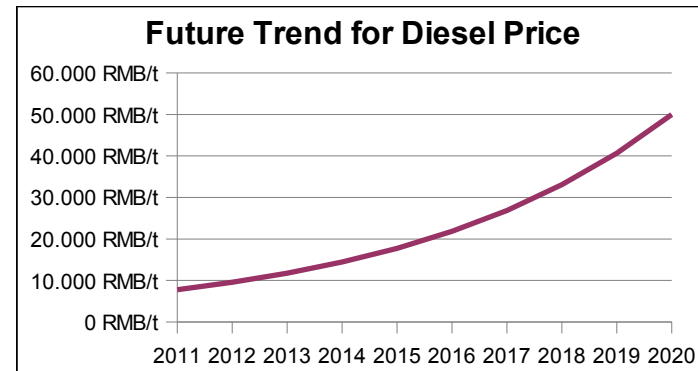
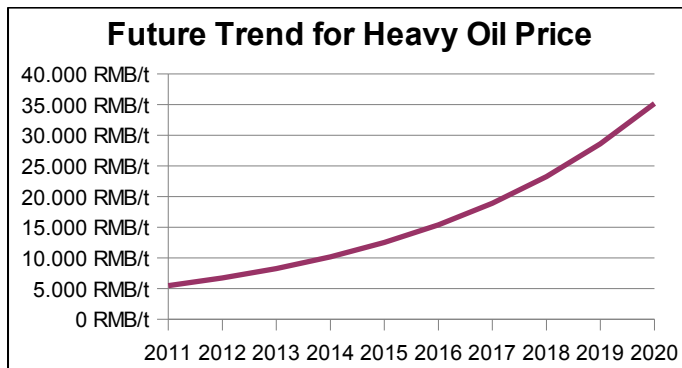
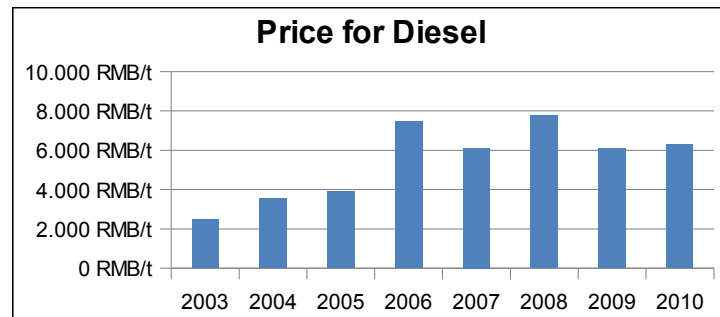
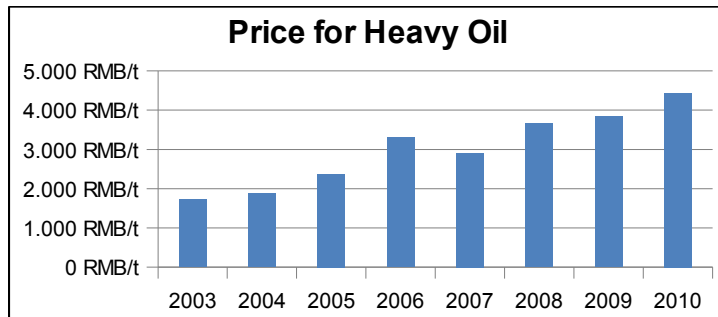


# **Afrika Woche 2011 Dresden Energie Workshop**

**Solar Thermal Systems  
easy and efficient for industrial  
and domestic use**

- 
- During this speech, we are using 1,000,000 times more energy on the world, than grew within the same period
  - We will run out of fossil fuel
  - We were facing an average energy price increase of 15% per year during the last 10 years – energy price more than tripled.

