

Functional Surfaces

Floating Solar Cover



Functional Surfaces



Functional Surfaces

Solar Floating Cover



- Typical water reservoir, integrated in a farmland irrigation scheme
- Surface or treated waste water are collected
- Water is exposed to evaporating (salinization), dust / dirt, algae growth
- Water treatment costs
- Typical area 5.000 m² - 100.000 m²



- **Completely covered, 80 pc. PV panels, 20 kWp**
- **Electric power is consumed by the local pump station**
- **Water by SWTP used for irrigation**
- **Cover thickness ~ 1 mm, 3 ply design, special fabric integrated**
- **Tensile strength allows to walk and work on the cover**
- **The cover follows the water level**
- **Ideal photovoltaic platform**
- **Installation took altogether 3 weeks**

Solar Floating Cover

How it works

Benecke-Hornschuch
Surface Group



Solar Floating Cover

How it works

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- The foil has a 20 year life span as a minimum
- 1/3rd of CAPEX, compared to concrete or steel tanks
- Irrigation water is often subsidized and sold for 0,1 EUR / m³ and 0,5 EUR / m³
- Diesel replacement, water truck or ship vessel supply shall be avoided

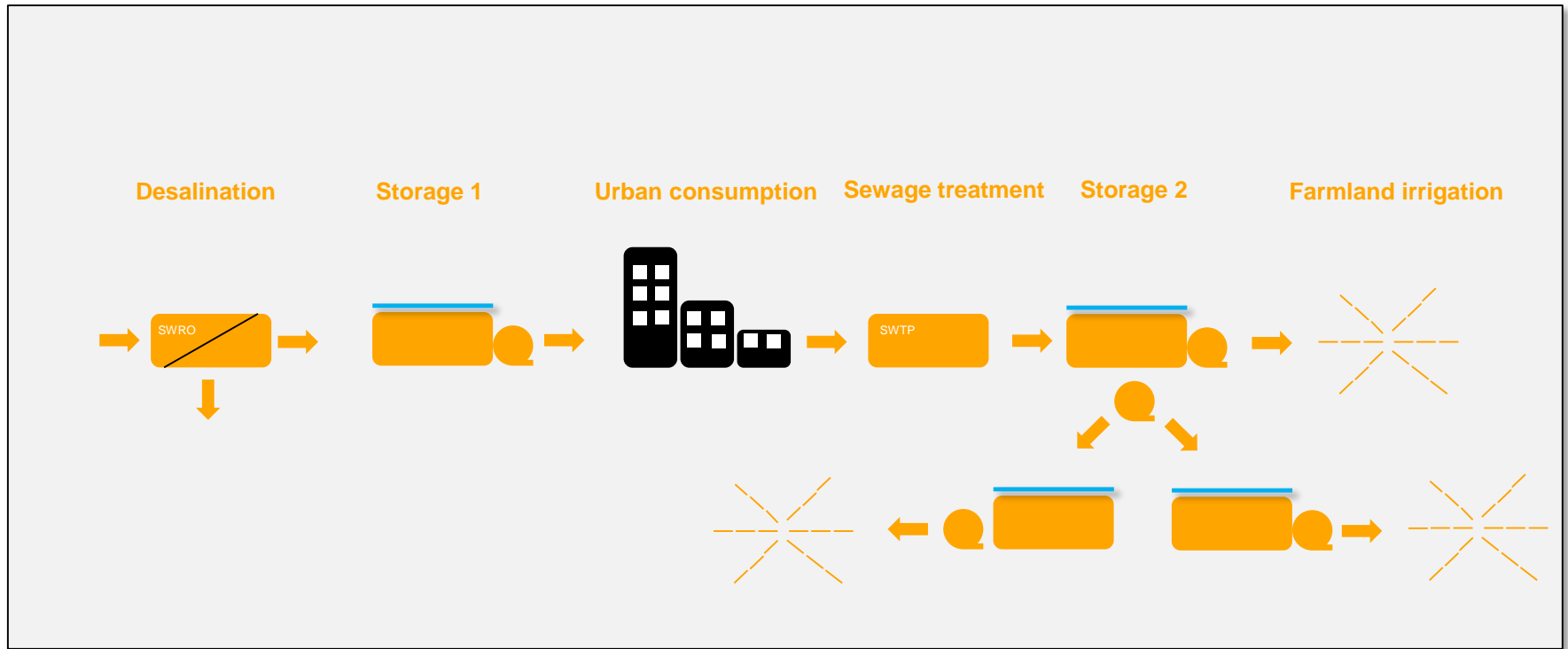
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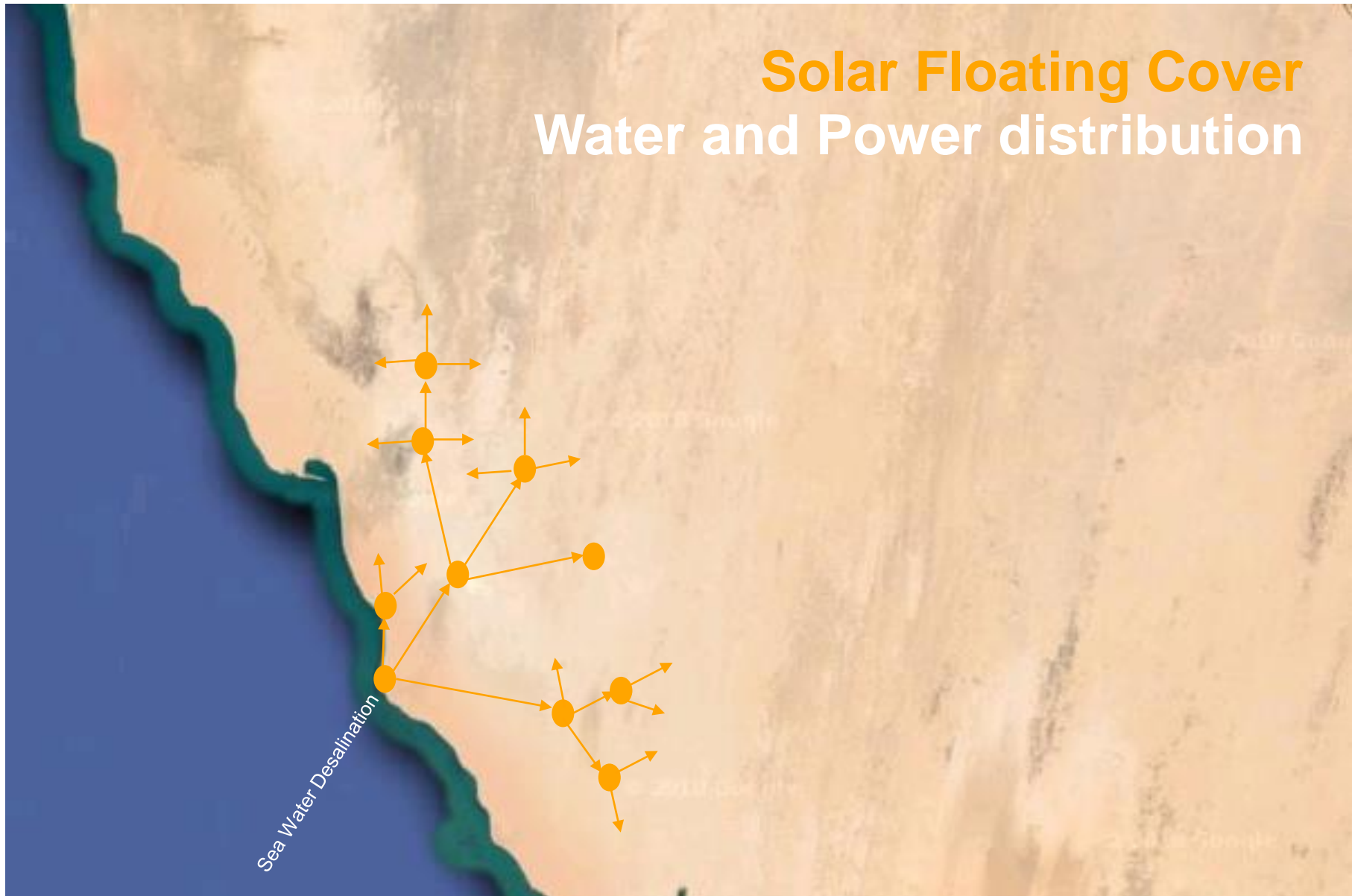
Integration in water management



