



SOLAR REGION Skåne

Solar Region Skåne


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www.solarregion.se

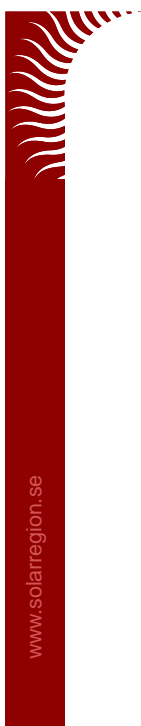


Solar Region Skåne

- ▶ **Non-profit association**
 - Started 2007 by City of Malmö, Skåne Energy Agency and Lund University
 - Members from municipalities and companies.
- ▶ **Information about solar energy to increase use of solar energy**
 - Seminars, educations, guided tours, member gatherings etc.
- ▶ **Support the development of the solar energy industry**
- ▶ **Promote subsidies for PV and solar thermal collectors in Sweden.**

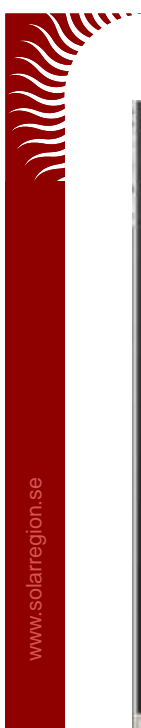



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Solar Region Skåne

- ▶ **Skåne Solar Award**
 - "PV plant and Thermal plant of the year"
- ▶ **The Solar Race**
 - Schoolproject, 1200 students in the competition!
- ▶ **Solar Energy Roadshow 2010**
 - Visit all municipalities in the Region of Skåne
 - Urban planning department, Environment department, utilities etc.
- ▶ **Intelligent Energy Europe-project "POLIS"**
 - Solar energy in urban planning and strategies
 - Germany, France, Portugal, Spain and Sweden
 - www.polis-solar.eu



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Aktuellt

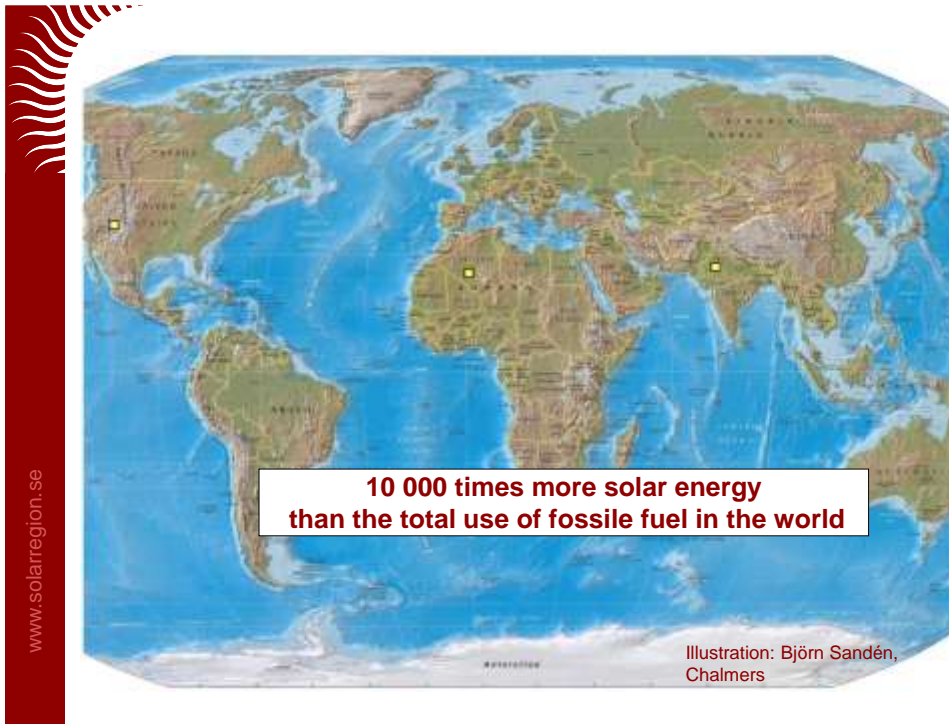
Kurs i simuleringsprogrammet Polysun

Invåldan till installatören/VVS-ingenjörer som arbetar med dimensionering: Observera att Solar Region Skåne inte är ansvarig för utgången. För anmälan och frågor, kontakta kustarängaren Klaus Lorenz. Kursen går på Högskolan i Gäddede 2010-12-07. [Se rubriken >>](#)

Soldriven stirlingmotor i drift i Malmö >>

Den sista stirlingmotorn i Sörs Park i Malmö är i drift. Fånga på ett gott och vackert område!

Internet



Swedish conditions



- ▶ A roof on a house receives 5 times as much energy from the sun during one year as the total energy use within the household!

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Subsidies for PV (Photovoltaics) in Sweden

- ▶ PV need subsidies to be profitable in Sweden (we have no feed-in tariffs)
- ▶ 2005-2008 : 70% governmental funding for installation of PV (Photovoltaic) systems in public buildings.
- ▶ A new subsidy from 2009-2011, open to everyone.
 - Max 60 % of investment cost (for big companies 55 %), max 2 million SEK/project.
 - Max 75 000 SEK/installed kW_p.
 - Subsidy 50 + 50 million SEK 2009, 50 million 2010 and 2011.
- ▶ To sell electricity from PV to the grid is not profitable at the moment.
 - It's better to dimension the plant so that you use all electricity yourself within the building.
 - Ongoing energy market investigation about net metering.

