

The state of energy management schemes in Germany

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Item 1-1

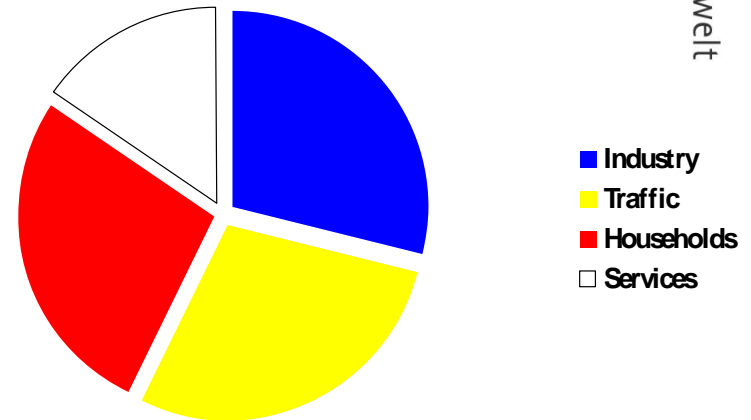


Energy consumption in Germany

Primary energy consumption 2008 : 14.280 Pj (Petajoule)

Consumption of end-use energy 2008

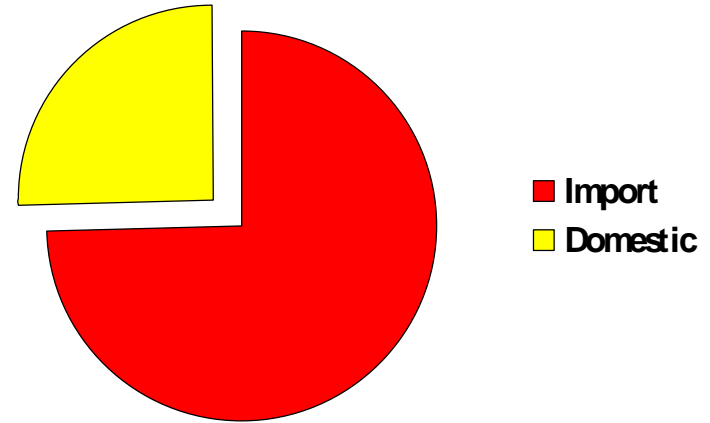
| | |
|------------------------|-----------------------|
| Industry | 2.645 (29,0%) |
| Traffic | 2.575 (28,2%) |
| Households | 2.502 (27,4%) |
| Services, Trade | 1.404 (15,4 %) |



| | | |
|----------------|-------------------------------------|--------------------|
| In 2009 | Energy consumption | minus 6.5 % |
| | Gross Domestic Product (GDP) | minus 5.0 % |

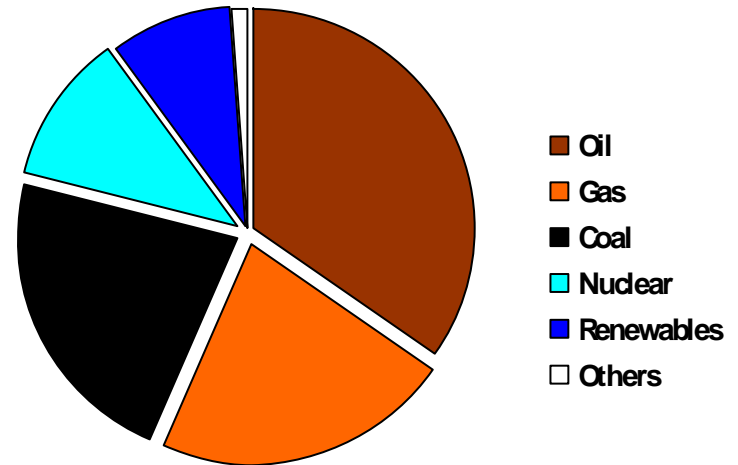


Need for import of primary energy



Energy mix: focus on carbon based energy sources (2009)