# The Global Energy Price

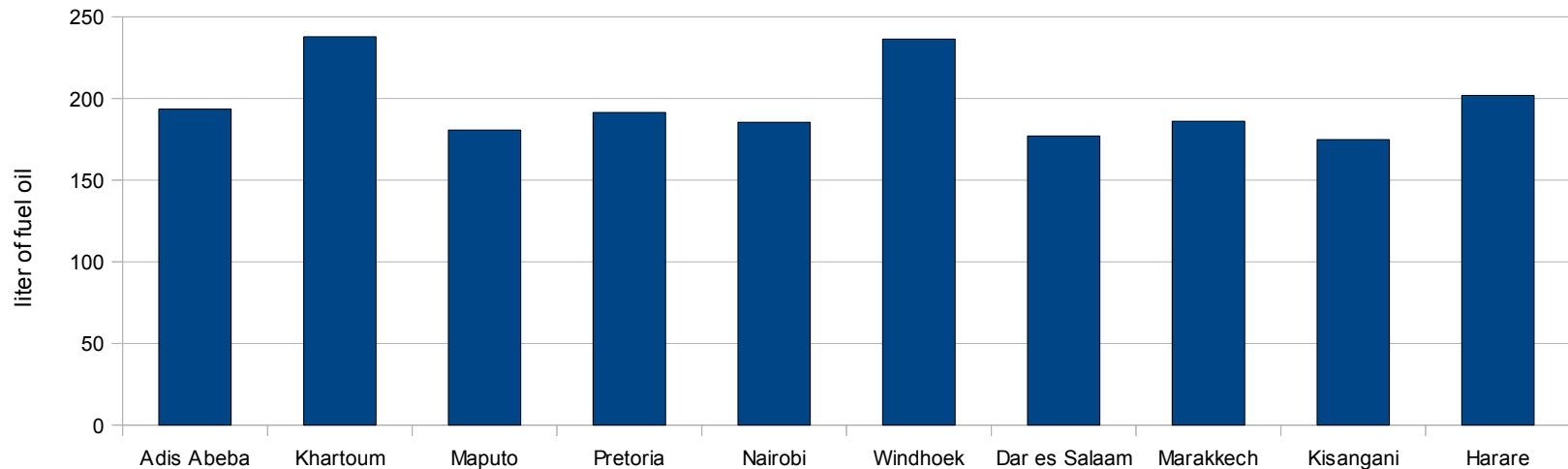


**There is only one direction!**

# The Power of the Sun



Oil Equivalent of Solar Irradiation  
per m<sup>2</sup> and year

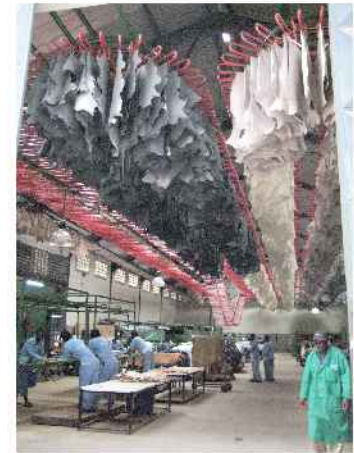


**More than 50% can be used with solar thermal systems!**  
The solar system does not replace a boiler, but replaces fuel!

# The different challenges

---

**Industries:** increase energy efficiency and replace fossil fuels by renewables to reduce consumption.

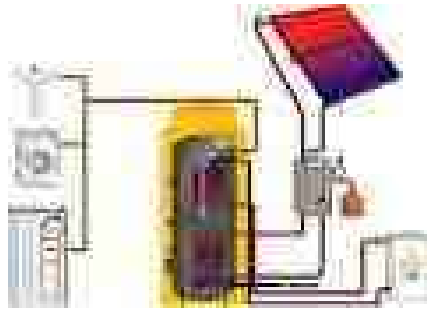


**Domestic use:** Avoid rising energy demand, by satisfying new energy needs of people by renewables



# Solutions for domestic use

## High – Tech vs. Low - Costs



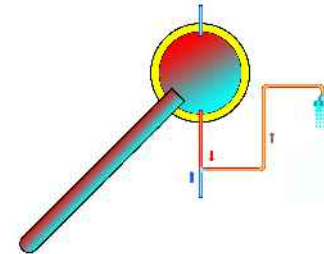
### German Way

Pressurized

2 – Loop

Fresh water technology

High efficient



### Chinese Way

Non-Pressurized

Open systems

Highly cost-efficient

Low price

**The true way is between the 2 worlds**

# The Solar Water Heater

The most cost-efficient Solar System for domestic use with potential for local added value.



