The web services allow access to data saved in the monitoring server while keeping the data secured for authorized users.

This document provides information about the technical features of the API, and describes each API with its parameters formats and other details.

Acronyms and abbreviations

The following table lists acronyms used in this document

Abbreviation	Meaning
API	Application Programing Interface
WS	Web Services
REST	Representational State Transfer
CSV	Comma Separated Values
JSON	JavaScript Object Notation
XML	Extensible Mark-up Language

Revision History

- January 2019 –
 - Addition of Meters API
 - Updated Storage Information API and Inverter Technical Data API
- February 2018 - addition of disable/enable site access by associated account
- September 2017 – various parameter updates
- June 2016 - addition of StorEdge profiles API
- April 2016- addition of status filter for alerts API

Introduction

The SolarEdge API allows other software applications to access its monitoring system database for data analysis purposes, fleet management, displaying system data in other applications, etc.

The following is a list of available APIs:

API Name	API Output
Site List	A list of sites for a given account, with the information on each site. This list allows convenient search, sort and pagination
Site Details	Details of a chosen site
Site Data: Start and End Dates	The site energy production start and end dates
Site Energy	Site energy measurements
Site Energy – Time Period	Site energy for a requested timeframe
Site Power	Site power measurements in a 15-minute resolution
Site Overview	Site current power, energy production (today, this month, lifetime) and lifetime revenue
Site Power	Detailed site power measurements including meters such as consumption, export (feed-in), import (purchase), etc.
Site Energy	Detailed site energy measurements including meters such as consumption, export (feed-in), import (purchase), etc.

API Name	API Output
Site Power Flow	Get the power flowchart of the site
Storage	Get detailed storage information from batteries including the state of energy, power and lifetime energy
Site Image	The site image as uploaded to the server, either scaled or original size
Site Environmental Benefits	Summary of site's positive impact on the environment
Installer Logo Image	The installer logo image as uploaded to the server.
Components List	List of inverters with name, model, manufacturer, serial number and status
Inventory	Information about the SolarEdge equipment, including: inverters/SMIs, batteries, meters, gateways and sensors
Inverter Technical Data	Technical data on the inverter performance for a requested period of time
Equipment Change Log	List of replacements for a given component
Account List API	The account details and list of all sub-accounts
Get Sensor List	The list of sensors installed in the site
Get Sensor Data	The measurements of the sensors installed in the site
Get Meters Data	Information about each meter in the site including: lifetime energy, metadata and the device to which it's connected to.
API Versions	The current and supported version numbers

An API key must be used in order to submit API requests.

Account users should generate an Account Level API Key, and system owners should generate a Site level API Key.

The API link is <https://monitoringapi.solaredge.com>

Please review the API terms and conditions at this link: <https://monitoring.solaredge.com/solaredge-web/p/license>

Display requirements:

When displaying information from the API, place the SolarEdge logo where it is clear to the user that the information source is SolarEdge's monitoring system.

The logo should link to <http://solaredge.com>

For any assistance with display, send an email to support@solaredge.com

Technical Information

The SolarEdge API is built as RESTful service:

- It uses predictable, resource oriented URLs
- It has built-in HTTP capabilities for passing parameters via the API
- It responds with standard HTTP codes
- It can return results in XML, JSON (including JSONP support) or CSV format.

API Access

- The API can be accessed via HTTPS protocol only. SolarEdge monitoring server supports both HTTPS/1.0 and HTTPS/1.1 protocols.
- All APIs are secured via an access token: every access to the API requires a valid token as a URL parameter named `api_key`. For example: `api_key= L4QLVQ1LOKQCX2193VSEICXW61NP6B1O`
- An API key can be generated to enable access to specific sites (via Site API key) or to all sites within a specific account (via Account API key).

► To generate an account users API key:

In the **Account Admin > Company Details** tab > **API Access** section:

- 1 Acknowledge reading and agreeing to the SolarEdge API Terms & Conditions.
- 2 Click Generate API key.
- 3 Copy the key.
- 4 Click **Save**.
- 5 Use the key in all API requests

► **To generate a Site API key:**

In the **Site Admin** > **Site Access** tab > **Access Control** tab > **API Access** section:

- 1 Acknowledge reading and agreeing to the SolarEdge API Terms & Conditions.
- 2 Click Generate API key.
- 3 Copy the key.
- 4 Click **Save**.
- 5 Use the key in all API requests

Language and Time Encoding

- When using special characters or spaces in URL, they must be **url encoded**.
- The monitoring server data can be in different languages therefore data is retrieved using UTF-8.
- Date and time formats in all APIs are:
 - Date and time: YYYY-MM-DD hh:mm:ss
 - Date only: YYYY-MM-DD
- Dates are always in the time zone of the site.
- All physical measures are in the metric units system.
- Temperature values are always in Celsius degrees.

Request Format

The request format and parameters are specified per each API, and conform to the HTTP and REST standards.

Parameter order in the request is not significant.

Response Formats

The user can request data in the following formats:

- JSON (application/json)
- XML(application/xml)
- CSV (text/csv).

See specific APIs in the next sections for supported format in each API.

If a specific format is not requested, the data will be retrieved via JSON. If the requested format is invalid, the system will generate HTTP error "Media not supported".

The API user can request the response format in one of the methods below. The system handles the response format as follows:

- URL format Parameter – ...&format=application/json
- Path extension – the name of the API will be followed by the requested format name ../details.json&...
- HTTP header – based on 'Accept' header e.g. Accept application/json

JSONP Support

The API supports JSONP calls by appending a callback parameter with the name of a callback method at the end of the request.

As JSONP content type is application/javascript, make sure the client sends this content type in the Accept header, otherwise HTTP 406 error may occur.

The following example shows a JSON call VS. JSONP call:

- JSON:

- Request:

```
http://monitoringapi.solaredge.com/1/details.json?api_key=[your_api_key]
```

- Response body:

```
{"details":{..}}
```

- JSONP:

- Request:

```
http://monitoringapi.solaredge.com/1/details.json?api_key=[your_api_key]&callback=myFunction
```

- Response body:

```
myFunction({"details":{..}});
```

Error Handling

The API system uses standard HTTP error codes for reporting errors that occurred while calling the API. The monitoring server API supports standard HTTP error codes, for example: if the user access is of an unknown resource, an HTTP 404 error will be returned.

Usage Limitations

Usage limitations are enforced to prevent abuse of the monitoring server API, and these limitations may be changed in the future without notice. Additionally, a request rate limit is applied to prevent abuse of the service. If you exceed the limitations, an error message appears in the monitoring server API. If the limitation is further exceeded, the system may temporarily be nonoperational, or your access to the monitoring server API may be blocked.

Specific API Usage Limitations

Specific APIs may enforce different usage limitations based on parameters sent by the client. Refer to the next sections for details on specific API usage limitations.

If there is a violation of a specific API validation, the `HTTP 403 - forbidden` status code is returned.

Daily Limitation

Use of the monitoring server API is subject to a query limit of 300 requests for a specific account token and a parallel query limit of 300 requests for each specific site ID from the same source IP.

APIs that do not have a specific ID (e.g. Site List, Account List) will be counted as part of the account query limit.

Any additional site or account level request will result in `HTTP 429 error - too many requests`.

Concurrency Limitation

The monitoring server API allows up to 3 concurrent API calls from the same source IP. Any additional concurrent calls will return `HTTP 429 error - too many requests`.

To execute APIs concurrently without exceeding the above limitation, it is the client responsibility to implement a throttling mechanism on the client side.

Bulk Use

Some of the APIs offer a bulk form, that is, they take multiple site IDs as an input. The list is separated by a comma and should contain up to 100 site IDs.

A bulk call for multiple sites consumes 1 call from the daily quota allowed for each of the sites included in the call.

API Description

Site Data API

Site List

Description: Returns a list of sites related to the given token, which is the account api_key. This API accepts parameters for convenient search, sort and pagination.

URL: `/sites/list`

Example URL (with all options):

https://monitoringapi.solaredge.com/sites/list?size=5&searchText=Lyon&sortProperty=name&sortOrder=ASC&api_key=L4QLVQ1LOKQCX2193VSEICXW61NP6B1O

Method: GET

Formats: JSON, XML and CSV

- **Request:** The following are parameters to include in the request.

