



● ECODESIGN AND LABELLING

Brussels, 27 October 2011,
REHVA Technical Seminar

DG Energy Unit C3
Energy efficiency & Intelligent Energy - Europe
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Directorate-General
for Energy



- The Energy efficiency of products is enshrined in a broader integrated approach

Integrated product policy:

- The **production phase** is addressed by the **RoHS Directive 2002/95/EC** on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment*
 - The **use phase** is addressed by the **Ecodesign Directive** and by the **Energy Labelling Directive**
 - The **end-of-life phase** is addressed in the Waste Electrical and Electronic Equipment Directive 2002/96/EC (the WEEE Directive)*
- Life cycle analysis performed on a number of energy using products show that most environmental impact occurs during **the use phase.**

*recast ongoing



Energy efficiency of products - main instruments

- **Ecodesign Directive 2009/125/EC**

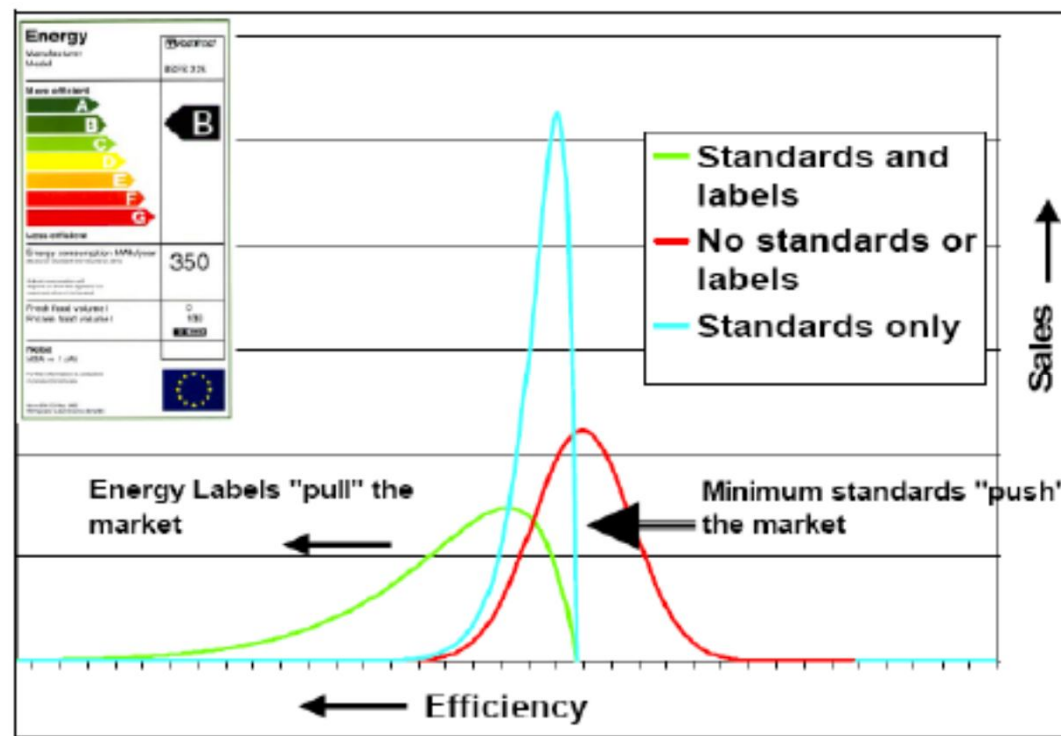
- » «framework» defining the «rules» for setting product-specific requirements/legislation on energy efficiency and further parameters

- **Energy Labelling Directive 2010/30/EU**

- » «framework» defining the «rules» for setting product-specific requirements/legislation on standard information of the consumption of energy and other resources

