# SCHOTT Solar AG

Whatever the future holds


SCHOTT
solar

# The SOLAR business unit of SCHOTT AG

## Segments and business units of SCHOTT AG


**Home Appliances**

- Home Tech
- Flat Glass
- Solar

**Precision Materials**

- Pharmaceutical Systems
- Electronic Packaging

**Optical Industries**

- Advanced Materials
- Lighting and Imaging

- International technology company, founded 1884 in Jena (Germany), Owner Carl-Zeiss-Foundation
- 2.26 M Euros sales in 2008/09; 74% exported
- Approx. 17,400 employees worldwide



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# SCHOTT Solar offers high quality components for solar power plants and photovoltaic applications

**SCHOTT Solar AG**

**Solar power plants (CSP*)**

- Solar receiver

**Photovoltaics (PV**)**

- Crystalline module

- Thin film module

- Global Presence
- 52 Years of Experience
- 42 Sales Offices worldwide
- 2.700 Employees
- Integrated Solar Production

* *CSP: Concentrated Solar Power*
** *PV: Photovoltaik*



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# SCHOTT Solar product portfolio covers all areas of solar power generating

OEM products

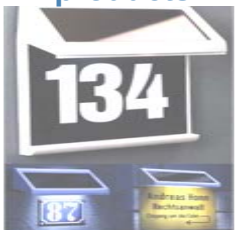
Crystalline and thin film modules for roof installations or power plants

Receiver for solar thermal plants

**Size**

| 1 Wp | 10 Wp | 100 Wp | 1 kWp | 10 kWp | 100 kWp | 1 MWp | 10 MWp | > 100 $MW_{el}$ |
|---|---|---|---|---|---|---|---|---|