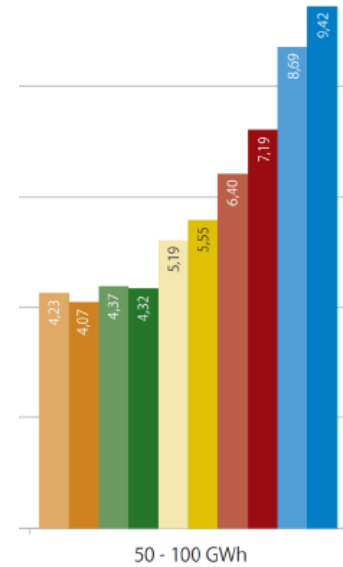
| | |
|------------|--------|
| Oil | 34,6 % |
| Gas | 21,7 % |
| Coal | 22,5 % |
| Nuclear | 11,1 % |
| Renewables | 9,1 % |
| Others | 1,0 % |



Rising prices for electricity

(ct/kW h 2000 – 2009)

4,23 to 9,42 ct/kW h (+ 122,6%)



rising share of gross output value 1999

1,75 %

(average in industry)

2007

3,10 %



Decision of European Council



(summit spring 2007 under German presidency):

- reduction of carbon dioxide emissions by 20 % (30 %)
- increase of renewables to 20 % share
- increase of energy efficiency by 20 % compared to business as usual

„20-20-20 until 2020“

Member States have to make good use of their energy efficiency action plans for that purpose

Adoption of an „Integrated Programme on Energy and Climate Change“ summer 2007

29 specific initiatives



Nr. 6: Introduction of modern energy management systems

- in order to improve energy efficiency an agreement between Government and Industry shall be concluded
- focus on qualified external advice
- still under consideration, binding rules not intended

- **management and organisation as core elements of responsibility of the private sector**
- **Government sets framework conditions, does not replace responsibility of enterprises**

Instead:

- **Partnership between Federal Government and German Chambers of Industry and Commerce**
- **to stimulate action of business sector by information and education**
- **to build up a group of front-runners in energy efficiency**
- **Financial support for energy audits by external experts in SME**



Binding rules for energy management

IPPC Directive (96/61/EU) for large industrial installations

- general principle: energy shall be used efficiently
- applicant has to describe measures to comply with general principles



German law (prevention of pollution act):

- Member of the board must be appointed responsible for compliance (1991)
- Management Officer for prevention (and energy efficiency monitoring) must be appointed (app. 50.000 installations)



Management Schemes

all of them with voluntary participation:

- EMAS (EU Regulation 1221/2008)
- ISO 14001
- EN 16001
- Management schemes for small and medium sized enterprises (Ökoprofit, Eco Step)

EMAS (Eco-Management and Audit Scheme)

- based on national environmental management standard in UK
- EU-Regulation (1221/2008)
- voluntary participation
- covers all inputs and outputs
- energy efficiency as a core indicator
- focus on continuous improvement
- management system according to ISO 14001
- environmental statement
- verifier accredited by member states