Parameter	Type	Mandatory	Default Value	Description
size	Integer	No	100	The maximum number of sites returned by this call. The maximum number of sites that can be returned by this call is 100. If you have more than 100 sites, just request another 100 sites with startIndex=100. This will fetch sites 100-199.
startIndex	Integer	No	0	The first site index to be returned in the results
searchText	String	No		Search text for this site. Searchable site properties: <ul style="list-style-type: none"> ▪ Name ▪ Notes ▪ Address ▪ City ▪ Zip code ▪ Full address ▪ Country
sortProperty	String	No		A sorting option for this site list, based on one of its properties. Available sort properties: <ul style="list-style-type: none"> ▪ Name – sort by site name ▪ Country – sort by site country ▪ State – sort by site state ▪ City – sort by site city ▪ Address – sort by site address ▪ Zip – sort by site zip code ▪ Status – sort by site status ▪ PeakPower – sort by peak power ▪ InstallationDate – sort by installation date ▪ Amount – sort by amount of alerts ▪ MaxSeverity – sort by alert severity ▪ CreationTime – sort by site creation time
sortOrder	String	No	ASC	Sort order for the sort property. Allowed values are ASC (ascending) and DESC (descending).
Status	String	No	Active,Pending	Select the sites to be included in the list by their status: <ul style="list-style-type: none"> ▪ Active ▪ Pending ▪ Disabled ▪ All Default list will include Active and Pending sites.

- **Response:** The returned data is the site list, including the sites that match the given search criteria. For each entry, the following information is displayed:
 - id - the site ID
 - name - the site name
 - account id -the account this site belongs to
 - status - the site status (see *Site Status* on page 53)
 - peak power - site peak power
 - CURRENCY
 - installationDate – site installation date (format: yyyy-MM-DD hh:mm:ss)
 - ptoDate – permission to operate date
 - notes
 - type – site type (see *Site Type* on page 53)
 - location - includes country, state, city, address, secondary address, time zone and zip
 - alertQuantity - number of open alerts in this site *
 - alertSeverity - the highest alert severity in this site *
 - publicSettings - includes if this site is public and its public name
 - * Alert information is only available when using an API_KEY generated by an account. API_KEY generated at the site level does not return this information.
 -
 -

- **Example:** JSON output:

```
{
  "Sites":{
    "count":1567,
    "list":[{
      "id":1,
      "name":"Test",
      "accountId":0,
      "status":"Active",
      "peakPower":10.0,
      "currency":"EUR",
      "installationDate":"2012-06-08 00:00:00",
      "ptoDate": "2017-05-11",
      "notes":"test notes",
      "type":"Optimizers & Inverters",
      "location":{
        "country":"the country",
        "state":"the state",
        "city":"the city",
        "address":"the address",
        "address2":"the address2",
        "zip":"00000",
        "timeZone":"GMT"
      }
    }
  ]
}
```

```
    },
    "alertQuantity":0,
    "alertSeverity":"NONE",
    "uris":{
        "PUBLIC_URL":"the public URL name",
        "IMAGE_URI":"the site image link"
    },
    "publicSettings":{
        "name":"the public name",
        "isPublic":true
    }
},
{
    "id":2,
    "name":"Test",
    "accountId":0,
    "status":"Active",
    "peakPower":10.0,
    "currency":"EUR",
    "installationDate":"2012-06-08 00:00:00",
    "ptoDate": "2017-05-11",
    "notes":"test notes",
    "type":"Optimizers & Inverters",
    "location":{
        "country":"the country",
        "state":"the state",
        "city":"the city",
        "address":"the address",
        "address2":"the address2",
        "zip":"00000",
        "timeZone":"GMT"
    },
    "alertQuantity":0,
    "alertSeverity":"NONE",
    "uris":{
        "PUBLIC_URL":"the public URL name",
        "IMAGE_URI":"the site image link"
    },
    "publicSettings":{
        "name":"the public name",
        "isPublic":true
    }
}
```

```

    }
  }
}
}

}}}}

```

Site Details

Description: Displays the site details, such as name, location, status, etc.

URL: `/site/{siteId}/details`

Example URL: https://monitoringapi.solaredge.com/site/1/details?api_key=L4QLVQ1LOKCCQX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON and XML

- **Request:** The following parameter is included in the request:

Parameter	Type	Mandatory	description
siteId	Integer	Yes	The site identifier

- **Response:** The returned data includes the following site information:

- id – the site ID
- name – the site name
- account id – the account this site belongs to
- status – the site status (see *Site Status* on page 53)
- peak power – site peak power
- currency
- installationDate – site installation date (format: yyyy-MM-DD hh:mm:ss)
- ptoDate – permission to operate date
- notes
- type – site type (see *Site Type* on page 53)
- location - includes country, state, city, address, secondary address, zip and time zone
- alertQuantity - number of open alerts in this site *
- alertSeverity – the highest alert severity in this site *
- publicSettings - includes if this site is public (isPublic) and its public name (name)
- * Alert information is only available when using an API_KEY generated by an account. API_KEY generated at the site level does not return this information.
-

- **Example:** JSON output:

```

{
  "details":{
    "id":0,
    "name":"site name",
    "accountId":0,
    "status":"Active",
    "peakPower":9.8,
    "currency":"EUR",
    "installationDate":"2012-08-16 00:00:00",
    "ptoDate": "2017-05-11",

```

```

"notes": "my notes",
"type": "Optimizers & Inverters",
"location": {
  "country": "my country",
  "state": "my state",
  "city": "my city",
  "address": "my address",
  "address2": "",
  "zip": "0000",
  "timeZone": "GMT"
},
>alertQuantity": 0,
>alertSeverity": "NONE",
>uris": {
  "IMAGE_URI": "site image uri"
},
>publicSettings": {
  "name": null,
  "isPublic": false
}
}
}

```

Site Data: Start and End Dates

Description: Return the energy production start and end dates of the site.

URL: `/site/{siteId}/dataPeriod`

Example URL: https://monitoringapi.solaredge.com/site/1/dataPeriod?api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON and XML

- **Request:** The following parameter is included in the request:

Parameter	Type	Mandatory	description
siteId	Integer	Yes	The site identifier

- **Response:** The returned data includes <start, end> dates of the requested site. In case this site is not transmitting, the response is "null".
- **Example:** JSON output example:

```

{
  "dataPeriod": {
    "startDate": "2013-05-05 12:00:00",
    "endDate": "2013-05-28 23:59:59"
  }
}

```

For non-transmitting sites:

```
{
```

```

    "dataPeriod": {
      "startDate": null,
      "endDate": null
    }
  }
}

```

Site Data: Bulk Version

Description: This section describes the use of the above API for a bulk call.

URL: `/sites/{siteId 1},{siteId 2},...,{siteId n}/dataPeriod`

Example URL: https://monitoringapi.solaredge.com/sites/1,4/dataPeriod?api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

- **Response:** The response includes a list of <start, end> data transmission dates for the requested sites. The value "null" will be displayed for sites that have no data (not transmitting). Note that if the list contains site IDs for which the user has no permission to view, the system will generate a 403 *Forbidden* error with a proper description.
- **Example:** JSON format example:
- In this response, the sample site 4 is not transmitting.

```

{
  "dataPeriod": {
    "count": 2,
    "list": [
      {
        "id": 1,
        "startDate": "2013-05-05 12:00:00",
        "endDate": "2013-05-28 23:59:59"
      },
      {
        "id": 4,
        "startDate": null,
        "endDate": null
      }
    ]
  }
}

```

Site Energy

Description: Return the site energy measurements.

URL: `/site/{siteId}/energy`

Example URL: https://monitoringapi.solaredge.com/site/1/energy?timeUnit=DAY&endDate=2013-05-30&startDate=2013-05-01&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON, XML and CSV

- **Usage limitation:** This API is limited to one year when using timeUnit=DAY (i.e., daily resolution) and to one month when using timeUnit=QUARTER_OF_AN_HOUR or timeUnit=HOUR. This means that the period between endTime and startTime should not exceed one year or one month respectively. If the period is longer, the system will generate error 403 with proper description.
- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier
startDate	String	Yes	The start date to return energy measurement
endDate	String	Yes	The end date return energy measurement
timeUnit	String		Aggregation granularity, see <i>Time Unit</i> on page 53. Default : DAY. Allowed values are: QUARTER_OF_AN_HOUR, HOUR, DAY, WEEK, MONTH, YEAR

- **Response:** The response includes the requested time unit, the units of measurement (e.g. Wh), and the pairs of date and energy for every date ({"date":"2013-06-01 00:00:00","value":null}). The date is calculated based on the time zone of the site. "null" means there is no data for that time.
- **Example:** JSON output:

```
{
  "energy": {
    "timeUnit": "DAY",
    "unit": "Wh",
    "values": [ {
      "date": "2013-06-01 00:00:00",
      "value": null
    },
    {
      "date": "2013-06-02 00:00:00",
      "value": null
    },
    {
      "date": "2013-06-03 00:00:00",
      "value": null
    },
    {
      "date": "2013-06-04 00:00:00",
      "value": 67313.24
    }
  ]
}
```

Site Energy: Bulk Version

Description: This section describes the use of that the above API for a bulk call.

