European Commission

EVIA panel debate "An overview of current and future Ecodesign rules for fans, motors, ventilation units"

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Ongoing and future regulatory framework for fans & motors

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I. Policy context

EU policy framework for energy efficiency

Energy Efficiency
Directive 2012/27/EU

Energy Performance of Buildings
New Directive 2018/844

Revised as part of the 2016 'Clean energy for All package'

PRODUCTS

Energy Labelling
New Regulation 2017/1369
(replacing Directive 2010/30/EU)

Ecodesign
Directive 2009/125/EC

Tyre Labelling
Regulation 2009/30/EU

Financing Energy Efficiency

European Structural Investment Fund; Horizon 2020; LIFE + funding; European Fund for Strategic Investments; Member State programmes; etc.

Measures in place

29 Ecodesign regulations

1275/2008	Electric power consumption standby and off mode
107/2009	Simple set-top boxes
244/2009	Non-directional household lamps
245/2009	Fluorescent lamps
278/2009	External power supplies
640/2009	**Electric motors**
641/2009	Circulators
642/2009	Televisions
643/2009	Household refrigerating appliances
1015/2010	Household washing machines
1016/2010	Household dishwashers
327/2011	**Industrial fans**
206/2012	Airco and comfort fans
547/2012	Water pumps
932/2012	Household tumble driers
1194/2012	Directional lamps
548/2014	Power transformers
617/2013	Computers and servers
666/2013	Vacuum cleaners
801/2013	Networked standby
813/2013	Space heaters
814/2013	Water heaters & storage tanks
66/2014	Domestic ovens, hobs and range hoods
1253/2014	**Ventilation units**
2015/1095	Professional refrigeration
2015/1185	Solid fuel local space heaters
2015/1188	Local space heaters
2015/1189	Solid fuel boilers
2281/2016	Air heating products, cooling products, high temperature process chillers and fan coil units

16 Energy labelling regulations

1059/2010	Household dishwashers
1060/2010	Household refrigerating appliances
1061/2010	Household washing machines
1062/2010	Televisions
626/2011	Air conditioners
392/2012	Household tumble driers
874/2012	Electrical lamps and luminaires
665/2013	Vacuum cleaners
811/2013	Space heaters
812/2013	Water heaters & storage tanks
65/2014	Domestic ovens, hobs and range hoods
518/2014	Internet energy labelling
1254/2014	**Residential ventilation units**
2015/1094	Professional refrigeration
2015/1186	Local space heaters
2015/1187	Solid fuel boilers

Voluntary agreements

COM (2012) 684	Complex set top boxes
COM (2013) 23	Imaging equipment
COM (2015) 178	Game consoles

Tyre labelling regulation

1222/2009/EC	Labelling of tyres with respect to fuel efficiency and other essential parameters

Ecodesign Working Plan 2016-2019

Measures under development

- Electronic displays (review of televisions)
- Commercial refrigeration
- Compressors
- Windows
- Welding equipment
- Professional washing machines, dryers and dishwashers
- Enterprise servers
- Water-related products (taps and showers)

Products under study

- Smart appliances
- Lighting controls/systems

New products for study

- Building Automation and Control Systems
- Electric kettles
- Hand dryers
- Lifts
- Solar panels and inverters
- Refrigerated containers
- High-pressure cleaners

Measures under review

- External power supplies
- **Electric motors**
- **Fans**
- Lighting products
- Household refrigerating appliances
- Household dishwashers
- Household washing machines
- Standby and off mode electric power consumption of electrical and electronic household and office equipment
- Water pumps
- Computers and computer servers
- Circulators
- Air conditioners and comfort fans
- Transformers
- Household tumble driers
- Vacuum cleaners
- Space and water heaters
- Local space heaters
- **Ventilation units**
- Tyres

Voluntary agreements under development

- Machine tools

The 2019 package of masures:

17 measures for 11 products !

