

klima:aktiv - The Climate Protection Initiative of the Austrian Ministry of Environment

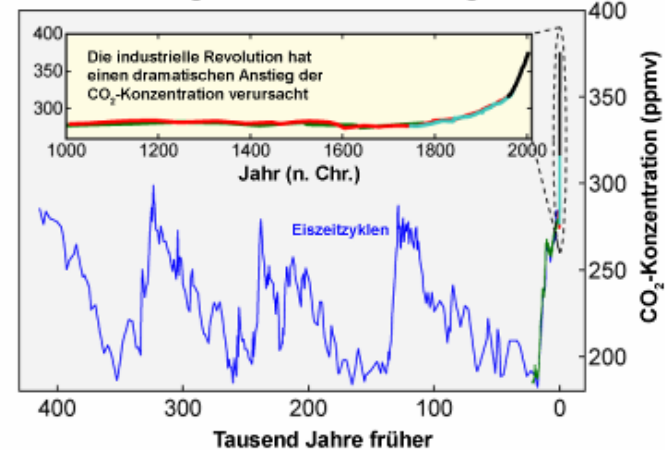
Petra Lackner, The Austrian Energy Agency



It's time to act!

- climate change
- shortage of fossil fuels
- increase in energy consumption and costs
- increasing competition
- social responsibility for sustainable acting

Veränderungen des Kohlendioxidgehalts

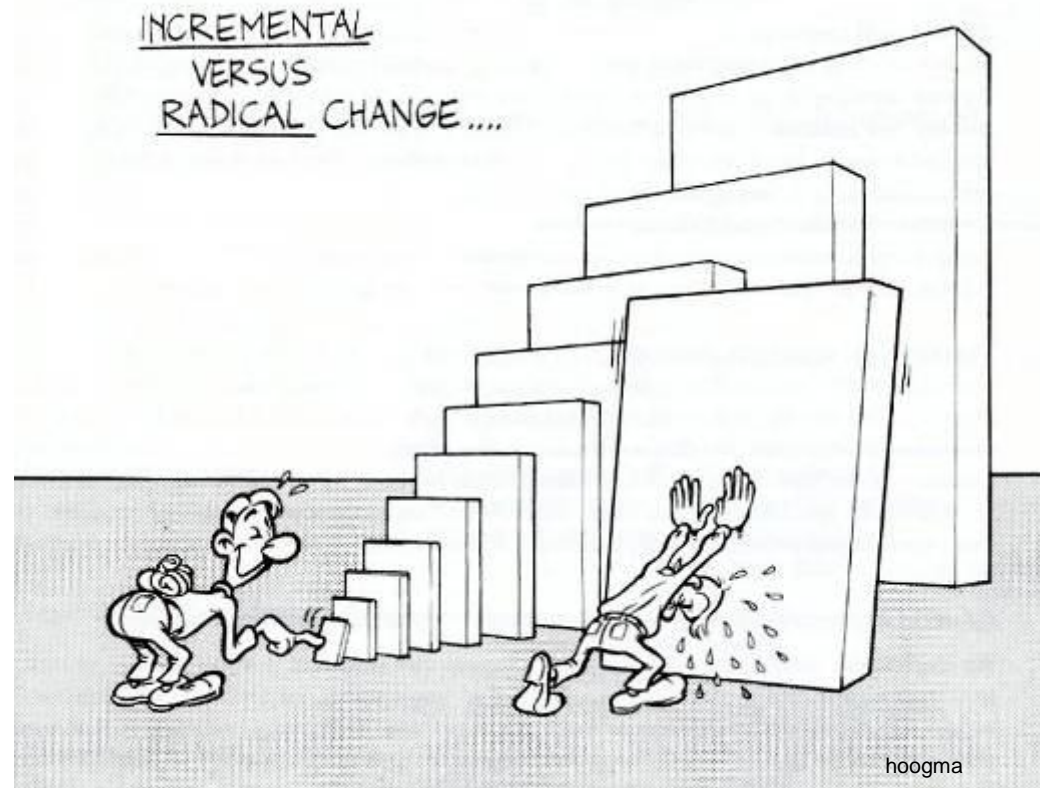


klima:aktiv

- is the climate protection initiative of the Austrian Ministry of Environment
- is the umbrella brand for the voluntary measures of the Austrian climate and energy strategy
- is complementing regulations and subsidy schemes in the area of climate protection
- is supporting activities of partners in the federal provinces and in industry
- the primary objective is to introduce and promote climate friendly technologies and services

in short: klima:aktiv is ...

- activating and bringing together stakeholders
- providing advice and support
- providing information and raising public awareness
- developing standards
- training klima:aktiv experts



klima:aktiv topics and target groups

Target Groups \ Topics	Consumers	Companies	Municipalities
Building and Refurbishment	klima:aktiv living Family homes	Residential buildings Commercial buildings Utilities management	Public buildings Utilities management
Energy Saving	Electricity saving	Production Procurement Use	Procurement Use
Renewable Energies	Heating and hot water	Heating and Cooling Energy supply	Heating and Cooling Energy supply
Mobility	Bicycling Public transfer Fuel saving	Staff mobility Fleet management	Staff mobility Fleet management

Objectives of the programme

- Awareness Raising for Energy Efficiency in Industry
 - organizing information events in co-operation with sector associations
 - organizing an energy efficiency award
- Implementing energy management according EN 16001
- Implementing energy efficiency measures in industrial enterprises in co-operation with partners
- Implementing standardized energy audits by organizing standardized trainings for energy auditors

Schritte zur Verbesserung der Energieeffizienz in Betrieben

EIN LEITFADEN



Pump genau
Energiekosten senken – Wasser richtig lenken



klima:aktiv starting points

federal support programmes
for energy audits, chambers of
commerce

581 energy auditors
participated on
trainings since 2006

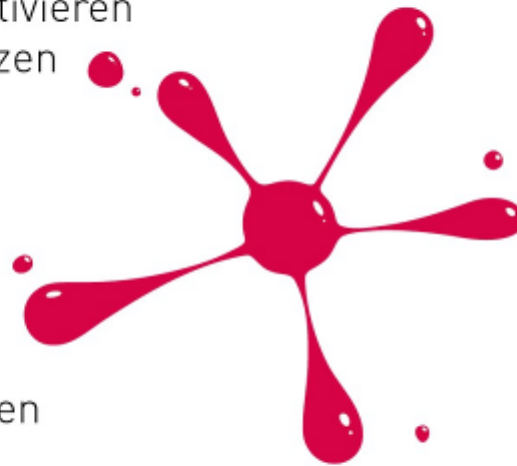
klima:aktiv Profis
aus- und weiterbilden