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Other solar energy subsidies

- ▶ **Different types of governmental fundings for solar thermal installations.**
 - Both private households and companies can apply for the subsidy.
 - For private house owners the maximum subsidy is 7500 SEK and for larger projects 3 million SEK.
- ▶ **Governmental funding for solar energy research in Swedish universities.**

Why solar energy in Malmö?

- ▶ **High ambitions regarding reduction of CO₂ emissions.**
- ▶ **Some targets in the energy strategy and environmental program of Malmö:**
 - Solar energy should be phased in
 - 50 % renewable energy in the whole municipality by 2020 (100 % of the municipality's own energy use).
 - 100 % renewable energy by 2030.
 - More efficient energy use is necessary.
 - Malmö Department of Internal Services' goals:
 - 2 % of the heat and 3 % of the electricity used in the real estate of the department should come from solar energy, by 2020.
- ▶ **Marketing, environmental profiling.**
- ▶ **Self sufficiency in energy, decreased dependence in energy suppliers.**
- ▶ **To be a role model and inspiration to others.**

Solar energy in urban planning - POLIS project pilot actions in Malmö

► Solar urban planning in Sege Park

- Houses and roofs should be oriented in a way that they enable solar energy installations the new local plan.
- The plan will specify where and in what way, solar energy plants can be installed.

► "Solar demands" in exploitation or purchase agreements

- When developers buy municipality owned land

► Potential study in Sege Park

- Developed method where a 3-D analyse of the buildings is linked to irradiation data.
- Solar energy potential of existing buildings and planned development will be calculated.
- The method will be used to calculate solar potential in other areas.



Examples of PV plants in the Malmö region

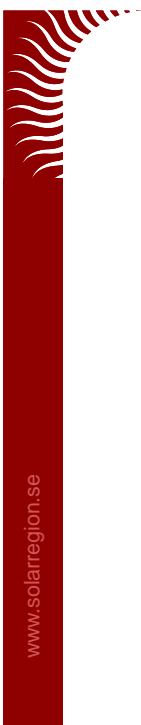




PV on the Museum of Science and Technology in Malmö



- ▶ **Awarded Solar Plant of the Year in 2006 in because of architectural integration and educational exhibition.**

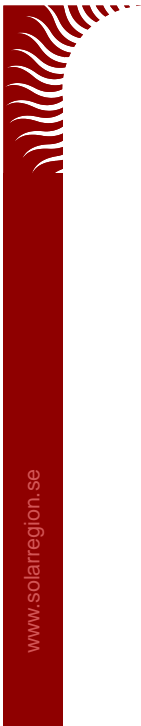


PV on the Mellanhed School

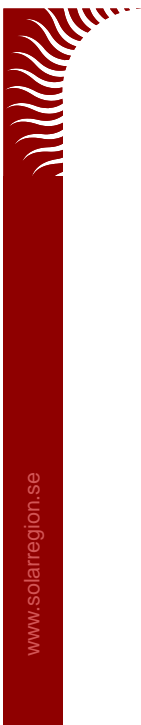
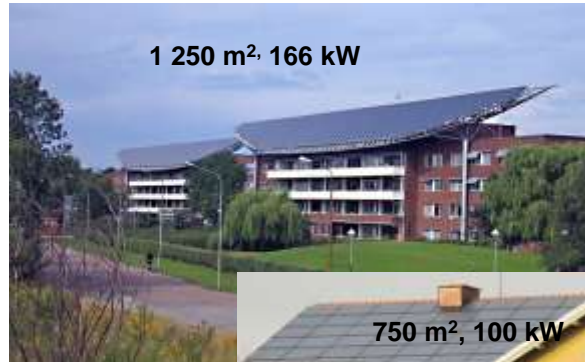


- ▶ **PV cells as solar shading gives double effect:**
 - Production of electricity
 - Reduction of the cost of cooling the building
- ▶ **Awarded Solar Plant of the Year 2007 for its' educational purpose.**





PV in Sege Park



Parking meters



Street lights



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SignFlash

- ▶ **PV warning lights for Zebra crossings**
 - A motion detector activates the light
- ▶ **Pictures from Hässleholm in the Skåne Region**



Foton: Linda Zälle



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Solar thermal collectors connected to the district heating system



Solar thermal collectors connected to the district heating system



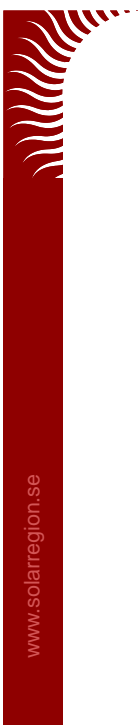
- ▶ Heat is delivered at 75 °C to the district heating system.
 - ▶ Heat is sold to E.ON at the same price as heat is bought from E.ON.
- www.solarregion.se



Thermal collectors with accumulator tanks in Malmö



- ▶ 27 m² flat plate collectors
- ▶ Connected to accumulator tanks combined with electric heating
- ▶ The collectors heat the water in the bottom of the tank.



Unglazed solar collectors for outdoor swimming pools



- ▶ The most efficient way of using solar energy.
- ▶ Heat is produced at 25 °C which gives low energy losses.
- ▶ Payback time 5 years, compared to 10-15 years for ordinary glazed solar thermal collectors.

Solar Stirling Engine



- ▶ **Kockums Stirling engine (Ripasso Energy)** Photo: Bo Johansson
- ▶ **30 % efficiency!**
- ▶ **Factory in Sibbhult, Skåne**
- ▶ **25 kW power, calculated production 15 MWh/year, sufficient for 3 households (in Sweden)**

Thank you!

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