



## Developing DHC Business by Quality Management

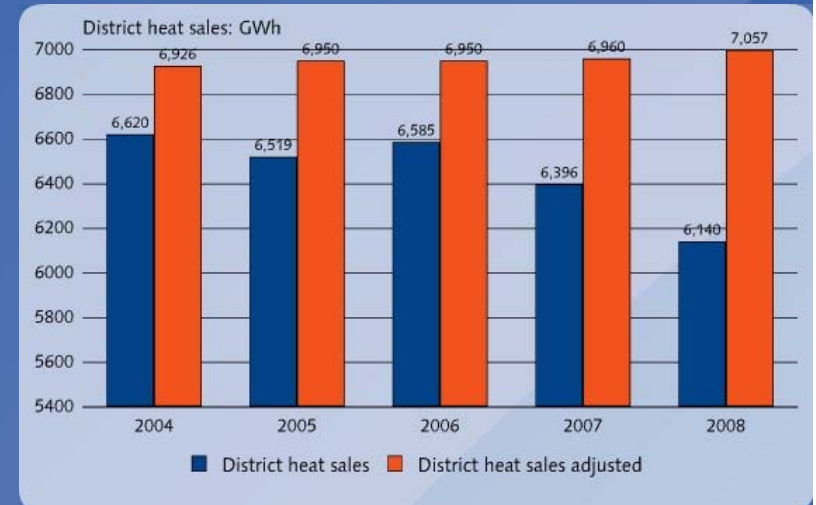
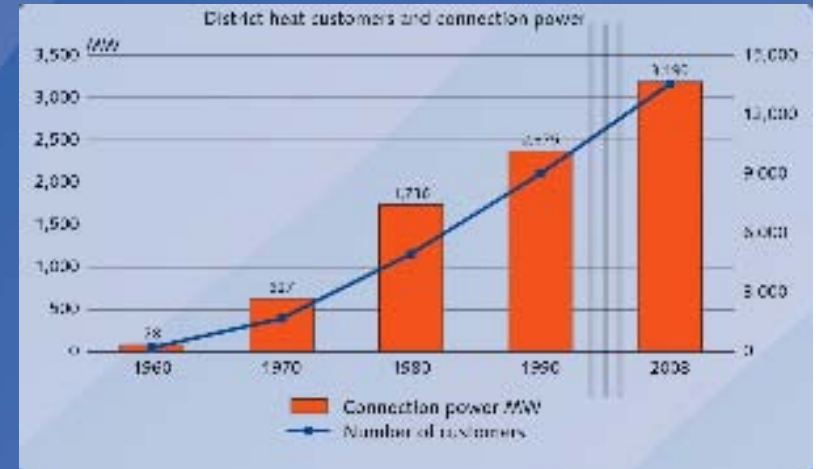
Mirja Tähtinen  
Helsingin Energia

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1. Helen DHC – Vision and Challenges
2. Development and quality tools in Helen DHC
3. Self assessment – EFQM Quality Award
4. Conclusions

# Helen - Helsingin Energia 100 years

- One of the biggest energy companies in Finland
  - Electricity production and transmission
    - 400 000 customers in Finland
  - District heating and cooling for Helsinki
    - Over 90 % of Helsinki's heat demand
      - The biggest DH company in Finland
      - 93 % CHP, 3 % heat pump
    - Third biggest DC system in Europe



