

SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

SHC and National Research Priorities in the Netherlands

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Solar thermal in the Netherlands

- 30 MWth in 2018  50 MWth in 2019
- 2020: TBD
- Sustainable Energy Investment Subsidy (ISDE) - up to 140 kWth (200 m² collector surface area)
- Sustainable Energy Subsidy (SDE++) - above 140 kWth (200 m² collector surface area)

Policy objectives

- **Dutch Climate Agreement**

- Over 100 organisations involved: reduce CO2 emissions by 49% in 2030
- Built environment natural gas-free in 2050

- **Heat in the built environment**

- Reduce consumption of natural gas
- Use of natural gas for heating banned in new buildings.
- Use of natural gas for heating existing building phased out:
 - Energy efficiency
 - Heat pumps
 - District heating (geothermal, biomass, surface water..)
 - And solar thermal?



Initial Road Map for Solar Heat in NL (I)

		Potential [PJ] in 2050	
		Without heat storage	With heat storage
Dwellings	Individual systems	25.1	34.3
	In existing heat networks	0.4	0.9
	In new heat networks	9.5	18.8
	Subtotal dwellings	35	54
	<i>Share solar thermal in total heat demand</i>	<i>17%</i>	<i>26%</i>
Services	Swimming pools, nursing homes, hotels	10	10
Agriculture	Horticulture, cattle breeding	3	3
Industry	Food industry	12	12
All sectors	(rounded figures)	60	80
	<i>Share solar thermal in total heat demand</i>	<i>8%</i>	<i>10%</i>

(Total heat demand in 2050 is 800 PJ, heat demand in dwellings just over 200 PJ)

Initial Road Map for Solar Heat in NL (II)

Promising applications (built environment):

- Solar heat for domestic hot water
- Solar heat from uncovered collectors (solar thermal or PVT) as a source for a heat pump or for regeneration of a ground source or underground heat and cold storage or for a low-temperature heat network
- Solar heat for district heating

Other sectors:

- Horticulture, cattle breeding, laundries, swimming pools, hospitals, recreation

SDE++

- Stimulation of Sustainable Energy Production and Climate Transition
- Categories:
 - Solar thermal energy from 140 kWth to 1 MWth
 - Solar thermal energy above 1 MWth
 - **New:** Solar PV and solar thermal in a PVT system with a heat pump (minimum thermal power of 500 kW)
 - **New:** Greenhouses: systems with solar heat concentration
- **Public consultation** on concentrating solar heat in the SDE++

SDE++ project - Nibbixwoud



- 10.5 MWth collector field
- April 2020

Solar Heat for District Heating

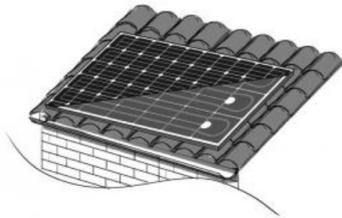
- Pilot project: DeZONNET
- 17 houses ('70s setup)
- PVT + heating network



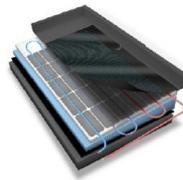
PVT



Triple Solar, 1a



Energiedak MEP



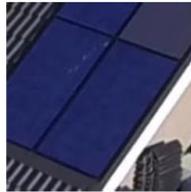
Energiedak plus



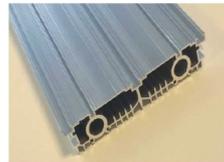
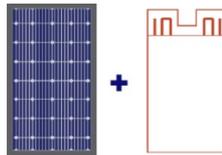
Solarus Power collector



Alius Volthera, 1b



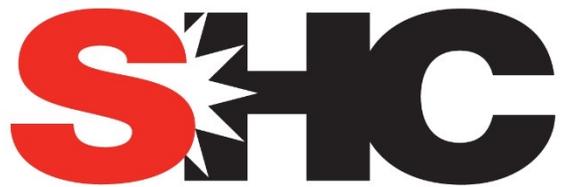
Dimark modular roof, 2a



Other research priorities:

- Thermochemical heat storage
- BIPVT
- ...

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