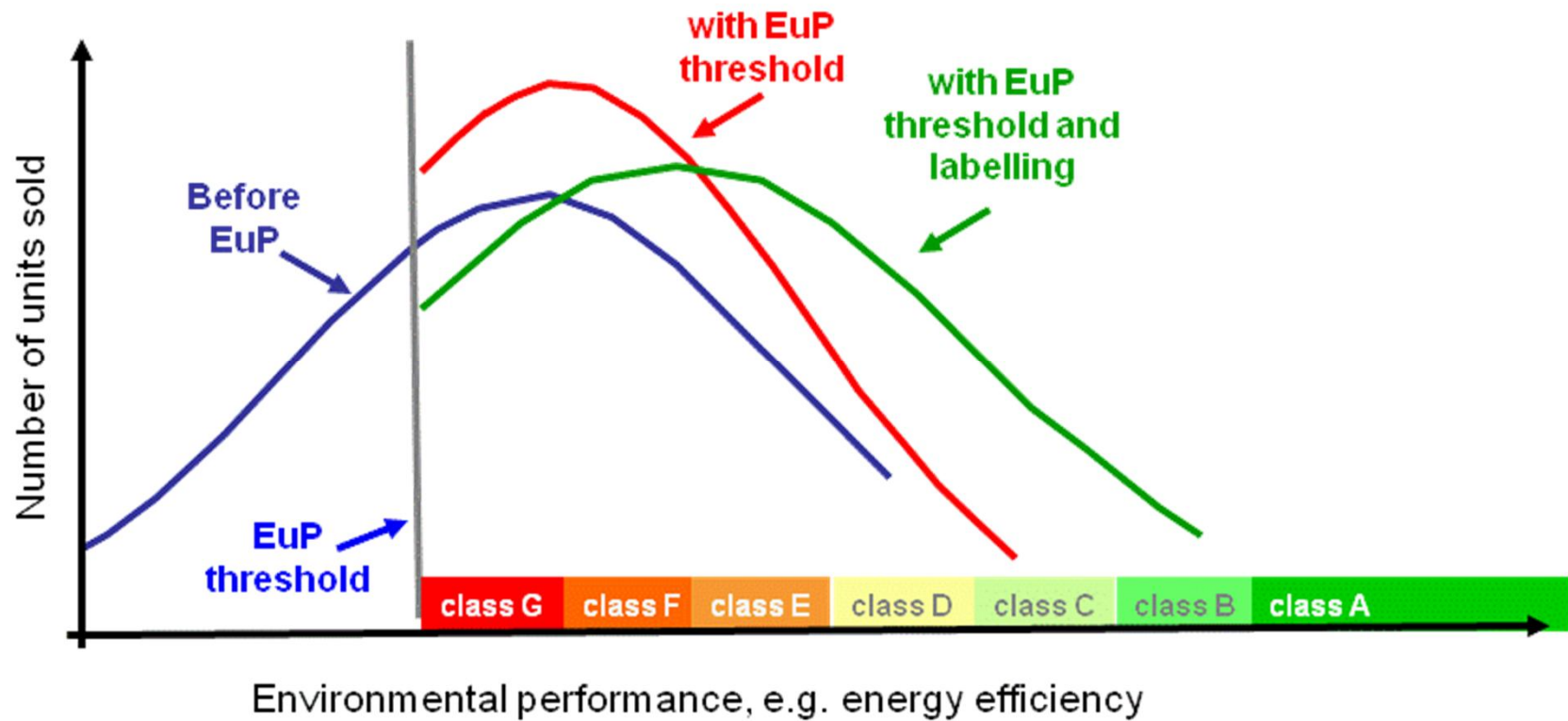
● The use phase: Interaction between the Ecodesign and the Energy Labelling Directives

The Ecodesign Directive addresses the **supply side** while the Energy Labelling Directive addresses the **demand side**. It is the **combined** effect of both measures which ensures a dynamic improvement of the market.



Source: IEA, P. Waide, International use of policy instruments, Copenhagen, 05 April 2006

