Swedish Test bed for new solar energy solutions

SP Technical Research Institute of **Sweden**

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Swedish Test bed for new solar energy solutions; Experiences and results

The project was running during 2 years – SP created the project - The first phase is over.

Suggested/chosen internal definition of the Test bed concept

The SP Test bed for solar energy is a physical and virtual setting in which companies, the academy and other organizations cooperate in order to develop, test and implement new services, products, processes within the solar energy field.

The Test bed is also a venue connecting research and technical innovation with end user needs, thus bringing out the results to business and society.

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Why start this project – Another way to put it

- A way to **break limitations** (bottlenecks) for how the business functions today

- The Test Bed is a way to have different players communicate and work together without withholding knowledge and capabilities – without too much restrictions and short term calculation of money – a way to **drop the guard**

- An environment with hardware and software, giving possibilities to create and build up in **different manners** than in the daily commercial situation.

The national Test bed offers:

- **Access to laboratories and equipment** of highest quality for testing, evaluation, development and verification.

- Access to **local as well as to global contacts** due to a considerable network

- The whole **value chain** is invited

- **Qualified project- and thesis works** together with among others Chalmers entrepreneur school and HDAs international masters program

- **Mutual competence development**, quality assurance and competitive/strategic intelligence

- **World class knowledge and expertise** on consultant terms or in partnership for qualified support in technique-, IP- and financing issues (CTH Encubator (school of entrepreneurship))

- **Workshops**, seminars etc. based on needs and on request

- The Test bed constitutes **a base for EU projects** and other kinds of externally financed projects

Representation from the whole value chain

- Universities
- Architects
- Building product manufacturers
- Business organizations
- Entrepreneurs
- Building contractors
- Developers

Projekts emerged from the Test bed

- **"Solar shading with and without PV":** Solar shading and PV competences cooperate for new products/solutions and increased awareness and acceptance among architects

- **"Competitive industrialized photovoltaic roofing (PROOF)":** SEML (Roof element), PV-modules (Gaia Solar), Skanska (Building project), SP (Process lead and quality assurance)

- **Strategic innovation agenda solar PV:** A road map for Swedish industry, research and for the use of our test bed resource

- **Renovation of the "Million apartment program" roofs with PV:** Creating a platform for a massive roll-out of PROOF concepts

- **Epishine Start-up company:** agreements with University of Linköping working for the commercialization of organic PV

SIA versus Test Bed

SIA: Is an overall approach aiming for enhanced cooperation on all levels. It is occupied with finding out potentials for a better innovative environment within solar energy. It creates dialogue between different parties. SIA is the overall discussion of what is needed. SIA = the roadmap (completed Febr 2016) to use for companies, polticians, whoever wants input.

Test bed: Is a close to the market innovation infrastructure. It is a testing- and knowledge resource, functioning as an idea- and project generator for products as well as for services.
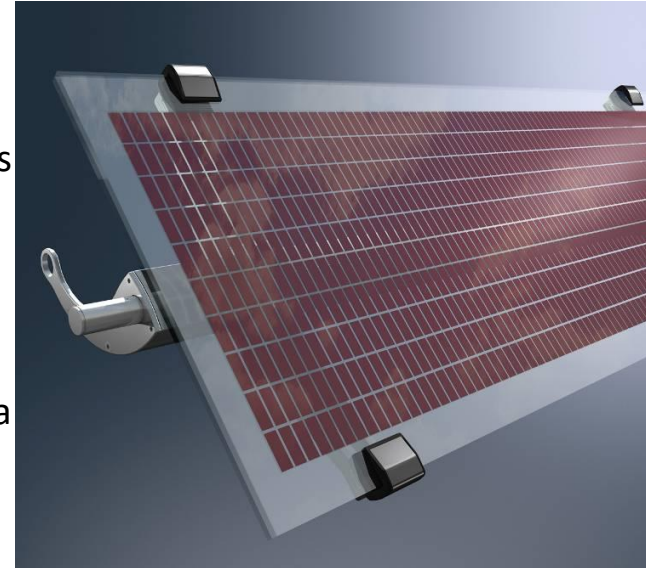
# Strategic Innovation Agenda; Direction from now on

(Report completed in February 2016)

