

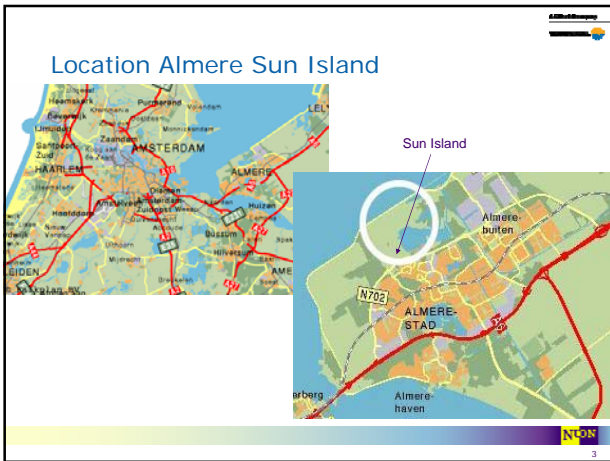


### History and future of district heating Almere

- Draining southern Flevoland 1956
- First delivery housing in Almere Haven 1976
- Start district heating Almere Stad 1979
- January 2010 population of Almere 188,000
- Current number of small consumers 45,000
- Current number of large consumers 660
- Current production capacity CHP Almere 2,514 TJ
- Expected final population of Almere approximately 350,000
- Expected final situation small consumers connected on district heating approximately 57,000

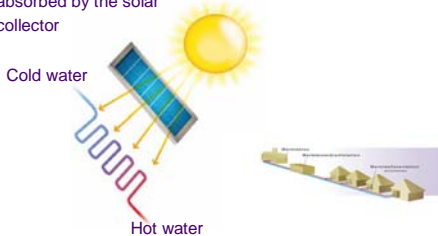



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### Energy from the sun. How a solar collector works

The rays of the sun are absorbed by the solar collector



Cold water

Hot water

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### Facts Almere Sun Island (1)

- Almere Sun Island is an innovative and unique energy project in the Netherlands combining solar energy and district heating. For the first time a residential area is collectively heated by solar energy.
- Almere Sun Island is a combination from waste heat and solar heat for 2,700 houses, also providing hot tap water. Together, the sun island and waste heat reduce CO2 emissions by 50%.
- 520 collectors of 6 by 2.5 m each are arranged at a 37° angle. This ensures an optimum yield.
- Almere Sun Island with a collector area of 7,000 m2 is the fourth largest in the world. The island provides thanks to the sun each year 1 million hot showers.
- The solar collectors supply a total of 9,750 gigajoules of energy per year.

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### Facts Almere Sun Island (2)

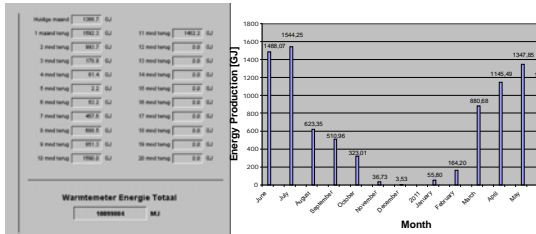
- Sun Island is a project of Nuon, Almere, Flevoland Nature and Environment, with support from the residents of Noorderplassen-West and the European Union.
- Since May 2010 Almere Sun Island has supplied heating and hot tap water to the new residential district Noorderplassen-West

■ Gross investment (million)	€ 4.2
■ Local contribution	€ 0.6
■ MAP subsidy	€ 0.9
■ European funding ( cRRescendo)	€ 1.4
■ Net investment	€ 1.3
▪ Gross annual revenue (€20*10.000GJ)	k€200
▪ Operational costs (maintenance, electricity)	k€ 50

- Pay Back period (Wacc 7%) 13 years

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## How much did we produce???



Print screen  
Monitoringsystem

Calculated production

## Almere Sun Island – a snapshot



First pile beaten by Minister Cramer

## Almere Sun Island – a snapshot



## Media attention for Sun Island Almere

Various Dutch newspapers, like Parool, Trouw, Volkskrant and energyrelated magazines.

50 – 60 tours for various targetgroups, like stakeholders etc.



Local newspaper of Almere for opening Sun Island

Attention for 1 year Sun Island. On nuon.com and broadcast Flevoland and various newspapers in the region.



## Project Almere Diemen pipeline connection 2011

