

**Presentation in the REHVA seminar  
HVAC for Net Zero Energy Buildings  
at ISH Frankfurt March 17, 2011**

**Uponor**

# **Heating and Cooling business challenges in nZEB**

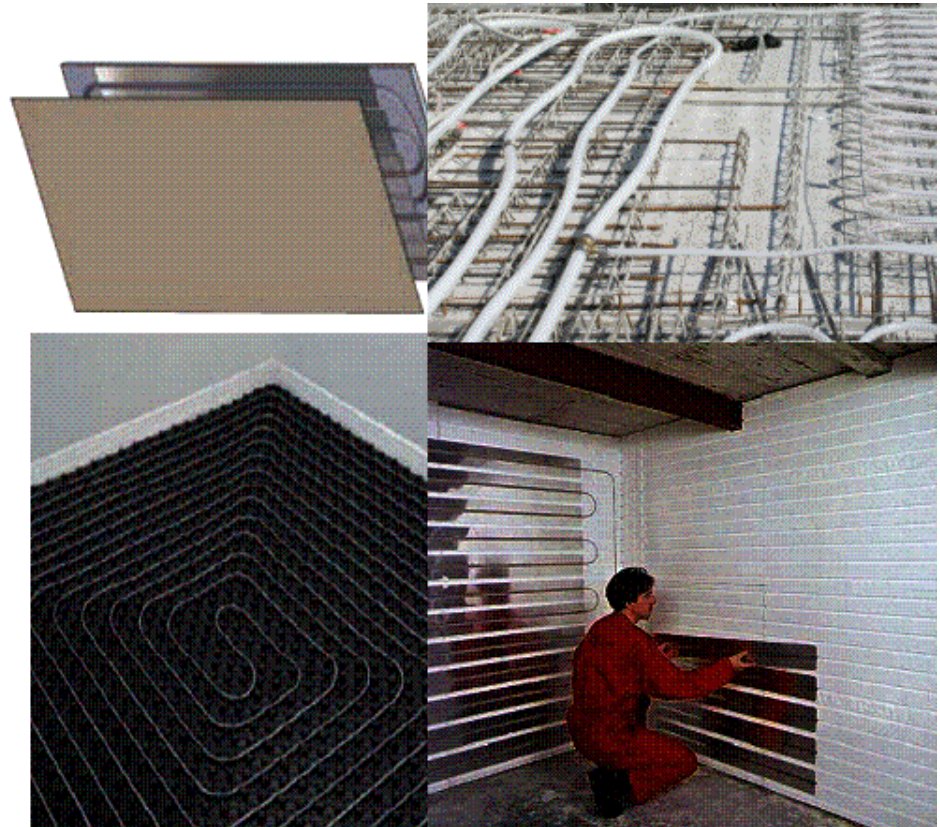
Ilari Aho  
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REHVA Supporters' seminar  
Frankfurt, March 17, 2011

# Uponor Indoor Climate Solutions

## Invisible Comfort

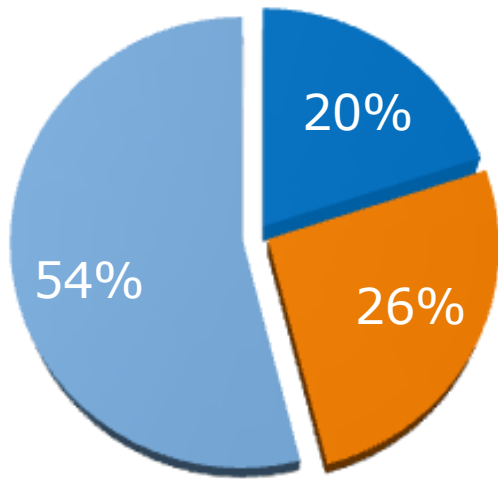
- **Underfloor heating and cooling systems**
- **Thermally Active Building Systems (TABS)**
- **Cooling panels and surface cooling elements**
- **Radiant heating and cooling controls**
- **Pre-insulated piping systems**
- **Ground energy collector systems**
- **Ventilation ducting**