Akteure aktivieren
und vernetzen

• Standards entwickeln
und Qualität sichern

Beraten und
unterstützen

standards for an initial
audit and special audits



Informieren und
zum Umdenken anregen

trained auditors and
technical partners

energy award, newsletters, 72 best
practice examples, branch energy
concepts

Co-operations with regional networks and chambers of commerce

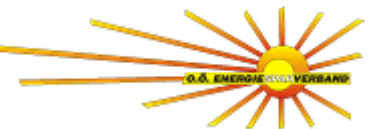
- subsidies for energy audits
- trainings of energy consultants
- awareness raising events



Energieinstitut Vorarlberg



Das Zentrum für Erneuerbare Energien der Tiroler Zukunftsstiftung



Profitieren. Mit Verantwortung.

Co-operations with technology partners

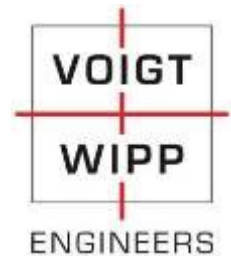
- optimization of compressed air systems, ventilation systems, pump systems

- energy efficient equipment

- heat recovery

- Online-metering and control systems

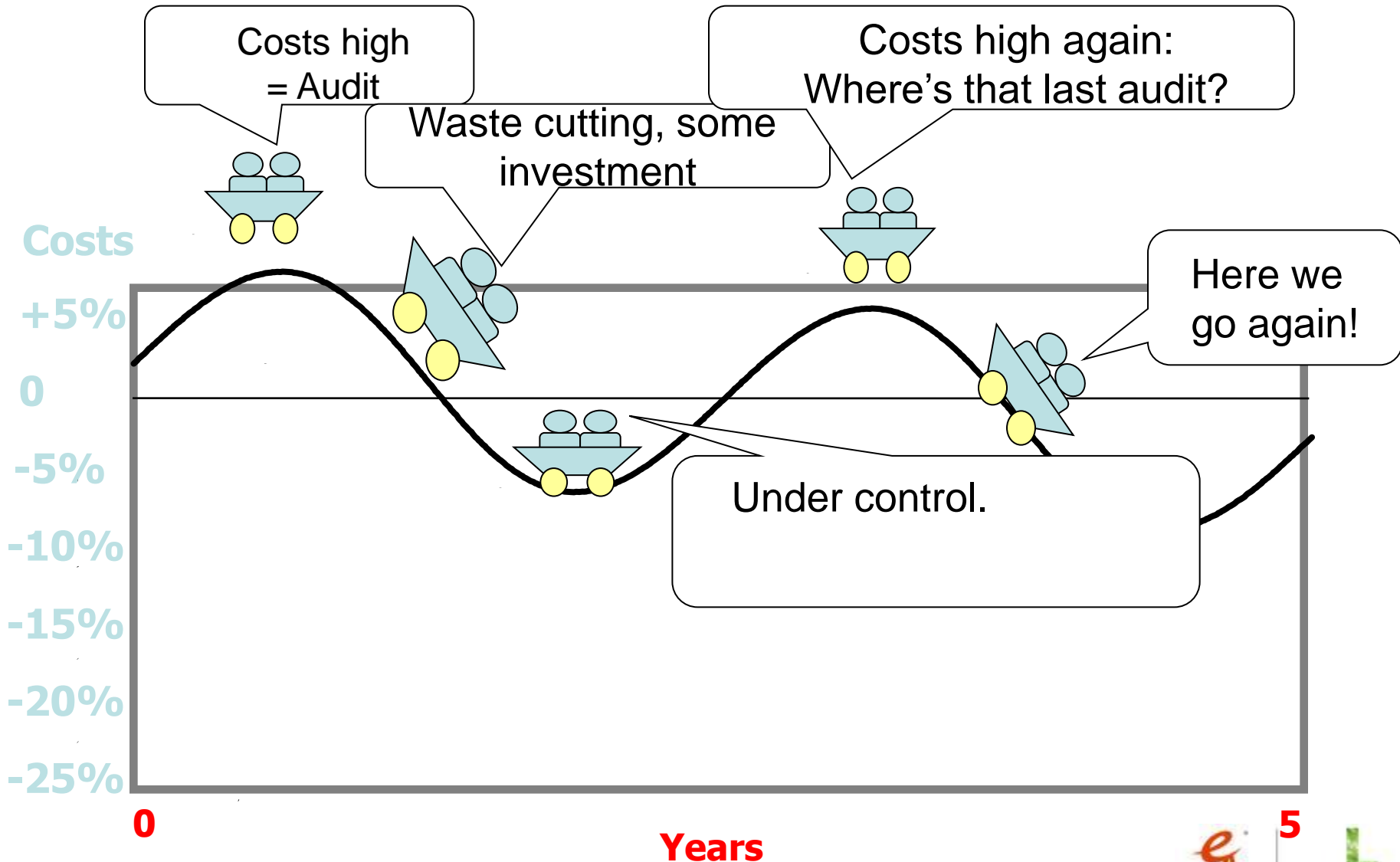
- multipliers etc.