Market transformation





- The Ecodesign Directive 2009/125/EC

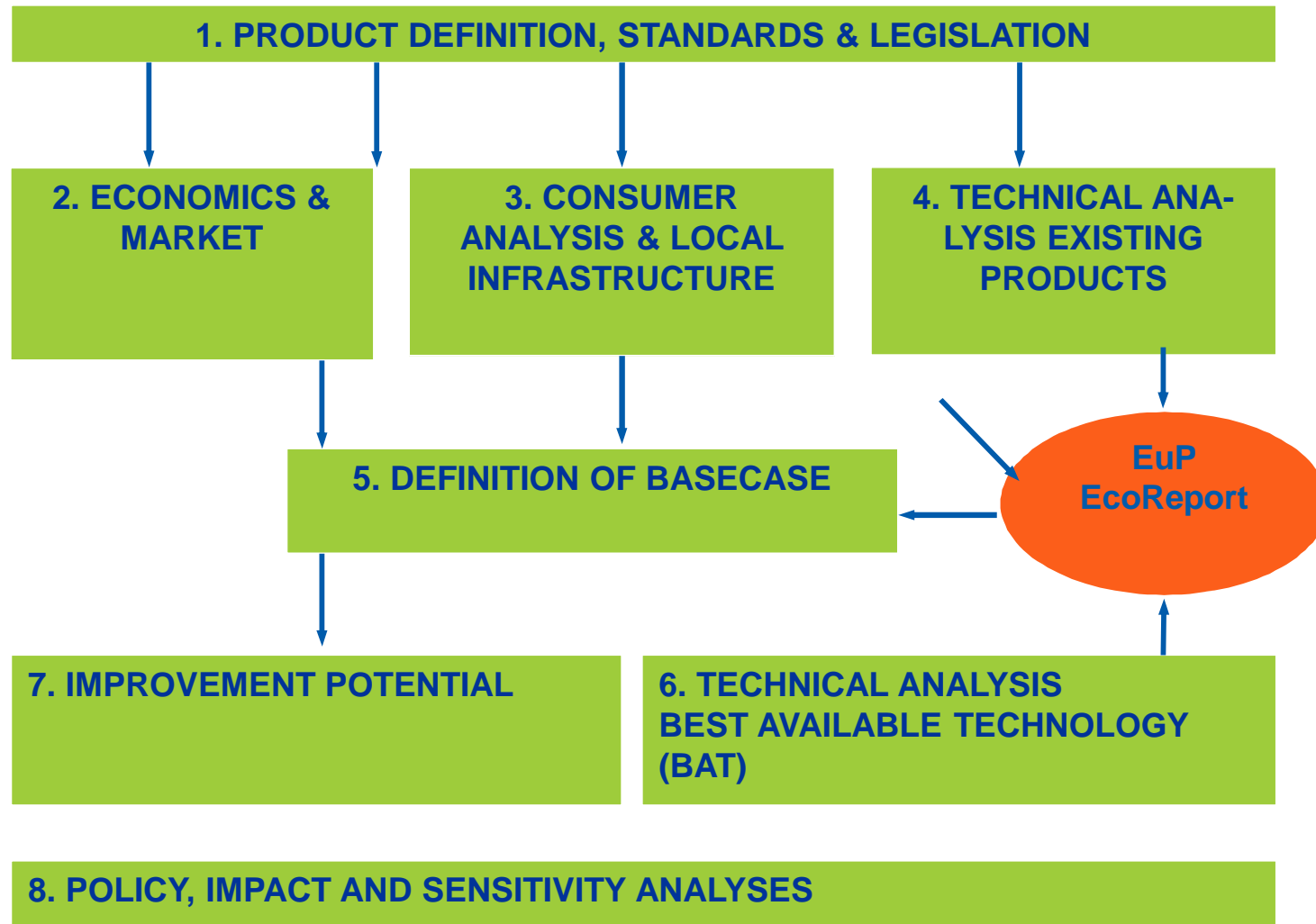
● The Ecodesign Directive 2009/125/EC

- The EU's main legal instrument to improve the environmental performance of **energy-related products**
 - » Extension of the scope of past Ecodesign Directive 2005/32/EC (energy-using products)
 - » Exemption for the automotive sector regulated in the type-approval legislation
- **Framework Directive** → requirements are introduced on a product-by-product basis via:
 - » **Implementing measures** (IM) to be adopted by the Commission, or
 - » **Voluntary agreements**
- Implementing measures only for products with:
 - » Significant environmental aspects
 - » Significant potential for improvement
 - » Significant trade and sales volume (indicative threshold: 200 000 units per year)
- Based on **Life-cycle approach**

● How is the Commission setting the requirements? – comitology procedure

- **Preparatory studies** : technical, environmental and economic analysis of product groups done by Consultant with input from stakeholders around the world (published on dedicated websites)
 - » Functionality of the product
 - » Health and safety
 - » Competitiveness of the industry
- **Consultation Forum**: discuss suggestions for ecodesign requirements (Commission)
- **Impact assessment and interservice consultation**
- **WTO notification** (Technical Barrier to Trade agreement)
- Vote in **Regulatory Committee** (EU Member States)
- **Scrutiny/Right of objection** of the European Parliament and Council
 - » PRAC, article 5(a) of Decision 1999/468/EC
 - » New comitology procedure of the Lisbon Treaty set out in Article 290
- **Adoption** by Commission: Regulations directly applicable in EU Member States