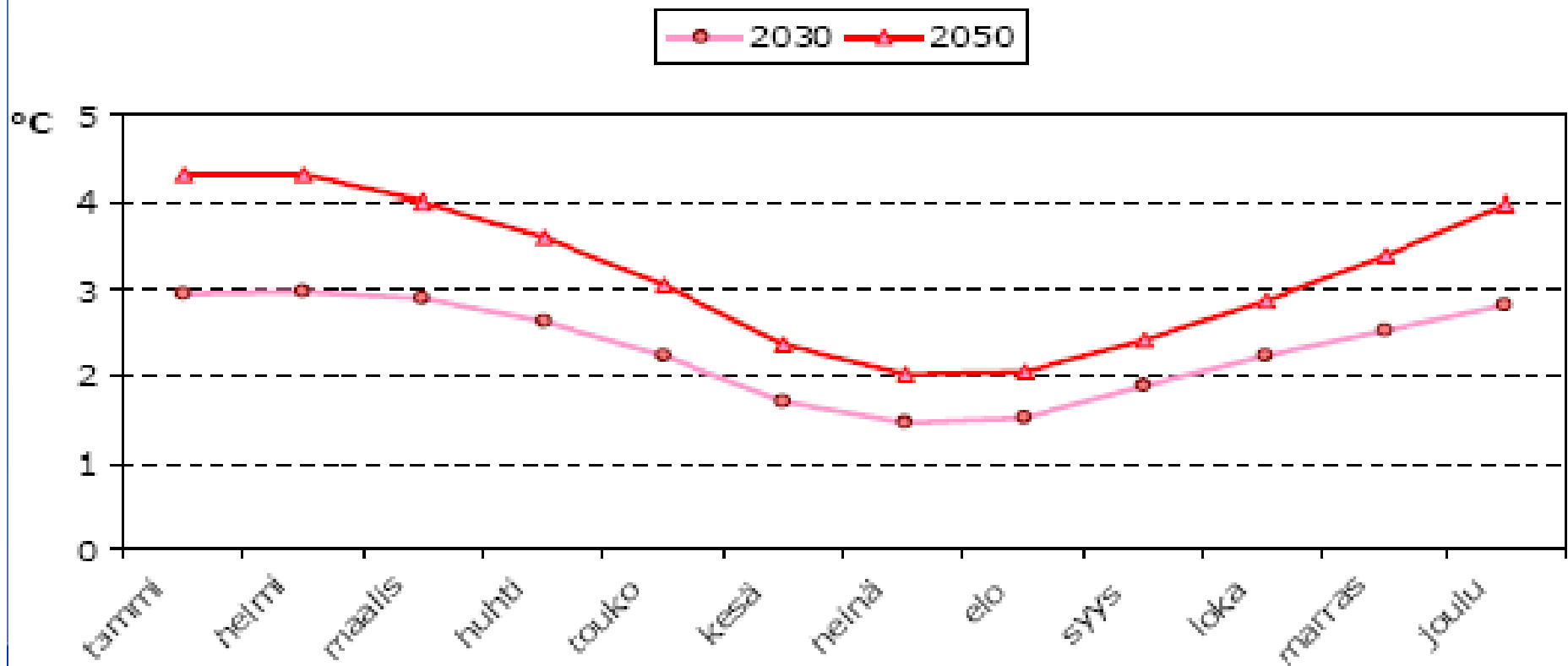
# Challenges and vision

- Consumption of heating energy is decreasing, while the consumption of cooling energy is increasing
- Political decisions may put DH at disadvantage
  - New tax for coal and gas
- Vision:
  - District heating will be the number one heating method in Helsinki also in the future. DH is seen as the best heating method for customer, for environment and for the society.

# Climate scenarios for Finland

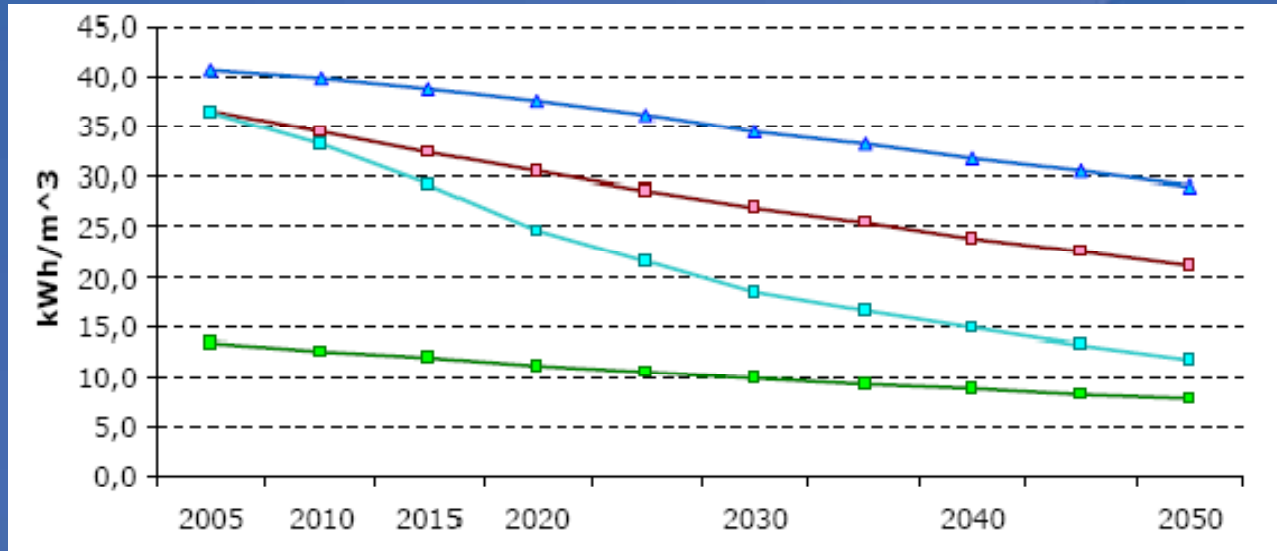
Source: [www.energia.fi](http://www.energia.fi)