URL: /sites/{siteId 1},{siteId 2},...,{siteId n}/ energy

Example URL: https://monitoringapi.solaredge.com/sites/1,4/energy?timeUnit=DAY&startDate=2013-05-01&endDate=2013-05-30&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1Q

- **Response:** The response includes the requested time unit, the units of measurement (e.g. Wh), and the list of sites. For each site there is a list of items which include a time stamp and the energy produced in that period. Example: ({"date":"2013-06-01 00:00:00","value":1500.12}). The date is calculated based on the time zone of every site; if there is no value for the selected time, "null" will be displayed for the value. Note that if the list contains site IDs for which the user has no permission to view, the system will generate a *403 Forbidden* error with a proper description.
- **Example:** JSON format example:

```
{
  "energy": {
    "timeUnit": "DAY",
    "unit": "Wh",
    "count": 2,
    "list": [ {
      "id": 1,
      "values": [ {
```

```

        "date": "2013-06-01 00:00:00",
        "value": null
    },
    {
        "date": "2013-06-02 00:00:00",
        "value": null
    },
    {
        "date": "2013-06-03 00:00:00",
        "value": null
    },
    {
        "date": "2013-06-04 00:00:00",
        "value": 67313.24
    }
  ]
},
{
  "id": 4,
  "values": [{
    "date": "2013-06-01 00:00:00",
    "value": null
  },
  {
    "date": "2013-06-02 00:00:00",
    "value": null
  },
  {
    "date": "2013-06-03 00:00:00",
    "value": null
  },
  {
    "date": "2013-06-04 00:00:00",
    "value": 67313.24
  }
  ]
}
}
}

```

Site Energy – Time Period

Description: Return the site total energy produced for a given period.

URL: `/site/{siteId}/timeFrameEnergy`

Example URL: https://monitoringapi.solaredge.com/site/1/timeFrameEnergy?startDate=2013-05-01&endDate=2013-05-06&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON and XML

- **Usage limitation:** This API is limited to one year when using timeUnit=DAY (i.e., daily resolution). This means that the period between endTime and startTime should not exceed one year). If the period is longer, the system will generate error 403 with proper description
- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier
startDate	String	Yes	The start date to calculate energy generation
endDate	String	Yes	The end date to calculate energy generation

- **Response:** The response includes the energy summary for the given time period with units of measurement (e.g. Wh) The date is calculated based on the time zone where the site is located.
- **Example:** JSON output:

```

{
  "timeFrameEnergy": {
    "energy": 761985.8,
    "unit": "Wh"
  }
}

```

Site Energy – Time Period: Bulk Version

Description: This section describes the use of that the above API for a bulk call.

URL: `/sites/{siteId 1},{siteId 2},...,{siteId n}/timeFrameEnergy`

Example URL: https://monitoringapi.solaredge.com/sites/1,4/energy?timeFrameEnergy?startDate=2013-05-01&endDate=2013-05-06&api_key=L4QLVQ1LOKCOX2193VSEICXW61NP6B1O

- **Response:** The response includes the units of measurement (e.g. Wh), and the list of sites that include energy summary for the given time period.

The date is calculated based on the time zone of every site; if no data exists for the requested period, “null” will be displayed for the value field.

Note that if the list contains site IDs for which the user has no permission to view, the system will generate a *403 Forbidden* error with a proper description.

- **Example:** JSON format example:

```
{
  "timeFrameEnergy": {
    "unit": "Wh",
    "count": 4,
    "list": [{
      "id": 1,
      "energy": 761985.8
    },
    {
      "id": 4,
      "energy": 234284.4
    },
    {
      "id": 534,
      "energy": null
    },
    {
      "id": 222,
      "energy": 9984724.5
    }
  ]
}
```

Site Power

Description: Return the site power measurements in 15 minutes resolution.

URL: `/site/{siteId}/power`

Example URL: https://monitoringapi.solaredge.com/site/1/power?startTime=2013-05-5%2011:00:00&endTime=2013-05-05%2013:00:00&api_key=L4QLVQ1LOKCOX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON, XML and CSV

- **Usage limitation:** This API is limited to one-month period. This means that the period between `endTime` and `startTime` should not exceed one month. If the period is longer, the system will generate error 403 with proper description.
- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier
startTime	String	Yes	The start (date + time) to get power measurements.
endTime	String	Yes	The end (date + time) to get power measurements

- **Response:** The response includes the time unit (i.e. `QUARTER_OF_AN_HOUR`), the measurement units (e.g. Watt) and the pairs of date and power (in Watts) for every date (`{"date":"2013-06-04 14:00:00","value":7722.3896}`)

The date is calculated in ticks starting 1-1-1970 and presented based on the time zone of the site. "null" means there is no data for that time.

■ **Example:** JSON output:

```
{
  "power": {
    "timeUnit": "QUARTER_OF_AN_HOUR",
    "unit": "W",
    "values": [
      {
        "date": "2013-06-04 11:00:00",
        "value": 7987.03
      },
      {
        "date": "2013-06-04 11:15:00",
        "value": 9710.121
      },
      {
        "date": "2013-06-04 11:30:00",
        "value": 8803.309
      },
      {
        "date": "2013-06-04 11:45:00",
        "value": 9000.743
      },
      {
        "date": "2013-06-04 12:00:00",
        "value": 6492.2075
      },
      {
        "date": "2013-06-04 12:15:00",
        "value": 7395.716
      },
      {
        "date": "2013-06-04 12:30:00",
        "value": 8855.878
      },
      {
        "date": "2013-06-04 12:45:00",
        "value": 6551.6655
      },
      {
        "date": "2013-06-04 13:00:00",
        "value": 8114.938
      }
    ]
  }
}
```

```

    },
    {
      "date": "2013-06-04 13:15:00",
      "value": 7466.171
    },
    {
      "date": "2013-06-04 13:30:00",
      "value": 6595.561
    },
    {
      "date": "2013-06-04 13:45:00",
      "value": 8824.195
    },
    {
      "date": "2013-06-04 14:00:00",
      "value": 7722.3896
    }
  ]
}
}

```

Site Power: Bulk version

Description: This section describes the use of that the above API for a bulk call.

URL: `/sites/{siteId 1},{siteId 2},...,{siteId n}/power`

Example URL: https://monitoringapi.solaredge.com/sites/1,4/power?startTime=2013-06-04 11:00:00&endTime=2013-06-04 14:00:00&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

- Response:** The response includes the resolution of time measurements (e.g. QUARTER_OF_AN_HOUR), units of measurement (e.g. W), and the list of sites that include date and power in the given resolution. The date is calculated in ticks starting 1-1-1970 and presented based on the time zone of the site. If no data exists for the requested period, "null" will be displayed for the value field. Note that if the list contains site IDs for which the user has no permission to view, the system will generate a *403 Forbidden* error with a proper description.
- Example:** JSON format example:

```

{
  "power": {
    "timeUnit": "QUARTER_OF_AN_HOUR",
    "unit": "W",
    "count": 2,
    "list": [{
      "id": 1,
      "values": [{
        "date": "2013-06-04 11:00:00",
        "value": 7987.03
      },
      {
        "date": "2013-06-04 11:15:00",
        "value": 9710.121
      },
      {
        "date": "2013-06-04 11:30:00",
        "value": 8803.309
      }
    ]
  }
}

```

```

        "date": "2013-06-04 11:45:00",
        "value": 9000.743
      },
      {
        "date": "2013-06-04 12:00:00",
        "value": 6492.207
      }
    ]
  },
  {
    "id": 4,
    "values": [
      {
        "date": "2013-06-04 11:00:00",
        "value": 7987.03
      },
      {
        "date": "2013-06-04 11:15:00",
        "value": 9710.121
      },
      {
        "date": "2013-06-04 11:30:00",
        "value": 8803.309
      },
      {
        "date": "2013-06-04 11:45:00",
        "value": 9000.743
      },
      {
        "date": "2013-06-04 12:00:00",
        "value": 6492.2075
      }
    ]
  }
]
}

```

Site Overview

Description: Display the site overview data.

URL: `/site/{siteId}/overview`

Example URL: https://monitoringapi.solaredge.com/site/{siteId}/overview?api_key=L4QLVQ1LOKCOX2193VSEICXW61NP6B10

Method: GET

Accepted formats: JSON and XML

- **Request:** The following parameter is included in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier

- **Response:** The response includes the site current power, daily energy, monthly energy, yearly energy and life time energy.

- **Example:** JSON output:

```

{
  "overview": {
    "lastUpdateTime": "2013-10-01 02:37:47",
    "lifeTimeData": {
      "energy": 761985.75,
      "revenue": 946.13104
    },
    "lastYearData": {
      "energy": 761985.8,
      "revenue": 0.0
    }
  },

```

```

    "lastMonthData":{
      "energy":492736.7,
      "revenue":0.0
    },
    "lastDayData":{
      "energy":0.0,
      "revenue":0.0
    },
    "currentPower":{
      "power":0.0
    }
  }
}

```

Site Overview: Bulk Version

Description: This section describes the use of that the above API for a bulk call.