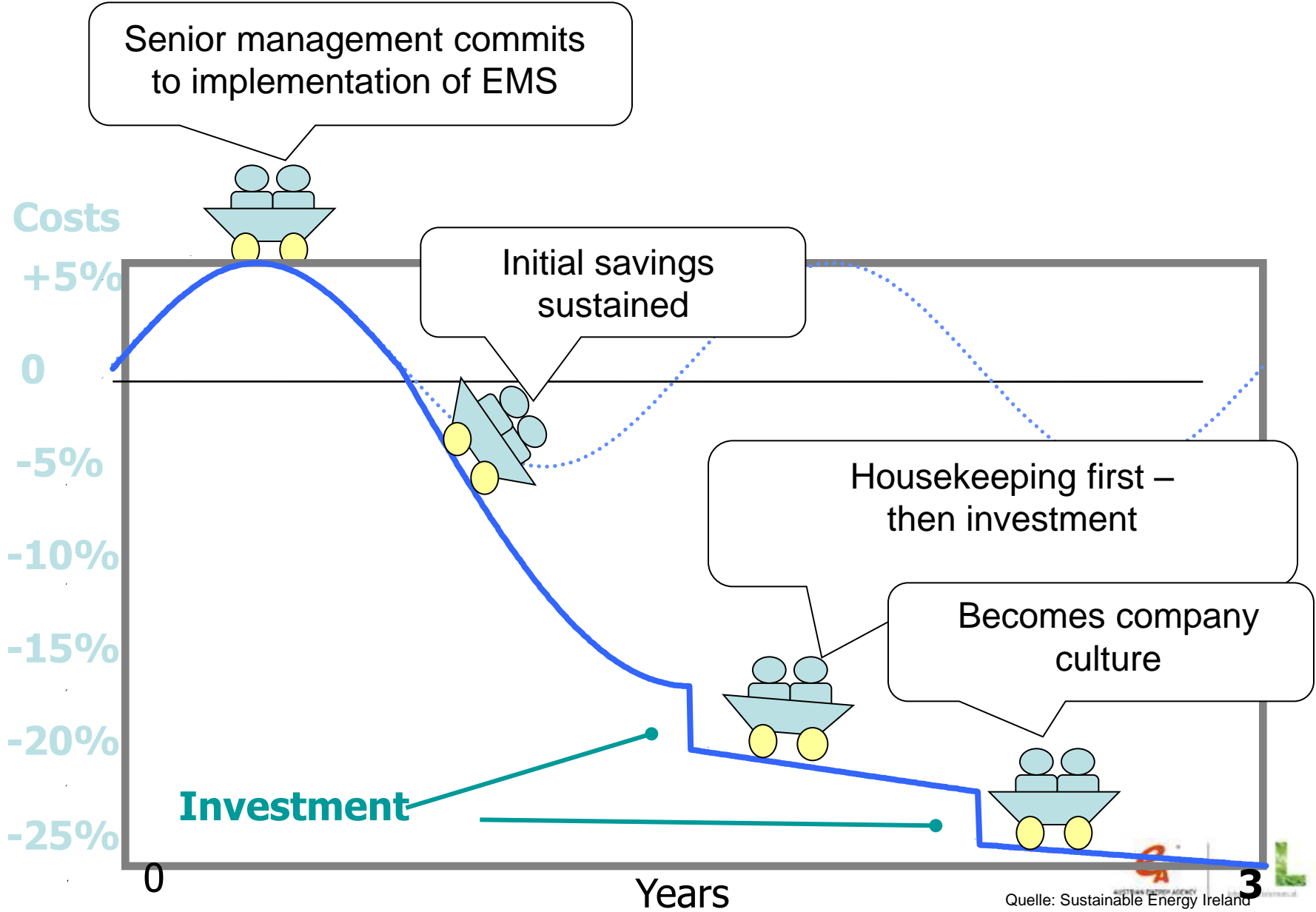
Saving Potentials exist!

- Studies and best practice examples demonstrate high saving potentials in industrial enterprises
- only the implementation of an energy management system (standard) brings savings of up to 5 – 10 %
- According to the IEA the main areas of improvements are the optimisation of process heat and electric motor systems
- economical saving potential:
 - motor systems: 20 to 25%
 - process heat systems: 10 to 15%