The change in monthly temperatures compared to average temperatures in 1971-2000.



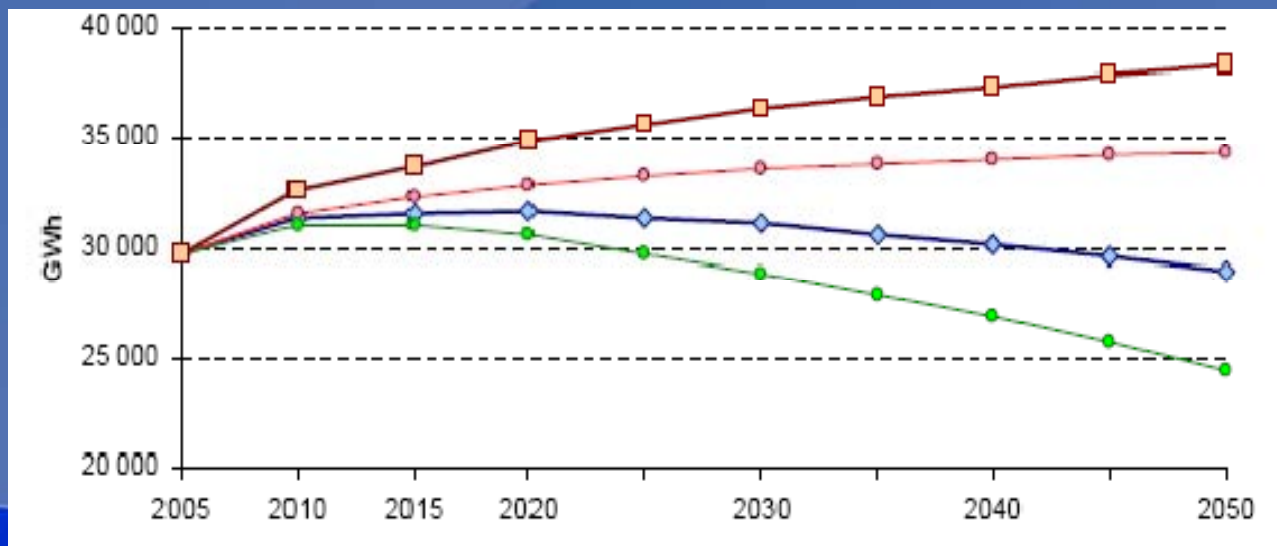
# The future heat demand in Finland

Source: [www.energia.fi](http://www.energia.fi)



## Heat demand in:

- a) Average of all buildings
- b) New buildings
- c) New buildings in average
- d) New low-energy buildings



## DH consumption:

- a) Estimate of DH companies (BAU)
- b) Slow change
- c) Baseline scenario
- d) Fast change

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# Development work

Performance can only be improved by setting targets!