URL: `/sites/{siteId 1},{siteId 2},...,{siteId n}/overview`

Example URL: https://monitoringapi.solaredge.com/sites/1,4/overview&api_key=L4QLVQ1LOKQCX2193VSEICXW61NP6B1O

- **Response:** The response includes the last update time, current power, and daily, monthly, yearly and life time energy and revenue measurements for each of the sites in the list

Note that if the list contains site IDs for which the user has no permission to view, the system will generate a *403 Forbidden* error with a proper description.

- **Example:** JSON format example:

```

{
  "overview": {
    "count": 2,
    "list": [{
      "id": 1,
      "lastUpdateTime": "2013-10-01 02:37:47",
      "lifeTimeData": {
        "energy": 761985.75,
        "revenue": 946.13104
      },
      "lastYearData": {
        "energy": 761985.8,
        "revenue": 0.0
      },
      "lastMonthData": {
        "energy": 492736.7,
        "revenue": 0.0
      },
      "lastDayData": {
        "energy": 0.0,
        "revenue": 0.0
      },
      "currentPower": {
        "power": 0.0
      }
    },
    {
      "id": 4,
      "lastUpdateTime": "2013-10-01 02:37:47",
      "lifeTimeData": {
        "energy": 761985.75,
        "revenue": 946.13104
      },
      "lastYearData": {
        "energy": 761985.8,
        "revenue": 0.0
      },
      "lastMonthData": {
        "energy": 492736.7,

```

```

        "revenue": 0.0
      },
      "lastDayData": {
        "energy": 0.0,
        "revenue": 0.0
      },
      "currentPower": {
        "power": 0.0
      }
    }
  }
}

```

Site Power - Detailed

Description: Detailed site power measurements from meters such as consumption, export (feed-in), import (purchase), etc.

Note: Calculated meter readings (also referred to as "virtual meters"), such as self-consumption, are calculated using the data measured by the meter and the inverters.

URL: `/site/{siteId}/powerDetails`

Method: GET

Accepted response formats: JSON (default), XML

- **Usage limitation:** This API is limited to one-month period. This means that the period between `endTime` and `startTime` should not exceed one month. If the period is longer, the system will generate error 403 with proper description.

- Parameters

Parameter	Type	Mandatory	Description
siteId	number	Yes	The site identifier
startTime	String	Yes	The power measured start time in yyyy-MM-DD hh:mm:ss format
endTime	String	Yes	The power measured end time in yyyy-MM-DD hh:mm:ss format
meters	String	No	Select specific meters only. If this value is omitted, all meter readings are returned. Value shall include entries from the following list separated by comma: <ul style="list-style-type: none"> ▪ Production- AC production power meter / inverter production AC power (fallback) ▪ Consumption - Consumption meter ▪ SelfConsumption - virtual self-consumption (calculated) ▪ FeedIn - Export to GRID meter ▪ Purchased - Import power from GRID meter

- **Example URL:**

https://monitoringapi.solaredge.com/site/1/powerDetails?meters=PRODUCTION,CONSUMPTION&startTime=2015-11-21%2011:00:00&endTime=2015-11-22%2013:00:00&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

- **Response:** The response provides 15 minute resolution data series for each of the requested meters.

The response includes the following:

powerDetails - Root element

- **timeUnit** - The time unit of the data (i.e. QUARTER_OF_AN_HOUR)
 - **unit** - Power measurement units (e.g. Watt)
 - **meters** - List of meters. For each meter:
 - **type** - The meter type (Production/Consumption/SelfConsumption/FeedIn (export)/Purchased (import))
 - **values** - Pairs of date and power for every date
({"date":"2013-06-04 14:00:00", "value":7722.3896})
For dates in which no data exists the value will be committed
- Sample response: A sample response for a call such as:

https://monitoringapi.solaredge.com/site/1/powerDetails?startTime=2015-11-21%2011:00:00&endTime=2015-11-21%2011:30:00&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

```

{
  "powerDetails": {
    "timeUnit": "QUARTER_OF_AN_HOUR",
    "unit": "W",

```

```
"meters": [
  {
    "type": "Consumption",
    "values": [
      {
        "date": "2015-11-21 11:00:00",
        "value": 619.8288
      },
      {
        "date": "2015-11-21 11:15:00",
        "value": 474.87576
      },
      {
        "date": "2015-11-21 11:30:00",
        "value": 404.7733
      }
    ]
  },
  {
    "type": "Purchased",
    "values": [
      {
        "date": "2015-11-21 11:00:00",
        "value": 619.8288
      },
      {
        "date": "2015-11-21 11:15:00",
        "value": 474.87576
      },
      {
        "date": "2015-11-21 11:30:00",
        "value": 404.7733
      }
    ]
  },
  {
    "type": "Production",
    "values": [
      {
        "date": "2015-11-21 11:00:00",
        "value": 0
      },
      {
        "date": "2015-11-21 11:15:00",
        "value": 0
      },
      {
        "date": "2015-11-21 11:30:00",
        "value": 0
      }
    ]
  },
  {
    "type": "SelfConsumption",
    "values": [
      {
        "date": "2015-11-21 11:00:00",
        "value": 0
      },
      {
        "date": "2015-11-21 11:15:00",
        "value": 0
      },
      {
        "date": "2015-11-21 11:30:00",
        "value": 0
      }
    ]
  },
  {
    "type": "FeedIn",
    "values": [
      {
        "date": "2015-11-21 11:00:00",
        "value": 0
      },
      {
        "date": "2015-11-21 11:15:00",
        "value": 0
      }
    ]
  }
]
```


- **values** - Pairs of date and power for every date ({"date":"2013-06-04 14:00:00", "value":7722.3896}).

For dates in which no data exists the value will be committed (see sample)

- **Sample response:** A sample response for a call such as:

https://monitoringapi.solaredge.com/site/1/energyDetails?meters=PRODUCTION,CONSUMPTION&timeUnit=WEEK&startTime=2015-10-21%2011:00:00&endTime=2015-11-21%2011:30:00&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

```
{
  "energyDetails": {
    "timeUnit": "WEEK",
    "unit": "Wh",
    "meters": [
      {
        "type": "Production",
        "values": [
          {
            "date": "2015-10-19 00:00:00"
          },
          {
            "date": "2015-10-26 00:00:00"
          },
          {
            "date": "2015-11-02 00:00:00"
          },
          {
            "date": "2015-11-09 00:00:00"
          },
          {
            "date": "2015-11-16 00:00:00",
            "value": 2953
          }
        ]
      },
      {
        "type": "Consumption",
        "values": [
          {
            "date": "2015-10-19 00:00:00"
          },
          {
            "date": "2015-10-26 00:00:00"
          },
          {
            "date": "2015-11-02 00:00:00"
          },
          {
            "date": "2015-11-09 00:00:00"
          },
          {
            "date": "2015-11-16 00:00:00",
            "value": 29885
          }
        ]
      }
    ]
  }
}
```

Site Power Flow

Description: Retrieves the current power flow between all elements of the site including PV array, storage (battery), loads (consumption) and grid.

Note: Applies when export , import and consumption can be measured.

URL: */site/{siteId}/currentPowerFlow*

Method: GET

Accepted response formats: JSON (default), XML

- Parameters:

Parameter	Type	Mandatory	Description
siteId	number	Yes	The site identifier

- **Example URL:**

https://monitoringapi.solaredge.com/site/1/currentPowerFlow?api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

- **Response:** The response returns power flow for each of the elements in the system and their state.

In case the site does not support this information, the response should be an empty object.

Otherwise, the response includes the following:

- **siteCurrentPowerFlow** - Root element
- **unit** - The measurement units (e.g. Watt)
- **connections** - A table including all the relationships between the elements, and the power flow directions (producing element and consuming element)
- **from** element - The element providing power
- **to** element - The element consuming power
- A list of elements - Element per entity type in the specific site
- **GRID** - always included in response
- **LOAD** - always included in response
- **PV** - included if the site has a PV array (measurement of PV produced power)
- **STORAGE** - included if the site has storage installed and enabled
- Parameters for each element:
 - For all included elements, the following parameters are provided:
 - **status** - The current status of the element (**Active / Idle / Disabled**)
 - **currentPower** - The current power of the element. All numbers are positive; power direction is determined by the “connections” section above:
 - For **STORAGE** - Check the “connection” section for the direction. From storage to load = discharge. From PV to storage or from load to storage = charge.
 - For **GRID** - Check the “connection” section for the direction. From grid to load = import (purchase), from load to grid = export (feed-in).
 - For Storage, the following additional properties are included:
 - **chargeLevel** - The accumulated state of energy (% of charge) for all batteries
 - **critical**- If the accumulated storage charge level drops below a configurable level (currently 10%), this flag is returned
 - **timeLeft** - In Backup mode (**GRID is Disabled**), this property is returned to specify the time left before the storage energy runs out (estimated according to current load level).