- Concerted action to strengthen the domestic market

- Increased cooperation between academic research and industrial activity

- Development of Swedish niches within the solar energy field
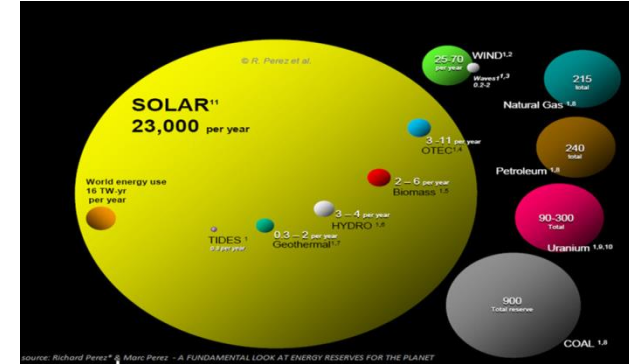
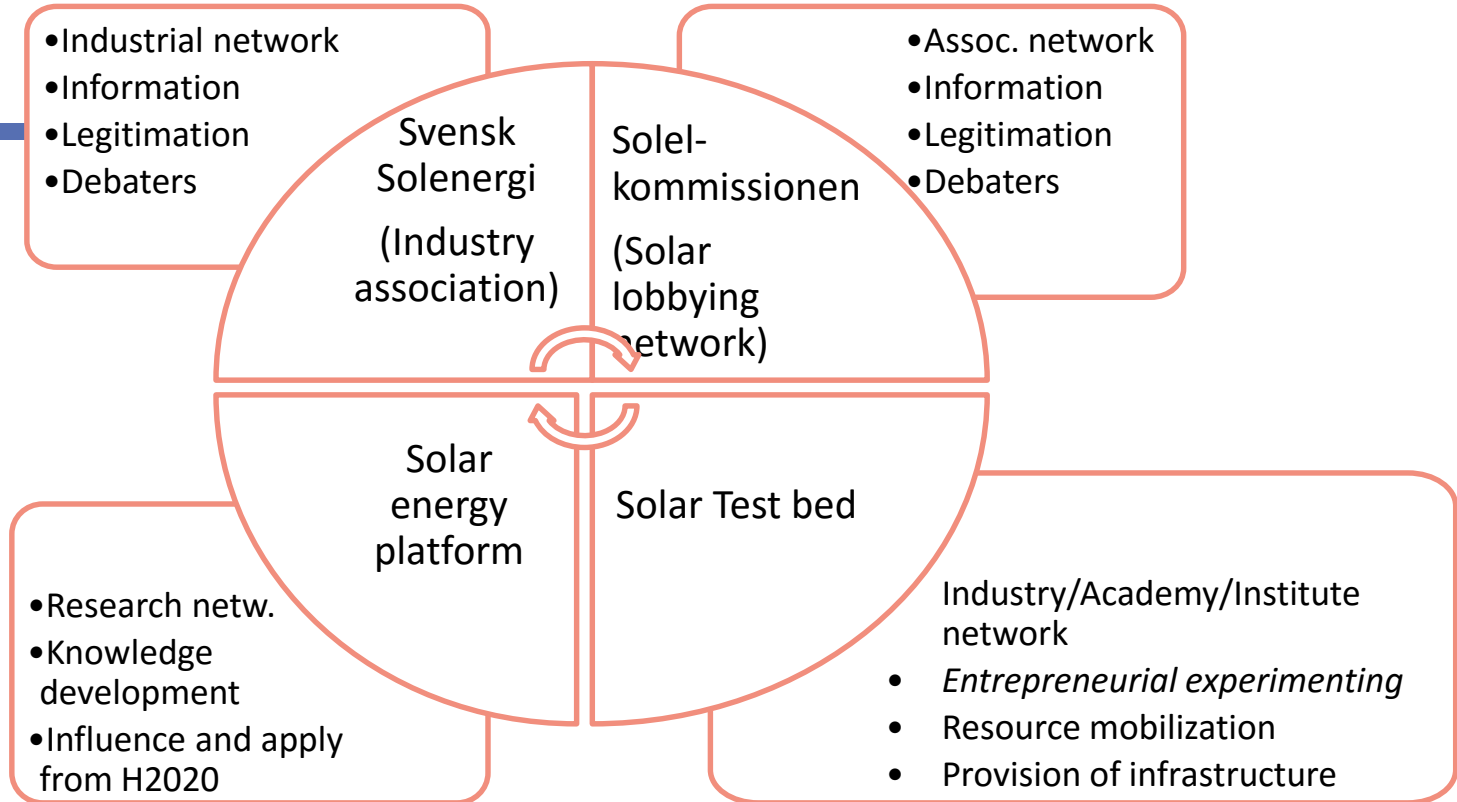# Acc. To SIA: Niches suitable for Swedish solar energy players

- Solutions including power production, power storage, energy efficiency and smart grids.