Knowledge & Learning

Investments

Business process development



## Quality management:

- Defines processes
- Creates procedures
- Plans development projects

PLAN

- Implements
- Educates people

DO

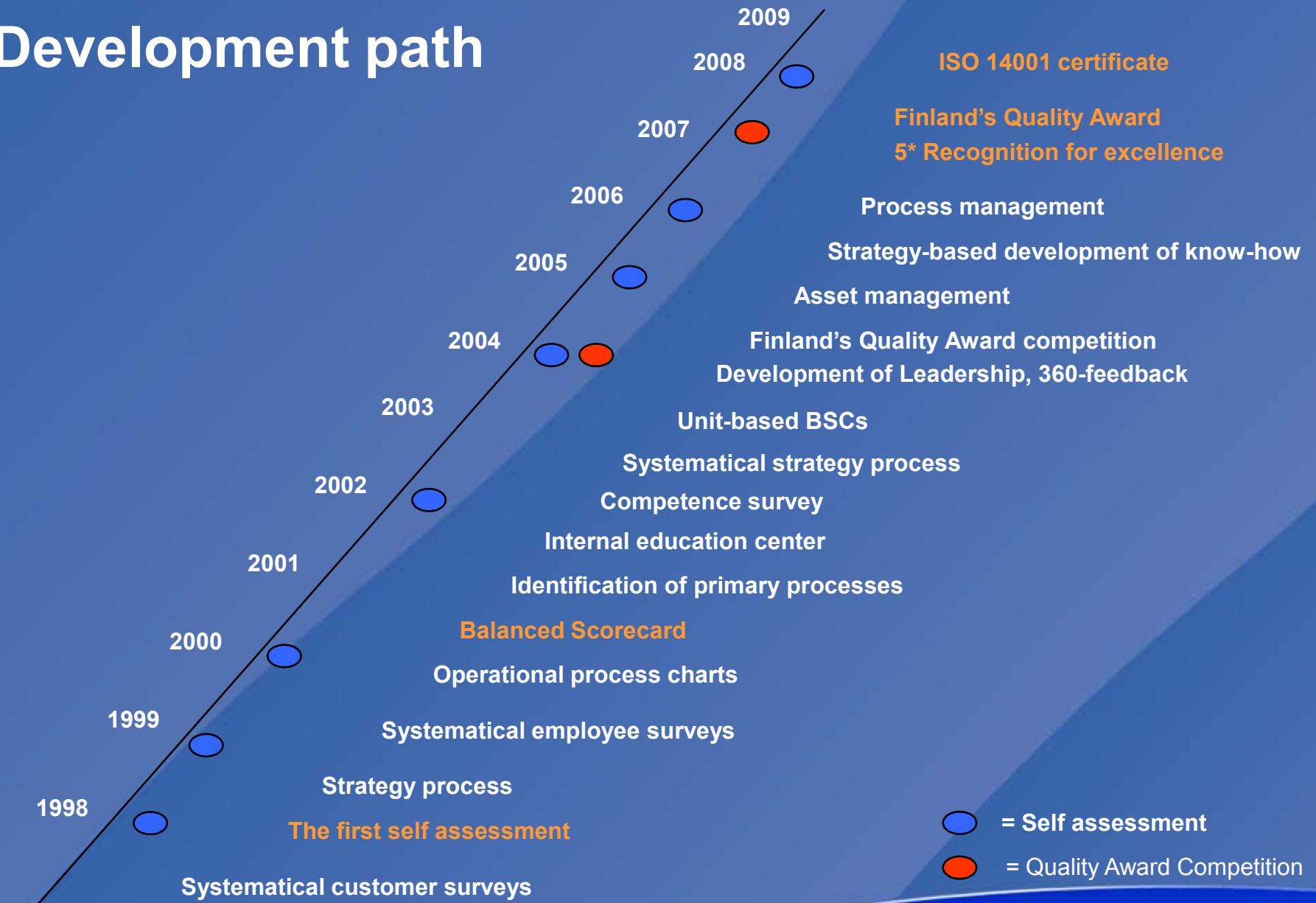
- Monitors and evaluates performance
- Produces information for decision making

CHECK

2009



# Development path



● = Self assessment  
● = Quality Award Competition

# Development in DHC Business

- Quality, environment and safety are everyone's everyday job!
- Helen DHC has an Integrated Management System (IMS) with ISO 14001 certificate
- Management system answers the questions:
  - Why?
  - What?
  - How?
- Quality, environmental and safety issues are covered in every process



# Helen DHC's environmental objectives

We lower emissions and develop our production to be ever more effective

We advise our customers to use energy in a reasonable way

We influence community planning in order to make the city economical and energy efficient

We minimise the trouble caused by our construction projects

No accidents happen in our operations!