**Consumer products**



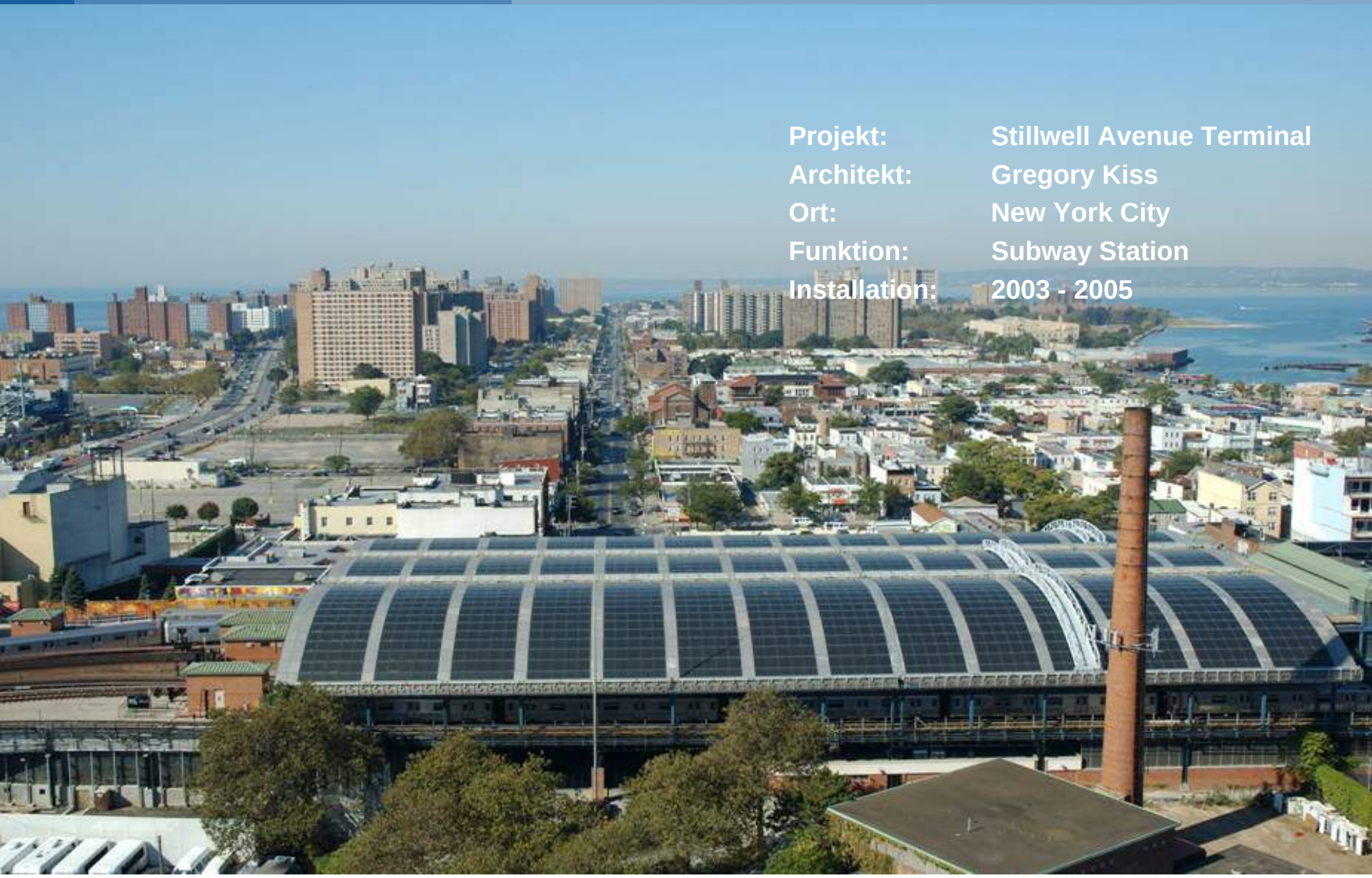

**Off-Grid Systems**

**Buildings**

**Industry**

**Large Systems / Solar Power Plants**

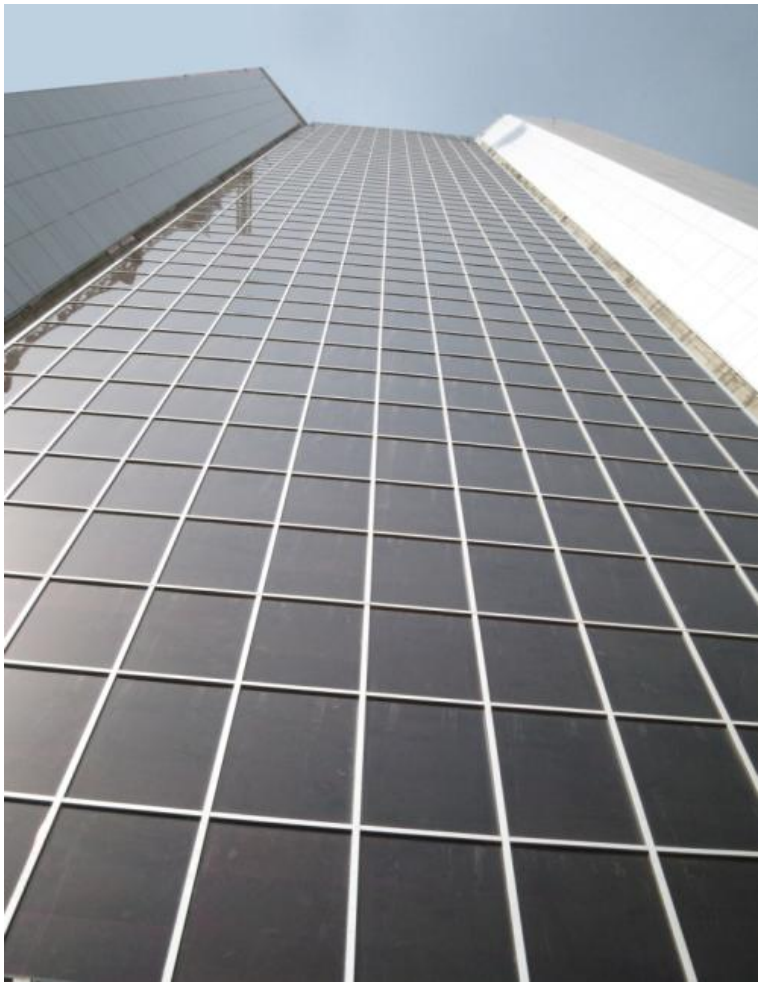
# Photovoltaics



| | |
|---|---|
| **Projekt:** | **Stillwell Avenue Terminal** |
| **Architekt:** | **Gregory Kiss** |
| **Ort:** | **New York City** |
| **Funktion:** | **Subway Station** |
| **Installation:** | **2003 - 2005** |