- **Sample response:**

```
{
  "siteCurrentPowerFlow": {
    "unit": "W",
    "connections": [
      {
        "from": "GRID",
        "to": "Load"
      }
    ]
  },
  "GRID": {
    "status": "Active",
    "currentPower": 3435.77978515625
  },
  "LOAD": {
    "status": "Active",
    "currentPower": 3435.77978515625
  },
  "PV": {
    "status": "Idle",
    "currentPower": 0
  },
}
```

```

    "STORAGE": {
      "status": "Idle",
      "currentPower": 0,
      "chargeLevel": 27,
      "critical": false
    }
  }
}

```

Storage Information

Description: Get detailed storage information from batteries: the state of energy, power and lifetime energy.

Note: Applicable to systems with batteries.

URL: `/site/{siteId}/storageData`

Method: GET

Accepted response formats: **JSON** (default), XML

- **Usage limitation:** This API is limited to one-week period. Specifying a period that is longer than 7 days will generate error 403 with proper description.

- **Parameters:**

Parameter	Type	Mandatory	Description
siteId	number	Yes	The site identifier
startTime	String	Yes	Storage power measured start time in yyyy-MM-DD hh:mm:ss format
endTime	String	Yes	Storage power measured end time in yyyy-MM-DD hh:mm:ss format
serials	Comma separated list of Strings	No	Return data only for specific battery serial numbers; the list is comma separated. If omitted, the response includes all the batteries in the site

- **Sample URL:** https://monitoringapi.solaredge.com/site/1/storageData?serials=1111,2222&startTime=2015-05-22%2011:00:00&endTime=2015-05-25%2013:00:00&api_key=L4QLVQ1LOKQCX2193VSEICXW61NP6B1O

- **Response:** The response includes the following:

- **storageData** - Root element
- **batteryCount** - Number of batteries includes in the response
- **batteries** - A list of battery objects, each containing the following:
 - **serialNumber** - String - The battery serial number
 - **nameplate** - number - The nameplate (nominal) capacity of the battery
 - **modelName** - Battery model number
 - **telemetryCount** - number - The number of telemetries for this battery in the response
 - **telemetries** - A list of storage data telemetries. each entry contains:
 - **timeStamp** - String - Telemetry timestamp in the format of **YYY-MM-DD HH:MM:SS**
 - **power** - number - Positive power indicates the battery is charging, negative is discharging.
 - **batteryState** - number - can be one of the following: 0 (Invalid), 1 (Standby), 2 (Thermal Mgmt.), 3 (Enabled), 4 (Fault)
 - **lifeTimeEnergyCharged** - number - The energy Charged from the battery in Wh, during battery lifetime.
 - **lifeTimeEnergyDischarged** - number - The energy discharged from the battery in Wh, during battery lifetime.

- **fullPackEnergyAvailable** - The maximum energy (Wh) that can currently be stored in the battery. Note that the battery state of health (SoH) can be calculated from this value. SoH is defined as Full Pack Energy available today/Full Pack Energy available on day one. Full pack energy available on day one can be extracted from the battery nameplate value or battery model information. Both the battery name plate value and model number are provided by the storageData method.
- **internalTemp** - Battery internal temperature in Celsius.
- **ACGridCharging** - Amount of AC energy used to charge the battery from grid within a specified date range in Wh.
- **stateOfCharge** – number (percentage) – the battery state of charge as percentage of the available capacity. Values are in the range of 0 to 100.

■ **Sample response:** A sample response for a call such as:

https://monitoringapi.solaredge.com/site/1/storageData.json?startTime=2015-10-13 07:40:00&endTime=2015-10-13 11:40:00&api_key=L4QLVQ1LOKQCX2193VSEICXW61NP6B1O

```
{
  "storageData": {
    "batteryCount": 1,
    "batteries": [
      {
        "nameplate": 1,
        "serialNumber": "BFA",
        "modelName": "LGXXXXX-XXX",
        "telemetryCount": 9,
        "telemetries": [
          {
            "timeStamp": "2015-10-13 08:00:00",
            "power": 12,
            "batteryState": 3,
            "lifeTimeEnergyCharged": 6
            "lifeTimeEnergyDischarged": 6,
            "fullPackEnergyAvailable": 8950,
            "internalTemp": 38,
            "ACGridCharging": 234
          },
          {
            "timeStamp": "2015-10-13 08:05:00",
            "power": 12,
            "batteryState": 3,
            "lifeTimeEnergyCharged": 6,
            "lifeTimeEnergyDischarged": 6,
            "fullPackEnergyAvailable": 8950,
            "internalTemp": 38,
```

```

        "ACGridCharging": 234
    },
    {
        "timeStamp": "2015-10-13 08:10:00",
        "power": 12,
        "batteryState": 3,
        "lifeTimeEnergyCharged": 6,
        "lifeTimeEnergyDischarged": 6,
        "fullPackEnergyAvailable": 8950,
        "internalTemp": 38,
        "ACGridCharging": 234
    },
    {
        "timeStamp": "2015-10-13 08:15:00",
        "power": 12,
        "batteryState": 3,
        "lifeTimeEnergyCharged": 6,
        "lifeTimeEnergyDischarged": 6,
        "fullPackEnergyAvailable": 8950,
        "internalTemp": 38,
        "ACGridCharging": 234
    }
]
}
]
}
}

```

Disclaimers:

1. As LG battery does not provide lifetime charge/discharge data, the monitoring system aggregates the delta charge/discharge values. In cases where telemetries containing delta energy values are lost or not sent, the calculated lifetime energy values will be incomplete. Values provided are not revenue grade.
2. AC coupling is not supported with 3rd party inverters.

Site Image

Description: Display the site image as uploaded by the user.

URL: `/site/{siteId}/siteImage/{name}`

Example URL:

https://monitoringapi.solaredge.com/site/1/siteImage/myname.jpg?hash=123456789&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

Method: GET

- Performance:** The image element returns with a hash element, which is consistent as long as the image is not changed. When executing the Site Image API while using the hash element, the server matches the image hash and the hash sent in the URL. If a match is found, the API returns an HTTP 304 code. In case the image hash that appears in the URL is different than the one stored in the server, the image will be downloaded. When using the maxWidth and MaxHeight parameters, the hash element will be ignored.
- Image sizes:** By default, the API returns the same image that was uploaded to the monitoring portal. If an image in a different scale is required, the API supports it via the maxWidth and maxHeight parameters. The system will scale the image while keeping the aspect ratio of the original image, so the returned image will be smaller.
- Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier
name	String	No	It is recommended to enter the site image name so the user can save the new image based on the name in the URL.
maxWidth	Integer	No	The maximum width to scale this image
maxHeight	Integer	No	The maximum height to scale this image
hash	Integer	No	The image hash

- Response:** The response includes one of the following:
 - The requested image
 - Error 404 – not found, if the site has no image
 - Error 304 – unmodified, if a hash attribute was specified

Site Environmental Benefits

Description: Returns all environmental benefits based on site energy production: CO₂ emissions saved, equivalent trees planted, and light bulbs powered for a day.

URL: `/site/{siteId}/envBenefits`

Example: https://monitoringapi.solaredge.com/site/2/envBenefits?systemUnits=Imperial&api_key=L4QLVQ1LOKCQX2193VSEICXW61NP6B10

Method: GET

Accepted formats: JSON

- Request:** The following parameters are included in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier
systemUnits	String	No	The system units used when returning gas emission savings. Valid Values: Metrics, Imperial – note systemUnits are case sensitive. If systemUnits are not specified, the logged in user system units are used.

- Response:** Returns the list of environmental benefits associated with the site energy production:
 - gasEmissionSaved: quantity of CO₂ emissions that would have been generated by an equivalent fossil fuel system
 - treesPlanted: equivalent planting of new trees for reducing CO₂ levels
 - lightBulbs: number of light bulbs that could have been powered by the site for a day

- Sample response:

For Imperial:

```
{
  "envBenefits": {
    "gasEmissionSaved": {
      "units": "Lb",
      "co2": 1486.63,
      "so2": 1926.55,
      "nox": 614.37
    },
    "treesPlanted": 2.2555082200000003,
    "lightBulbs": 5217.4604
  }
}
```

For Metrics:

```
{
  "envBenefits": {
    "gasEmissionSaved": {
      "units": "Kg",
      "co2": 674.93066,
      "so2": 874.65515,
      "nox": 278.92545
    },
    "treesPlanted": 2.2555082200000003,
    "lightBulbs": 5217.4604
  }
}
```

Installer Logo Image

Description: Return the site installer logo image as uploaded by the user. If such an image does not exist, the account installer logo is returned.