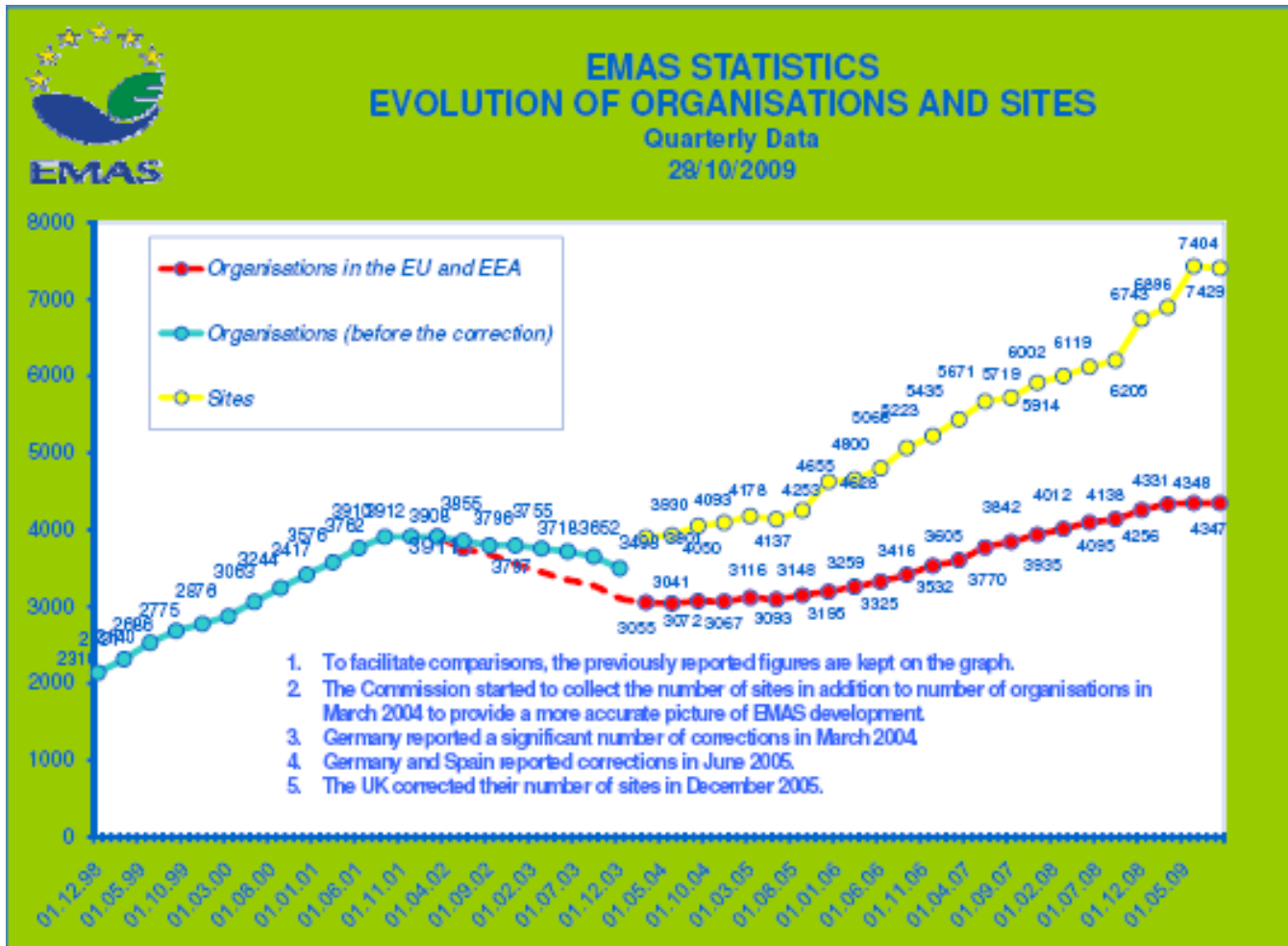
Energy as part of the environmental statement

- total direct energy use /energy consumption
- renewable energy use
- consumption of electricity and heat by the organisation
- targets and instruments for improvement

Development of reference documents for industrial sectors (Art 46)

- best management practices
- performance indicators for specific sectors
- benchmarks of excellence and rating systems





Source: EMAS Helpdesk (http://ec.europa.eu/environment/emas/index_en.htm)

ISO 14001



International
Organization for
Standardization

- in the meantime the most popular management system standard concerning energy issues in Germany
- in Germany 5.709 certificates according ISO survey 2008
- 3 % of all certificates worldwide
- gradually rising figures