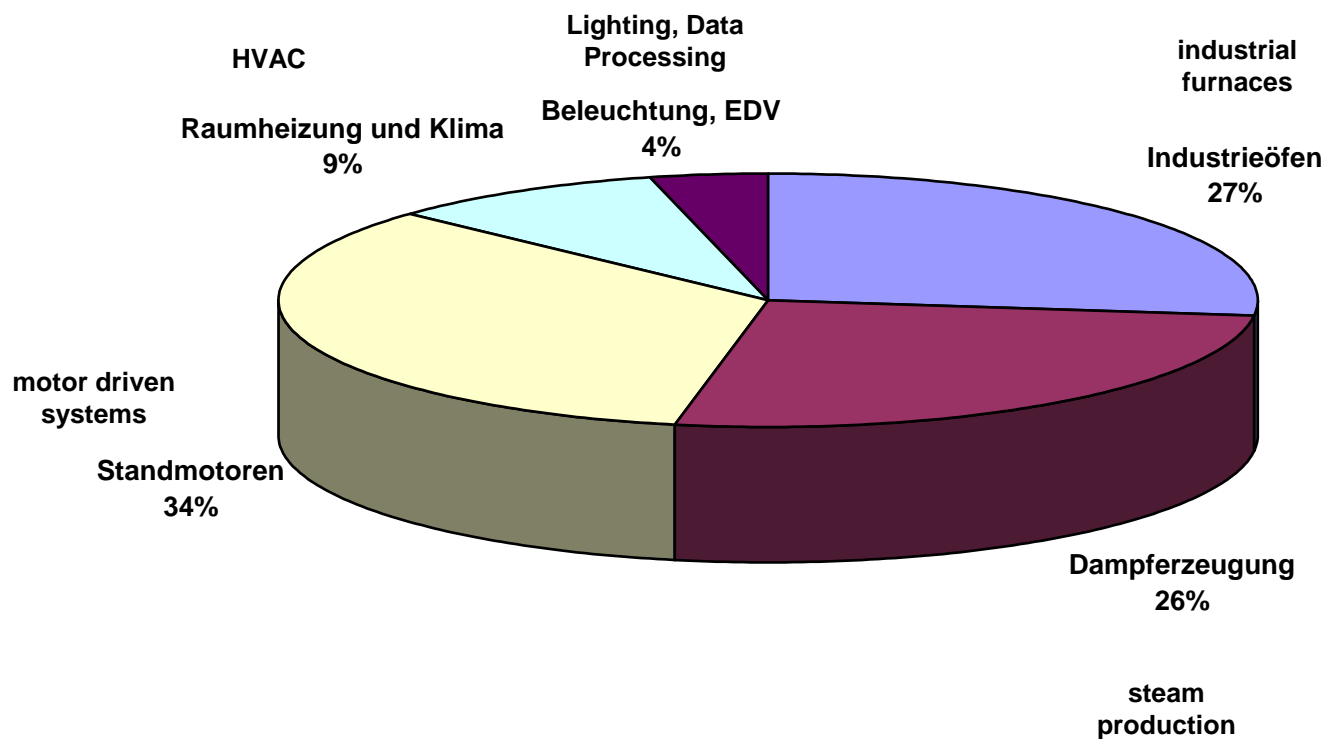
Ad-hoc energy management



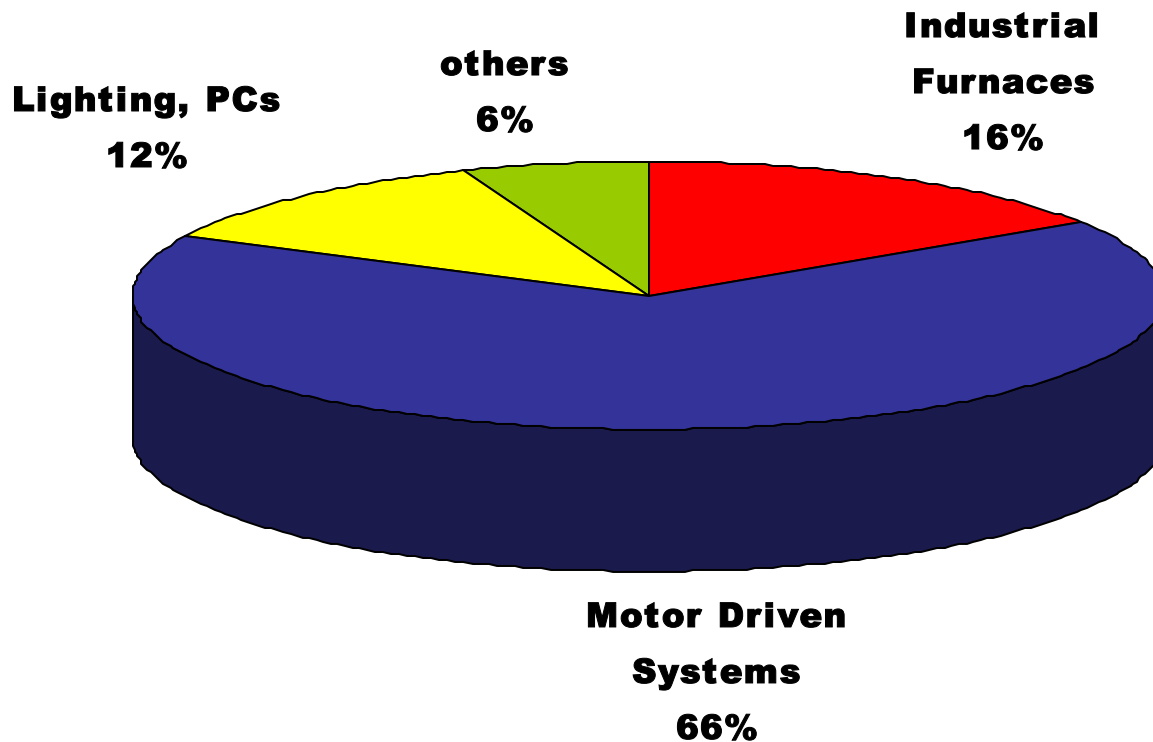
Energy management system



Energy Consumption in Manufacturing Sector in Austria



Electricity Consumption in Manufacturing Sector in Austria



Saving Potentials

Measure	Economical saving potential
Improvement of drives through	
High efficient motors	3 %
Variable speed drives	11 %
System optimisations	
Compressed air	33 %
Pumps	15 %
Chillers	18 %
Fan systems	30 %
Total	Ca. 30 %

Survey with 20 energy managers



Quelle: Umfrage der Österreichischen Energieagentur, Dez. 2006

Instruments for Implementing Energy Efficiency measures

- Information of the key users, to raise awareness of the saving potential
 - Develop best case studies and conduct pilot audits
- [01_Wozabal_bp.pdf](#), [11_Sandoz_bp2010.pdf](#), [23_Schwab Tischlerei_bp.pdf](#)
- Education of key users and energy auditors
 - Assistance via partly financed energy audits
 - Assistance for financing of resulting investments
 - Work with partners and networks to distribute information and specific know-how

klima:aktiv trainings of energy auditors

standardised training for 5 days:

1. day: initial energy audit and energy management
2. day: optimisation of compressed air systems
3. day: optimisation of pump systems
4. day: optimisation of ventilation and AC systems
5. day: optimisation of steam systems



klima:aktiv trainings of energy auditors

Participants get from the training:

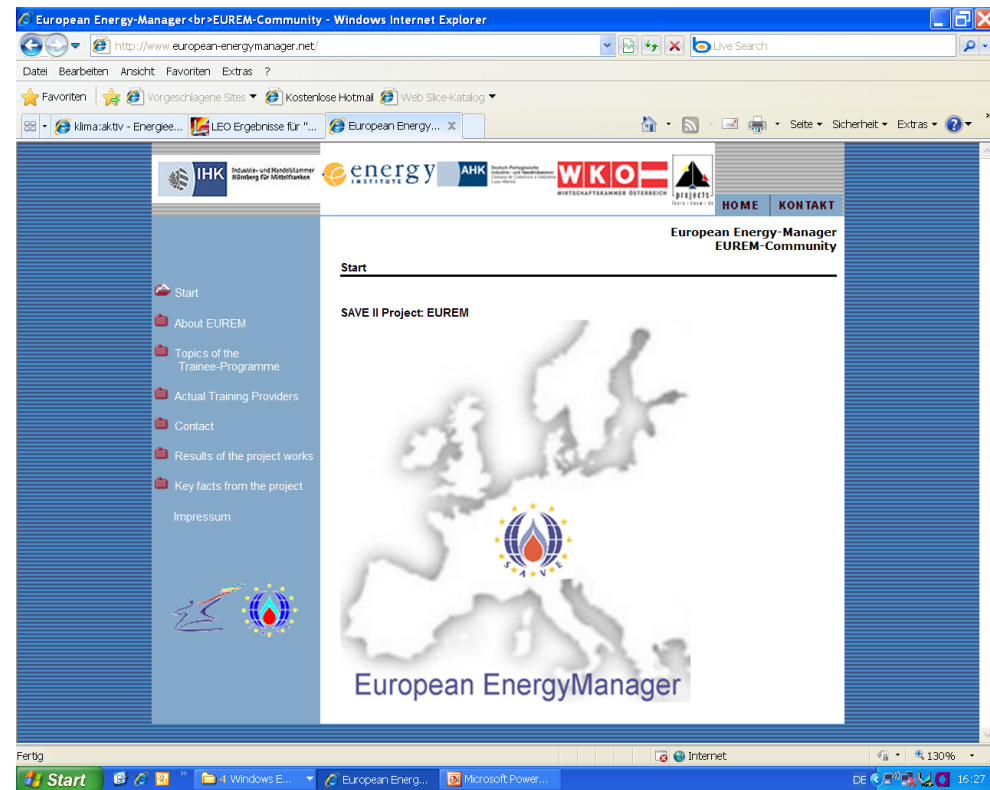
- guidelines to conduct special audits
- audit tools
- templates for audit reports
- contact to klima:aktiv network
- participants are already energy auditors in different auditor networks (federal programmes)
- this is not a basic training



