

REPORTING SOLAR PHOTOVOLTAIC DATA

Capture and reporting of on-site solar data

Solar in public healthcare facilities

The installation of solar photovoltaic (PV) systems is common practice during the construction and expansion of healthcare capital projects, as well as retrofitting on existing healthcare facilities.

The Victorian Health and Human Services Building Authority (VHHSBA) requires the automated capture of net generation data from on-site solar PV systems and reporting into the online environmental data management system (EDMS) regardless of how the solar PV system is funded. This reporting is configured through the inverter.

Inverters installed after 2015 should have the capability to meet the requirements. Where older inverters do not have the capability to meet the requirements, reporting can be delayed until the inverter is replaced.

This guidance note details the technical specification connect on-site solar to the EDMS.

Step 1: inform VHHSBA of your solar PV system details

If your solar PV systems was not funded through the regional health solar program, or directly by VHHSBA (excluding capital projects), you are to forward the following details to [environmental data management system <edms@dhhs.vic.gov.au>](mailto:edms@dhhs.vic.gov.au)

- facility name of installation
- year of installation
- solar PV system capacity (kWp)

If your solar PV systems was funded through the regional health solar program, or directly by VHHSBA, then it will have already been given a measurement device name and set up in the EDMS.

Step 2: setting up solar array on the EDMS

Upon receipt of the solar PV system details, VHHSBA will provide a measurement device name and set it up on the EDMS. The measurement device is a unique identifier for the solar PV system (or part of a system) from which the data is being supplied.

The measurement device name will be based on the details of each solar PV system. For a measurement device that reports solar production from the entire solar PV system (e.g. taken from the Class one LGC meter, a single inverter, or for reporting an aggregate of multiple inverters), then the naming convention will follow the format of: FACILITY NAME_SOLAR_kWp (system capacity).

As an example, for a 7 kWp array at Healesville Hospital, the measurement device would be named HEALESVILLE_SOLAR_7.

Where Solar PV data is being measured from multiple measurement points within the overall solar PV installation (such as emails generated from individual inverter outputs where there is more than one inverter) then the naming convention will follow the format of: FACILITY NAME_SOLAR_kWp_Inverter (or other device) number.

As an example, for a 200 kWp array at Bendigo Hospital with two separate inverters, the measurement devices would be named: BENDIGO_SOLAR_200_01 and BENDIGO_SOLAR_200_02.

Step 3: Configure the inverter(s) to export data

The inverter needs to be configured to report periodic structured solar energy generation data that can be automatically uploaded into the environmental data management system (EDMS) to track hospital solar PV electricity generation data. This requires a set format as detailed below. Any deviation from the format will result in the data not being accepted by the EDMS.

The system is to provide information to the interface via email, containing an attached file in Excel CSV format containing records in the following format structure:

```
'supplier name','measurement device','start datetime','stop datetime','measured quantity','measurement unit','activity name'\r\n
```

The .csv files must not contain header rows or blank rows.

Transmission methodology

supplier name

the producer of the measurement, which for a health service-owned solar installation is the health service name, such as Eastern Health

measurement device

measurement device name as provided by VHHSBA in Step 2 above

start datetime

the time of the measurement period start in SQL format datetime YYYY-MM-DD HH:MM e.g.: 2017-09-10 23:30

stop datetime

the time of the measurement period end in SQL format datetime YYYY-MM-DD HH:MM e.g.: 2017-09-10 23:44

measured quantity

the amount of energy measurand – for example the measured amount on 200kWh is 200

measurement unit

the unit of the measurand – for solar generation this is kWh

activity name

the EDMS approved name for the activity type. For solar it is Solar Power with capitalisation as shown.

Example of a seven-day extract is shown below:

```
Eastern Health,HEALESVILLE_SOLAR_7,2017-09-10 00:00,2017-09-10 23:59,0.060,kWh,Solar Power
Eastern Health,HEALESVILLE_SOLAR_7,2017-09-11 00:00,2017-09-11 23:59,0.170,kWh,Solar Power
Eastern Health,HEALESVILLE_SOLAR_7,2017-09-12 00:00,2017-09-12 23:59,0.200,kWh,Solar Power
Eastern Health,HEALESVILLE_SOLAR_7,2017-09-13 00:00,2017-09-13 23:59,0.370,kWh,Solar Power
Eastern Health,HEALESVILLE_SOLAR_7,2017-09-14 00:00,2017-09-14 23:59,0.550,kWh,Solar Power
```

Eastern Health,HEALESVILLE_SOLAR_7,2017-09-15 00:00,2017-09-15 23:59,0.680,kWh,Solar Power

Eastern Health,HEALESVILLE_SOLAR_7,2017-09-16 00:00,2017-09-16 23:59,0.800,kWh,Solar Power

Email address for exported data

Emails are to be sent to direct-data@edensuite.com.au.

Emails must only contain a single attachment file – if multiple files are generated at the same time by a batch process, they must be emailed separately.

The frequency of emailing should ideally be weekly showing daily generation data from each measurement device. However, monthly reporting of daily generation data will be acceptable, once the data format has been received and confirmed to be in the required format.

Solutions that require manual action by health services, or third parties to process emails are not compliant reporting solutions.

Example of data extraction methods

Outlined below are a few methods the Health provider can use to provide the required information.

This may be in the form of one of the following:

- interval data from existing or new meters or IoT sensor networks which estimate solar energy generation
- inverter monitoring system (manufacturer or third-party):
 - via supplied application programming interface (API); push service:
 - this can provide system availability and consistency of information/access across sites
 - additional hardware (e.g. BACnet/Modbus interface + comms):
 - it may require site access and maintenance.
- outputs from external communication devices, such as SIM cards or on-site WiFi/LAN used to transmit generation data
 - SIM card:
 - independent measurement and communication and will incur ongoing maintenance and connection costs
 - on-site WiFi/LAN:
 - uses existing infrastructure but interaction/integration with on-site IT systems may introduce an unacceptable point of entry for unauthorised users.

Step 4: Test data upload and reporting

The final step is to test the automatic upload and reporting of data. This can be done by searching for the solar PV system measurement device name in the EDMS and checking whether it has any accepted data.

Further information

For further advice or information, please contact [environmental data management system](mailto:environmental_data_management_system@edms@dhhs.vic.gov.au) at <edms@dhhs.vic.gov.au>.