Methodology of Preparatory studies (“MEEuP”)

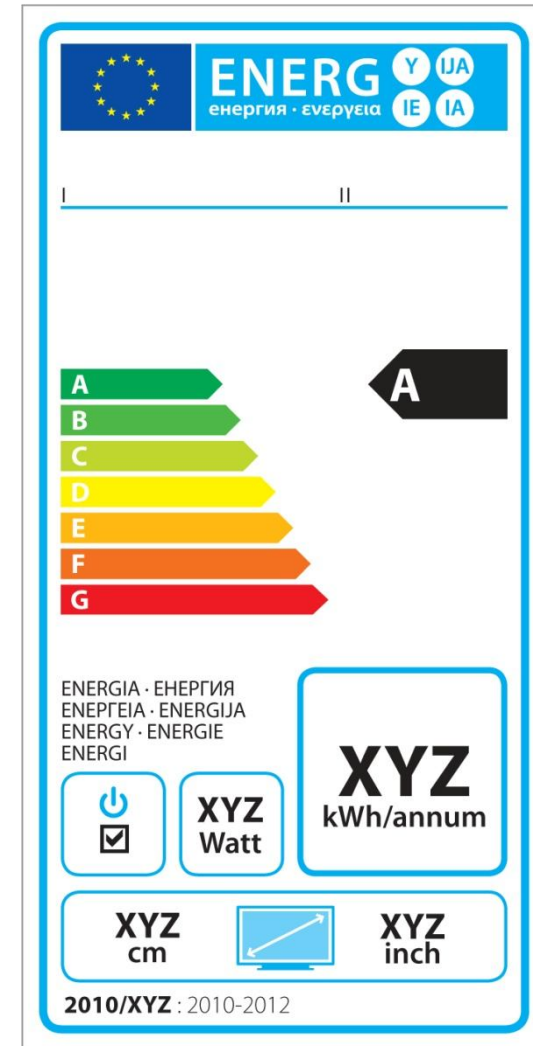




- The Energy Labelling Directive 2010/30/EU

Energy Labelling Directive 2010/30/EU (1)

- **Information requirements** on the consumption of energy and essential resources
- **Target: end-users** (public and private demand)
- Label design and layout decided in DAs
- New Adoption procedure with Lisbon Treaty in force: consultation of all stakeholders but no committee with a vote by Member States



● Energy Labelling Directive 2010/30/EU (2)

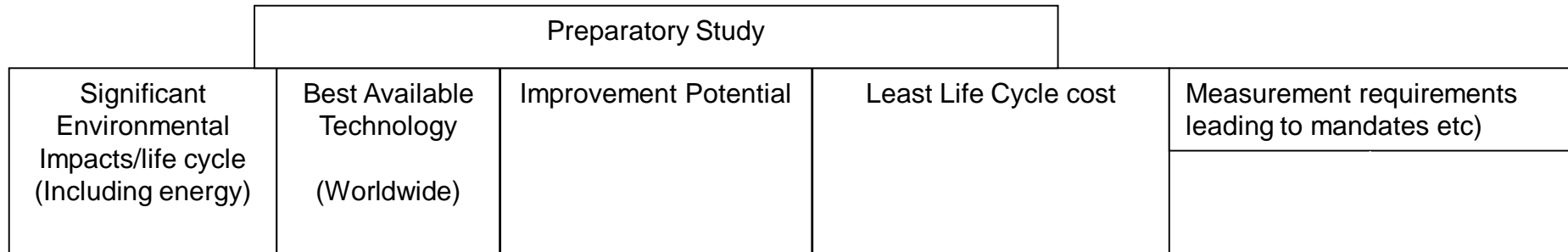
Main elements of Directive 2010/30/EU:

