



ENGINE – Energy Efficiency in SMEs

- IEE project Oct. 2007 – March 2010
- Partners: Germany, Italy, Sweden, UK, Austria
- Branches: Food Industry, Automotive, Wood Processing
- Develop Training Material for Energy Consultants
- Conduct Energy Efficiency Checks
- Train the Trainers in energy efficiency and energy management

Results available on: www.engine-sme.eu

klima:aktiv

- is the climate protection initiative of the Austrian Ministry of Environment
- it combines the voluntary measures of the Austrian climate strategy
- the primary objective is to introduce and promote climate friendly technologies and services
- ENGINE results have been implemented into the programme

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



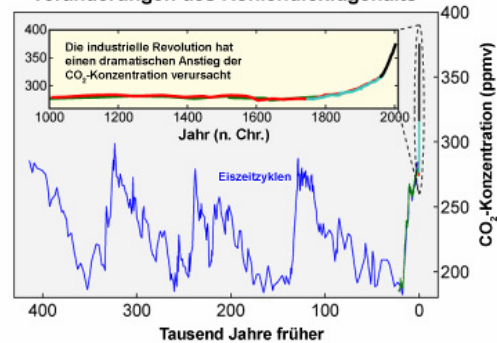
klima:aktiv topics and target groups

	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

It's time to act!

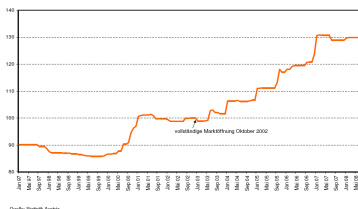
- climate change
- shortage of fossil fuels
- increase in energy consumption and costs
- increasing competition
- social responsibility for sustainable acting

Veränderungen des Kohlendioxidgehalts



Quelle: global warming art

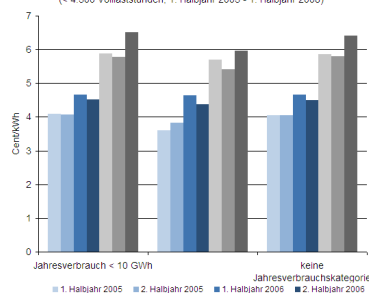
Gesamtpreisentwicklung



Quelle: Statistik Austria

Industriestrompreisentwicklung

(< 4.500 Vollaststunden, 1. Halbjahr 2005 - 1. Halbjahr 2008)



Quelle: E-Control

Objectives of klima:aktiv „energy efficient enterprises“

- awareness raising for energy efficiency in industrial enterprises
 - organising information events in co-operation with sector associations
 - organising an energy efficiency award

- implementation of energy efficiency measures in industrial enterprises
 - co-operation with federal support programmes for energy audits and with their energy consultants
 - carrying out pilot energy audits (e.g. within ENGINE)
 - co-operation with market and technology partners

EINLADUNG ZUR TAGUNG
Steigerung der Energieeffizienz in Industrie und Gewerbe

DINNSTAG, 2. DEZEMBER 2008, WIEN, MUSEUMSQUARTIER
■ ERFOLGSGESPELLE NAMMARTER ÖSTERREICHISCHER UNTERNEHMEN
■ AUSZEICHNUNG DURCH BUNDESMINISTER JOSEF PROLL



klima:aktiv

best practice:

Alpenmilch Salzburg

Thema: Optimierung Druckluft, Homogenisierung, Pasteurisation, Wasserzuberheißung und Kühlung

INTERVENIENZPROFIL
Das Alpenmilch Salzburg verwendet 200 t/a Druckluft, 100 t/a Kühlwasser und 100 t/a Wasser. Aus diesem Grund sind die Energiekosten für die Druckluft, das Kühlwasser und das Wasser ein wichtiger Bestandteil der Energiekosten.

