City of Lund

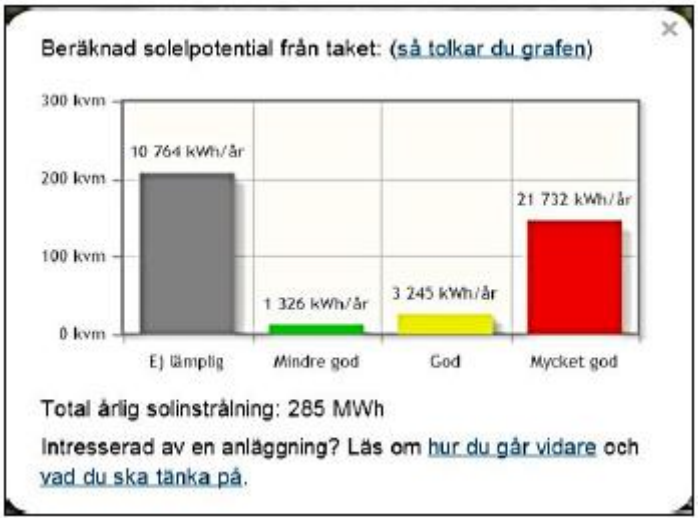
Solkartan – Solar Energy Potential Map

The energy from the sun hitting the earth every hour is equivalent to the entire planet's annual human energy needs. This energy can be utilized by installing solar panels that convert solar energy to electricity. However, not all places are suitable for solar panels. Solkartan (the Solar Map) is a map with a search feature that shows the most suitable places to install solar panels for electricity production in Lund municipality. Solkartan is an accessible and easy-to-use tool for property owners who are considering an investment in solar panels. Solkartan provides information on how well suited the roofs of houses and buildings are for production of electricity from solar energy. The purpose and goal of the project is to increase the production of solar energy in Lund municipality.

Two different display views for Solkartan. The colors indicate whether the amount of sunlight hitting each roof is Very good (red), Good (yellow) Less good (green) or Not suitable (gray).

The solar radiation on a roof depends mainly on two factors, the angle of the roof and the direction of the roof relative to the sun. However, it is important that the roof is not shaded by other buildings, vegetation or chimneys. By using Solkartan property owners can get an estimation of their buildings average solar radiation during the year and potential energy production from solar panels, should they be installed on their roof. Solkartan is the first large-scale solar energy potential map in Sweden. The project is collaboration between Lund municipality, Solar Region Skåne, Kraftringen and Lund University, with funding from Region Skåne's Environmental Fund. The map was created with the intent to be used as a guideline and inspiration for future solar potential maps in other cities and municipalities.

The map was created using aircrafts equipped with laser scanners. The first scan was performed by helicopter on 300 m altitude, which covered the city center. The second scan was performed by airplane from 1000 m altitude and covered the entire municipality. This created a very detailed 3D-model of all the roofs within Lund municipality. This data was then analyzed in ArcGIS (a software used for processing geographic information) to calculate the solar radiation for each roof. To simplify the map for non-technical users the solar radiation was categorized. The four categories are Very good (red), Good (yellow) Less good (green) or Not suitable (gray).



A graph for each individual roof can be obtained through Solkartan.
Each category shows the area (kvm) and how much electricity (kWh/year)
that could be generated if that area was covered with solar cells.

The result from Solkartan is not absolute. The aim of the map is simply to provide general information on solar radiation. If a property owner is interested in installing solar panels on their roof, a physical assessment of the roof is necessary. Lund municipality can assist property owners in this assessment, and can through Kraftringen also provide a complete solar panel installation. Property owners can receive all the information they need regarding solar panels and solar energy by contacting Solkartan's customer service.

http://www.kraftringen.se/Privat/Solceller/Solkartan/

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