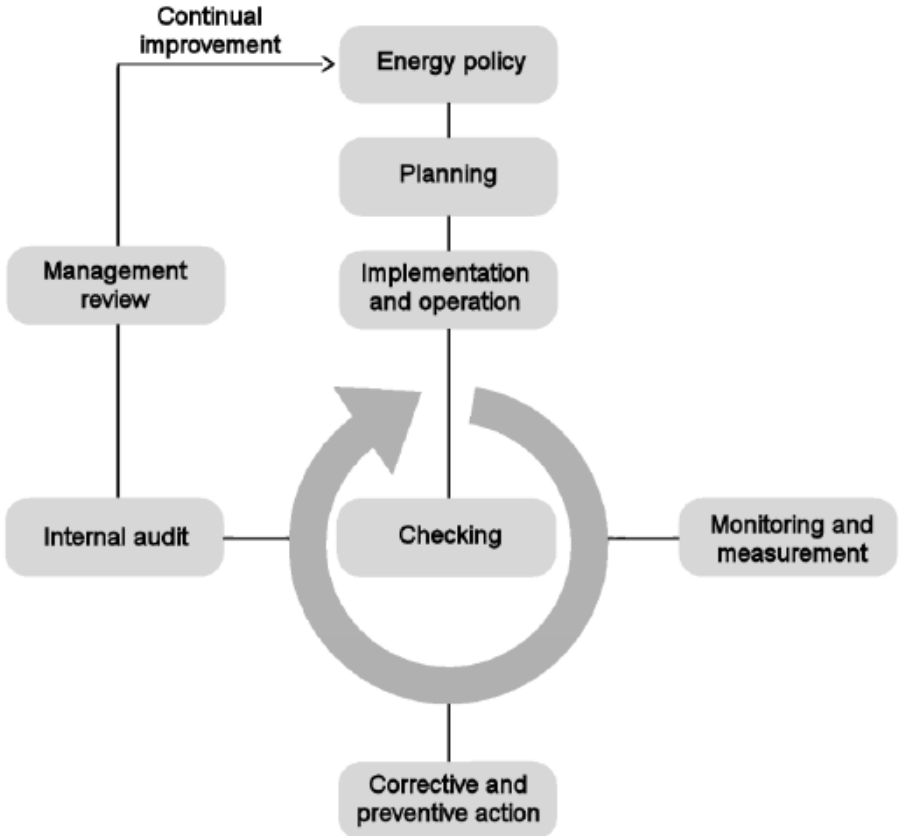
EN 16001

- formally adopted July 1st, 2009
- preliminary national standards in the Netherlands (2000), Denmark (2001), Sweden (2003), Ireland (2005), Spain (2007)
- CEN decides to develop a more focussed management system concerning energy at European level
- structure of the standard and structure of the management system consistent with ISO 14001
- can be used as a „stand-alone“ management system or as a module in an existing management system
- basis for the ongoing development of ISO 50 001



structure of EN 16001 system:

familiar to all users of
ISO 14 001 and
EMAS



Adapted Management Schemes for SME

Ökoprofit

- developed in Austria 1991
- focus on energy, water and waste
- reduction of consumption AND reduction of cost
- mix of
 - individual consultation,
 - workshops and
 - development of internal structures



