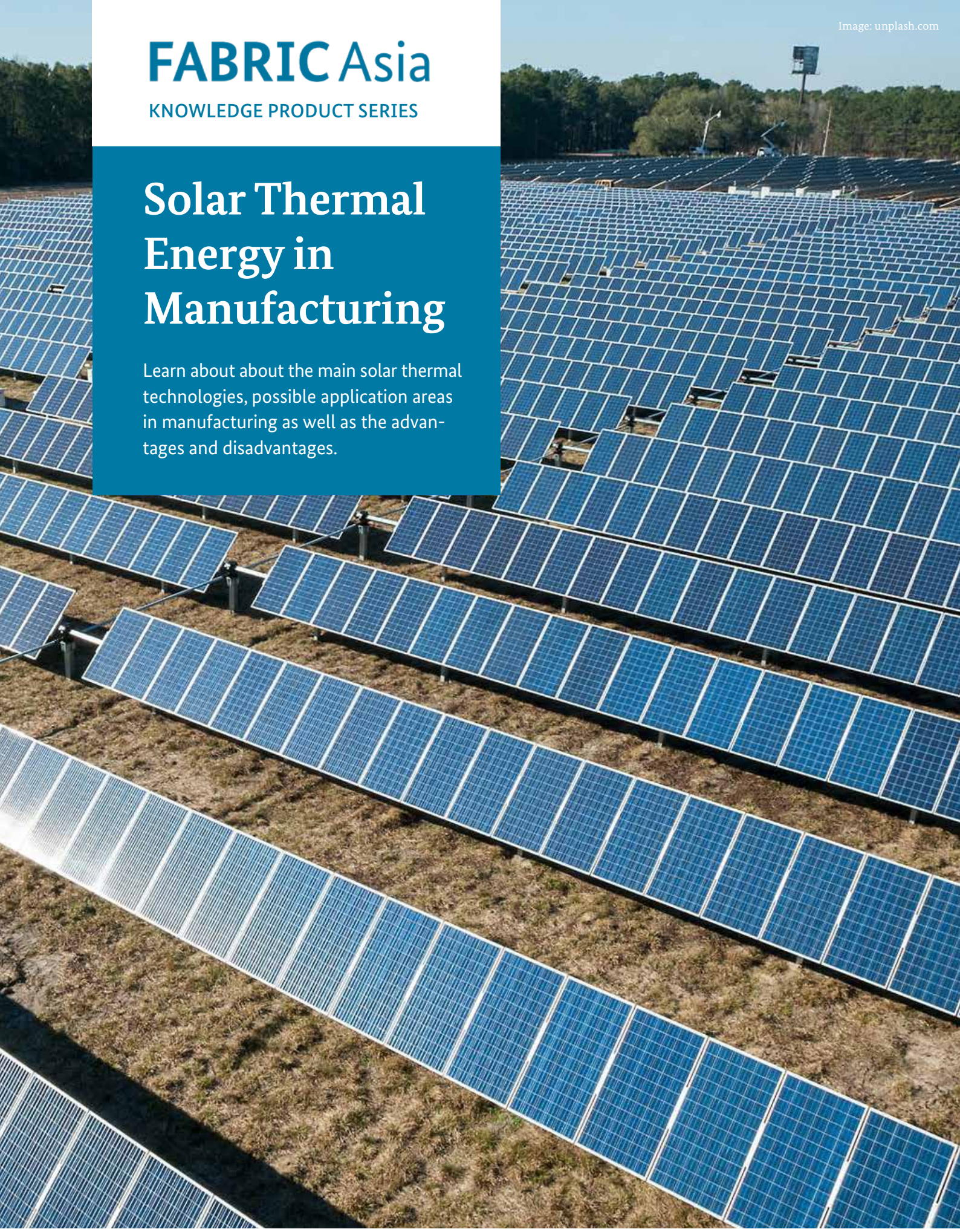
FABRIC Asia

KNOWLEDGE PRODUCT SERIES

Solar Thermal Energy in Manufacturing

Learn about about the main solar thermal technologies, possible application areas in manufacturing as well as the advantages and disadvantages.



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DEUTSCHE ZUSAMMENARBEIT

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Solar Thermal Energy in Manufacturing

Who this is for

Factory owners in the textile and garment industry

In brief

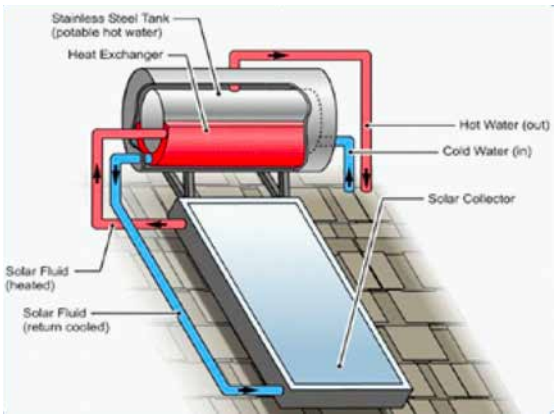
Using solar energy for manufacturing operations is an increasingly feasible, pragmatic and profitable option.

What are the benefits of using solar energy?

- Sunshine is abundant in the region.
- Electricity tariffs are rising - solar energy costs remain stable with low operational costs allowing you to reduce costs and avoid price fluctuations.
- Droughts and power cuts threaten your operations' energy supply - become more independent of national grids and imported energy!
- Factory roof space is ideal for installing panels – they act as insulation against the sun and keep your factory cool.
- Renewable energy sources are increasingly demanded by brands and retailers – become more attractive to clients and investors!

Solar thermal systems

Garment and textile plants quite typically need steam. Depending on production processes, sometimes large quantities of steam are required. There are two main technologies, the basic solar thermal assist for smaller and medium sized manufacturing factories and the compound parabolic concentrators for large textile mills with significant hot water requirements.



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1. Basic 'solar thermal assist' feed-in system

Application areas
- Temperature regulation of staff dormitories
- Supplement boiler feed water tanks to save energy and money.
- Supply normal garment factory steam applications such as ironing department.

Advantages
- Easy set-up and maintenance
- Raise boiler feed water temperature by up to 20 or 30 degrees celsius
- Substantial carbon emissions reductions and fuel savings for the factory.
- Payback period of only 3 years, depending on site-specific factors.

Disadvantages
- Produces only heat, no electricity

2. Direct steam generation via compound parabolic concentrators

Compound parabolic systems focus and concentrate the sun's rays in such a way as to generate intense heat, allowing for direct steam generation.

Application areas
- Supplement a traditional boiler for different manufacturing operations requiring steam

Advantages
- Achieves higher temperatures
- Direct steam generation
- Can generate heat and electricity

Disadvantages
- Higher cost for set-up and maintenance

Image: istockphoto.com

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ABOUT FABRIC

The project FABRIC (Fostering and Advancing Sustainable Business and Responsible Industrial Practices in the Clothing Industry in Asia) is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, which works on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). To successfully shape the desired economic growth in Asia's textile and garment production in a sustainable way, many parties need to be involved. GIZ's FABRIC project brings together people from the Asian industry, public sectors, NGOs and from international buyers, promoting knowledge transfer and cooperation. FABRIC is working in Bangladesh, Cambodia, Myanmar, Pakistan, Viet Nam and together with China to strengthen an industry that offers quality jobs, protects the environment and contributes to economic growth.

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Fostering and Advancing Sustainable Business and Responsible Industrial Practices in the Clothing Industry in Asia

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Published by
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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As at
04.2021