Druckluft	100 t/a
Kühlwasser	100 t/a
Wasser	100 t/a



AUSGABERESULTATE
Klimaschutz: Der Alpenmilch Konzern hat sich mit dem Ziel verbunden, die Energieeffizienz zu steigern und die Energiekosten zu senken. Durch die Optimierung der Druckluft, des Kühlwassers und des Wassers wurden Energiekosten von 1,2 Mio. € auf 0,8 Mio. € gespart. Dies entspricht einer Energieeffizienzsteigerung von 33%. Die Energieeffizienzsteigerung wurde durch die Optimierung der Druckluft, des Kühlwassers und des Wassers erreicht. Die Energieeffizienzsteigerung wurde durch die Optimierung der Druckluft, des Kühlwassers und des Wassers erreicht.

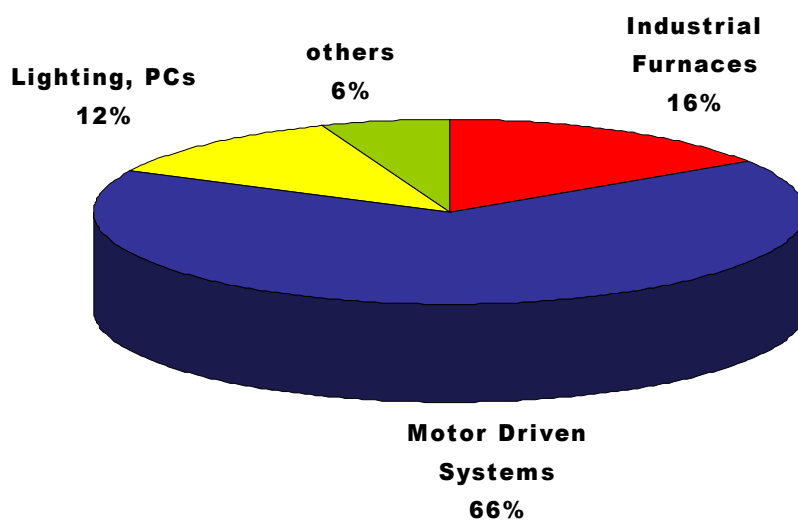
KLIMA:AKTIV



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%

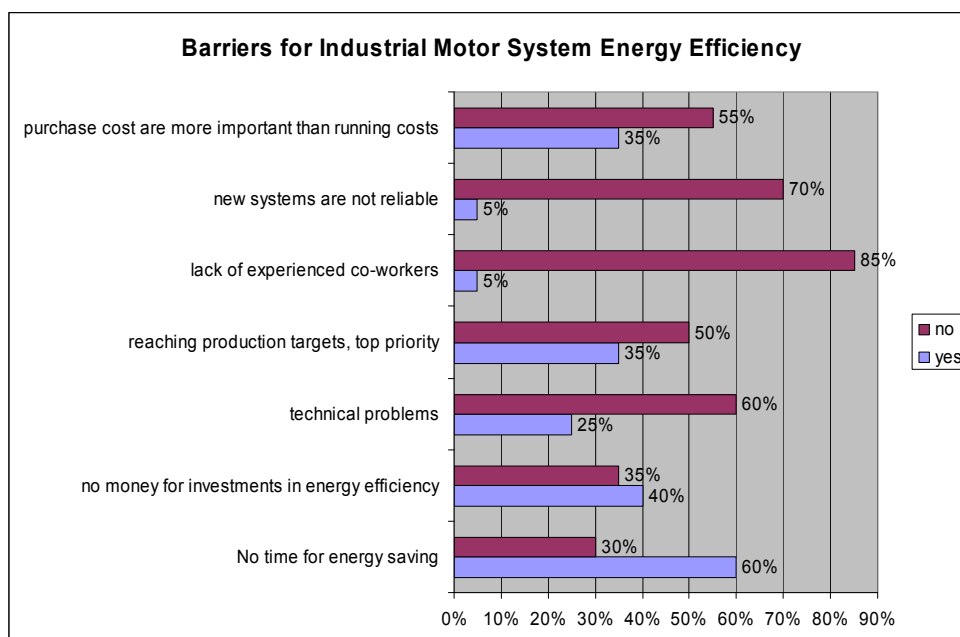
Electricity Consumption in Manufacturing Sector