- Extension of the scope to
 - » Non-household products (e.g. motors)
 - » Energy-related products (as in the revised Ecodesign Directive)
- Fiscal incentives and public procurement
 - » Tentative implementation of the SCP/SIP action plan
 - » DAs to provide energy efficiency classes below which Member States should not set incentives and/or procure
- Simplification
 - » Delegated Acts in the format of Regulations instead of Directives
- Role for manufacturers, retailers as well as installers
- Political compromise reached on 17 November 2009, new elements:
 - » design and layout of the label – A+++ introduced
 - » public procurement and incentives - voluntary
 - » energy efficiency class in advertisement – mandatory

● Energy Labelling Directive 2010/30/EU (3)

- main aims: market transparency for consumers, incentives for innovation for manufacturers, market transformation towards highly efficient products/energy savings
- complementary to “minimum” ecodesign requirements
- new « framework » Directive provides that the energy label
 - » uses a classification «A» to «G» as basis
 - » A+, A++ and A+++ can be used
 - » only seven classes are shown
 - » colours are dark green to red
- review of classification when A+++ and A++ are significantly «populated» and further room for improvements exists
- Seldom relevant for ‘industrial’ products

Integration of product labelling and ecodesign




Specific Eco-Design Requirements

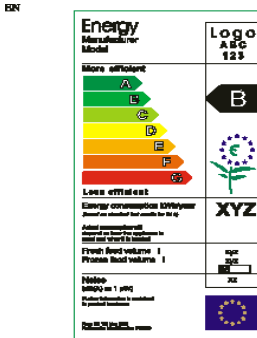
Maximum levels tolerated for "CE" marking

Eco-Label

top of the class



Energy Label



Voluntary Agreements

when ambitious compared with Business as usual and significant share of the market

EN Measurement Standards

- Revision**
- **5-10** years depending on product group and progress of technology but staged requirements possible
 - **Dynamic** but predictable to encourage improvement products while providing clarity on investments for Industry
 - **Consistent**
 - Thresholds to be maintained (A becomes D etc.)
 - Reward Development of 'good' products, compatibility of incentives

● Ecodesign: current status (1)

- **Recently adopted measures (Regulations):**
 - » **Circulators, OJ L 191, 23.7.2009, p. 35–41**
 - » **Electric motors, OJ L 191, 23.7.2009, p. 26–34**
 - » **Household refrigerating appliances, OJ L 191, 23.7.2009, p. 53–68**
 - » **Televisions, OJ L 191, 23.7.2009, p. 42–52**
 - » **Fans, OJ L 90, 6.4.2011, p. 8-21**
- **Other measures under preparation:** Boilers, commercial refrigerators, computers, imaging equipment, pumps, room air-conditioners, domestic fans, complex set-top boxes, laundry driers, vacuum cleaners, domestic lighting products II (reflector lamps and luminaires), solid fuel small combustion installations, transformers, sound and imaging equipment, other refrigerating & freezing equipment.
- **Other measures planned:** listed in Ecodesign Work Plan 2009-2011

● Ecodesign: current status (2)

- Ecodesign Work Plan 2009-2011 COM(2008) 660
 - » Air-conditioning and ventilation systems
 - » Electric and fossil-fuelled heating equipment
 - » Food-preparing equipment
 - » Industrial and laboratory furnaces and ovens
 - » Machine tools
 - » Network, data processing and data storing equipment
 - » Refrigerating and freezing equipment
 - » Sound and imaging equipment
 - » Transformers
 - » Water-using equipment

Regulations in force

- «savings» are savings compared to «no ecodesign/energy labelling» scenario
- savings correspond approx. to the electricity consumption of the UK
- details are in the impact assessments

Product	Estimated savings (annual by 2020)
Standby	35 TWh
Simple set-top boxes	6 TWh
Street & Office lighting	38 TWh
External power supplies	9 TWh
Domestic lighting	37 TWh
Electric motors	135 TWh
Circulators	23 TWh
Freezers/refrigerators (adoption of labelling measure pending)	6 TWg
Televisions (adoption of labelling measure pending)	43 TWh
Total	333 TWh

- **Status: Work Programme**
 - 1st phase – Art. 16 - addressing mainly household energy consumption
 - 2nd phase – 2008 WP - moving to industrial and tertiary sectors in 2009-2011
 - 3rd phase – 2011 WP - strengthening existing requirements and possibly filling the gaps

