Water in Industries - Increase Efficiency and Manage Risk

Increase Efficiency and Manage Risk

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ASEM Seminar, Changsha, 23.5.2014
Water Supply Crisis Now Top Global Risk

Industrialization and Growth drives Water Scarcity

- Industrial water demand is expected to almost double in the next 20 years (GWI)
- Mining Industry puts alone high stress on water resources
- 40% of water consumption relates to power industry (Water-Energy Nexus)
- Basically all industries are water sensitive
- China plays key role, as high industrial production meets water scarce regions

Summary

- Water is a risk and threat for industries
- Technologies are necessary, but not sufficient
- Both, technology and management systems need to be considered in a combined approach to achieve optimal and sustainable solutions
- Technologies and corresponding management frameworks are available
- Water management reduces risk, but also reduces costs
- Standards such as Management Systems are best practices and give industry the vehicle to take action, and governments to enforce consistently
Water - Risk Factor for Businesses

Reputational Risks

Process/Physical Risks

Regulatory Risks

Business Threat
Water Efficiency – Some Technologies

• **Membranes**
  - Large scale future deployment
    Current market size US$ 1.4 bn
  - Key component for water recycling and concentration
  - Performance, stability depends on water matrix and operating conditions
  - Fouling requires expert knowledge

• **Monitoring**
  - Increase transparency and awareness
  - Sensor systems and monitoring solutions are available
  - Reliability and interoperability need expert knowledge

• **Optimization** of water system with data driven solutions
  - Convert classical to smart water management
  - Required technologies are available
  - Interoperability and availability need to be addressed
A management system is the framework of processes and procedures used to ensure that an organization can fulfill all tasks required to achieve its objectives.

Examples: ISO 9001, 14001, 50001

New Management System for Water Efficiency: SS577

Company
- Manage water according to best practice
- Identify and manage water related risks
- Reduce costs

Regulator/Government
- Reduce overall water demand
- Secure and improve business environment
- Enforce consistently
Case studies show consistently strong reduction in water consumption by water efficiency measures. Saving potential vary, as cases are very different.

Examples

- **Food Industry**: Replacement of water cooling tower by air cooled condensers and chillers
  Net operating savings of $83,000 with ROI of <4 years
- **Paper Mill**: 80% reduction of water consumption through water reuse, Zero Liquid Discharge
- **Polyethylene producer**: 30% reduction of water consumption, 45% reduction of waste by new pipes and pumps, change of treatment process, upgrade of WWTP, water reuse
- **Semiconductor**: 40% reduction, cost savings of $700,000 by reuse and segregation
- **Households**: zero water / zero energy decentralized solution including nutrient recovery using rotating disc filters, anaerobic digestion, vacuum sewage system
- **Singapore**: NEWater strong easing of other water taps
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Thank You for Your Attention

WATER SERVICES

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