Quelle: NEA 2004

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 %



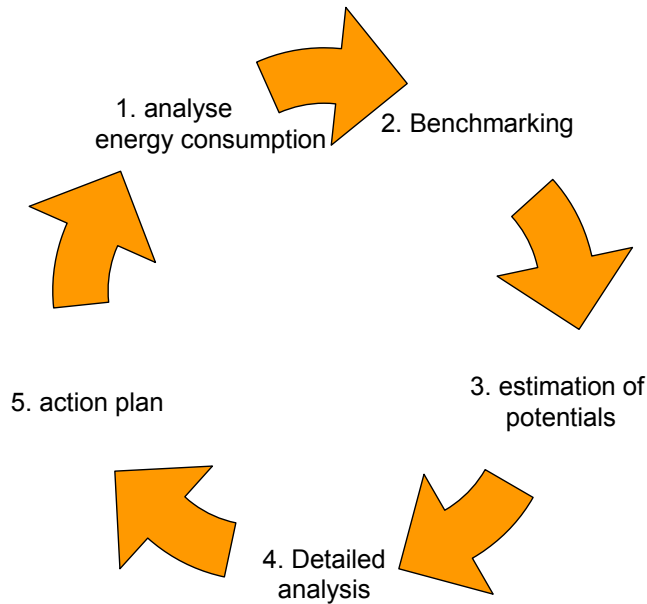
Source: Survey of AEA, Dec. 2006

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
- 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

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

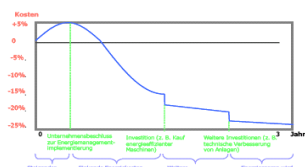
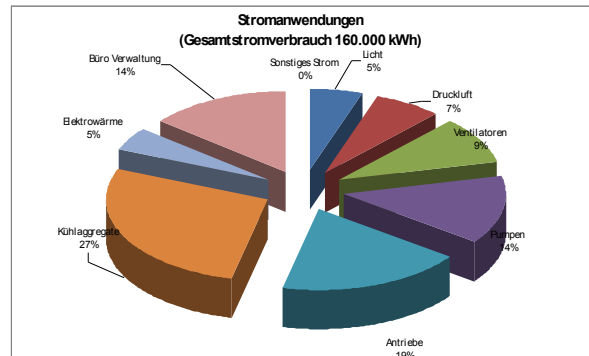
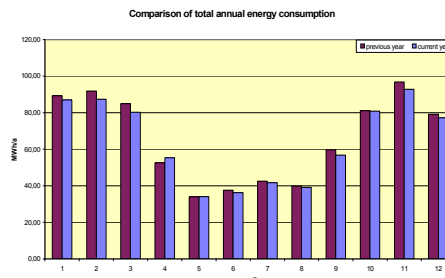


Abbildung 2. Kostensenkung bei Anwendung kontinuierlicher Energiemanagementprozesse

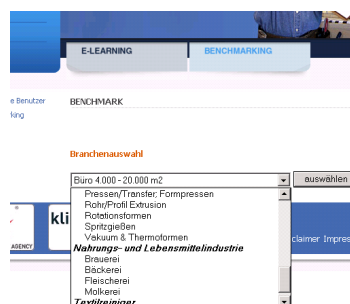
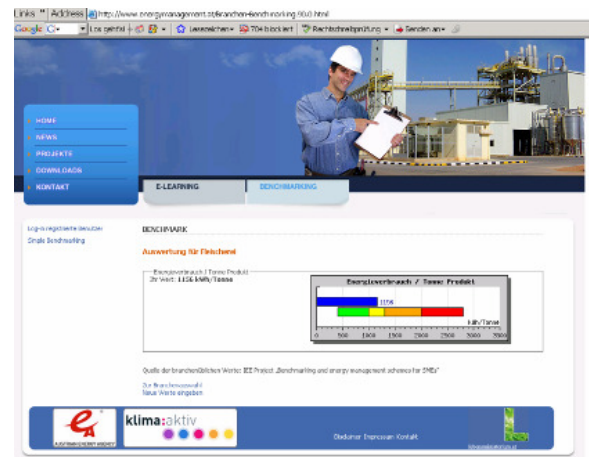
- Show the people what happens with energy in their company (use, abuse, waste)
- Detailed analysis/measurement of energy consumption
- To bring the consultants experience to the companies
 - give advice/technical input
 - finding solutions together
 - Influence the behaviour