● Developments in Ecodesign

- New Work Programme
- Review of ERP methodology
- Revision/evaluation of Ecodesign 2012 and EL 2014 – questions: timing, all products, systems, integration of instruments...
- In a few years start of reviews and possible revisions of existing measures

● Approaches in Ecodesign

- Product : fridge, washing machine
- Components/functions: circulator, standby
- Extended Product Approach:
 - » boiler (heat generator, controls, circulator, ...) ?
 - » motor plus VSD
 - » fan plus VSD plus motor
 - » pump plus VSD/control plus motor
 - » air based central heating and airco systems ?
- Generic EPA: motor plus VSD/control plus load
- Systems? Relation with ERP criteria?
- Input from industry, ESOs, NGOs welcome

● Relation with standardisation

Roles of EU and ESO:

- EU legislation sets out *requirements*
- CEN/CENELEC set *standards*

Conclusions

- In general about a 3 year process
- Now a Horizontal Mandate for Ecodesign
- close involvement of industry and Member States

● Developments in Energy Efficiency Directive regarding systems (proposal under discussion)

- Article 7 on repeated energy audits and energy management systems
- Article 9 on penalties in MS
- Article 11 : MS to collect data on large industrial installations (power plants, refineries) and to report to the Commission; possible measures in the future
- NEEAPs in a different form

- The state of play of several Ecodesign Lots

- Lot 1 Boilers and Lot 2 Water Heaters
 - Preparatory study finished
 - Draft Impact Assessment accepted
 - Tentative timeline:
 - » Inter Service Consultation by December 2011
 - » Energy label by April 2012
 - » Ecodesign requirements by July 2012

● Ecodesign Lot 11 fans (1)

- Regulation 327/2011/EU with:
 - » Ecodesign requirements: only electricity consumption in two tiers from 1/1/2013 and 1/1/2015
 - » Information requirements from 1 January 2013
- Link with ISO 5801 and 12759
- Use of efficiency grades and target energy efficiency
- Mandate issued to CEN/CENELEC for energy efficiency

● Ecodesign Lot 11 fans (2)

- Efficiency calculation
 - » Fan as final assembly
 - » Fan as not final assembly
 - » Default value if not supplied with motor
- Provisions for fans with VSD
- Guidance document planned for 2012

● Ecodesign ENER Lot 10 air-conditioning

- Launch of Inter Service Consultation in November 2010
- Vote in Regulatory Committee on 31 may 2011
- Scrutiny/right of objection ended in October 2011
- Ecodesign Requirements for energy efficiency and noise, in two tiers from 2013 and 2014
- Bonus for low GWP refrigerants
- Labelling from 2013, repealing Directive 2002/31/EC
- Proposed scope:
 - » Air-to air rated output below or equal to 12 kW
 - » Split, w/w, single ducts, double ducts
 - » Cooling and heating function



Ecodesign ENER Lot 15 Solid fuel small combustion installations

- Preparatory study completed
- Working Document for Consultation Forum tentatively expected around April 2012
- Timeline and approach linked to Lot 1
- Will address energy efficiency and various emissions of biomass and coal fired products:
 - » Local room heaters (ovens, stoves)
 - » Central heating products

- Ecodesign ENER Lot 20 Local room heaters
 - Preparatory study in progress
 - Tasks 1-6 completed (as drafts)
 - Study planned till May 2012
 - Second Stakeholder Meeting end September 2011
 - Will also deal with air curtains

- Ecodesign ENER Lot 21 (1)
Central heating products using hot air to distribute heat
 - Preparatory study in progress
 - Tasks 1-6 completed (as drafts)
 - Study planned till May 2012
 - Second Stakeholder Meeting end September 2011
 - Close link with ENTR Lot 6 because of reversible function

● Ecodesign ENER Lot 21 (2) Central heating products using hot air to distribute heat

- Heat pumps in scope
- System approach in line with ENER Lot 1 boilers and ENTR Lot 6 VAC because of similarities and increased savings
- SCOP and SEER
- Taking into account building characteristics and climate zones
- Consultant BIOIS, adrian.tan@biois.com



Enterprise and Industry
Directorate-General

Sustainable Industrial Policy

ENTR Lot 6: study on large air-conditioning and ventilation systems ongoing (1)

- A preparatory study, analysing whether and which ecodesign requirements should be set for large air-conditioning and ventilation products (ENTR LOT 6), is running from 01/2010 until 5/2012.
- The selected contractor is Armines, France (Contact : Philippe Rivière, philippe.riviere@mines-paristech.fr).
- Stakeholders are encouraged to register at the website of the study: www.ecohvac.eu and contact the contractor on their own initiative, should they consider it useful.
- The product scope, as follows, was agreed at the first of three stakeholder meetings in July 2010.
Second stakeholder meeting took place end September 2011.

