



Desalination Institute DME

Profile 2021

Duisburg, Germany

Desalination Institute DME

Water must be available to every human being in a sufficient quality and volume and it must be supplied under socially acceptable and environmentally friendly conditions. (Vision of Desalination Institute)

The biggest part of the world's surface (71 %) is covered with water. Only 3 % of the water resources worldwide is portable water and the rest of 97 % is salty water, not drinkable for human beings.

Our Institute is committed to concentrate and structure know-how existing in desalination with focus on the economy, sciences and politics. Globally we provide services, experiences and offering further education on water desalination. Starting in 2003 we do independently serve customer requests globally and locally in desalination projects and technology know how. We advise federal and state ministries, investors, banks, insurance companies, system suppliers, component suppliers and operators.

Our technology know how range starts with evaporation, passes membranes and ions and reaches bio engineering. More than 52 desalination technologies are on our radar today. Customers from more than 40 countries requested our services preparing their desalination future. We are a think tank specialized in desalination.

Portfolio of Services

- Consulting German Ministries (Federal and States)
- Pre-preparation of UN reports
- Advisory and internal training services for KfW
- Advising and Consulting services on desalination and related technologies
- Expert reports on desalination technologies
- Rendering of projects
- Project supervision and management

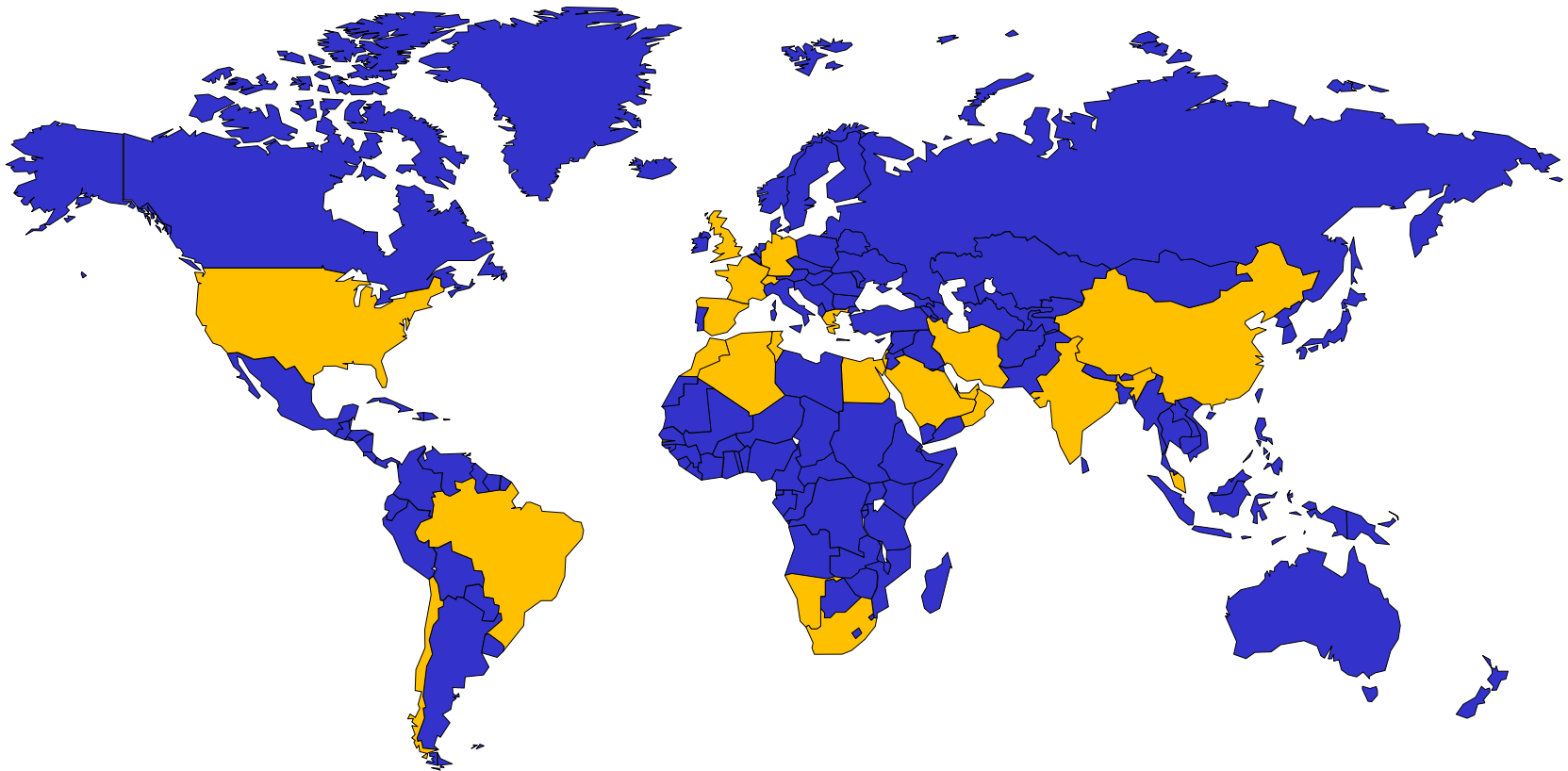
Portfolio of Services

- Business Development
- Acquisition of projects and business
- Support in product developments, sales and marketing
- Confidential survey of information
- Strategic consultancy in M&A and company's development
- Evaluation of technologies and companies in the desalination industry
- Techno-commercial planning assistance
- Analysis resp. control of documents such as specifications, offers, technical drawings etc.

Selection of References



Global activities past 10 years



Advising and Consulting of the Institute



The earlier a planning error is made, the greater the potential damage to the entire project is



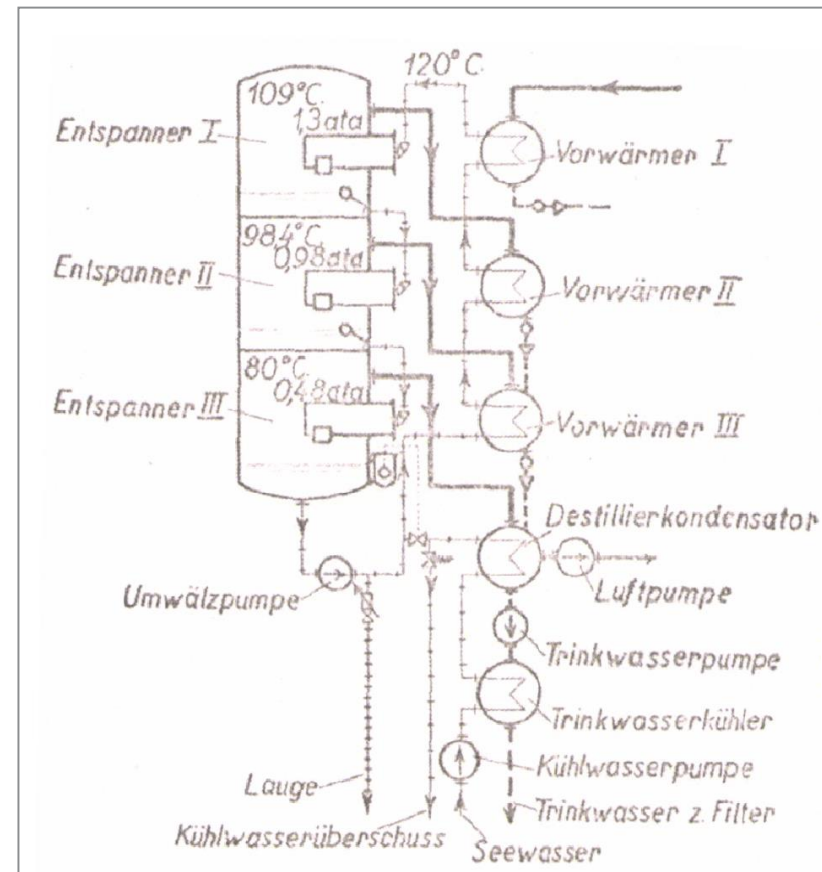
Planning costs and costs for planning errors are strongly linked