# We have objectives for our operations!



# We plan actions and set targets!

Energy Efficiency

R&D

Construction site management

Process management

Project portfolios

# We monitor our performance!

g/kWh    %    kWh/m<sup>2</sup>    unit / year    W/m    kg

# DHC Process Map

CORE PROCESSES

**CUSTOMER MANAGEMENT**

**HEAT DELIVERY**

SUPPORT PROCESSES

ASSET MANAGEMENT

General Planning of DHC System

Construction of DHC Networks

Construction of DHC Plants

Maintenance of DHC Networks

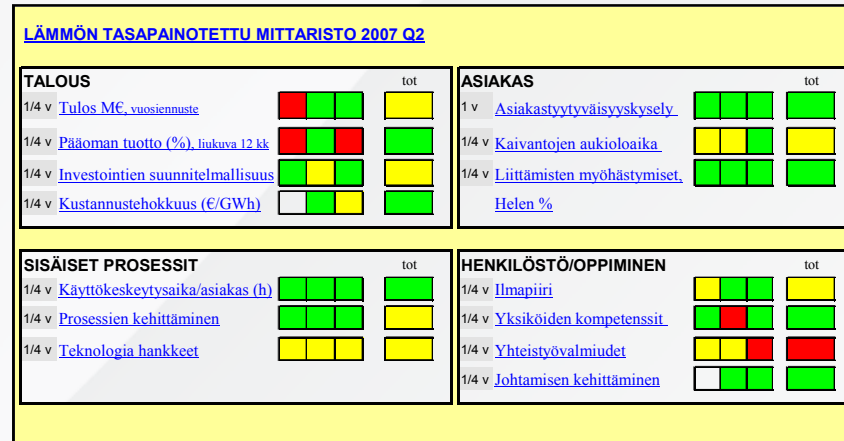
Maintenance of DHC Plants

Every process has:

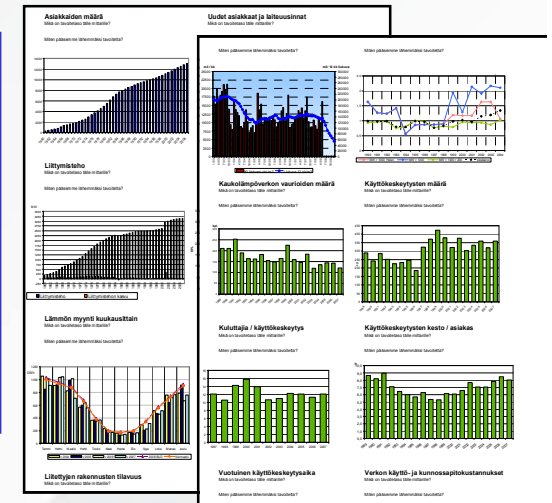
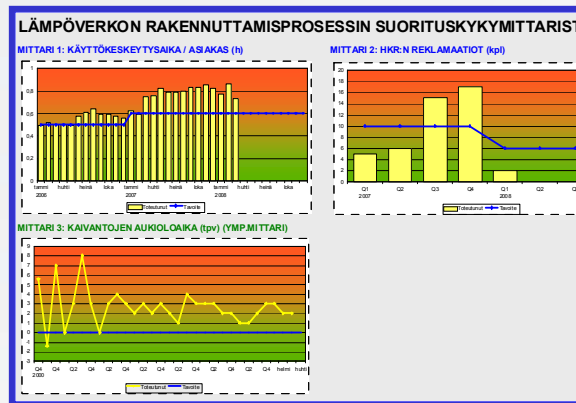
- Owner and steering group
- Process chart
- Strategical targets
- Performance indicators
- Project portfolio