# Net sales in 2009

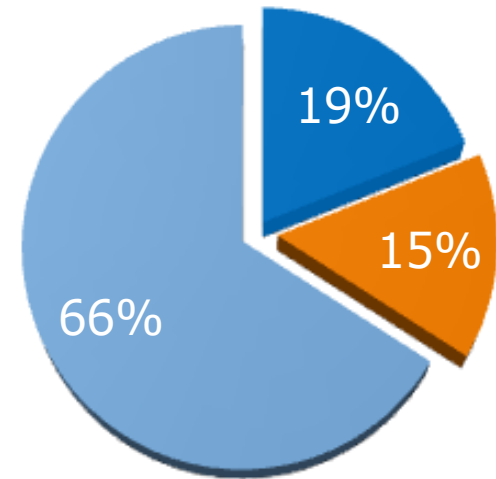
- Consolidated net sales for 2009: EUR 730 million
- Personnel: ca 3,300 persons

Net sales by business group



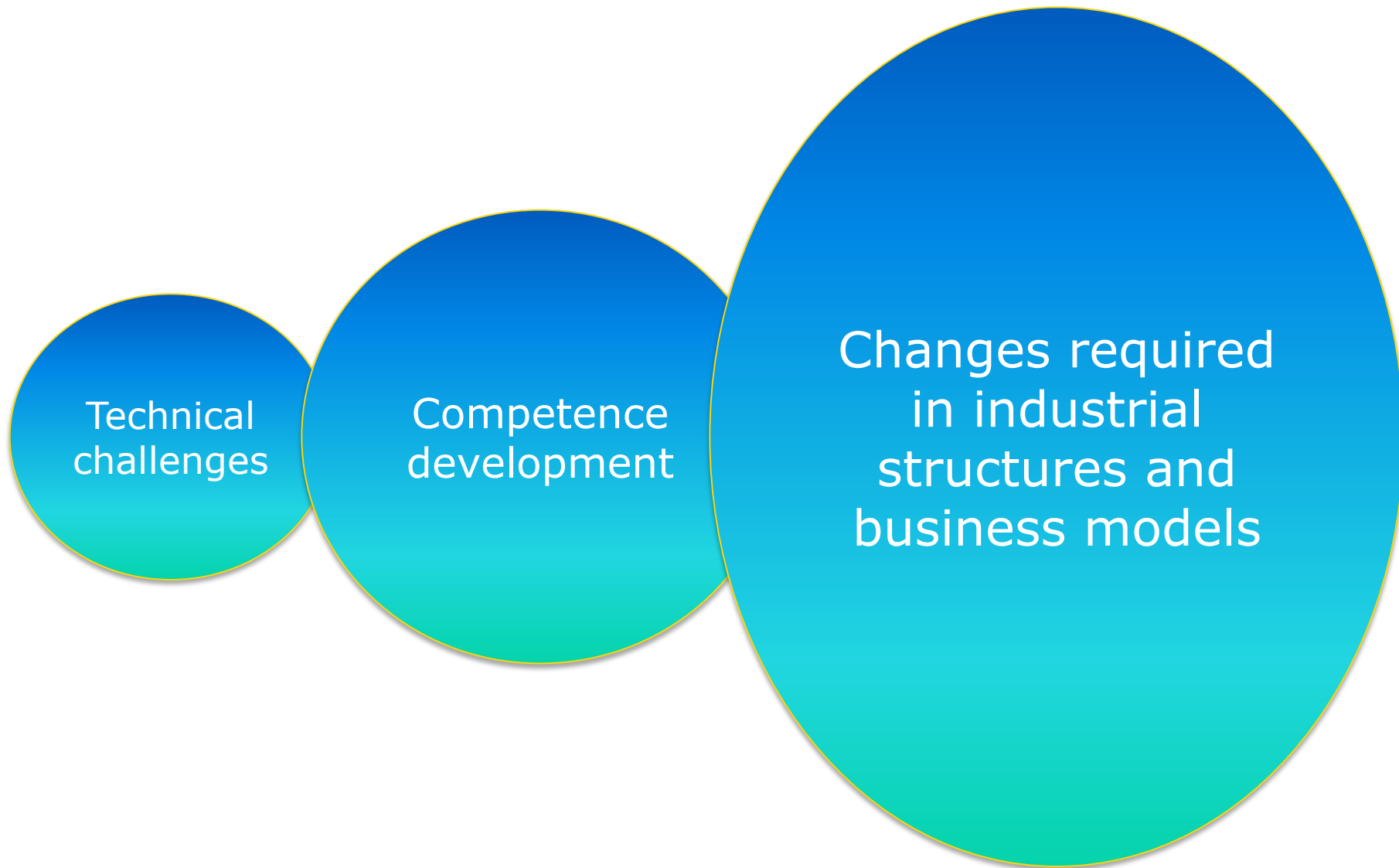
- Infrastructure solutions
- Indoor climate solutions
- Plumbing solutions