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● ENTR Lot 6: Scope for Air-conditioning products (2)

Air conditioning of buildings Energy Related Products

ENER Lot 10
Air-to-air AC P ≤ 12 kW

AC products:

- Single ducts
- Double ducts
- Window / wall units
- Split systems
- Multi-split systems

ENTR Lot 6

Air-to-air AC P > 12 kW
Air-to-water, water-to-air, water-to-water AC

ENER Lot 11: Fans 125 W < P < 500 kW

Reg. 640/2009/EC: Motors 0.75 kW < P < 375 kW

Reg. 641/2009/EC: Circulators 1 W < P < 2.5 kW

1. Cooling generators (*) : Package, split and multi split AC, (> 12 kW), Roof top, VRF systems, Chillers for AC
2. Air distribution : AHUs (**)
3. Water circulation: circulators (***)
4. Terminal units: Fan coils, active ceiling beams, water-to-air air conditioners (all sizes)
5. Heat extraction : cooling towers, dry coolers
6. Controls of AC systems

(*) Heating function included in ENER Lot 1, 20 and 21

(**) Other than dedicated ventilation AHUs

(***) For those not included in reg. 641/2009/EC

● ENTR Lot 6: Scope for Ventilation products (3)

Ventilation of buildings Energy Related Products

**ENER Lot 10
Residential Ventilation
Rooms and individual
dwelling**

**Residential ventilation
products**
-Decentralized products
-Centralized products

**ENTR Lot 6: ventilation systems
Products not covered in ENER Lot 10**

Reg. 327/2011/EU: Fans $125 \text{ W} < P < 500 \text{ kW}$

Reg. 640/2009/EC: Motors $0.75 \text{ kW} < P < 375 \text{ kW}$

1. Exhaust AHU(*) & rooftop fans, incl controls
2. Supply AHU(*), incl controls
3. Balanced AHU(*), incl controls and HR
4. Electrically operated openings/grids

(*) Dedicated ventilation AHU

- Ecodesign ENER Pumps (1)
 - Lot 11 Circulators: Regulation 641/2009/EC
 - Lot 11 Clean water pumps:
 - » ISC planned in December 2011
 - » Vote in regulatory committee scheduled early 2012

● Ecodesign ENER Pumps (2)

- Preparatory studies expected to start early 2012 for:
 - ENER Lot 28: Pumps (extended product approach including motors, VSD and controls, where appropriate) for private and public waste water (including all stages including buildings, networks and treatment facilities) and for fluids with high solids content
 - ENER Lot 29: Pumps (extended product approach including motors, VSD and controls, where appropriate) for private and public swimming pools, ponds, fountains and aquariums, as well as clean water pumps larger than those regulated under Lot 11

● Ecodesign ENER Motors and compressors

- Preparatory studies expected to start early 2012 for:

- ENER Lot 30: motors

- (complementing Regulation 640/2009/EC)

- Products in motor systems outside the scope of the Regulation 640/2009 on electric motors, such as special purpose inverter duty motors (asynchronous servo motors), permanent magnet motors, motors cooled by their load (fans), including motors and products under Article 1, Points 2(b), (c) and (d) and including drives, such as soft starters, torque or variable speed drives (VSD) from 200W- 1000kW. The study should also cover motors in the scope of the Regulation 640/2009 from 750kW – 1000kW.

- ENER Lot 31: compressors

- (complementing Regulation 640/2009/EC)

- Products in motor systems outside the scope of the Lot 30 and the Regulation 640/2009 on electric motors, in particular compressors, including small compressors, and their possible drives.

More info

- Website of DG ENER

http://ec.europa.eu/energy/efficiency/ecodesign/eco_design_en.htm

- Website of DG ENTR

http://ec.europa.eu/enterprise/policies/sustainablebusiness/ecodesign/index_en.htm

- Ecodesign legislation and EU policies

Thank you for your attention !

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