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The future of appliance policy: ZEAP

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(NL Agency)
Chairperson 4E

Wien, 5 March 2010

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Overview of presentation

- Trends in appliances
- Why appliances are important?
- Where does 4E fit in?
- Mapping & Benchmarking of appliances
- Future of appliance policy: ZEAP

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Trends in appliances

- Energy efficiency of appliances has improved, BUT
- More appliances per household
- More households, more appliances in total
- Larger appliances, increased performance: cold appliances, televisions, monitors
- Increasing time in power consuming modes: always on, network connections

Conclusion: energy consumption of appliances will increase

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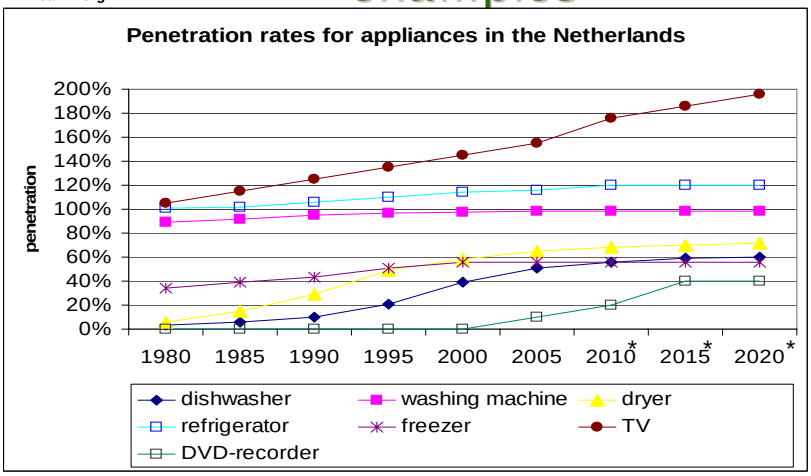
Trends in appliances examples



* 2010, 2015, 2020: estimates

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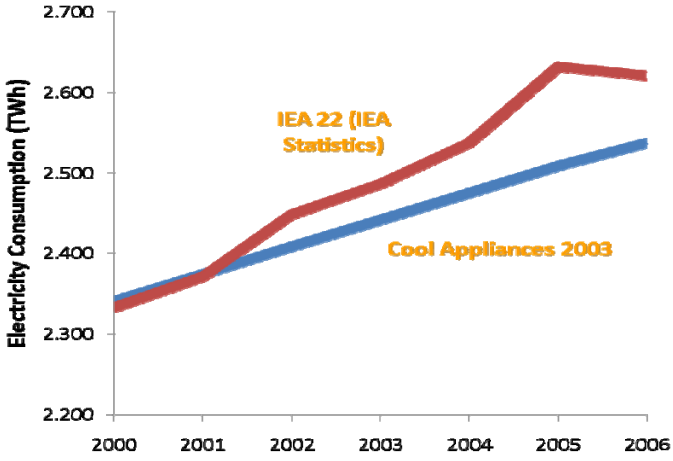
Residential electricity consumption



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4E at a glance

- 4E provides an international forum for governments and other stakeholders to:
  - Share expertise and develop understanding of electrical end-use equipment and policies
  - Facilitate co-ordination of international approaches in the area of efficient electrical end-use equipment
- 4E seeks to meet the challenges for policy makers to maximize energy efficiency on all types of non-transport electrical equipment.
- Launched in March 2008, 4E now has 11 member countries actively participating in collaborative projects.

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Participating countries

Members:

Australia (vice-chair)
Austria
Canada
Denmark
France
Korea
The Netherlands (chair)
Switzerland
South Africa
UK
USA

Considering membership:

China
Japan
Mexico
Sweden

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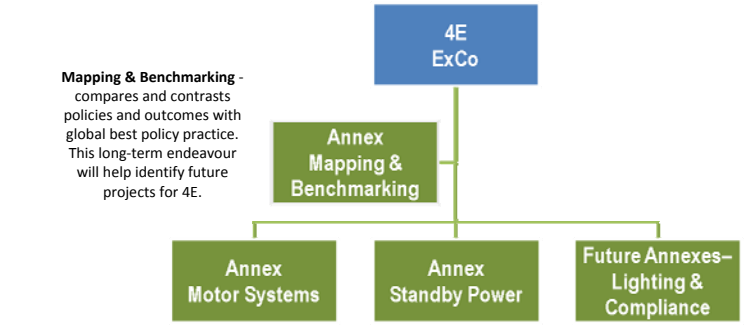
Structure of 4E



Mapping & Benchmarking - compares and contrasts policies and outcomes with global best policy practice. This long-term endeavour will help identify future projects for 4E.

Electric Motor Systems: reporting the means used to improve efficiency and encourages alignment on policies proven to be effective.

Standby Power: identifying new trends in standby power and the policies with potential to reverse increasing energy use.

