



● ECODESIGN LEGISLATION AND EU POLICIES

Brussels, 28 October 2010,
REHVA Technical Seminar

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



● Energy efficiency policy – landscape (1):

The recent past:

- Energy and climate packages in the past years
- Link with Lisbon strategy, Kyoto
- Energy Efficiency Action Plan (EEAP)
- Legislative initiatives and recasts (ERP, EPBD, ...)
- Covenant of Mayors, Intelligent Europe
- Separate DGs for Energy, for Environment and for Climate

● Energy efficiency policy – landscape (2):

The near future:

- Activities from the past being continued: stream of new ERP measures, recasts, studies
- In DG ENER, energy efficiency is priority 1
- New Energy Strategy, to be published in a few weeks, with a chapter on energy efficiency
- New Energy Efficiency Plan around February 2011
- Energy Council early 2011
- Ongoing pressure from EP, which is more important after the entering into force of the Lisbon Treaty (TFEU).

● Energy efficiency policy - main instruments include:

- **Ecodesign Directive** 2009/125/EC (former 2005/32/EC)
- **Energy Labelling Directive** 2010/30/EU (former 92/75/EEC)
- **Energy Star** programme for office equipment
- **Ecolabel Regulation** (EC) No 1980/2000 (voluntary endorsement label for top performers)
- Energy performance of **Buildings Directive** 2002/91/EC (recast close to publication in the Official Journal)
- **End use energy efficiency and energy services directive** 2006/32/EC
- **CHP Directive** 2004/8/EC

- Other non-legislative instruments include:
 - **Intelligent Energy Europe Programme** (2007-2013)
 - **Covenant of mayors**

And of course

- **Structural funds**
- **Research projects**

An Energy Strategy is in preparation, with a linked Energy Efficiency Plan.

- Example of policy making: the energy efficiency of products

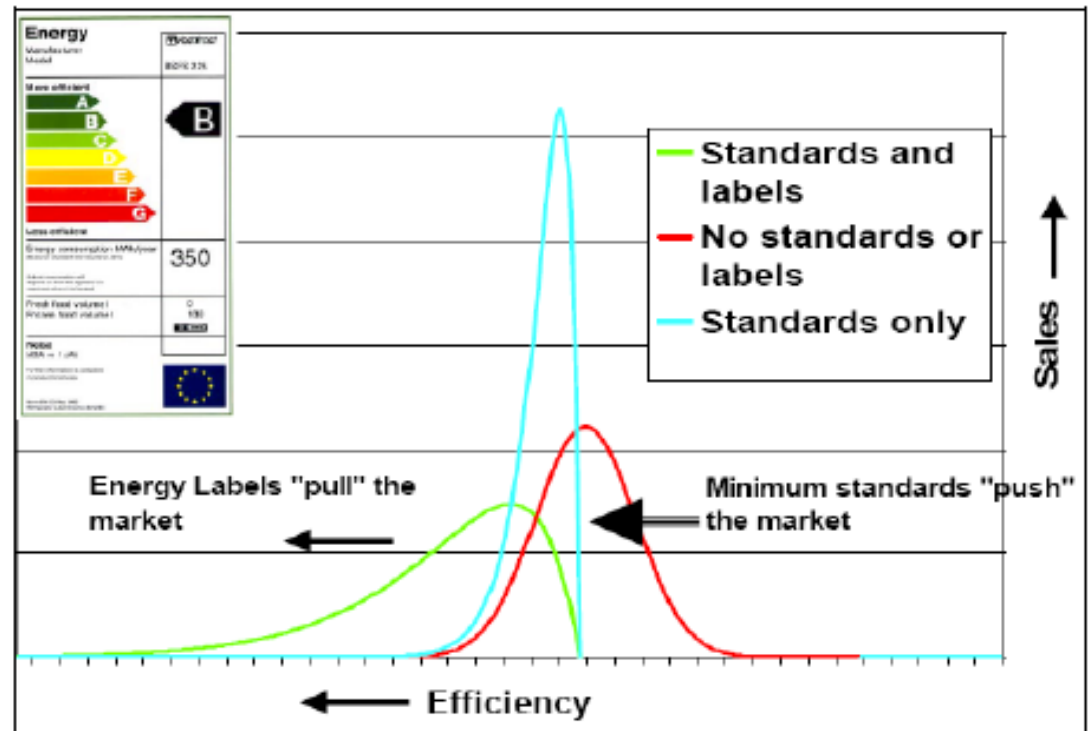
- The Energy efficiency of products is enshrined in a broader integrated approach

