**Suggested content for the IALA website.**

**IALA SOLAR SIZING TOOL**

IALA offers a solar sizing tool, that is associated with Guideline 1039 Design Solar Power Systems for Aids to Navigation. This tool enables the user to design a solar power supply for use with AtoN.

Some input data relating to location is necessary for utilizing the solar sizing tool. There are a number of means of accessing and examples are provided below.

The NASA website provides public access to meteorology and solar energy data for particular locations. It can be accessed via the following link.

<http://eosweb.larc.nasa.gov/sse/>

Another source of PV potential data for Europe and Asia-Africa can be accessed via the following link.

<http://re.jrc.ec.europa.eu/pvgis/apps4/pvest.php>.

Geographical data is required for the calculation of solar insolation and night / day hours. Precise information on locations can be easily derived via the following link.

<http://www.latlong.net/>

Guideline 1039 provides detailed guidance on how to use the excel solar sizing tool and provides some general information on solar power and batteries. It is recommended that the solar sizing tool be used in conjunction with the guideline, to allow the user to get best benefit from the tool.

To access the solar sizing tool, please click here.

To access Guideline 1039, please click here

**Work done at ENG6 by sub group**

# Short manual for meteorology and Solar Energy

The following the description shows how to extract relevant data from a public NASA website.

Another website to derive data from is <http://re.jrc.ec.europa.eu/pvgis/apps4/pvest.php>.

| **Description** | **Action** |
| --- | --- |
| <http://eosweb.larc.nasa.gov/sse/> | Click on the link at the left side to access the NASA's website. |
|  | **Step 1:**  Click on the link shown on the left side. |
|  | **Step 2:**  Click on the link shown on the left side. |
|  | **Step 3:**  Enter the geographical position where your AtoN is located.  To derive coordinates from a map you can use <http://www.latlong.net/>  (see short description at the end of the table).  Then press the button “Submit”.  In this example, it is used a location in Svalbard. |
|  | **Step 4:**  Select the headlines.  Click on the link "Parameters" for more information and definition |
|  | **Step 5:**  Add more choices to suit your location  Select all parameters and press “Submit” button at the bottom |
|  | **Step 6:**  Use parameters in "Monthly Average…”  and subtract the percentage difference according to "Minimum" column below.  This must be done manually.  The result is passed into the IALA excel sheet. |
|  | **Step 7:**  Data from step 6 is to copied in this section at table ‘radiation & duration of night’ of the Excel sheet. |
|  | **Step 8:**  Use the value of NASA table for the monthly average hours of daylight, convert it into duration of night (= 24 – daylight hours) and copy them  into the IALA excel sheet.  Example for the month of June are shown here. |

# Get Latitude and Longitude of a site from a web based map

| **Description** | **Action** |
| --- | --- |
| <http://www.latlong.net/> | Click on the link at the left side to access a free program online, to find a certrain location |
|  | Click the map and the position with respect. Latitude and longitude of the location you have selected is displayed. |