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4E

Efficient Electrical End-Use Equipment
International Energy Agency

bmvit Bundesministerium für Verkehr, Innovation und Technologie

Österreichische Energieagentur

Efficient Electrical End-Use Equipment Aktivitäten des IEA Programms 4E

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Background

- Energy Efficiency is Top Priority
- The IEA estimates that energy-efficiency improvements could contribute 47% of reductions in energy-related CO2 emissions potentially achievable by 2030
- Using energy-efficient equipment is the most cost-effective short-term path to greater energy security and lower greenhouse gas emissions to combat climate change
- Call for global activity at G8 summits in Gleneagles, Heiligendam…
- Activities in a lot of IEA and Non-IEA Countries
- Chances in Internationaler Co-Operation
- CERT: 2006 & 2007 Consideration on co-operative programme for “Efficient Electrical End-use Equipment (4E)”

Content und Results of Implementing Agreement 4E

- **Scope**
  - Energyefficiency of electrical enduse equipment – esp. with high energy consumption und high market relevance (industry, commercial, households)
  - International co-operation for development of better understanding of enduse-equipment and policy instruments
  - International coordination of different approaches
- **Deliverables**
  - Forum for participating governments and sponsor-organisations
  - Elaboration and establishing Annexes of 4E
  - Conclusions for international cooperative activities on basis of the results of annexes

Status

- Definition: 2007
- The Governing Board of the International Energy Agency (IEA) has in March 2008 given support to the co-operation
- First 4E ExCo Meeting: Paris 14-15 April 2008
- Selection Procedure for EXCO Operating Agent Summer 2008:
  → Mark Ellis (Australien)
- **4E ExCo Meeting Washington 23-24 Oktober 2008**
- Annex Motor Systems- final proposal (CH)
  Annex Standby- draft proposal (Australia)
  Annex Mapping and Benchmarking- draft proposal (UK)
  Annex Set Top Boxes- draft proposal (USA)
  Annex Lighting- first proposal (FR)

Participating States

- Austria
- Australia
- Canada
- Denmark
- France
- Korea
- Netherlands
- Switzerland
- UK

Open:

- Japan
- South Africa
- US

- At the moment: China, Brasilia?

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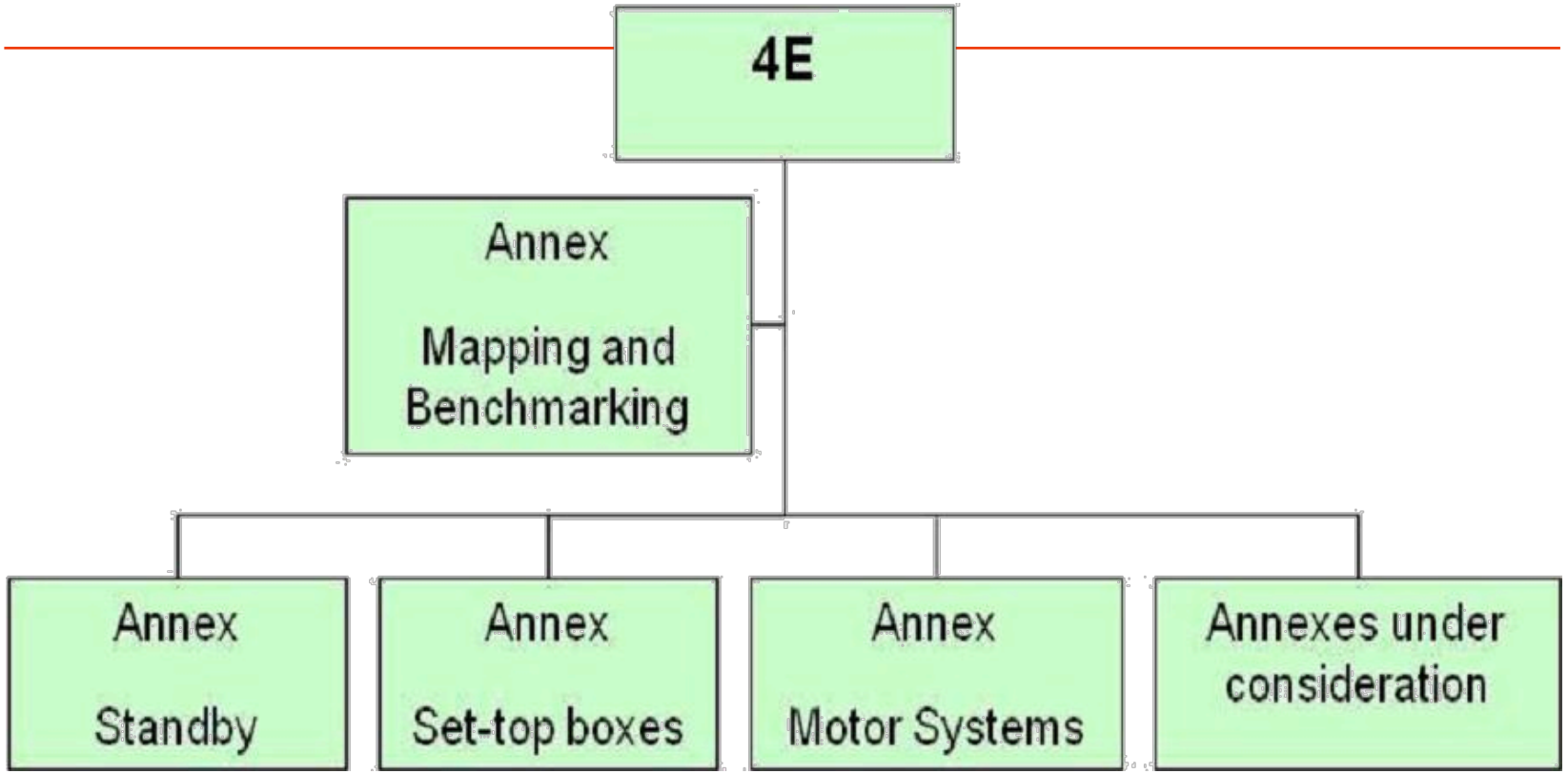
Österreichische Experten