Areas of high energy use, with need for policy co-operation

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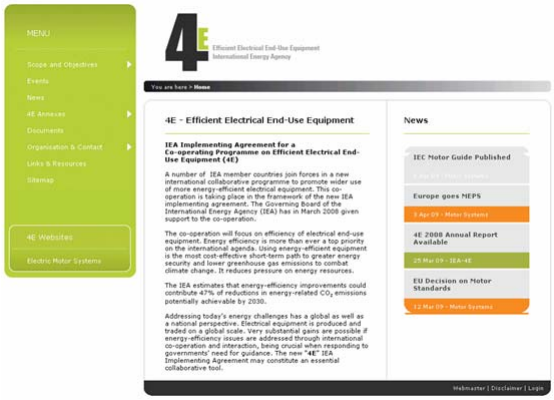
Further information: on the website …



- General information and news on 4E
- Specific information on Annexes
- Protected area for sharing information amongst participants
- Linked websites for Annexes

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… and in 4E and Annex newsletters

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Mapping&Benchmarking

Goal: provide information for policy makers to

- Identify the potential of products on the market (Mapping)
- Compare data for products in various regions of the world (Benchmarking)

The following products will be dealt with:

- cold appliances, washing machines, clothes dryers
- domestic lighting
- laptops, displays, televisions
- water heaters, airconditioners

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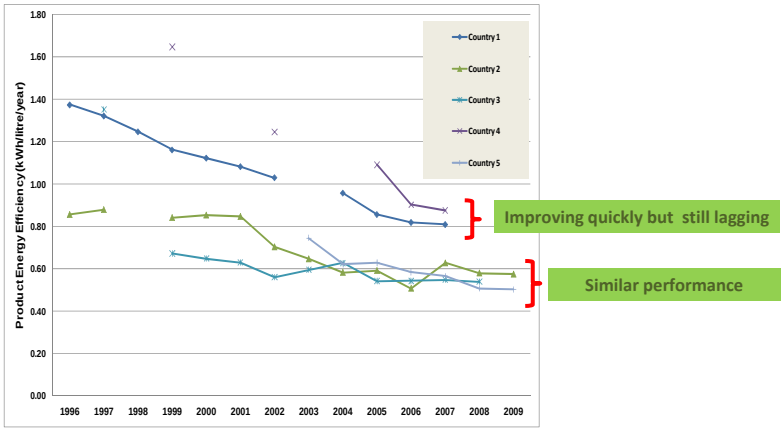
Mapping&Benchmarking across countries

Cold appliances (market data):



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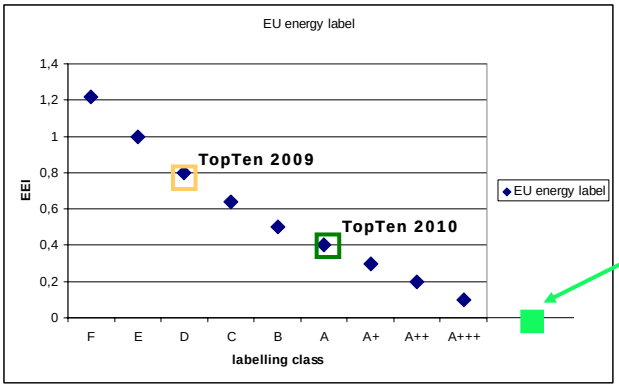
Mapping&Benchmarking

Televisions (EC proposal labelling classes):



Zero energy consumption

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Future of appliance policy

- Energy consumption per appliance is decreasing.
- What is the next step?
- Buildings and transport have shown the way forward:
  - net zero energy buildings
  - carbon neutral transport
- Future of appliance policy:
  ZEAP (zero energy appliance policy)

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What is a ZEAp?
(Zero Energy Appliance)

- Zero energy appliance: appliance that on average has a zero energy consumption from the mains.
  - No connection to the mains (230 V, 50 Hz)
  - Consumption from the mains equals production to the mains
- ZEAPs already exist/are being developed:
  - Hand powered radios, watches and flashlights
  - Mobile phones powered by ambient/body heat

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Towards ZEAps: guiding principles

- Decrease energy consumption:
  - Eliminate all unnecessary energy consumption
  - Use extreme efficient components
  - Implement power management
- Increase energy production of the appliance:
  - Use of ambient heat
  - Solar input
  - Mechanical power: opening of doors, human power
- Very efficient storage:
  - Storage of energy generated by the appliance for later use
  - Use grid as storage: efficient exchange

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Policies supporting ZEAps

- Use the concept as an inspiring vision
- Total life cycle costing:
  - Refrigerator with a retail price of € 275 and energy consumption of 200 kWh/year has total cost of € 875*.
- Energy label 2020: A class is reserved for ZEAps.
- Policies supporting R&D towards ZEAps, efficient storage.

* Life time: 12 years, electricity price 0,25 €/kWh

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Thank you for your attention

More information on 4E:

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Or contact the Operating Agent

Mark Ellis (m.e.a@bigpond.com)

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