# Telecom Tower Sudan

**Total installed capacity 104,67 kWp with ASI Thru**



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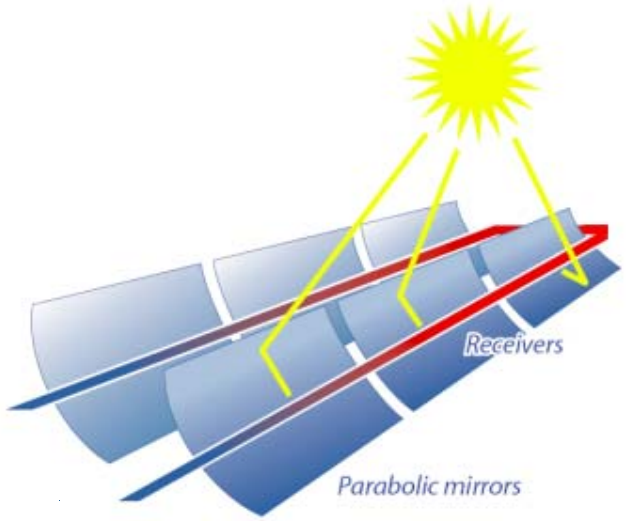
# Concentrated Solar Power

# Parabolic trough technology

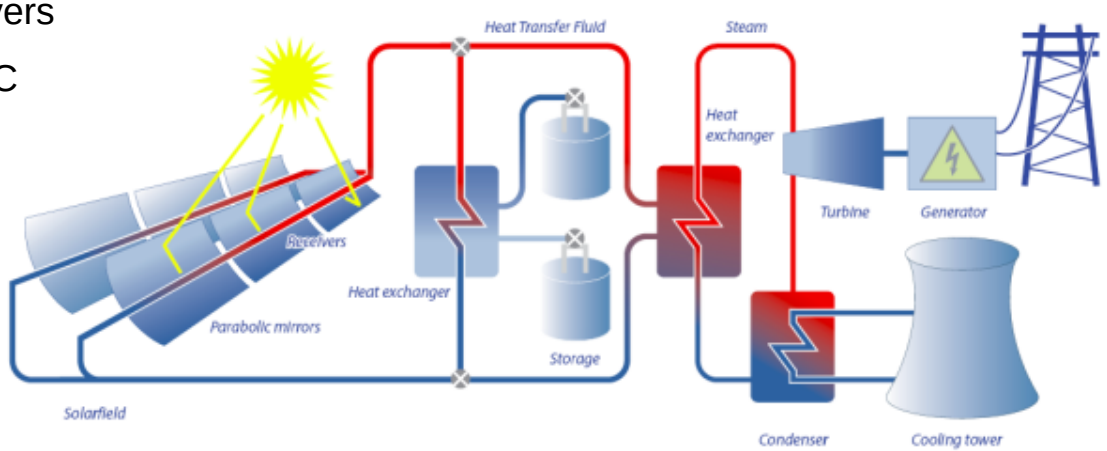
## Process flow




(1) large parabolically shaped mirrors, lined up in long troughs of more than 400 meters (1,300 ft) in length, concentrate the solar irradiation along the focal point of the mirrors onto specially coated, evacuated absorber tubes – **the receivers**

(2) a special oil that is used as a heat transfer medium flows through the receivers where it is heated to about 400°C

(3) a heat exchanger generates steam in the central generating unit to power conventional steam turbines



# The heart comes from SCHOTT

## Receivers as the core components

As the core component of the solar field, the quality of the receiver has a decisive influence on how efficiently solar radiation can be converted into heat

### The receivers

- have to achieve maximum solar absorptance and at the same time minimal emittance of heat
- need to be resistant to severe mechanical and thermal stress
- need to show long-term performance stability and keep maintenance costs low during operation



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# Dii – Implementing the DESERTEC Concept

SCHOTT Solar founding member

- The DESERTEC concept forms the basis of the “Dii”, an **industrial initiative**, which aims at accelerated implementation of the DESERTEC concept
- Dii was founded on 30th of October 2009 by twelve renowned international companies and the DESERTEC Foundation, with **SCHOTT Solar as a founding member**
- Next steps: drafting of concrete business plans and associated financing concepts, industrial preparations for building a large number of CSP plants in the MENA region

# Thank you for your attention!


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