Älykäs kaukolämpö osana energiajärjestelmää

TTY – Älykäs Energia Seminaari
Teijo Salonpää
Solution Manager, Valmet
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This is Valmet

Unique offering
- Market’s widest offering combining process technologies, services and automation
- Research and development spend EUR 64 million in 2017

Market leadership
- Leading market position in all markets
- Pulp #1–2
- Energy #1–3
- Board #1
- Tissue #1
- Paper #1
- Services #1–2
- Automation #1–3

Strong global presence
- 120 service centers
- 87 sales offices
- 36 production units
- 16 R&D centers
- 12,000 professionals
  - EMEA 8,000
  - China 1,700
  - North America 1,200
  - Asia-Pacific 700
  - South America 500

Leader in sustainability
- Four consecutive years in Dow Jones Sustainability Index
- Three consecutive years in Ethibel Sustainability Index Europe
- A- rating in CDP climate program 2017

A long history in the digitalization of process industries
1979 Damatic, the first Distributed Control System (DCS)
1987 Damatic XD, modular second generation DCS
Future challenges for energy production

Volatile raw material and energy costs

- Cost
- Availability
- Quality

Increasing environmental requirements

- Environmental impacts
- Stakeholders interest

How to best utilize the opportunities of digitalization and Industrial Internet

- Performance?
- Technologies?
- Competitiveness?
- Market requirements
Enhanced Performance with Valmet Industrial Internet Systems of Energy Production Management

- CHP PLANTS: Electricity trading and purchasing
- Biofuel processes
- Power plants
- District heat network: Heat pump and DH plans
- DH MANAGEMENT: Electricity trading and purchasing, District heat purchasing
- District heating optimization
- Production optimization
- Forecasting: Coal and CO₂ price, Electricity (also realized price), Weather
- Electricity measurement
- Maintenance management
- Process monitoring and reporting
- Fuel management: Fuel suppliers, Transport companies, Drivers, Fuel logistics
- Fuel process management
- Boilers optimization
- District heating optimization
- Simulated values
- Valmet DNA automation
- Simulator
- Electricity trading and purchasing
- District heat purchasing
- Electricity measurement
- Maintenance management
- Steam customers

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DNA Energy Management

Optimized Production Planning

Forecasts

Trading

DNA Energy Management
Optimized Production Planning

Production Optimization

Energy System Modelling

Short term

Long term

Fuel contracts

Topology editor

Energy System Model

Modelling with graphical editor

Optimized loads and start, stop timing

Load and Price Forecasts

Optimized production plans
DNA District Heating Manager
Advanced Process Control

It’s an Advanced Process Control for district heating networks featuring:
- Predictive Supply Temperature Control
- Advanced Economic Load Dispatch
- Optimization of Static Pressure level

Secured Optimized Production Plan
Reduced Heat Losses
Minimized Pumping Costs

DNA District Heating Manager
Advanced Process Control

Predictive Supply Temperature Control
Advanced Economic Load Dispatch
Static Pressure Control Optimization

CHP units  Peak Boilers  District Heating Pumps  Heat Storages  Heat Pumps

Smart District Heating

Customer’s process

5 November, 2018
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