Attention on:

climate conditions, environmental conditions, qualification of installers, adaption to the market

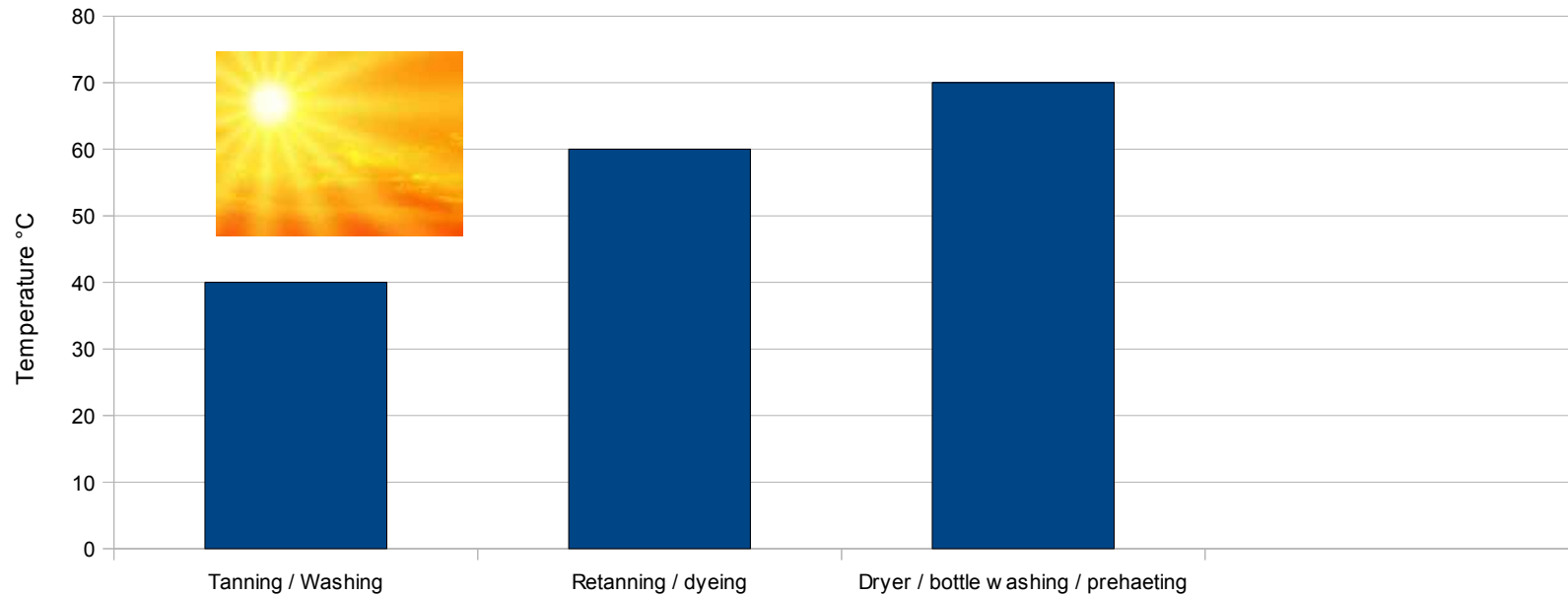
- More than 30 year old boilers
- Heavy oil boilers and thermal oil units
- Steam based systems
- None or bad insulation of piping
- Burning of wood in areas with serious destruction of forrests
- No Control, no monitoring