Michael Hübner (BMVIT): Beteiligung	EXCO, Koordination der österreichischen
Konstantin Kulterer (AEA):	Alternate EXCO, Annex Motor Systems
Wolfgang Wimmer (TU-Wien):	Annex Mapping and Benchmarking, Annex Standby
Herbert Pairitsch (Infineon):	Annex Mapping and Benchmarking, Annex Standby
Bernd Schäppi (AEA): Beteiligung	Vorbereitung und Anbahnung der österr.

Structure



- Lighting
- Supply Chain Agreements
- Product/Service Systems

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Annex Mapping and Benchmarking

- *Provide policy makers with knowledge on product performance and associated policy tools across the world*
- *more informed policy making at the national and regional levels*

Aims

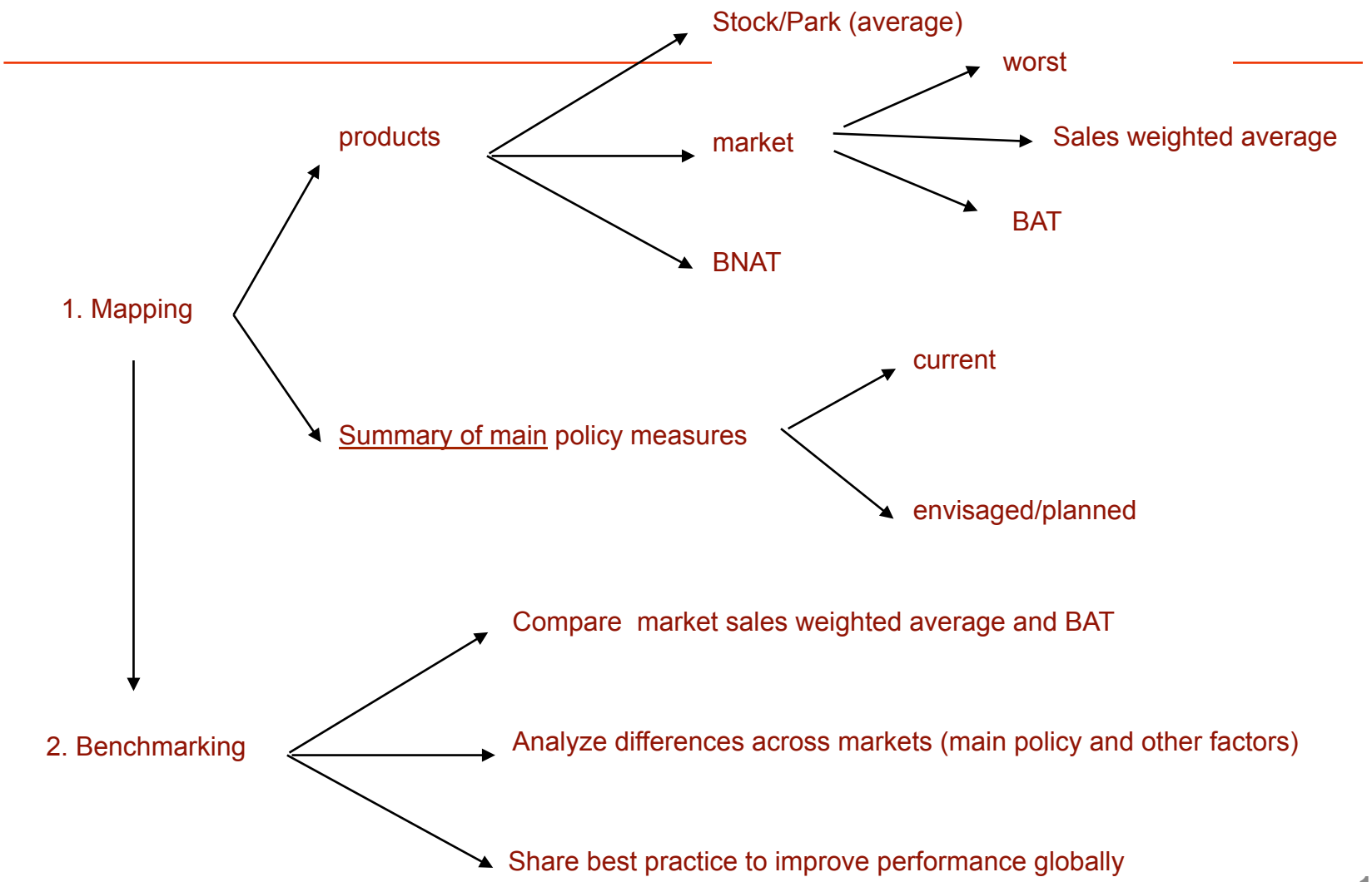
Mapping

provide an overview of the energy efficiency performance of electrical end-use equipment in several countries and a brief summary of the main policy measures in this field;

Benchmarking

compare sales weighted average and best performance of products put on the market;
analyse difference between different markets;

Aims


Stock/Park (average)
products
market
worst
Sales weighted average
BAT
BNAT
1. Mapping
current
Summary of main policy measures
envisaged/planned
Compare market sales weighted average and BAT
2. Benchmarking
Analyze differences across markets (main policy and other factors)
Share best practice to improve performance globally

Mapping Products

- Collect information (by country/region) about the average product in the stock/park
- Collect information about worst, and most efficient products on the market
- Collect information on BNAT (Best Not Yet Available Technology)
- Details of what measurement/test standard performance has been measured

Mapping Policies

- Gather high level information on the *main* policy measures employed or planned in each market
- Categorise such policy actions by type (regulatory, financial/incentive, voluntary, information/capacity building), areas and percentage of the market targeted, etc.

Benchmarking

- Comparing average and best products on the various markets
- Analysing differences between markets taking into account policy measures as well as other relevant factors (energy prices, competitive pressures, culture, etc);
- Share best practice and lessons learnt by highlighting potential policies that could lift product markets to better energy performance levels, globally;

Which products?

- Domestic Cold Appliances
- Televisions
- Domestic Laundry Appliances
- Domestic Air Conditioners
- Laptop Computers
- Integrated Home Networks
- Waterheaters
- Domestic Lighting
- Computer Displays
- Motors