Size and Technology of the Institute Projects

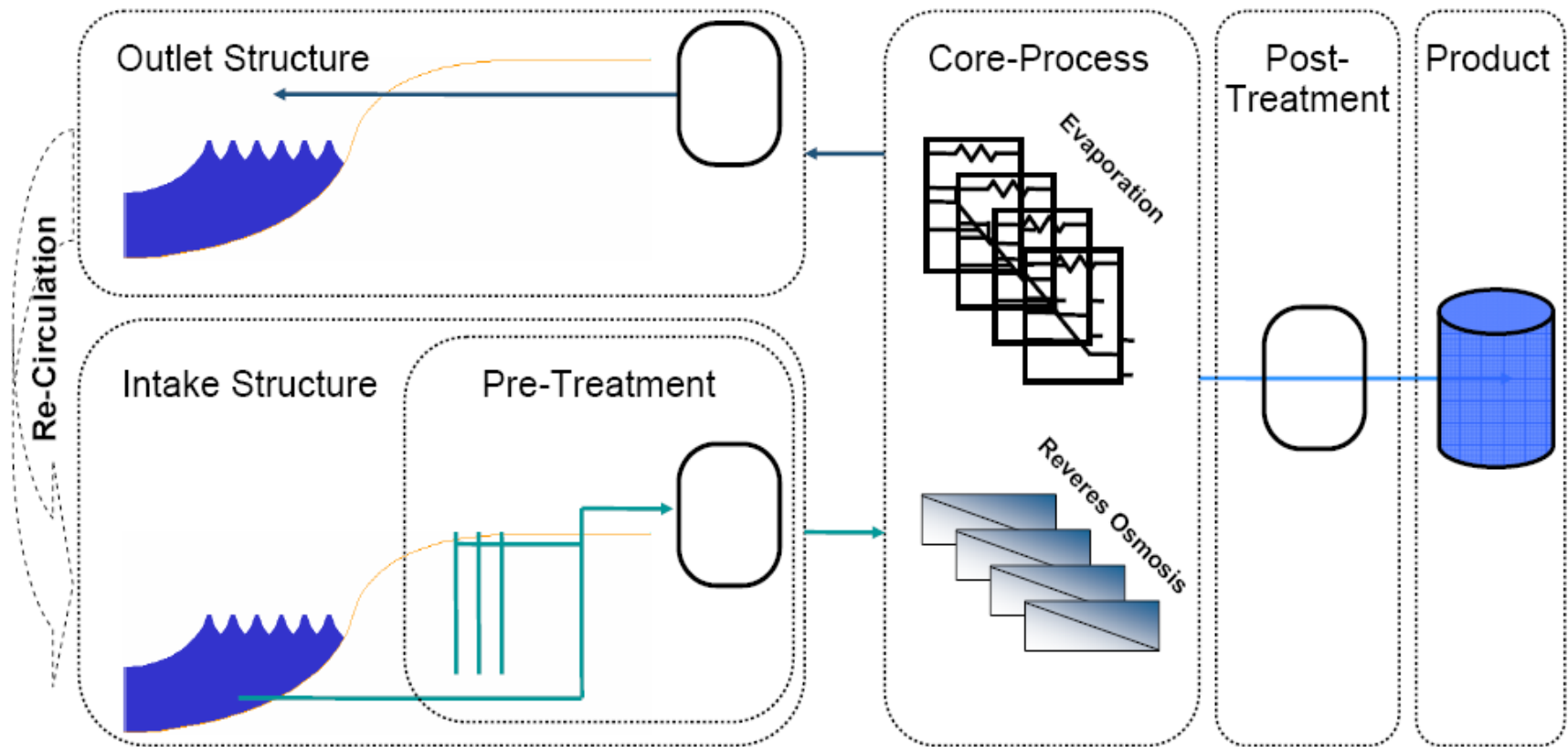


Historical Background – Multi Stage Flash Evaporation (MSF)

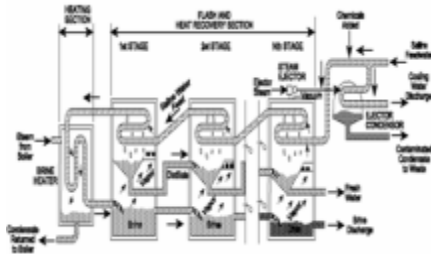
- Process scheme of a multi stage flash (MSF) evaporator , published 23. – 26. May 1934 in Germany during a seminar of “Schiffstechnische Gesellschaft” by Mr. R. Blaum
- “Process scheme of a 3-stage flash evaporator plant with brine recirculation”



Desalination Process Overview



Main technology paths in desalination

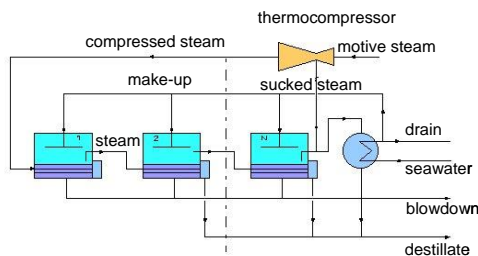


MSF Technology - pros

- Robust, fully developed process
- Very low consumption of chemicals
- Easily to couple with power stations
- Large unit sizes up to 70,000 m³/d

MSF Technology - cons

- High energy consumption
- Relatively high specific investment costs
- Coupling to power station mandatory
- Large volume of raw water necessary

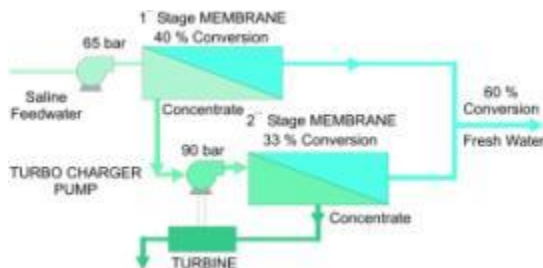


MED & MED-TVC Technology - pros

- Robust, developed process
- Ideal for coupling with power stations
- Very low consumption of electrical energy
- Very low consumption of chemicals
- Unit sizes up to 37,000 m³/d