**No one cares about energy – seems still too cheap!**

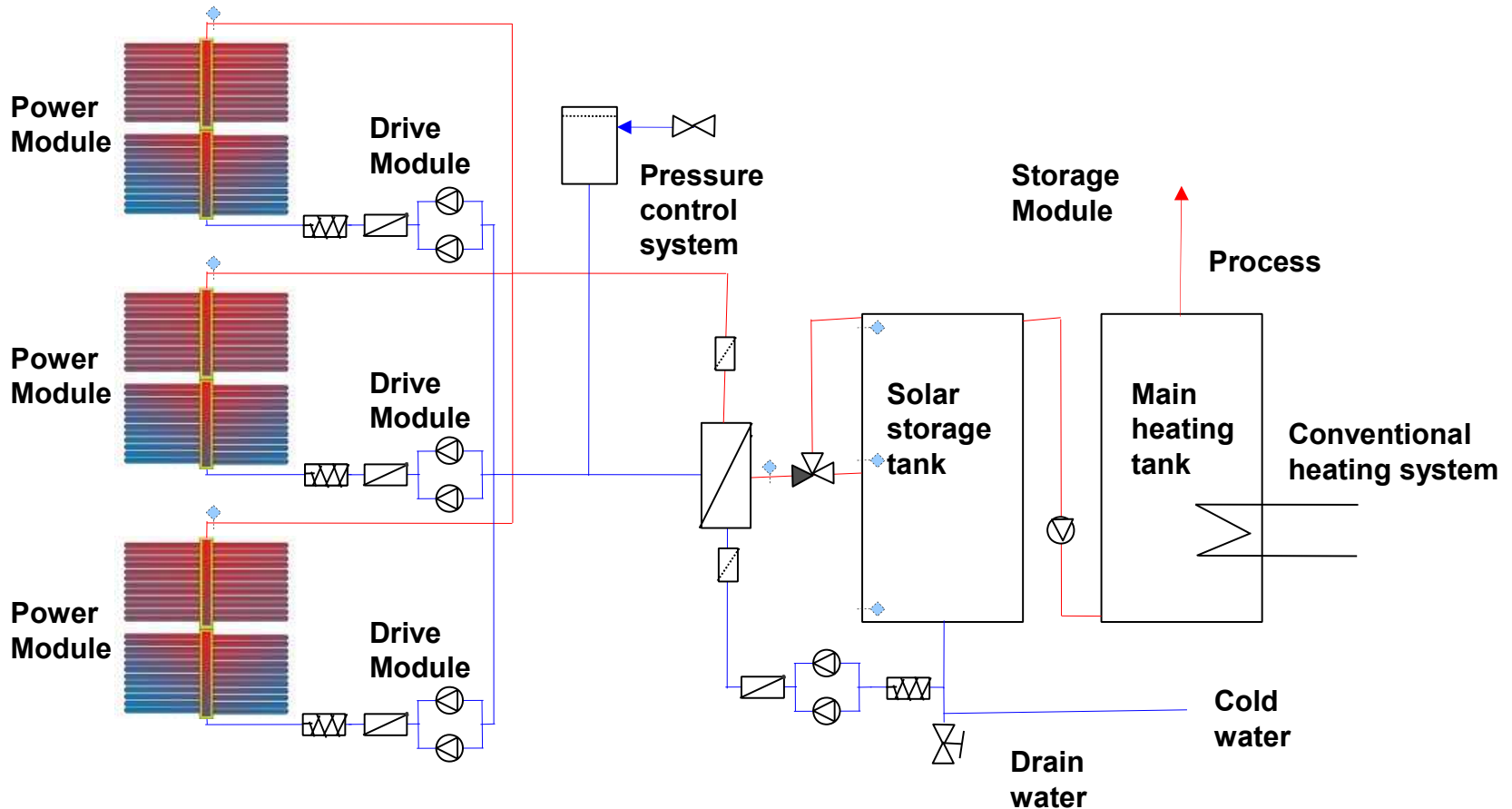


typical Heat-Processes in the industry



**perfect for solar**

# Solar for Tanning and Dyeing



# Industrial Solar Systems

---



# It is possible to change

---



Thank you for your attention!