# Performance measuring

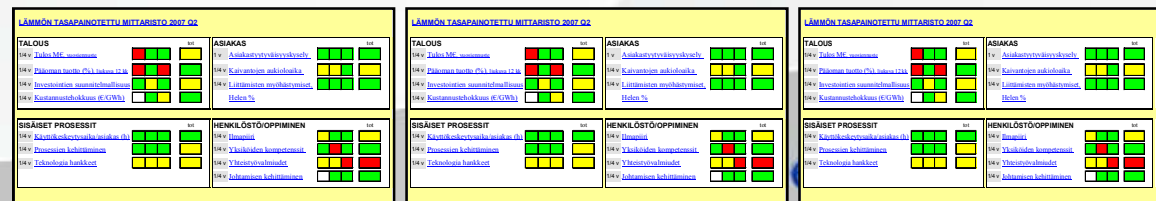
Helen Scorecard for the business units  
 – Helen DH & DC



Performance indicators and statistics for processes



Helen Scorecard for different units within Helen DH



# Energy efficiency contract

- In Finland Energy Saving Directive is implemented by voluntary contracts
  - These contracts include commitment towards set targets
    - 1000 GWh primary energy
    - 1000 GWh efficiency improvements in production
    - 150 GWh in electricity transmission, 150 GWh in DH heat losses in distribution and 150 GWh in electricity use in DH production and distribution
  - Energy Efficiency Contract requires organizations to maintain Energy Efficiency Systems which include
    - Targets
    - Actions
    - Measures and monitoring
- It is recommended that Energy Efficiency System is built on the basis of ISO 14001

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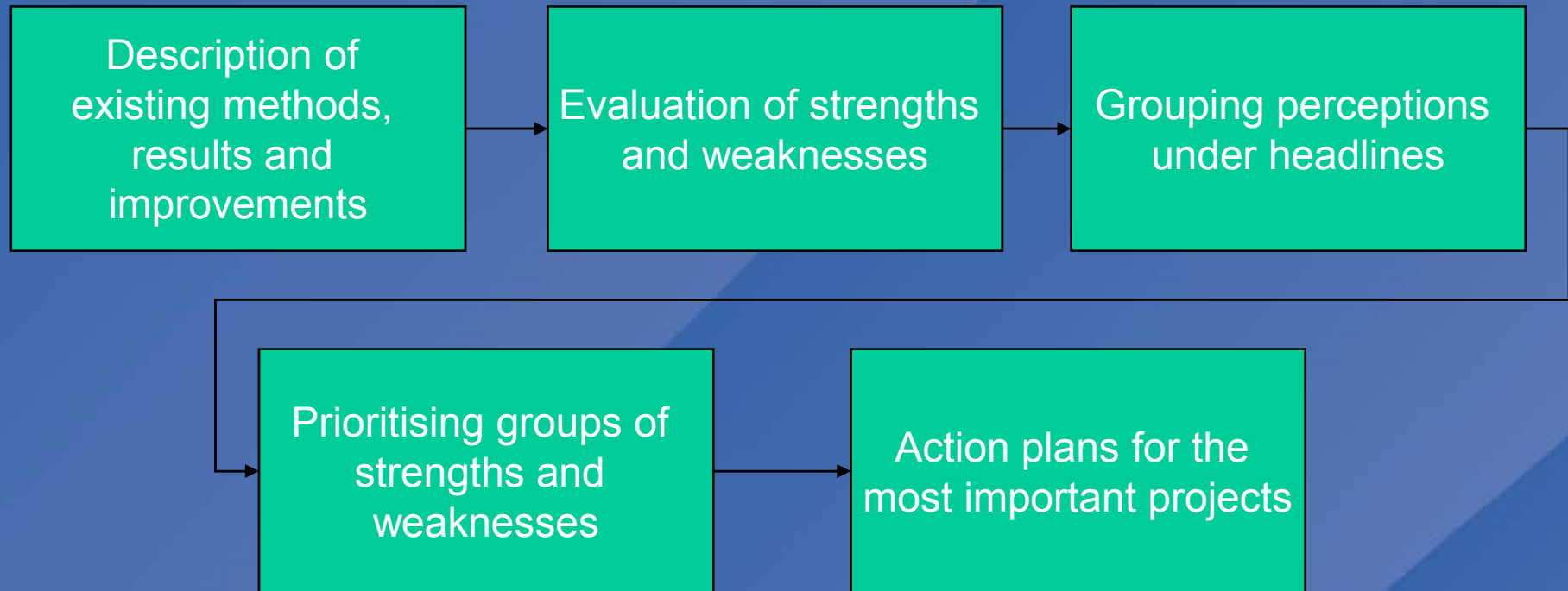
1. Helen DHC – Vision and Challenges
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# Self Assessment and Excellence Award