SAVE II Project EUREM – European Energy Manager

<http://www.european-energymanager.net>

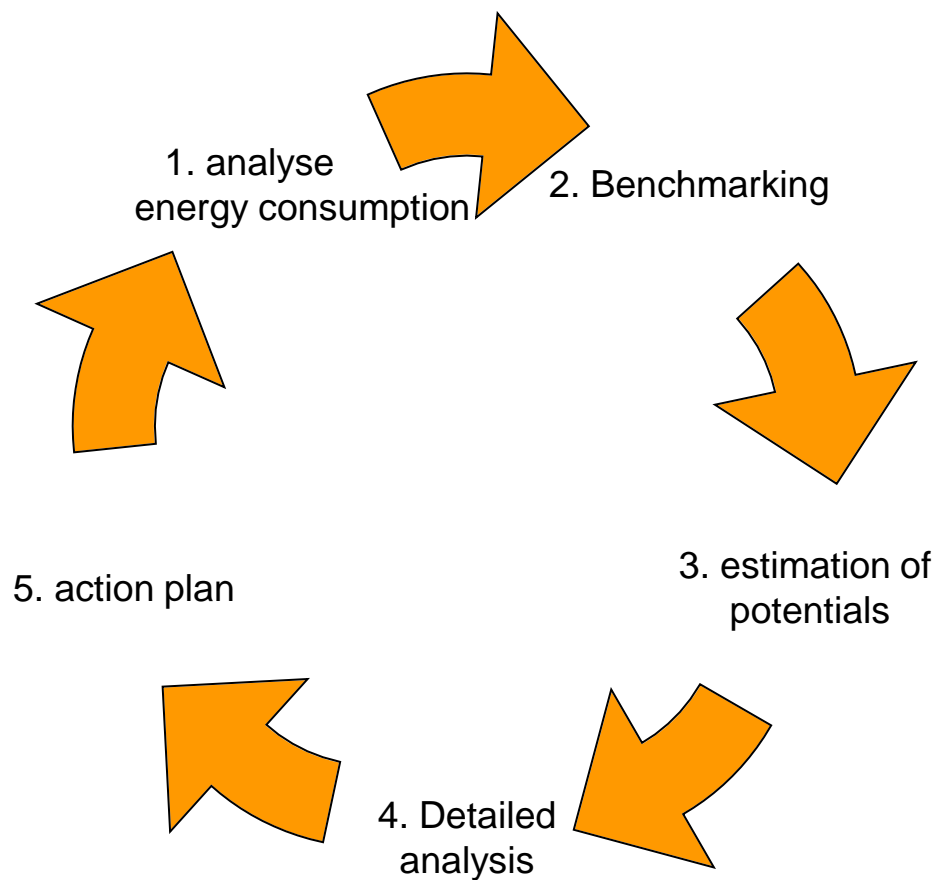
- training programme European Energy Manager
- tailor-made to the requirements of production enterprises
- very successful in Austria – organised by the Chamber of Commerce
- 9 courses so far
- duration - 9 month: block courses



[EUREM IX-
Workshopprogramm\[1\].pdf](#)

Steps for improving energy efficiency

continuous
improvement through
energy management
system



klima:aktiv support
for all steps

Energy management

- up to 10% savings by energy management
- CEN/CENELEC EN 16001
- guide line step by step implementation of energy management
- e-learning: www.energymanagement.at
- www.bess-project.info

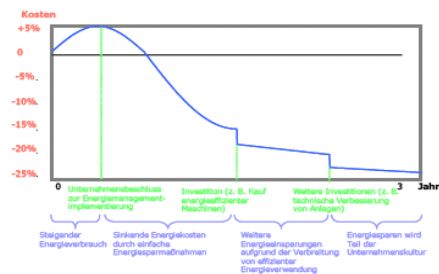
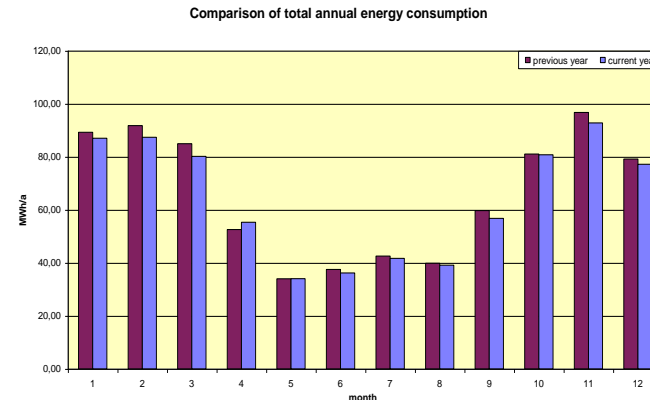
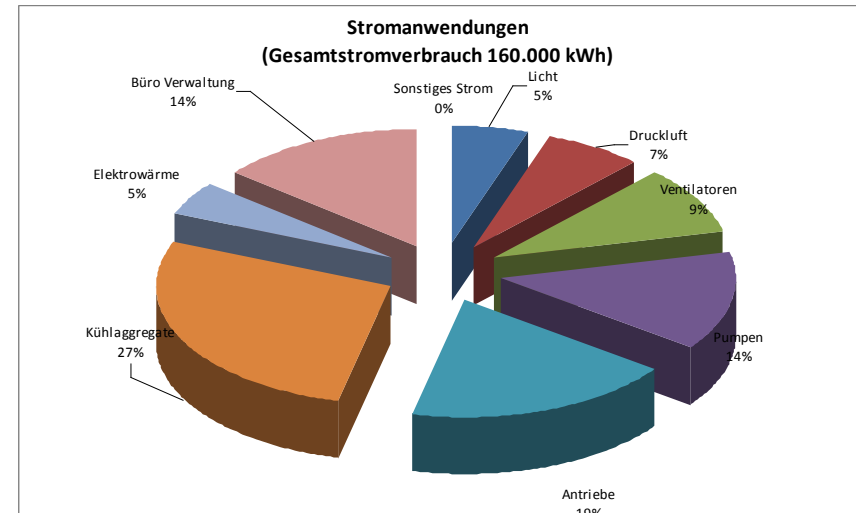