Net sales by segment



- Infrastructure Solutions
- Building Solutions - North America
- Building Solutions - Europe

# Industry challenges moving towards nZEB

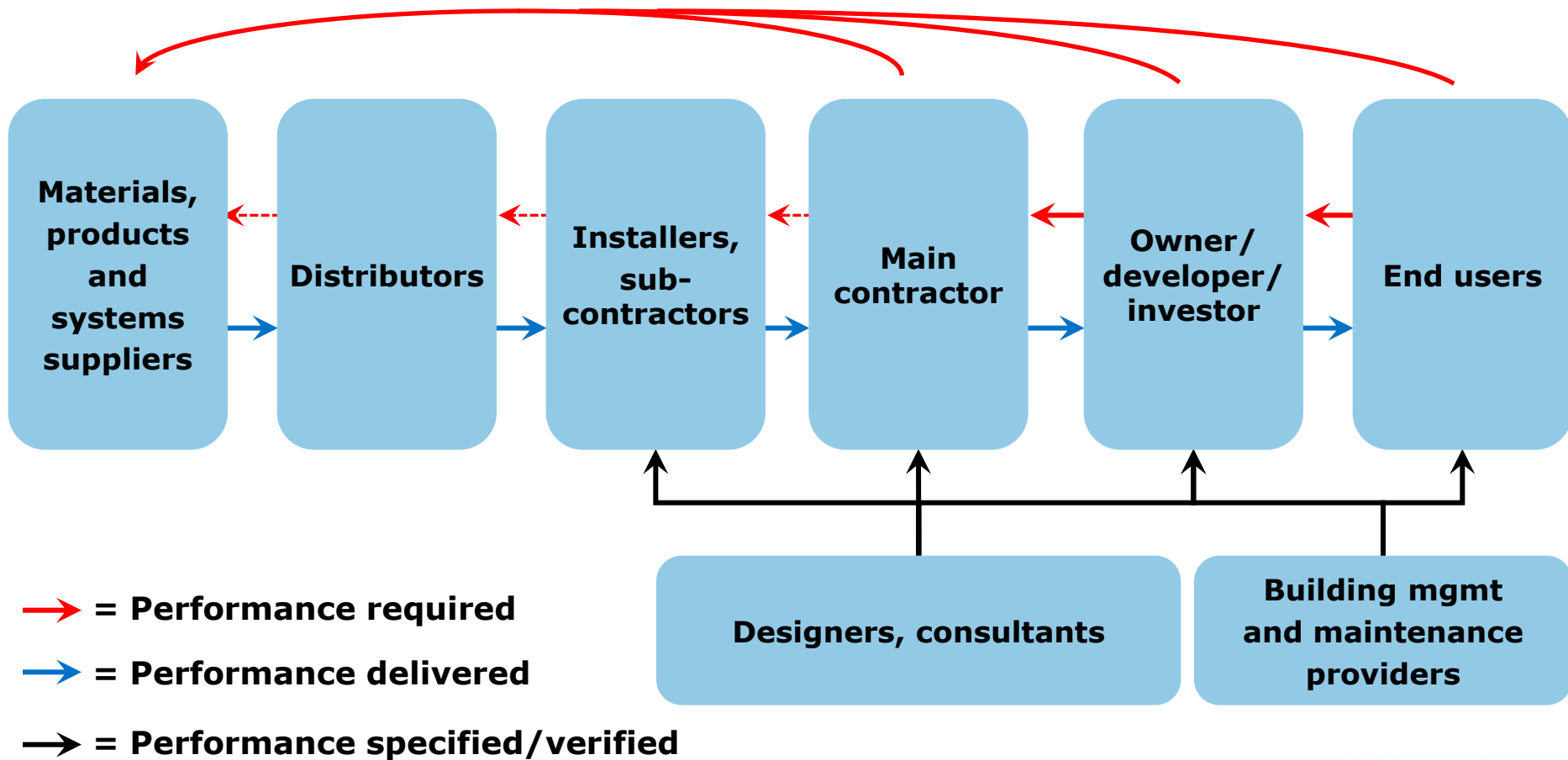


# Heating and cooling business challenges in nZEB

- Fragmented construction value chain with split incentives
- Competence gaps in the value chain
- Performance-based business and earnings logic
- Performance of components vs. systems vs. buildings vs. communities

# Fragmented construction value chain

- Who assumes responsibility for performance?
- How is performance delivered, ensured and verified?