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.**

● 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



- The Ecodesign Directive 2009/125/EC

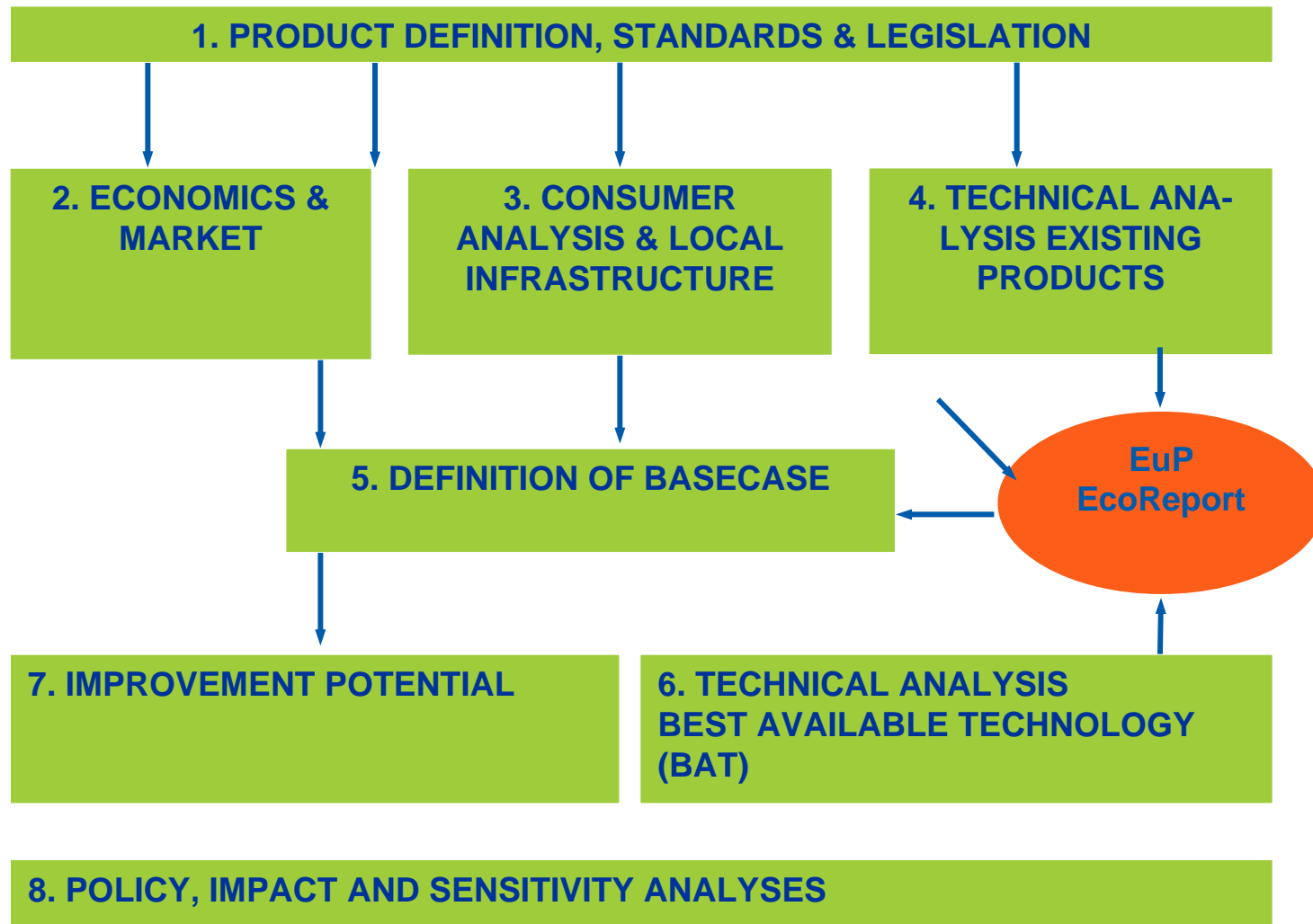
● The Ecodesign Directive 2009/125/EC

- 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** 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”)



● Impact of Ecodesign IM

Examples of adopted implementing measures:

Product	Reference	Estimated savings (annual by 2020)
Standby	OJ L 339, 18.12.08, p. 45	35 TWh
Simple set-top boxes	OJ L 36, 5.2.09, p. 8	6 TWh
Street & Office lighting	OJ L 76, 24.3.09, p. 17	38 TWh
External power supplies	OJ L 93, 7.4.09, p. 3	9 TWh
Domestic Lighting	OJ L 76, 7.4.09, p. 3	37 TWh