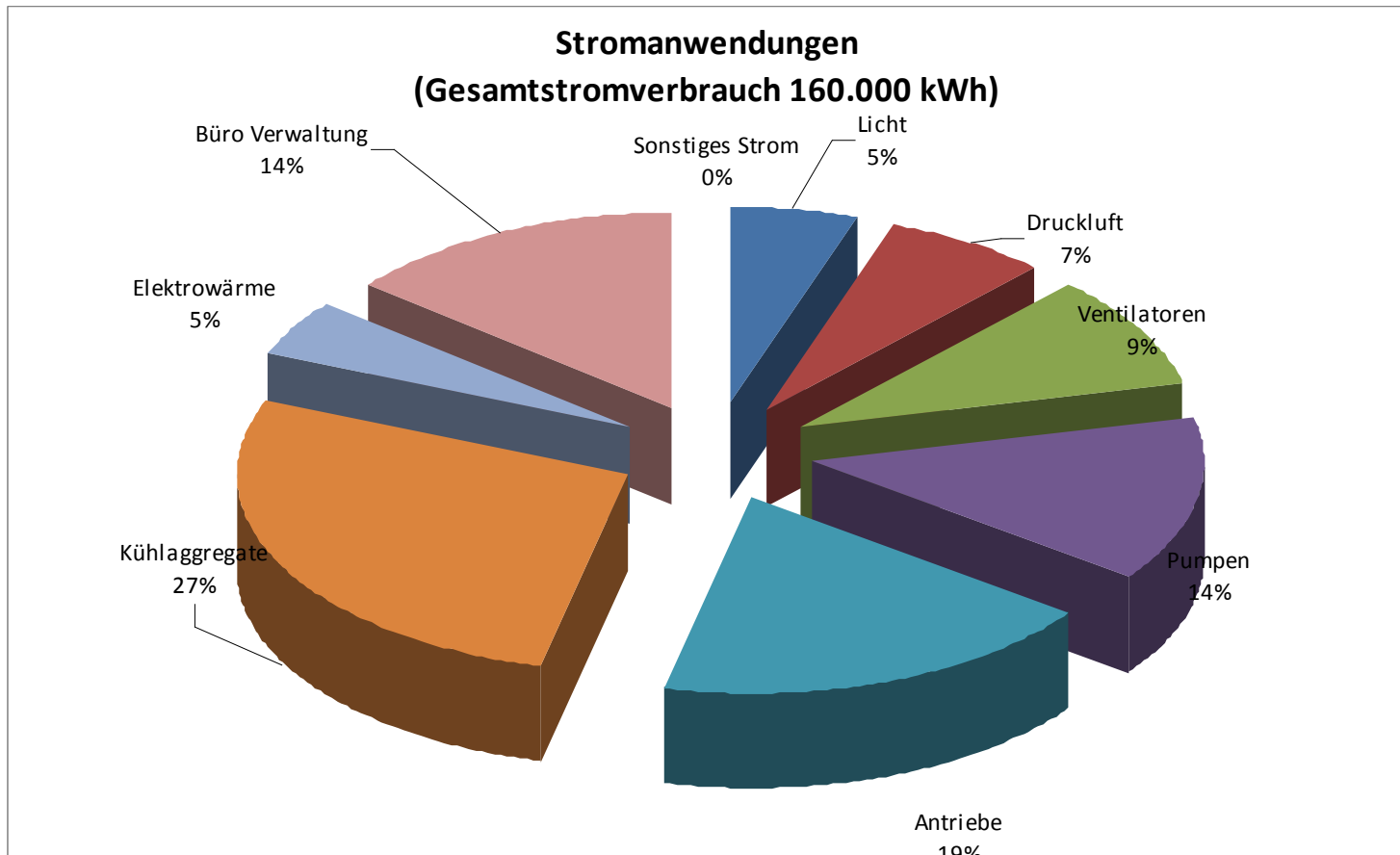
Abbildung 2: Kostenverlauf bei Anwendung kontinuierlicher Energiemanagementprozesse