- Solutions for installing PV when renovating existing buildings.

- Building integrated PV-systems.

- Manufacturing of high quality components for PV-systems.

- Manufacturing equipment for solar cells and PV-modules production.

- Manufacturing and offers of products and services linked to IT, QA, optimization
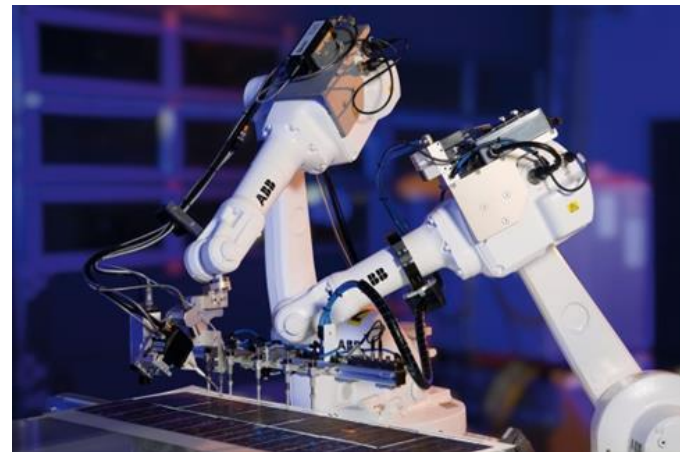
Solar networks within the Innovation system in Sweden

Coordination between these networks is needed to enhance efficiency

- Industrial network
- Information
- Legitimation
- Debaters

- Assoc. network
- Information
- Legitimation
- Debaters

Svensk Solenergi
(Industry association)

Solel-kommissionen
(Solar lobbying network)

Solar energy platform

Solar Test bed

- Research netw.
- Knowledge development
- Influence and apply from H2020

Industry/Academy/Institute network
- *Entrepreneurial experimenting*
- Resource mobilization
- Provision of infrastructure

The Test bed continues... although the project is finished ...

- **A core group is established**: SP, HDA, Encubator, Chalmers, Glava

- The Test bed and the Solar Energy Platform are joined together by their ambition to create and open up new possibilities by connecting several parties with a common interest in solar energy.

- **Innovation Cluster:** After two years we realize that the cooperation is maybe better characterized as a cluster than a Test bed.


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A life after VINNOVA and VGR ...

(Vinnova is the Swedish innovation agency)

(VGR is the Västra Götaland region)

The ambition for the project is to create a test bed which lives and acts on its own strength:

- By elaborating an appropriate organizational structure and cooperation agreements

- By identifying and developing the added values given through the collaboration

- By establishing sustainable funding opportunities

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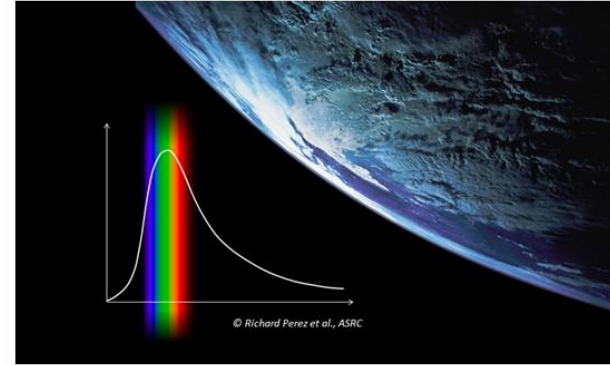
Expected outcome in the long run

- The Test bed shall contribute to new products, systems, services and processes being developed, quality assured and adapted by the market

- The network created around the test bed contributes to enhanced solar competence among suppliers and clients, and generally whithin building related businesses

- The Test bed is also expected to help Swedish companies, innovators and entrepreneurs to increase their shares of the global market for solar energy products and services
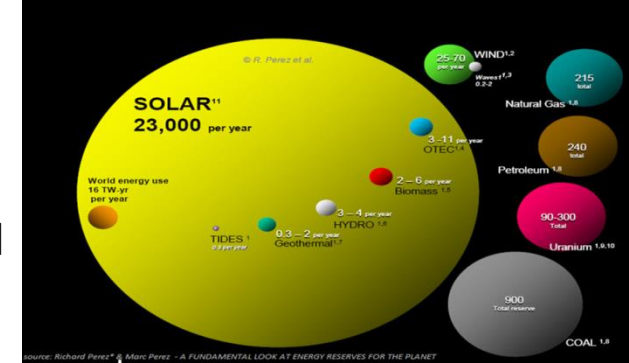
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