- EFQM Excellence model is used to assess:
  - How goals are set and how organisation is led?
  - How strategy is created and how it is communicated?
  - How the strategy is implemented?
  - How does the organisation measure performance? How has the organisation succeeded?
- Excellence Award is based on self assessments made by organisations according to EFQM model
  - Evaluation of contestants is based on written applications and on on-site audits

# Self Assessment Procedure



- What are the critical success factors that shall be improved even more?
- What are the main issues that need to be corrected?

# Scoring and results

- Scoring of organisation is based on:

- **Results**

- trends, targets, comparisons, consequences

- **Action**

- reasonable, coherent

- **Implementation**

- execution, methodicalness

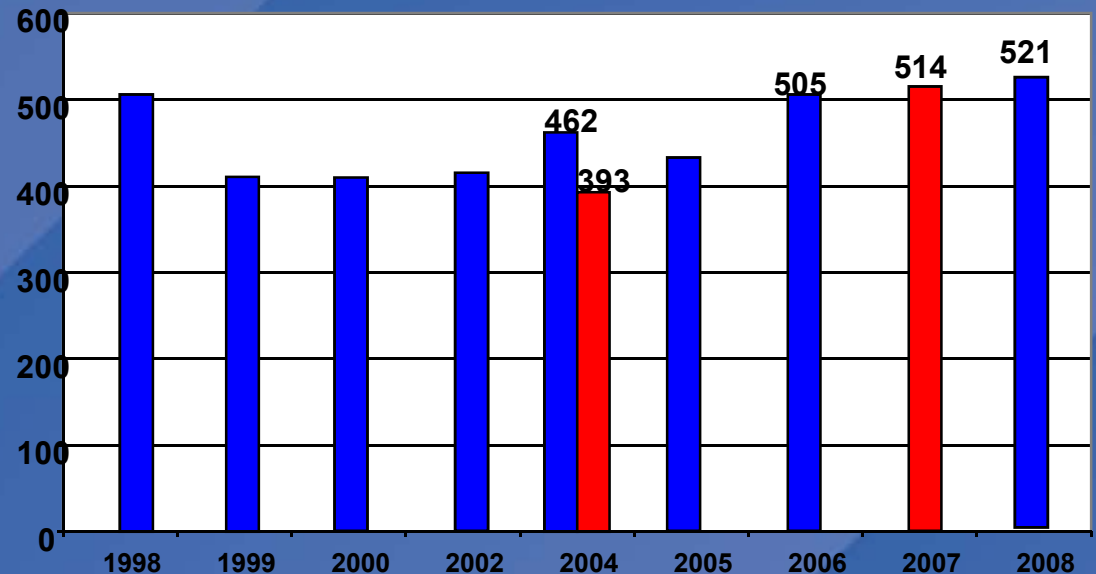
- **Reflection**

- measuring, learning, improving

## Helen DHC's Results:

Self assessments

Excellence Award competition



- **What does it take to win the Excellence Award competition?**

- In Finland, approximately 600 points
- In Europe, approximately 700 points

# Benefits of EFQM Excellence Model

- **Why do self assessment?**
  - Systematic procedure gives a holistic picture of performance
  - To learn organisation's strengths and weaknesses
- **Why participate in Excellence Award contest?**
  - To get an independent outsider's assessment of organisation's performance
  - To get perspective and comparison to other companies
  - To bring enthusiasm and new ideas to development work
- Seven self assessments have been made since 1998
- **Helen DHC has taken part in Finland's Excellence Award competition twice**
  - The next participation will take place in 2010

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# Conclusions

- Climate change, political decisions and more stringent building standards bring new challenges for DHC companies
- DHC is a great solution to tackle climate change but we need to be prepared for changes in consumption and customer's needs
  - by developing and monitoring business processes and business performance efficiency
  - by setting targets and planning actions for achieving them
- To do this, we need to understand
  - Customer needs
  - New technologies and competitors
  - Upcoming legislation
  - Our own strengths and weaknesses
- Even though climate change decreases heat demand, DH will still be the most wanted heating method in the future!