District Energy Optimisation
Smart Energy Management Systems

Digital Heat
Brussel, 29/05/2018

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OPTIT’S WAY: OPERATIONS RESEARCH APPLIED TO INDUSTRY 4.0

Business Processes in Industry 4.0 / IoT (r-)evolution are Complex, Data-driven, and Dynamic.

Make sense out of data to take better decisions.
DECISION SUPPORT SYSTEMS FOR SMART ENERGY SYSTEMS

- Business Intelligence
- Data mining
- Simulation
- Forecasting
- Optimisation
- Artificial Intelligence
- Automatization
DHC NETWORK DEVELOPMENT OPTIMISATION

THE BUSINESS ISSUE

• Evaluate Network Development opportunities to:
  • Reach most valuable potential users;
  • Size pipes and operating conditions to respect thermal-hydraulic constraints;
  • Respect physical constraints;
  • Maximize return on investments based on cost-revenues conditions

SOLUTION

• GIS-based solution that:
  • Maps existing and potential network/customers;
  • Embeds model of DHC system;
  • Maximises Net Present Value while respecting all constraints
  • Supports Strategic & Commercial development planning

District Heating Network
THE BUSINESS ISSUE

• Achieve optimal hourly energy mix of complex Energy Systems to satisfy Heat/Chill/Power demand:
  • Complex CHCP plant configuration (incl. storage, RES sources, …);
  • Cost & revenues drivers;
  • Respect regulatory constraints;
  • Maximize profits in view of prices and operating conditions

SOLUTION

• Web-enterprise solution that:
  • Links to plant/meteo/price data;
  • Configures Energy Plant;
  • Forecasts demands;
  • Manages year-long to same-day hourly profiles to maximise operating margin
  • Provides optimised profiles to SCADA (automatization)
  • Supports production & what-if analysis
BROADENING THE PICTURE

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- CHCP Plant Optimisation Solution
- DHC Network Development
- Customer awareness & behaviours
- Peak shaving
- Smart meter & appliances
- Predictive Maintenance
- Demand Side Management
- Pump (+temperature) optimisation

**OPTIT**

Optimal solutions