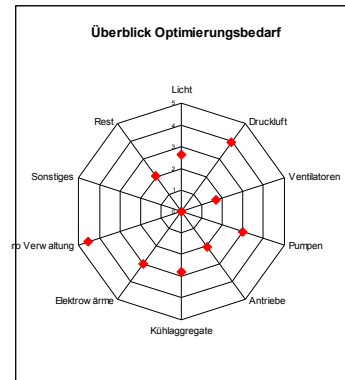
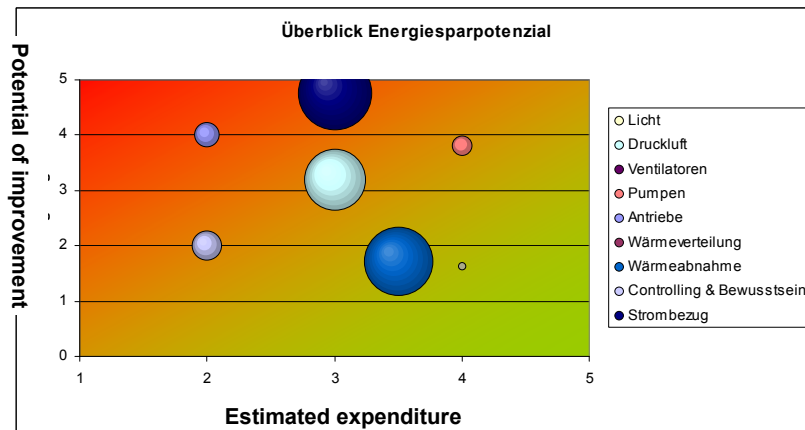


- → k:a eeb ProTools fulfil this needs!



- 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)





result of klima:aktiv ProTool

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

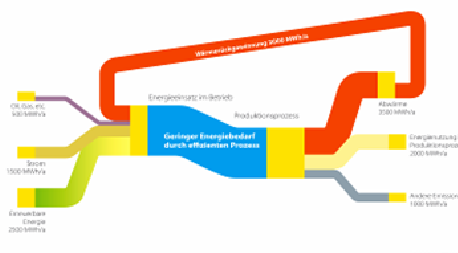
Technischer Leitfaden LÖSUNGEN ZUR VERBESSERUNG IHRER MOTORENSYSTEME



Halten Sie die Luft an! –
Machen Sie Druck auf Ihre Energiekosten



OPTIMISierter ENERGIeFLUSS NACH EINSTEIN



- 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



- subsidies for energy consulting
- training of the regional auditor networks with klima:aktiv tools
- events and pilot actions



Das Zentrum für Erneuerbare Energien der Tiroler
Zukunftsstiftung

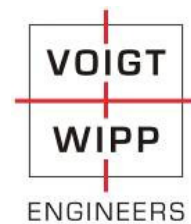


ENGINE



Co-operation with market partners

- Leakage finding in compressed air systems
- energy efficient plants and systems
- process heat optimisation
- online-metering



ENGINE



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



- 200 trained consultants in the areas of initial energy checks (ProTool), energy management, compressed air systems, pump systems, process heat systems
- 47 Best Practice Examples online
- 350 GWh saved electricity and heat
- 140.000 tons CO2 saved
- 700 companies get the newsletter



Best Case Example - Control of Fans Knauf

- Drying of building-plates by ventilation of hot air
- Delivered amount of air is reduced to 40% of the maximum power through a inappropriate vane control
- Direct control of fan velocity by different pulley sizes
- Reduction of performance of 63 kW
- Cost reduction: 24.000 EUR
- Energy saving: 340.000 kWh; (assuming that electrical energy costs 7 cent/kWh)
- Costs: 3.500 EUR for the change of the pulley

KNAUF





Maria Bellazzi und Heinz Hofbauer
die SemiNarren

Peter Sattler und Kurt Krautgartner
sattlerenergie consulting gmbh



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

Conclusions

- saving potentials exist in each company
- 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