URL: `/site/{siteId}/installerImage/{name}`

Example URL:

https://monitoringapi.solaredge.com/site/1/installerImage/myname.jpg?hash=123456789&api_key=L4QLVQ1LOKQX2193VSEI CXW61NP6B1O

Method: GET

- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier

name	String	No	It is recommended to enter the site image name so the user can save the new image based on the name in the URL.
------	--------	----	---

- **Response:** The response includes the requested image.

Site Equipment API

Components List

Description: Return a list of inverters/SMIs in the specific site.

URL: `/equipment/{siteId}/list`

Example URL (with all options):

https://monitoringapi.solaredge.com/equipment/2/list?api_key=L4QLVQ1LOKCQX2193VSEICXW61NP6B10

Method: GET

Accepted formats: JSON, XML and CSV

- **Request:** The following parameter is included in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier

- **Response:** The response includes a list of inverters/SMIs with their name, model, manufacturer and serial number.

- name – the inverter/SMI name
- manufacturer – the equipment manufacturer e.g. SolarEdge
- model – the inverter/SMI model e.g. SE16K
- serialNumber – the equipment short serial number

- **Example:** JSON output:

```
{
  "list": [{
    "name": "Inverter 1",
    "manufacturer": "SolarEdge",
    "model": "SE16K",
    "serialNumber": "12345678-00"
  },
  {
    "name": "Inverter 1",
    "manufacturer": "SolarEdge",
    "model": "SE16K",
    "serialNumber": "12345678-00"
  },
  {
    "name": "Inverter 1",
    "manufacturer": "SolarEdge",
    "model": "SE16K",
    "serialNumber": "12345678-00"
  },
  {
    "name": "Inverter 1",
    "manufacturer": "SolarEdge",
    "model": "SE16K",
    "serialNumber": "12345678-00"
  }
}
```

```

    "name": "Inverter 1",
    "manufacturer": "SolarEdge",
    "model": "SE16K",
    "serialNumber": "12345678-65"
  }
}

```

Inventory

Description: Return the inventory of SolarEdge equipment in the site, including inverters/SMIs, batteries, meters, gateways and sensors.

URL: `/site/{siteId}/inventory`

Example URL (with all options):

https://monitoringapi.solaredge.com/site/2/inventory?api_key=L4QLVQ1LOKCQX2193VSEICXW61NP6B10

Method: GET

Accepted formats: JSON, XML

- **Request:** The following parameter is included in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier

- **Response:** The response includes a list equipment installed on site:

- Inverters – SolarEdge inverters
 - name – the inverter name e.g. Inverter 1
 - manufacturer – manufacturer name (SolarEdge)
 - model name e.g. SE16K
 - CPU Firmware version e.g. 2.52.311
 - DSP 1 Firmware version
 - DSP 2 Firmware version
 - communicationMethod – the communication interface used to connect to server. E.g. Ethernet.
 - serialNumber – the equipment serial number e.g. 7F123456-00
 - connectedOptimizers – number of optimizers connected to the inverter
- thirdPartyInverters – 3rd party inverters
 - name – the inverter name, e.g.: Inverter 1
 - manufacturer – manufacturer name
 - model name
 - SN – serial number
- smiList – List of SMI devices
- name – the inverter name e.g. Inverter 1
 - manufacturer – manufacturer name (SolarEdge)
 - model name e.g. SE16K
 - Firmware version e.g. 2.52.311
 - communicationMethod – the communication interface used to connect to server. e.g.: Ethernet.
 - serialNumber – the equipment serial number e.g.: 7F123456-00

- connectedOptimizers – number of optimizers connected to the inverter
 - Meters
 - name – the inverter name e.g. “Feed In Meter”
 - Manufacturer – e.g. “WattNode”
 - Model – meter model number
 - SN – serial number (if applicable)
 - Type – meter type, e.g. “Production”
 - FirmwareVersion (if applicable)
 - ConnectedTo – Name of SolarEdge device the meter is connected to
 - connectedSolaredgeDeviceSN – serial number of the inverter / gateway the meter is connected to
 - form – physical for a HW meter or virtual if calculated by arithmetic between other meters
 - Sensors – Irradiance / wind / temperature sensors
 - connectedSolaredgeDeviceSN – the S/N of the device it is connected to e.g. 12345678-00
 - Id – e.g. “SensorDirectIrradiance”
 - connectedTo – name of the device it is connected to e.g. “Gateway 1”
 - Category – e.g. IRRADIANCE
 - Type – e.g. “Plane of array irradiance”
 - Gateways:
 - name – the inverter name e.g. Inverter 1
 - serialNumber – the equipment serial number e.g. 7F123456-00
 - Firmware version
 - Batteries
 - Name
 - Serial Number
 - Manufacturer - the battery manufacturer name
 - Model - the battery model name
 - Nameplate capacity - the nameplate capacity of the battery as provided by the manufacturer
 - Firmware version
 - ConnectedTo – Name of SolarEdge device the battery is connected to
 - connectedSolaredgeDeviceSN – serial number of the inverter / gateway the battery is connected to

■ **Example:** JSON output:

```
{
  "Inventory": {
    "meters": [
      {
        "name": "Production Meter",
        "manufacturer": "WattNode",
```

```
    "model": "WNC-3Y-480-MB",
    "firmwareVersion": "0013",
    "connectedSolaredgeDeviceSN": "12345678-00",
    "type": "Production",
    "form": "physical"
  }],
  "sensors": [
    {
      "connectedSolaredgeDeviceSN": "12345678-00",
      "id": "SensorDirectIrradiance",
      "connectedTo": "Gateway 1",
      "category": "IRRADIANCE",
      "type": "Direct irradiance"
    },
    {
      "connectedSolaredgeDeviceSN": "12345678-00",
      "id": "SensorPlaneOfArrayIrradiance",
      "connectedTo": "Gateway 1",
      "category": "IRRADIANCE",
      "type": "Plane of array irradiance"
    }
  ],
  "gateways": [
    {
      "name": "Gateway 1",
      "firmwareVersion": "2.956.0",
      "SN": "12345678-00"
    }
  ],
  "batteries": [
    {
      "name": "Battery 1.1",
      "manufacturer": "NAME",
      "model": "10KWh",
      "firmwareVersion": "2.0",
      "connectedInverterSn": "12345678-01",
      "nameplateCapacity": 6400.0,
      "SN": "T123456789"
    }
  ],
  "inverters": [
    {
      "name": "Inverter 1",
      "manufacturer": "SolarEdge",
```

```

    "model": "SE20K",
    "firmwareVersion": "2.19.233",
    "SN": "12345678-01",
    "connectedOptimizers": 76
  },
  {
    "name": "Inverter 2",
    "manufacturer": "SolarEdge",
    "model": "SE20K",
    "firmwareVersion": "2.19.233",
    "SN": "12345678-02",
    "connectedOptimizers": 76
  }
}
]]
}
}

```

Inverter Technical Data

Description: Return specific inverter data for a given timeframe.

URL: `/equipment/{siteId}/{serialNumber}/data`

Example URL (with all options): https://monitoringapi.solaredge.com/equipment/2/12345678-90/data?startTime=2013-05-5%2011:00:00&endTime=2013-05-05%2013:00:00&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON, XML and CSV

- **Usage limitation:** This API is limited to one-week period. This means that the period between endTime and startTime should not exceed one week). If the period is longer, the system will generate error 403 with proper description.
- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier
serialNumber	String	Yes	The inverter short serial number
startTime	String	Yes	The start (date + time) to get inverter data
endTime	String	Yes	The end (date + time) to get inverter data

- **Response:** The response includes technical parameters as for the inverter's performance (e.g., voltage, current, active power etc.), inverter type (1ph or 3ph), and software version. If an attribute is not supported based on the inverter version or type it will be omitted from the response.