Total (125 TWh) → exceeds by 15 TWh the annual household electricity consumption of Portugal, Spain and Sweden combined

● 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**
- **Measures under scrutiny:** domestic washing machines and dish washers, fans
- **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 boilers, transformers, sound and imaging equipment, other refrigerating & freezing equipment.
- **Other measures planned:** listed in Ecodesign Work Plan 2009-2011

● Ecodesign: current status (2)

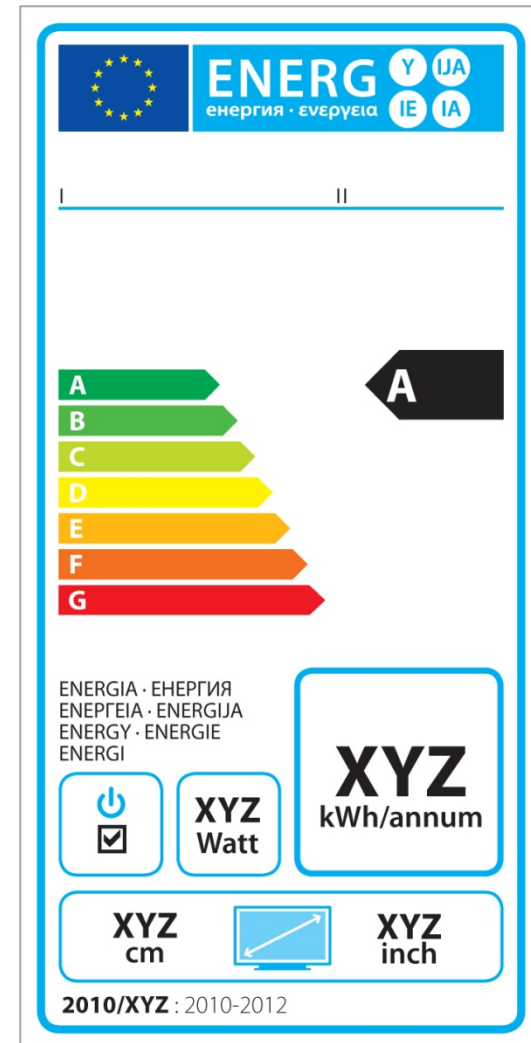
- Ecodesign Work Plan 2009-2011 COM(2008) 660
 - » Air-conditioning and ventilation systems
 - » Electric and fossil-fuelled heating equipment
 - » Food-preparing equipment
 - » Industrial and laboratory furnaces and ovens
 - » Machine tools
 - » Network, data processing and data storing equipment
 -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



- The Energy Labelling Directive 2010/30/EU

● The new Energy Labelling Directive (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

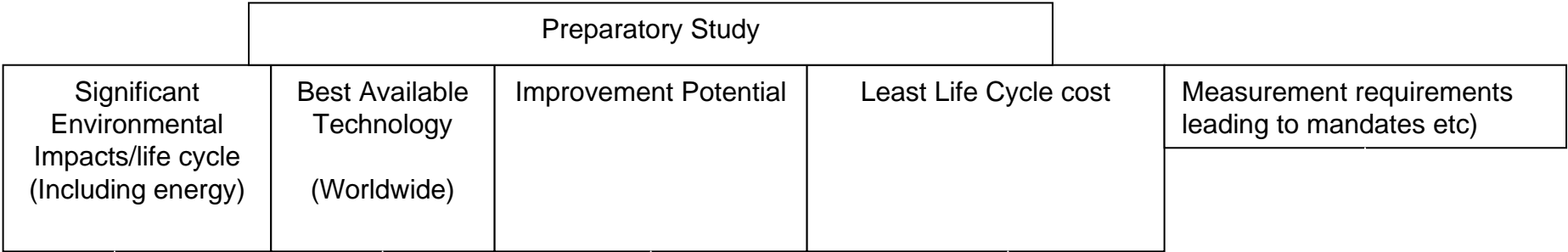


● The new Energy Labelling Directive (2)

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

Integration of product labelling and ecodesign



Specific Eco-Design Requirements

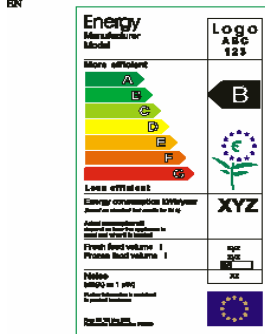
Maximum levels tolerated for "CE" marking

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

- The state of play of several Ecodesign Lots

● Ecodesign ENER Lot 11 fans (1)