1st step - Analysis of energy consumption

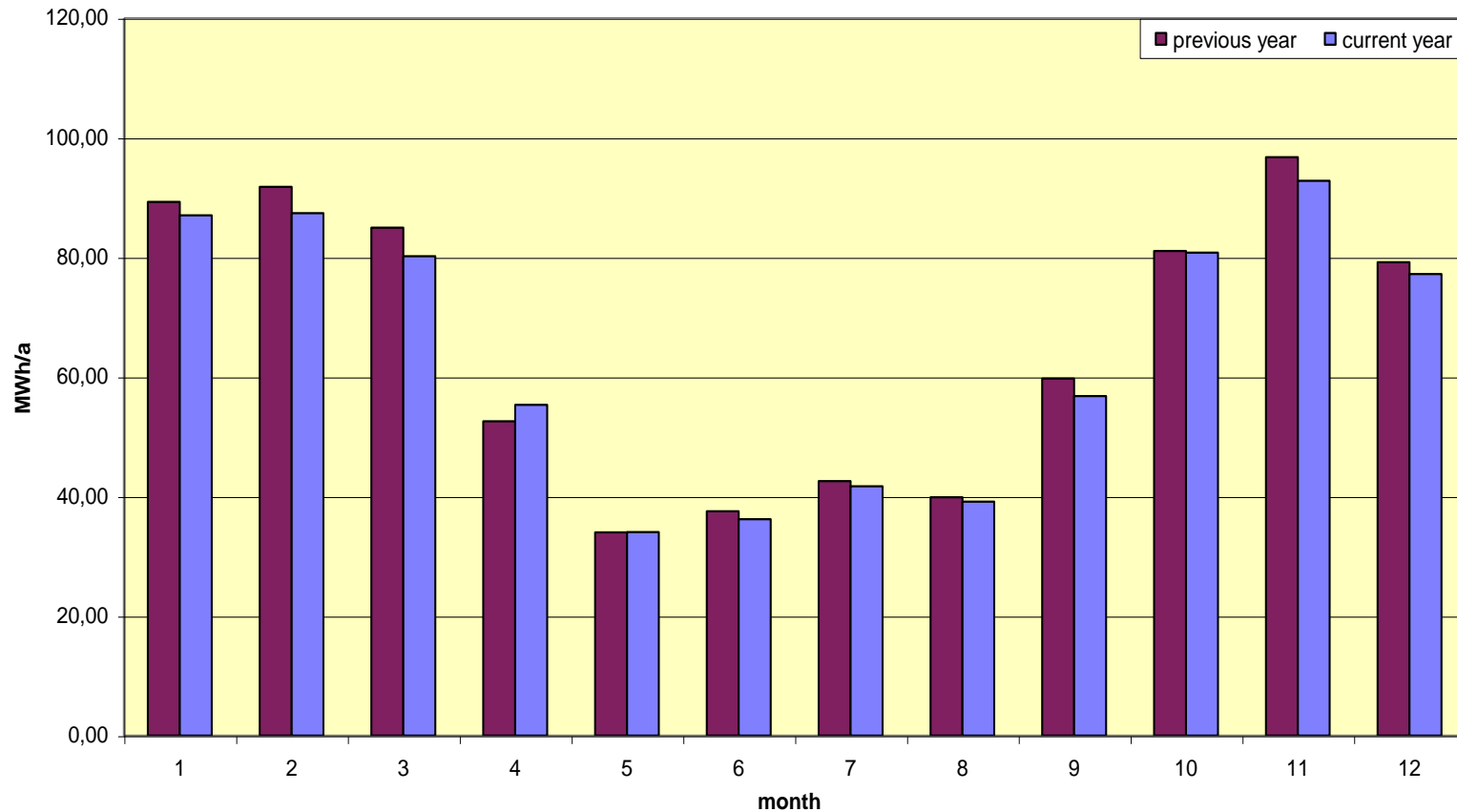
Initial Audit

- Show the people what happens with energy in their company (use, abuse, waste)
- Detailed analysis/measurement of energy consumption
- To bring the consultants experience to the companies
 - give advice/technical input
 - finding solutions together
 - Influence the behaviour
- → k:a eeb ProTools fulfil this needs!



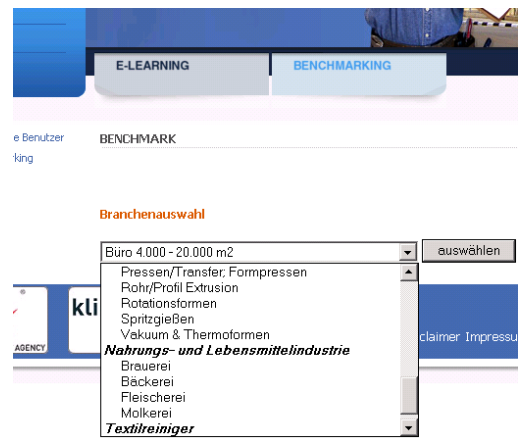
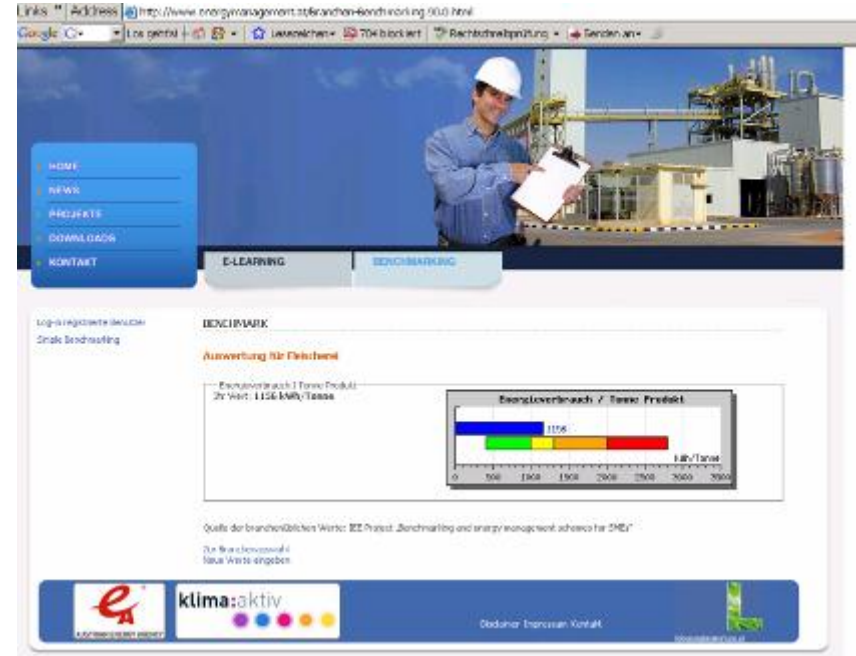