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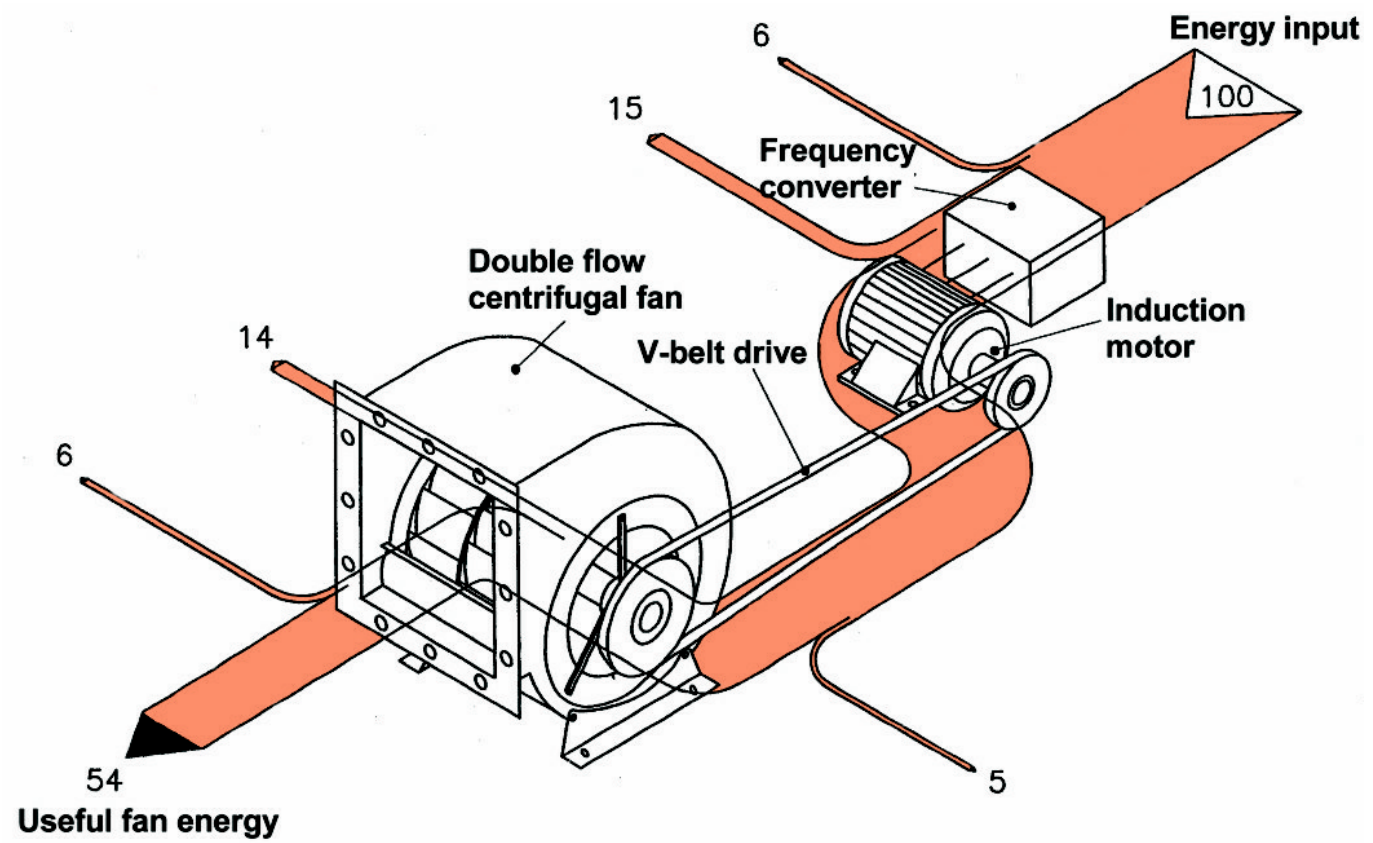
EMSA Electric Motor Systems Background

- Electric motor systems use 40% of global electricity.
- They drive pumps, fans, compressors and traction systems in industry, infrastructure and buildings.
- With using best practice energy efficiency can be improved by 20% to 30% on average.
- Most improvments have a pay back time of 1 to below 3 years.

Scope of Motor Systems Annex

- We deal with:
- poly phase electric motors between 0,5 and 375 kW (AC 2,4,6 poles with 200 V to 1000V)
- Motor and core system (pump, fan, compressors; and VSD, transmission system)
- Not included: pipes, ducts, etc.