MED & MED-TVC Technology - cons

- High energy consumption
- Very high specific investment costs
- Coupling to power station proposed
- Large volume of raw water necessary (winter)



Reverse Osmosis (RO) Technology - pros

- Very low energy consumption
- Low specific investment costs and low ground area needed in case of an "ideal" raw water
- Small volume of raw water needed
- Unit sizes up to 12,000 m³/d

RO Technology - cons

- Operational costs for chemicals and membrane replacement very high
- High specific investment costs in case of difficult raw water
- Malfunctions can lead to serious plant damages
- Qualification of the operation and maintenance personnel must be higher than for thermal processes

www.Desalination-Academy.de

Full digital Academy: Today 42 courses available

Basic desalination training and courses

Specific desalination training courses

Subject training desalination courses

The screenshot displays the Desalination Academy website interface. At the top, the user is logged in as 'Claus Merles' with a 'Customise this page' button. The main navigation menu on the left includes 'Dashboard', 'Site home', 'Site pages', 'My courses', 'Participants', 'Badges', 'Compliments', 'Grades', 'General', and a detailed list of seminars and workshops. The 'Course overview' section shows a grid of course cards, each with a thumbnail image, title, and completion status (0% complete). The 'Timeline' section on the right indicates 'No upcoming activities due'. The 'Private files' section shows 'No files available'. The 'Online users' section shows '1 online user (last 5 minutes)'. The 'Latest badges' section shows 'You have no badges to display'. The 'Calendar' section shows a calendar for June 2021. The 'Upcoming events' section shows 'There are no upcoming events'. The footer of the interface shows 'Show 12'.

DESALFACTS (Digital Desalination Database)

www.Desalfacts.de

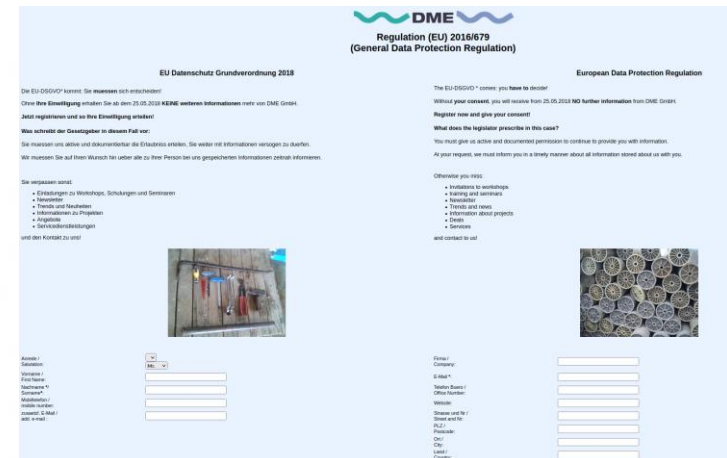
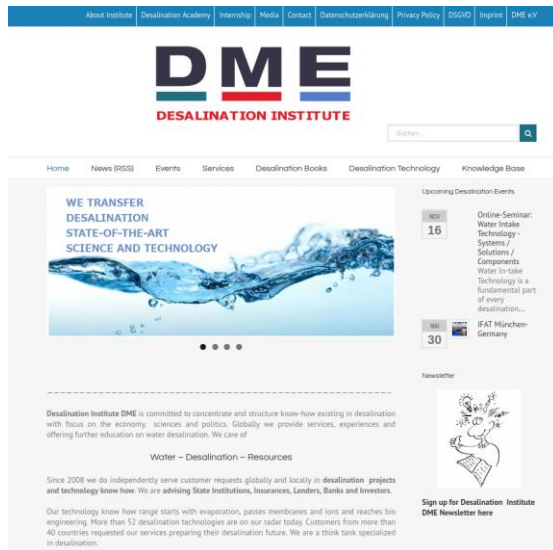
7 Modules included

1. 98% of all UN Countries with detailed water profiles – identify the main water trends driving opportunities and focus your business strategy.
2. dozens of Company -, University - and R&D Institute Profiles (108 detailed of more than 4.300 short profiled) – technical and financial details available. You need a new profile? Get in contact to find out more about partners and competitors.
3. 25 of 52 in-depth technology profiles of all known, upcoming, and future desalination technologies – understand how you can make use of this know-how.
4. several thousands of desalination plant profiles at a fast growing number due to the unique public barter process.
5. more than a thousand desalination patents – categorized and organized in systematic structures.
6. hundreds of R&D Articles – categorized and organized in systematic structures.
7. a functional “Google-like” own (no google!) search engine enabling every user a most selective search over ALL data.

DESALFACTS (Digital Desalination Database)

www.Desalfacts.de

Weekly free digital Desalination News Letter





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