Original name	Comment	Data divided per phase
timestamp		no
AC current		yes
AC voltage		yes
AC frequency		yes
QRef		yes
CosPhi		yes
Total Active Power		no
apparentPower	Supported starting communication board version 2.474	yes

Original name	Comment	Data divided per phase
activePower	Supported starting communication board version 2.474	yes
reactivePower	Supported starting communication board version 2.474	yes
DC voltage		no
groundFaultResistance		no
powerLimit %		no
Lifetime energy	Supported starting communication board version 2.474	no
totalEnergy		no
temperature	Celsius	no
inverterMode	OFF – Off NIGHT – night mode WAKE_UP – pre-production PRODUCTION – production PRODUCTION_LIMIT – Forced power reduction SHUTDOWN – Shutdown procedure ERROR – error mode SETUP – maintenance LOCKED_STDBY – standby mode lock LOCKED_FIRE_FIGHTERS – fire-fighters lock mode LOCKED_FORCE_SHUTDOWN – forced shutdown from server LOCKED_COMM_TIMEOUT – communication timeout LOCKED_INV_TRIP – inverter self-lock trip LOCKED_INV_ARC_DETECTED – inverter self-lock on arc detection LOCKED_DG – inverter lock due to DG mode enable	no
operationMode	0 – On-grid 1 – Operating in off-grid mode using PV or battery 2 - Operating in off-grid mode with generator (e.g. diesel) is present	no
apparentPower	VA	yes
activePower	VA	yes
reactivePower	VAR	yes
cosPhi		yes
vL1ToN		1ph only
vL2ToN		1ph only
vL1To2		3ph only
vL2To3		3ph only
vL3To1		3ph only

■ Example:

```
{
  "data": {
    "count": 2,
    "telemetries": [{
```

```
"threePhaseInverterTelemetry":[{
  "date":"2013-06-04 11:00:00",
  "totalActivePower":null,
  "dcVoltage":46.9757,
  "groundFaultResistance":6672.34,
  "powerLimit":78.4159,
  "totalEnergy":1.26533E7,
  "temperature":54.8134,
  "inverterMode":MPPT,
  "operationMode":0
  "L1Data":{
    "acCurrent":22.653,
    "acVoltage":11.6201,
    "acFrequency":41.3468,
    "apparentPower":1964.0,
    "activePower":1954.0,
    "reactivePower":-89.0,
    "cosPhi":1.0
  }
  "vL1To2":394.312,
  "vL2To3":393.781,
  "vL3To1":392.5,
  "L2Data":{
    "acCurrent":22.653,
    "acVoltage":11.6201,
    "acFrequency":41.3468,
    "apparentPower":1964.0,
    "activePower":1954.0,
    "reactivePower":-89.0,
    "cosPhi":1.0
  }
  "L3Data":{
    "acCurrent":22.653,
    "acVoltage":11.6201,
    "acFrequency":41.3468,
    "apparentPower":1964.0,
    "activePower":1954.0,
    "reactivePower":-89.0,
    "cosPhi":1.0
  }
}],
```

```
    "threePhaseInverterTelemetry": [{
      "date": "2013-06-04 11:05:00",
      "totalActivePower": null,
      "dcVoltage": 46.9757,
      "groundFaultResistance": 6672.34,
      "powerLimit": 78.4159,
      "totalEnergy": 1.26533E7,
      "temperature": 54.8134,
      "inverterMode": "MPPT",
      "operationMode": 0
      "L1Data": {
        "acCurrent": 22.653,
        "acVoltage": 11.6201,
        "acFrequency": 41.3468,
        "apparentPower": 1964.0,
        "activePower": 1954.0,
        "reactivePower": -89.0,
        "cosPhi": 1.0
      }
      "vL1To2": 394.312,
      "vL2To3": 393.781,
      "vL3To1": 392.5,
      "L2Data": {
        "acCurrent": 22.653,
        "acVoltage": 11.6201,
        "acFrequency": 41.3468,
        "apparentPower": 1964.0,
        "activePower": 1954.0,
        "reactivePower": -89.0,
        "cosPhi": 1.0
      }
      "L3Data": {
        "acCurrent": 22.653,
        "acVoltage": 11.6201,
        "acFrequency": 41.3468,
        "apparentPower": 1964.0,
        "activePower": 1954.0,
        "reactivePower": -89.0,
        "cosPhi": 1.0
      }
    }
  ],
```

```

    }}
  }
}

```

Equipment Change Log

Description: Returns a list of equipment component replacements ordered by date. This method is applicable to inverters, optimizers, batteries and gateways.

URL: `/equipment/{siteId}/{serialNumber}/changeLog`

Example URL (with all options):

https://monitoringapi.solaredge.com/equipment/2/1234567-38/changeLog?api_key=L4QLVQ1LOKQCX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON, XML and CSV

- **Request:** The following parameter is included in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	Site identifier
serialNumber	String	Yes	Inverter, battery, optimizer or gateway short serial number

- **Response:** The response includes a list of replacements by the specified equipment component, ordered-by date. The list contains the component serial number, model and date of replacement.
 - count – number of replacements of specified component
 - list – list of replacements where each replacement contains:
 - serialNumber – equipment short serial number
 - partNumber – inverter/battery/optimizer/gateway model
 - date – date of replacement of that equipment component

- **Example:** JSON output:

```

{
  "ChangeLog": {
    "count": 1,
    "list": {
      "serialNumber": "1234567-3A",
      "partNumber": null,
      "date": "2017-08-30"
    }
  }
}

```

Account List API

Description: Return the account and list of sub-accounts related to the given token. This API accepts parameters for convenient search, sorting and pagination.

URL: `/accounts/list`

Example URL (with all options):

https://monitoringapi.solaredge.com/accounts/list?size=5&searchText=someText&sortProperty=name&sortOrder=ASC&api_key=L4QLVQ1LOKQCX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON, XML and CSV

- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Default Value	Description
size	Integer	No	100	The maximum number of accounts returned by this call. If you have more than 100 sites, just request another 100 sites with startIndex=100. This will fetch sites 100-199.
startIndex	Integer	No	0	The first account index to be returned in the results
searchText	String	No		Search text for this account. Searchable properties: <ul style="list-style-type: none"> ▪ Name – the account name ▪ Notes ▪ Email – contact person email ▪ Country ▪ State ▪ City ▪ Zip ▪ Full address
sortProperty	String	No		A sorting option for this account list, based on one of its properties. Available sort properties: <ul style="list-style-type: none"> ▪ Name – sort by account name ▪ country – sort by account country ▪ city – sort by account city ▪ address – sort by account address ▪ zip – sort by account zip code ▪ fax – sort by account fax number ▪ phone – sort by account phone ▪ notes – sort by account notes
sortOrder	String	No	ASC	Sort order for the sort property. Allowed values are ASC (ascending) and DESC (descending).

■ **Response:** The returned data is the account data, including sub-accounts. For each entry, the following information is displayed:

- id – account ID
- name – account name
- location – includes country, state, city, address, address2 (secondary address), zip
- companyWebSite – the company web site
- contactPerson – the account contact person first name and surname
- email – the contact person email
- phoneNumber – account phone number
- faxNumber – account fax number
- notes – account notes
- parentId – account parent identifier

■ **Example:** JSON output example:

```
{
  "accounts":{
    "count":2638,
    "list":[{
      "id":0,
      "name":" account 1",
      "location":{
        "country":"my country",
        "state":null,
        "city":null,
```



```
        "address":"my address 4",
        "address2":"my address 2",
        "zip":"00000"
    },
    "companyWebSite":"","
    "contactPerson":"Saar",
    "email":"mail@mail.com",
    "phoneNumber":"+00000000",
    "faxNumber":"","
    "notes":" ",
    "parentId":32,
    "uris":null
},
{
    "id":1,
    "name":" account 2",
    "location":{
        "country":"my country",
        "state":null,
        "city":null,
        "address":"my address 4",
        "address2":"my address 2",
        "zip":"00000"
    },
    "companyWebSite":"","
    "contactPerson":"Saar",
    "email":"mail@mail.com",
    "phoneNumber":"+00000000",
    "faxNumber":"","
    "notes":" ",
    "parentId":32,
    "uris":null
},
{
    "id":2,
    "name":" account 3",
    "location":{
        "country":"my country",
        "state":null,
        "city":null,
        "address":"my address 4",
```

```
        "address2": "my address 2",
        "zip": "00000"
    },
    "companyWebSite": "",
    "contactPerson": "Saar",
    "email": "mail@mail.com",
    "phoneNumber": "+00000000",
    "faxNumber": "",
    "notes": " ",
    "parentId": 32,
    "uris": null
}
}
```

Meters API

Get Meters Data

Description: Returns for each meter on site its lifetime energy reading, metadata and the device to which it's connected to.