Comparison of total annual energy consumption

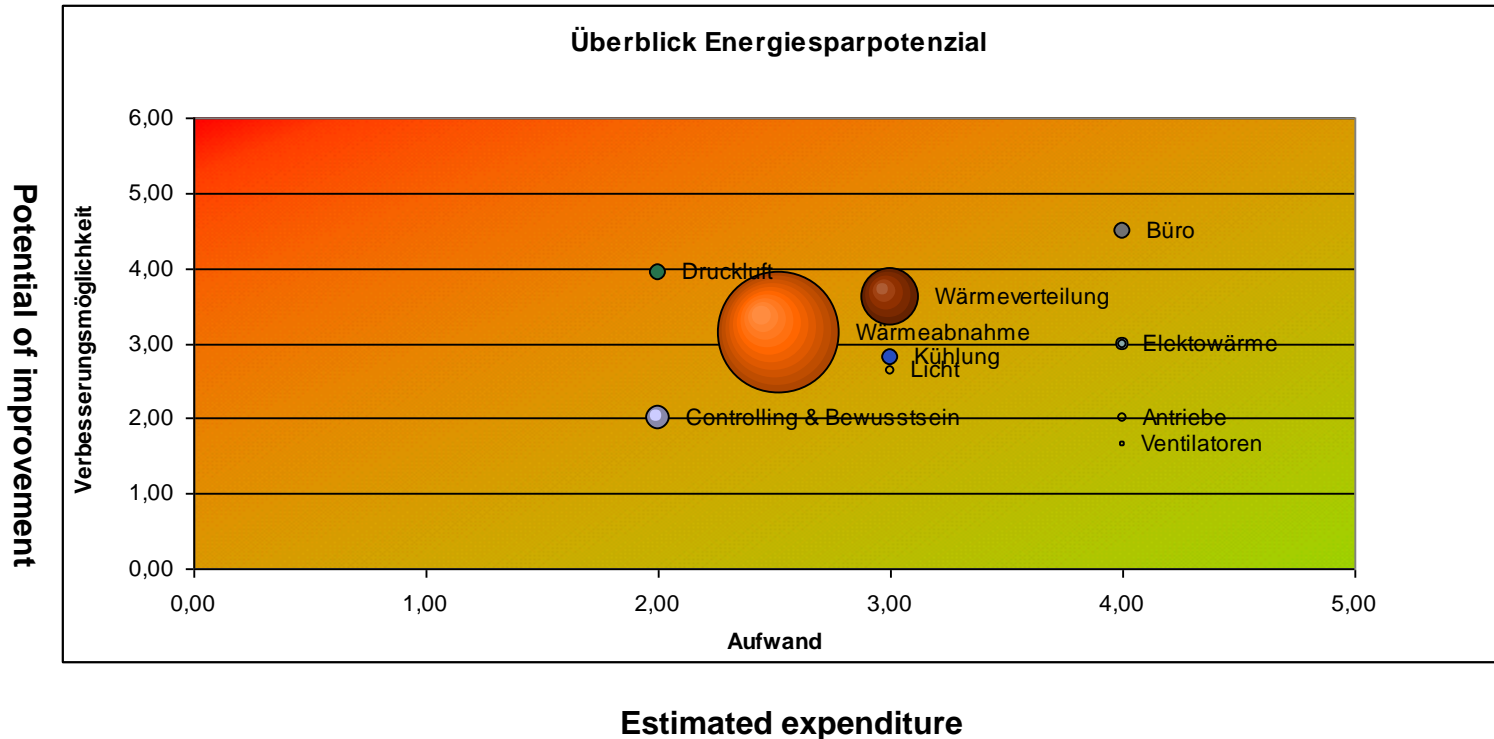


2nd step - Benchmarking

- Definition of key figures for internal monitoring
- definition of benchmarks for comparison with other companies of the sector
- Online „Benchmarking Simple“ for 14 branches on www.energymanagement.at
- www.bess-project.info (international benchmarking)



3rd step - estimation of saving potential



result of klima:aktiv ProTool:

[ka Protools 01102010.xls](#)

4th step - detailed analysis

Special Audits

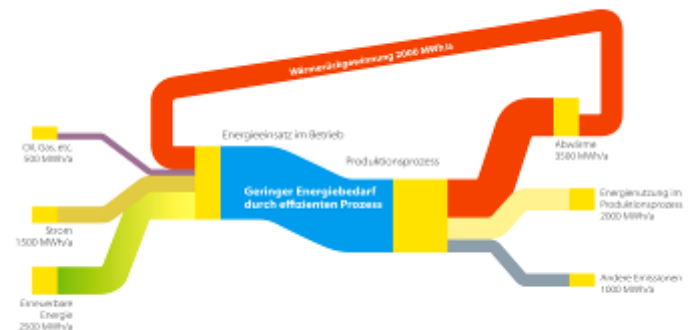
- MotorChallengeProgramme
- Compressed air initiative
- Pumps initiative
- Fans initiative
- Ventilation and Air Conditioning initiative
- optimisation of process heat (EINSTEIN – IEE project)
- Services of partners

Technischer Leitfaden

LÖSUNGEN ZUR VERBESSERUNG
IHRER MOTORENSYSTEME



OPTIMIERTER ENERGIEFLUSS NACH EINSTEIN



www.klimaaktiv.at

5th step - Action Plan

- energy consultant and energy manager / managing director of the company discuss recommended measures
- action plan for next 4 – 5 years
- start with no- and low- cost measures
- for new investments the company should have a list of most efficient equipment and processes on hand

klima:aktiv agreement on objectives

The company commits to implement economical efficiency measures entitles to use the klima:aktiv project partner logo



Overview of klima:aktiv activities for industrial companies

trainings of energy auditors with klima:aktiv tools

audits in companies carried out by trained auditors with financial support of the federal programmes

signing of klima:aktiv „agreement on objectives“ entitles to use the klima:aktiv project partner logo



annual award for efficiency measures with Minister of Environment

TuDu! Energ!e Sem!nar Cabaret Influencing user behaviour in Industry



TuDu ...do it yourself, don't wait for
the others ...!

Selected results

- 581 participants in trainings
- 72 best practice examples online
- 380 GWh savings in electricity and heat
- 145.000 tons savings of CO2
- 840 companies, decision makers and auditors reached by the newsletter



Conclusions

- Saving potentials exist in each company - the top management must be aware of it!
- Subsidised energy consultancy offer low-cost possibility to get an action plan.
- Many measures have pay back periods of less than two years.
- Energy management system guarantees a continuous improvement of the energy situation.

Possible Approach for Project Component 1

Task 1: Monitoring, Tracking and Benchmarking

- adoption of Austrian Energy Data Collection and Benchmarking Tools to Moldovan requirements
- building working groups with Moldovan stakeholders to ensure the best adoption to Moldovan conditions (e.g. existing reporting procedures of company data for official statistics)
- organising workshops with Moldovan stakeholders and possible pilot companies to explain and start the pilot phase (for testing the monitoring, tracking and benchmarking programme)
- visit of pilot companies from PC2 experts for auditing and collecting benchmark data

Possible Approach for Project Component 1

Task 2: IEE Best Practice Dissemination Programme

- to raise the interest in energy efficiency in Moldovan industry, suitable Austrian Best Practice Examples could be translated and presented,
- a website with interesting information on existing efficiency potentials similar to the klima:aktiv website could be created
- in half-day workshops for industry all possibilities to improve their energy efficiency will be presented

Task 3: IEE Best Practice Recognition Programme

- in working groups and workshops the Austrian experience in setting up an energy award will be adjusted to Moldovan requirements

Task 4: National Industrial Energy Manager Certification Programme

- adapting the experience with Austrian training programmes to the requirements of Moldova

Possible Approach for Project Component 1

Task 4: National Industrial Energy Manager Certification Programme