Timeline

- February 2008 : Preparatory study: draft completed
- 27 May 2008 : 1st Consultation Forum meeting with Member States and stakeholders
- June 2009 : Impact assessment draft completed
- December 2009 : Launch of Inter Service Consultation
- 26 March 2010 : 2nd Consultation Forum meeting with Member States and stakeholders
- 30 April 2010 : Deadline for comments
- 11 June 2010 : Regulatory Committee meeting (vote)
- From Sept. 2010 : Scrutiny by European Parliament and Council
- January 2011 : Publication in Official Journal
- 2013 - 2014 : Indicative start of review process

● Ecodesign Lot 11 fans (2)

- Scope: fans driven or designed to be driven by motors with an electric input power between 125 W and 500 kW, including those integrated in other products (fans and motor-fan subsystems).
 - Exemptions:
 - » High or very low temperatures
 - » Potentially explosive atmospheres
 - » Emergency use only (fire safety Directive)
 - » Toxic, highly corrosive or flammable environments
 - » Supply voltage > 1000 V AC or 1500 V DC
 - » Fans integrated in:
 - Laundry dryers below 3 kW
 - Kitchen hoods below 280 W
 - Little cooling fans for electric motors
- Exempted for energy efficiency requirements only:
- » Over 8000 rpm (vacuum cleaner)
 - » Ratio of discharge over suction pressure over 1.11
 - » Conveying fans

Roof and box fans are included in ENTR Lot 6, but fans inside are covered by the proposed Regulation anyway

● Ecodesign Lot 11 fans (3)

- Ecodesign requirements: only electricity consumption
- Link with ISO 5801 and 12759
- Use of efficiency grades and target energy efficiency
- Mandate to be issued to CEN/CENELEC for energy efficiency

● Ecodesign Lot 15 fans (4)

- Timetable for ecodesign requirements:

- » Tier 1 from 1 January 2013

Exemptions:

- laundry dryers over 3 kW

- indoor air-conditioners or indoor units; below 12 kW maximum airco output power

- IT products

- » Tier 2 from 1 January 2015

● Ecodesign Lot 15 fans (5)

- Product information requirement from 1 January 2013 for manufacturers of fans:
 - » Technical documentation of fans (for MS)
 - » Free access websites
- Information plate on or near the fan, including info on overall efficiency, efficiency grade and use of VSD
- Information should also cover installing, using and maintaining the fan

● Ecodesign Lot 11 fans (6)

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

● Ecodesign ENER Lot 11 fans (7)

- Other related Ecodesign legislation coming:
 - » ENTR Lot 6 on airco and ventilation systems
 - » ENER Lot 21 on hot air based central heating systems
 - » ENER Lot 10 on residential aircos, comfort fans and possibly kitchen hoods
 - » ENER Lot 1 on boilers (including heat pumps)
 - » ENER Lot 16 on laundry dryers
 - » ENER Lot 17 on vacuum cleaners

● Ecodesign ENER Lot 10 air-conditioning

- Launch of Inter Service Consultation in November 2010
- Vote in Regulatory Committee scheduled for January or February
- Ecodesign Requirements for energy efficiency and noise, in two tiers from 2012 and 2014
- Labelling from 2012, 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 21 (1) Central heating products using hot air to distribute heat

- Preparatory study in progress
- Task 1 completed
- Questionnaire for industry to be launched
- Study planned till end 2011
- First Stakeholder Meeting foreseen for end January or early February 2011 (product scope)
- Close link with ENTR Lot 6 because of reversible function



Ecodesign ENER Lot 21 (2)

Central heating products using hot air to distribute heat

- Air handling units in scope
- 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 11/2011.
- 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 out of three stakeholder meetings in July 2010.

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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**

ENER Lot 11: 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 Lot 11 Pumps (1)
 - Circulators: Regulation 641/2009/EC
 - Clean water pumps:
 - » ISC planned in December 2010
 - » Vote in regulatory committee scheduled early 2011
 - » CEN/CENELEC mandate to be launched soon

● Ecodesign ENER Lot 11 Pumps (2)

- Tenders to be launched:

- 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

● More information available on:

DG Energy

- http://ec.europa.eu/energy/efficiency/ecodesign/ecodesign_en.htm
- <http://www.ecomotors.org>
- Email: tren-ecodesign@ec.europa.eu

DG Enterprise and Industry

- http://ec.europa.eu/enterprise/eco_design/index_en.htm
- Email: entr-ecodesign@ec.europa.eu

Energy Star

- <http://www.eu-energystar.org/>

- Ecodesign legislation and EU policies

Thank you for your attention !

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