Example of Motor System



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EMSA Electric Motor Systems

Target:

- contribute to a coordinated effort towards rapid transformation of global markets by:
  - Spreading good practice
  - New improved technology
  - Positive policy experiences

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IEA 4 E Motor Annex

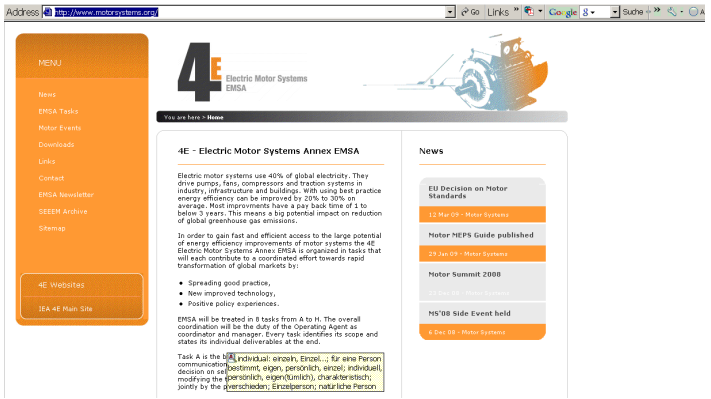
	Task	
A	Implementation Support & Outreach	
B	Technical Guide for Motor Systems	
C	Testing Centers	
D	Instruments for Coherent Motor Policy	Starts later
E	Training & Capacity Building	
F	Energy Management in Industry	
G	New Motor Technologies	
H	Total Motor Systems Integration	Starts later

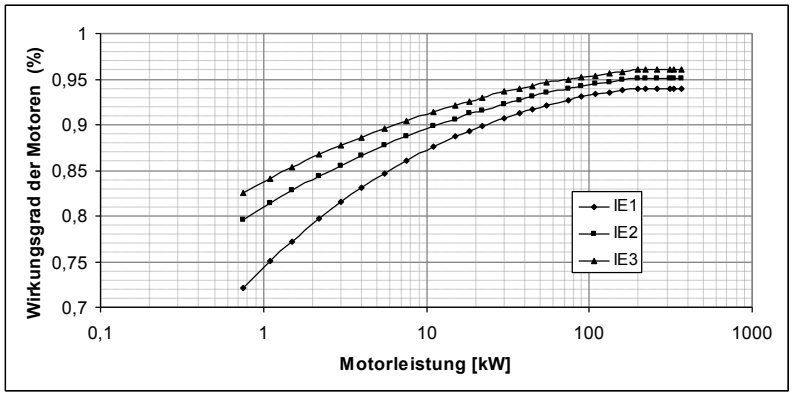
First Results

- Web Site:

www.motorsystems.org

- Newsletter: international, national
- MEPS Guide on new IEC Standard





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Stand By Power Aims

- 1. Support for policies to tackle standby power
- 2. Information collection and dissemination.

Stand by Power Activities I

- Draw on existing policy development work to address standby power;
- Examine horizontal approaches to policy setting including options by modes (Stand By, Off, Sleep); groups of appliances, functions (time display)
- Identify key generic functions for electrical/electronic appliances that could be used to define a horizontal approach; (time display, etc.)
- Monitor the development of new functions and their relevance for low power modes
- Identify a range of acceptable power consumption levels for each function
- Communicate findings to policy-makers
- Contribute to further development of relevant measurement methods

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Stand By Power Activities II

- Promote innovative power management and auto power down solutions for individual devices
- Monitor and promote solutions for power management within networked electronic devices,
- Compare national policies especially looking at nations with policies like Japan that are successfully lowering standby power.

Stand By Power
Information collection, Dissemination

- Hold regional workshops to promote the collection of data and train those involved in measurements.
- Collect and publish information, analysis of trends about standby power.
- Disseminate the results of national standby power studies via website, workshops, etc;
- Research and publish guidelines on methodologies for assessment of standby power consumption.

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Set Top Boxes I

- **Development of a Test Procedure**
  - evaluation of existing test procedures, and working within the international standards development body to revise existing or to develop new test procedures
- **Financial and Regulatory Approaches to Reducing Energy Use**
  - generic approaches to overcoming market barriers , national case studies
- **Demonstrate New, Energy-Saving Technologies**
  - develop an energy efficient prototype STB

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Set Top Boxes II

- **IEA sponsor biennial forum** on Energy-Efficient Set-Top Boxes and Networks
- **Establish Technical Specifications for Energy-Efficient Set-top Boxes**
  - establish globally-applicable performance specifications. Specification could be used for both voluntary or regulatory programs to include procurement, deployment, and endorsement programs.
- **Develop a Database of Efficient Set-Top Boxes and Components**

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