Preparation and Licence Agreement

Kick-off Event

Workshop Series

Operational Implementation

Evaluation and Examination by a Commission

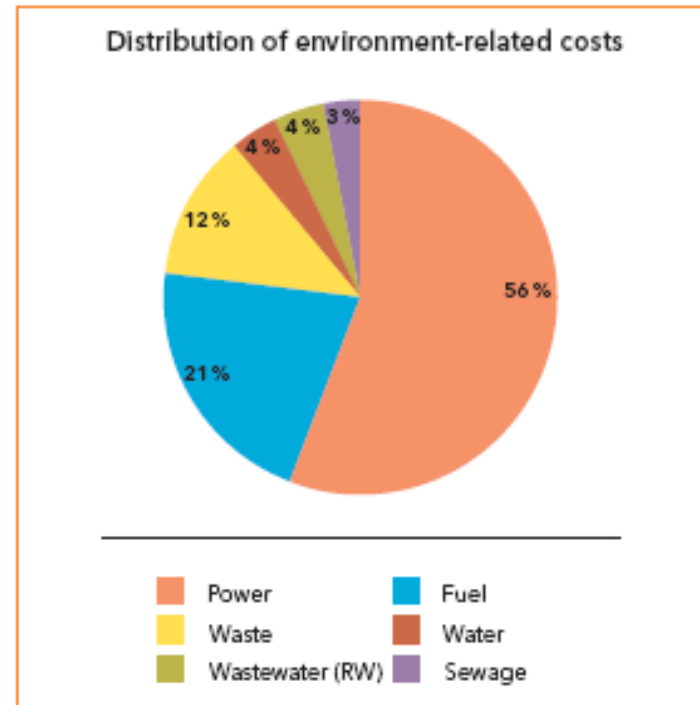
Certification

EcoStep

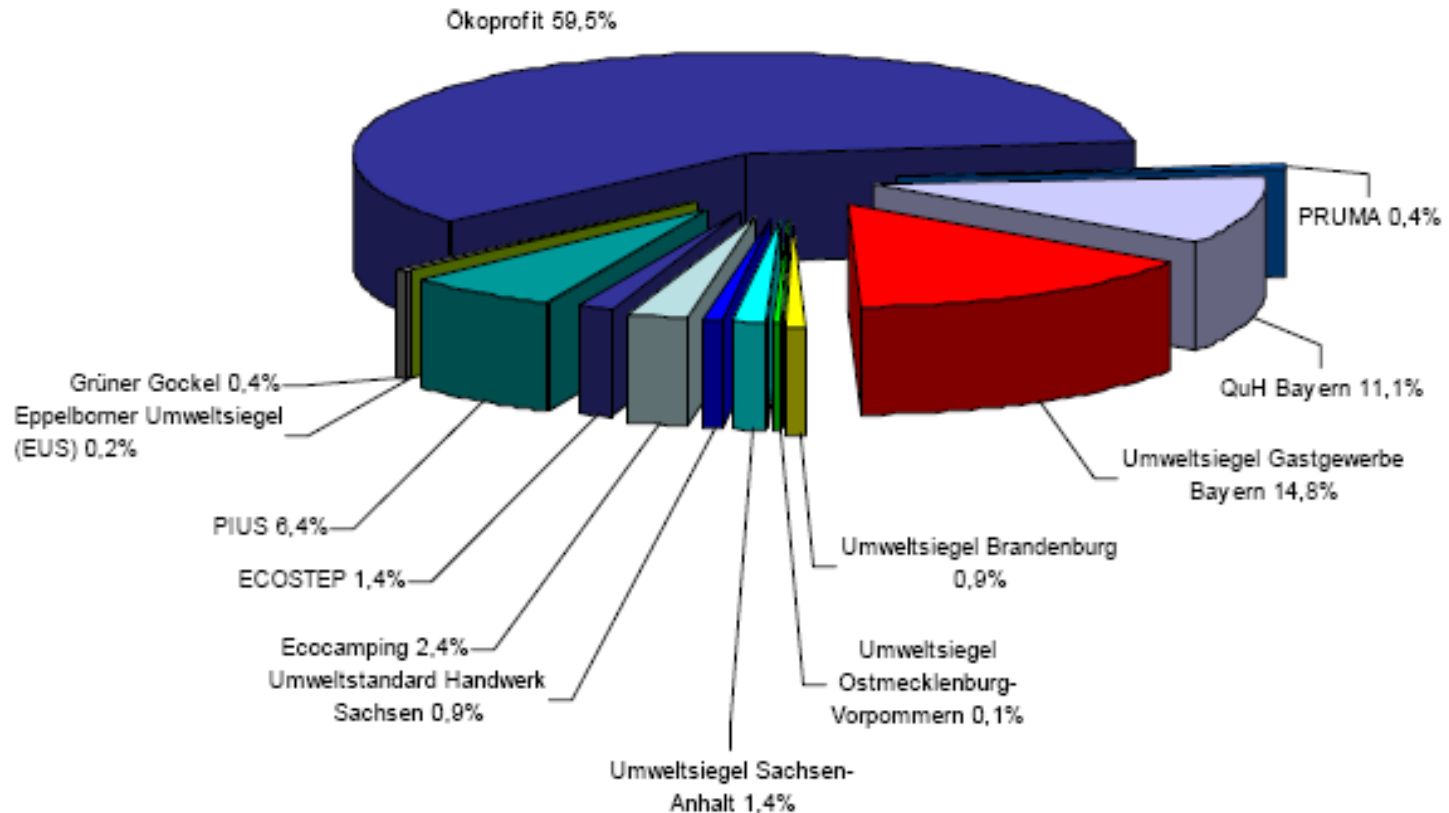
management tool for

- environment and energy
- occupational health
- quality
- food safety
- mix of
 - individual consultation,
 - workshops and
 - development of internal structures

EcoStep



Variety of different local or sector specific schemes



Total: approx. 6000 enterprises

Latest developments:**Learning Energy Efficiency Networks**

- moderated groups of enterprises
- voluntary participation
- energy cost > 300.000 \$/a
- group target for energy efficiency improvement
- mix of consultation, workshops and self-implementation
- example: Energietisch Hohenlohe 20,1 % improvement of energy efficiency 2001 – 2007
- financial support for networks until 2013



European Energy Manager EUREM

- advanced vocational training
- curriculum for approx. 200 h
- project thesis required
- effect: energy savings of 75.000,- \$/a
- financial support by Government: 1/3 of the fees for training course (until 2012)
- 700 alumni in Germany
- virtual exchange forum
- EUREM in 13 member states of the EU





Thank you for your attention!