URL: /site/{siteid}/meters

Example: https://monitoringapi.solaredge.com/site/2/meters?meters=Production,Consumption&startTime=2013-05-5%2011:00:00&endTime=2013-05-05%2013:00:00&api_key=L4QLVQ1LOKQX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON, XML (default)

- **Request:** The following parameters to be included in the request:

Parameter	Type	Mandatory	Description
site	number	Yes	Site identifier
timeUnit	String	No	Aggregation granularity, see <i>Time Unit</i> on page 53. Default: DAY. Allowed values are: QUARTER_OF_AN_HOUR, HOUR, DAY, WEEK, MONTH, YEAR
startTime	String	Yes	The power measured start time in yyyy-MM-DD hh:mm:ss format
endTime	String	Yes	The power measured end time in yyyy-MM-DD hh:mm:ss format
meters	String	No	Select specific meters only. If this value is omitted, all meter readings are returned. Value shall include entries from the following list separated by comma: <ul style="list-style-type: none"> ■ Production- AC production power meter / inverter production AC power (fallback) ■ Consumption - Consumption meter ■ FeedIn - Exported to grid meter ■ Purchased - Imported power from grid meter

- **Response:** Response parameters include lifetime energy reading at the defined granularity within the specified date range, including the following parameters:

Original name	Comment	Data divided per meter
timeUnit	Aggregation granularity	no
Unit	Wh	no
meterSerialNumber		yes
connectedSolaredgeDeviceSN	Inverter to which the meter is connected to	yes
model	Meter model	yes
meterType	Production, Consumption, FeedIn or Purchased	yes
date	Measurement timestamp	yes
value	Lifetime energy reading	yes

Example - JSON output example:

```
{
  "meterEnergyDetails": {
    "timeUnit": "DAY",
```

```
"unit": "Wh",

"meters": [

  {

    "meterSerialNumber": "12345678",

    "connectedSolaredgeDeviceSN": "7E212128-E8",

    "model": "RWNC-3Y-480-MB",

    "meterType": "Production",

    "values": [

      {

        "date": "2018-11-01 00:00:00",

        "value": 198

      },

      {

        "date": "2018-11-02 00:00:00",

        "value": 243

      },

      {

        "date": "2018-11-03 00:00:00",

        "value": 273

      },

      {

        "date": "2018-11-04 00:00:00",

        "value": 299

      },

      {

        "date": "2018-11-05 00:00:00",
```

```
    "value": 309
  },
  {
    "date": "2018-11-06 00:00:00",
    "value": 312
  },
  {
    "date": "2018-11-07 00:00:00",
    "value": 344
  },
  {
    "date": "2018-11-08 00:00:00",
    "value": 415
  },
  {
    "date": "2018-11-09 00:00:00",
    "value": 451
  },
  {
    "date": "2018-11-10 00:00:00",
    "value": 552
  },
  {
    "date": "2018-11-11 00:00:00",
    "value": 572
  },
  },
```

```
{
  "date": "2018-11-12 00:00:00",
  "value": 670
}
],
{
  "meterSerialNumber": "22233345",
  "connectedSolaredgeDeviceSN": "7E212121-E1",
  "model": "RWNC-3Y-480-MB",
  "meterType": "Production",
  "values": [
    {
      "date": "2018-11-01 00:00:00",
      "value": 121
    },
    {
      "date": "2018-11-02 00:00:00",
      "value": 153
    },
    {
      "date": "2018-11-03 00:00:00",
      "value": 255
    },
    {
      "date": "2018-11-04 00:00:00",
```

```
    "value": 276
  },
  {
    "date": "2018-11-05 00:00:00",
    "value": 295
  },
  {
    "date": "2018-11-06 00:00:00",
    "value": 303
  },
  {
    "date": "2018-11-07 00:00:00",
    "value": 348
  },
  {
    "date": "2018-11-08 00:00:00",
    "value": 450
  },
  {
    "date": "2018-11-09 00:00:00",
    "value": 541
  },
  {
    "date": "2018-11-10 00:00:00",
    "value": 604
  },
  },
```

```
{
  {
    "date": "2018-11-11 00:00:00",
    "value": 817
  },
  {
    "date": "2018-11-12 00:00:00",
    "value": 975
  }
]
}
]
}
```


Sensors API

Get Sensor List

Description: Returns a list of all the sensors in the site, and the device to which they are connected.

URL: /equipment/{siteid}/sensors

Example: https://monitoringapi.solaredge.com/equipment/2/sensors?api_key=L4QLVQ1LOKQCX2193VSEICXW61NP6B10

Method: GET

Accepted formats: JSON

- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteid	Integer	Yes	The site identifier

- **Response:** Returns the list of sensors installed in the site associated with the gateway they are connected with. Each entry will include the following parameters:
 - connectedTo: name of the gateway the sensor is connected to
 - name: the name of the sensor
 - measurement: what the sensor measures, e.g.: SensorGlobalHorizontalIrradiance, SensorDiffusedIrradiance, SensorAmbientTemperature
 - type: the sensor type e.g.: Temperature, Irradiance.
- **Example:** JSON output example:

```
{
```

```
  "SiteSensors": {
    "count": 3,
    "list": [{
      "connectedTo": "Gateway 19",
      "count": 2,
      "sensors": [{
        "name": "Global horizontal irradiance",
        "measurement": "SensorGlobalHorizontalIrradiance",
        "type": "IRRADIANCE"
      },
      {
        "name": "Diffused irradiance",
        "measurement": "SensorDiffusedIrradiance",
        "type": "IRRADIANCE"
      }
    ]
  },
  {
    "connectedTo": "Gateway 1",
    "count": 1,
    "sensors": [{
      "name": "Ambient temperature",
      "measurement": "SensorAmbientTemperature",
      "type": "TEMPERATURE"
    }
  ]
}
```

```

    ]]
  ]]
}
}

```

Get Sensor Data

Description: Returns the data of all the sensors in the site, by the gateway they are connected to.

URL: /site/{siteId}/sensors?{startDate}=<timestamp>&{endDate}=<timestamp>

Example: https://monitoringapi.solaredge.com/site/2/sensors?startDate=2013-05-5%2011:00:00&endDate=2013-05-05%2013:00:00&api_key=L4QLVQ1LOKCOX2193VSEICXW61NP6B1O

Method: GET

Accepted formats: JSON

- **Usage limitation:** This API is limited to one-week period. This means that the period between endDate and startDate should not exceed one week). If the period is longer, the system will generate error 403 with a description.

- **Request:** The following are parameters to include in the request:

Parameter	Type	Mandatory	Description
siteId	Integer	Yes	The site identifier
startDate	String	Yes	The start (date + time) to get sensor data
endDate	String	Yes	The end (date + time) to get sensor data

- **Response:** Returns the telemetries reported by all sensors in the site, by the device they are connected to. Each entry will include the following parameters:
 - connectedTo: name of the gateway the sensor is connected to
 - count: the number of telemetries
 - date: timestamp of the telemetries
 - measurement: (e.g. ambientTemperature) and its numerical value (metric system)
- **Example:** JSON output example:

```

{
  "siteSensors": {
    "data": [{
      "connectedTo": "Gateway 19",
      "count": 0,
      "telemetries": []
    },
    {
      "connectedTo": "Gateway 1",
      "count": 427,
      "telemetries": [{
        "date": "2015-06-15 13:00:00",
        "ambientTemperature": -22.1155,
        "moduleTemperature": 47.2601,
        "windSpeed": 81.3652,
        ...
      }],
    }
  ]
}

```

```
{
  "connectedTo": "Gateway 3",
  "count": 427,
  "telemetries": [{
    "date": "2015-06-15 13:00:00",
    ...
  }],
  {
    "connectedTo": "Gateway 4",
    "count": 0,
    "telemetries": []
  },
  {
    "connectedTo": "Gateway 489",
    "count": 0,
    "telemetries": []
  },
  {
    "connectedTo": "Gateway 488",
    "count": 427,
    "telemetries": [{
      "date": "2015-06-15 13:00:00",
      ...
    }]
  }
}
```

API Versions

As the monitoring API evolves over time, users of the monitoring API need to make sure their code is interacting with the formally supported version.

The monitoring API supports previous versions to some extent. This can be verified by executing the *Supported Version* API (see below).

The version format is <major.minor.release> where:

- **Major** - The main version number. This number increases when the version includes significant changes, which might not be backward compatible with previous versions in terms of APIs calls and returned results.
- **Minor** – The sub-version number. This number increases when the version includes some changes, which might not affect the APIs, however the returned results can contain more information than the previous minor version.
- **Release** – bug fixes

The user should optionally specify the version as a parameter for each API (except this API) e.g. version=1.0.0. If it is omitted, current version is assumed (see *Current Version* below).

Current Version

Description: Return the most updated version number in <major.minor.revision> format.

URL: */version/current*

Example URL: *https://monitoringapi.solaredge.com/version/current*

Method: GET

Accepted formats: JSON and XML

Method: GET

- **Request:** No parameters
- **Response:** The current version
- **Example:** JSON output:

```
{"version": "1.0.0"}
```

Supported Version

Description: Return a list of supported version numbers in <major.minor.revision> format.

URL: */version/supported*

Example URL: *https://monitoringapi.solaredge.com/version/current*

Method: GET

Accepted formats: JSON and XML

Method: GET

- **Request:** No parameters
- **Response:** A list of supported versions
- **Example:** JSON output:

```
{"supported": ["0.9.5", "1.0.0"]}
```

Data Types

Time Unit

Allowed values: DAY, WEEK, MONTH and YEAR

Site Status

- Active – The site is active
- Pending Communication – The site was created successfully however there is no communication yet from its inverters/SMI.

Site Type

- Optimizers and inverters
- Safety and monitoring interface
- Monitoring combiner boxes