- Water scarcity requests a comprehensive water management by public water authorities
- Water reservoirs become a self sustainable water & power distribution network

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Water and Power distribution



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Hydro-biological benefit

- Water pollution prevention
- Algae removal, irrigation improvement
- Odor prevention
- Evaporation prevention
- Avoidance water treatment costs
- Lower salinity level
- Sealing against birds (aeronautics)

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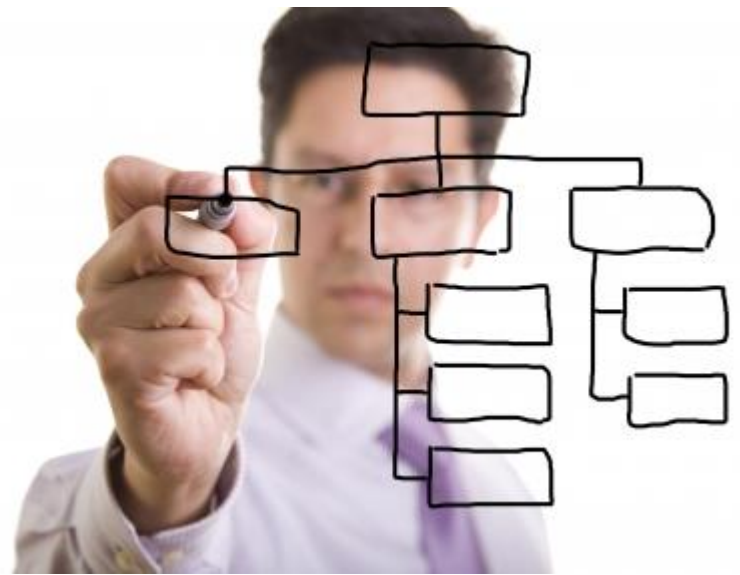
Energy supply benefit




- **Self sustainable pump operation**
- **Participation on renewable feed-in-schemes**
- **Replacement of alternators in remote areas**
- **Water and power supply in semi-arid regions**
- **Saving land or land costs**
- **State of the art photovoltaic system**
- **Glass encapsulated PV panels, semi-rigid or flexible**

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Project study



- Comprehensive project study -> technical-economical-legal-logistical
- Cost of land is decisive for power supply cost comparison
- Hydro-biological study
- Feed-in-tariff-scheme
- Energy yield simulation
- Electrical loading profile
- Off-grid PV system and self sustainable operation
- The study shall be carried out jointly by the buyer and vendor



Wind and Solar Energy

Performance and Reliability

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