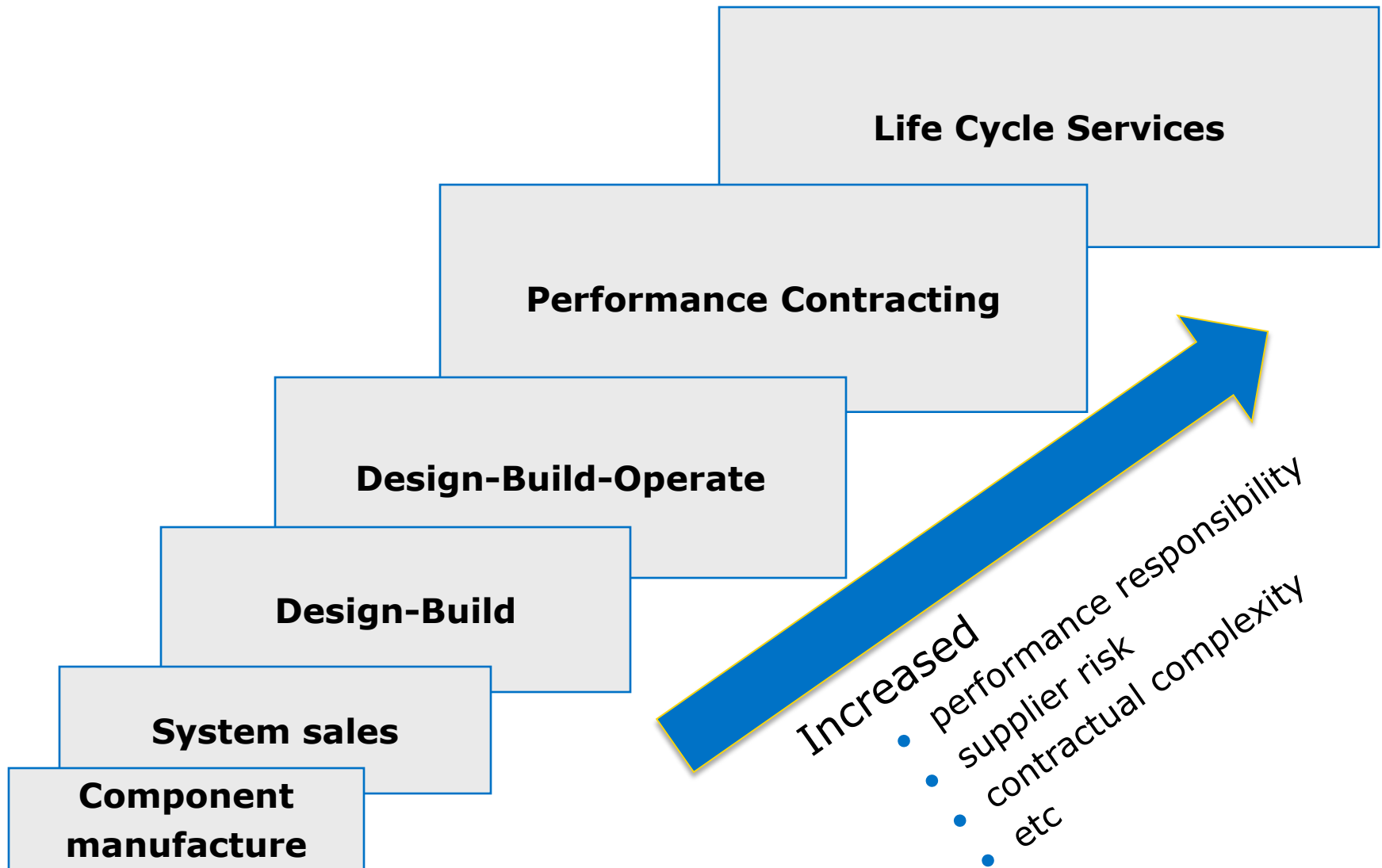


# Competence gaps

- Specifying performance, not technical features
- Designing and delivering performance, not hardware
- Verifying performance, not the existence of specified components



# Performance-based business models





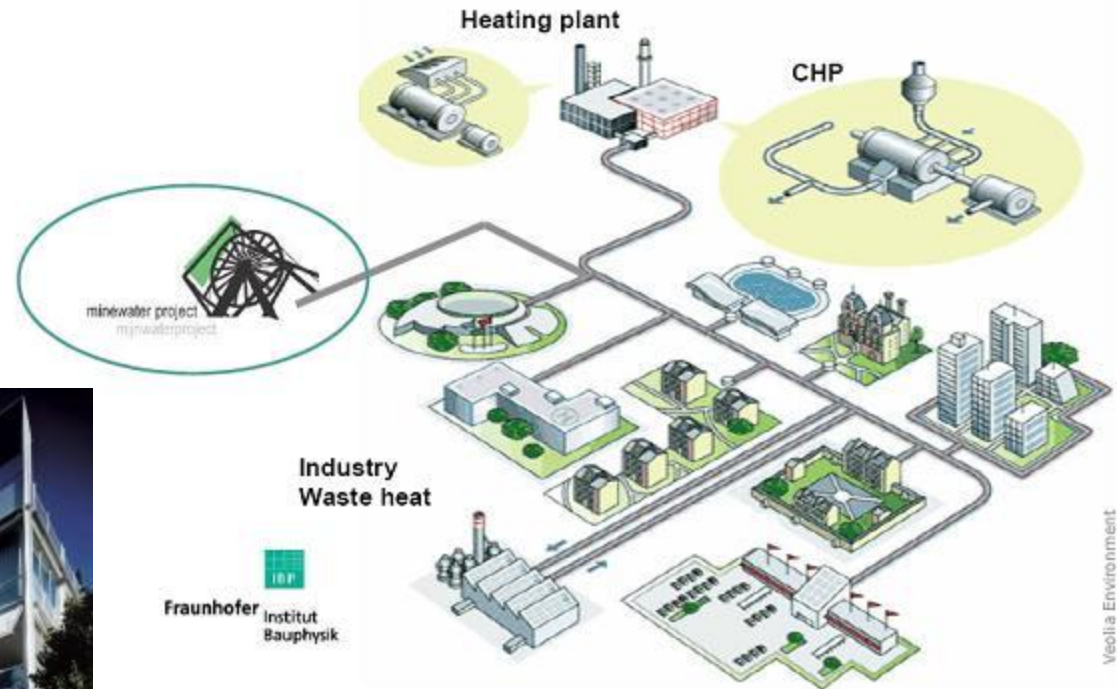
# Changes in earnings logic

- Value based on delivered performance
- Detaching earnings from material flows and service delivery
  - **based on common, measurable and contractually applicable performance metrics**



# Net / near Zero Energy is best achieved on the community level

**High-performance buildings + Low Exergy Supply structures**



# Uponor

simply more

