

## ENERinTOWN Case Study

### Energy-Saving Project Geislingen, Germany

#### Client

City of Geislingen

#### Initial situation



Annual costs of the city of Geislingen for energy, water, waste water and waste disposal: approx. 1,700,000 Euro

- Estimated saving potential: 10 – 15 %
- Baseline average annual consumption of the previous three years 2001, 2002 and 2003 with temperature compensation
- Free financial resources (achieved through energy savings) are distributed between ZREU and the city of Geislingen as a motivating incentive and for the implementation of low cost energy saving measures

**Ecological aim:** saving of energy and resources (water, waste water, municipal waste) and therefore a positive impact on the environment

**Educational benefits:** building occupants contribute in practice and get acquainted with the positive effects of energy and resources saving

**Economic advantages:** saving of financial resources; emerging free resources are used to implement further energy saving measures (mainly low cost measures - revolving fund)

#### Object data

The programme was developed for 80 facilities in the City of Geislingen: Town halls, Administrative buildings, Fire – house, Schools, Kindergartens, Gyms, etc.

#### Realisation model

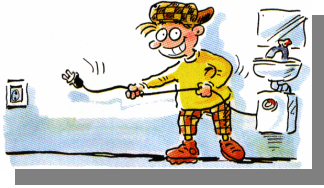


Formation of energy teams / election of energy managers for the supervision of

- room temperatures, airing
- lighting
- thermostatic valves
- suggestions for improvement
- co-ordination of on-site activities

#### Activities

- On site inspections  
Participants: building authority, caretaker, head of building (e.g. headmaster), pupil energy manager, ZREU
- Object specific reports incl. recommendations  
ZREU prepares catalogue for priority low-cost / now-cost measures
- Training of energy managers, care takers and pupil energy managers  
Participants: building authority, caretakers, heads of buildings (e.g. headmasters), pupil energy managers, ZREU
- User information  
Materials for lessons, checklists, circulars, monthly energy report
- Annual RSP competition  
Best school, best project work, best caretaker

**Measures implemented****Data Collection and Energy Management**

- Heat, electricity and water meters for digital output
- Internet based electronic management system with automatic data collection
- ⇒ Monitoring of consumption
- ⇒ Fast reaction to failures in the technical equipment
- Compilation of characteristic values and benchmarking:
  - heat ⇒ kWh/(m<sup>2</sup>•a), water ⇒ m<sup>3</sup>/(user • a),
  - electricity ⇒ kWh/(m<sup>2</sup>•a), waste ⇒ m<sup>3</sup>/(user • a)
- Annual energy reports with informative charts

**The order of implementation**

- Room temperatures Information of building occupants and caretakers Rules for room temperatures by the administration
- General energy saving behaviour (turn lights off, shut windows, turn thermostats down, 'The 7 lies about lighting' etc.)
- Gross problems with technical equipment (broken controls etc.)
- Electricity
  - artificial lighting intensity
  - pumps, ventilators, kitchen appliances
- In depth training of caretakers
  - 1 day workshop by an energy expert → fine tuning of controls

**Results****Savings:**

- 2004/2005: about 140.000 Euro or 8 % of total energy cost
- 2005/2006: about 200.000 Euro or 12 %

**Annual Contest October 2006 for the year 2004/2005**

- |                           |  |
|---------------------------|--|
| 1. Price School 1.000,- € | pupils small presents, caretaker 100,- € |
|                           | Saving: 20,88 % = 17.022,11 €            |
| 2. Price School 500,- €   | pupils small presents, caretaker 100,- € |
|                           | Saving: 14,87 % = 10.448,70 €            |
| 3. Price School 250,- €   | pupils small presents, caretaker 100,- € |
|                           | Saving: 19,20 % = 23.842,73 €            |

**Prices for the best housekeeping**

Two additional schools had over 15 % saving although project work was still slow. Therefore caretakers earned all the merits.

Lindenschule Saving 19,69 % = 25.798,15 €

Helfenstein-Gymnasium Saving 15,27 % = 16.030,45 €

**Benefits for the clients**

- Saving on natural resources
- Emissions reduction and climate protection
- Additional financial resources
- Implementation of a professional energy management
- Practical lessons on the responsible use of energy and environment for users/pupils

**Assistance provided**

ZREU Zentrum für rationelle Energieanwendung und Umwelt GmbH

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