All voted/agreed in Regulatory Committee / Expert Group in Dec 2019 – Jan 2019

Product Group	New or (R)eview	Ecodesign	Energy labelling
1. Domestic refrigeration	R	X	X
2. Lighting products	R	X	X
3. Electronic displays and TV	R	X	X
4. Dishwashers	R	X	X
5. Washing machines	R	X	X
6. Electric motors and VSDs	R	X	
7. Power transformers	R	X	
8. EPS (Electronic Power Supplies)	R	X	
9. Commercial refrigeration	New	X	X
10. Welding equipment	New	X	
11. Entreprise servers	New	X	

Adopted 11 March

'Adoption' of ecodesign measures expected mid 2019
Possible publication in the OJ : September 2019

II. Current and upcoming regulatory framework

Current Framework for fans

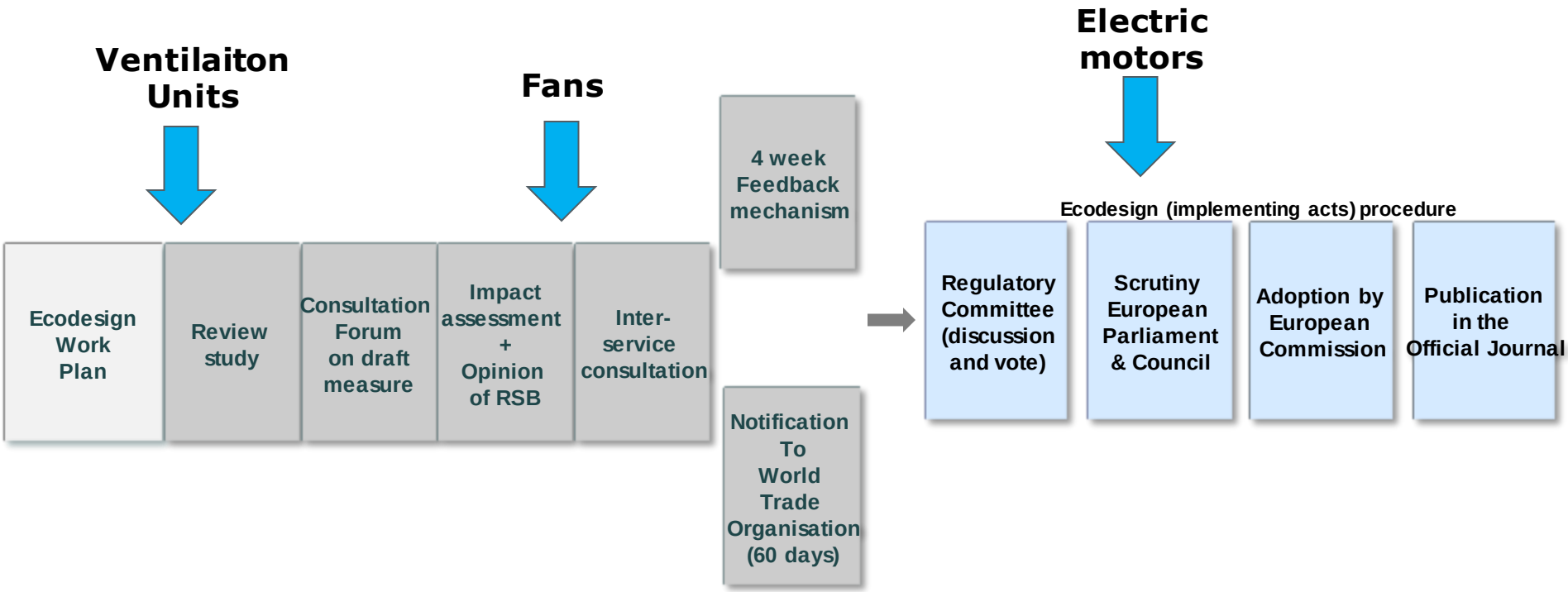
Ventilaiton Units
> 30W

1253/2014
1254/2014
(RVU/NRVU)

Electric motors
640/2009
0,75-375 kW

Fans
327/2011
0,125-500 kW

Review process



Ventilation units

- Review study started Feb 2019 => 2020
- Run by a consultant
- Study website : https://www.ecoventilation-review.eu/
- Stakeholder meeting foreseen before the summer 2019
- Subscribe to the mailinglist !

Electric motors

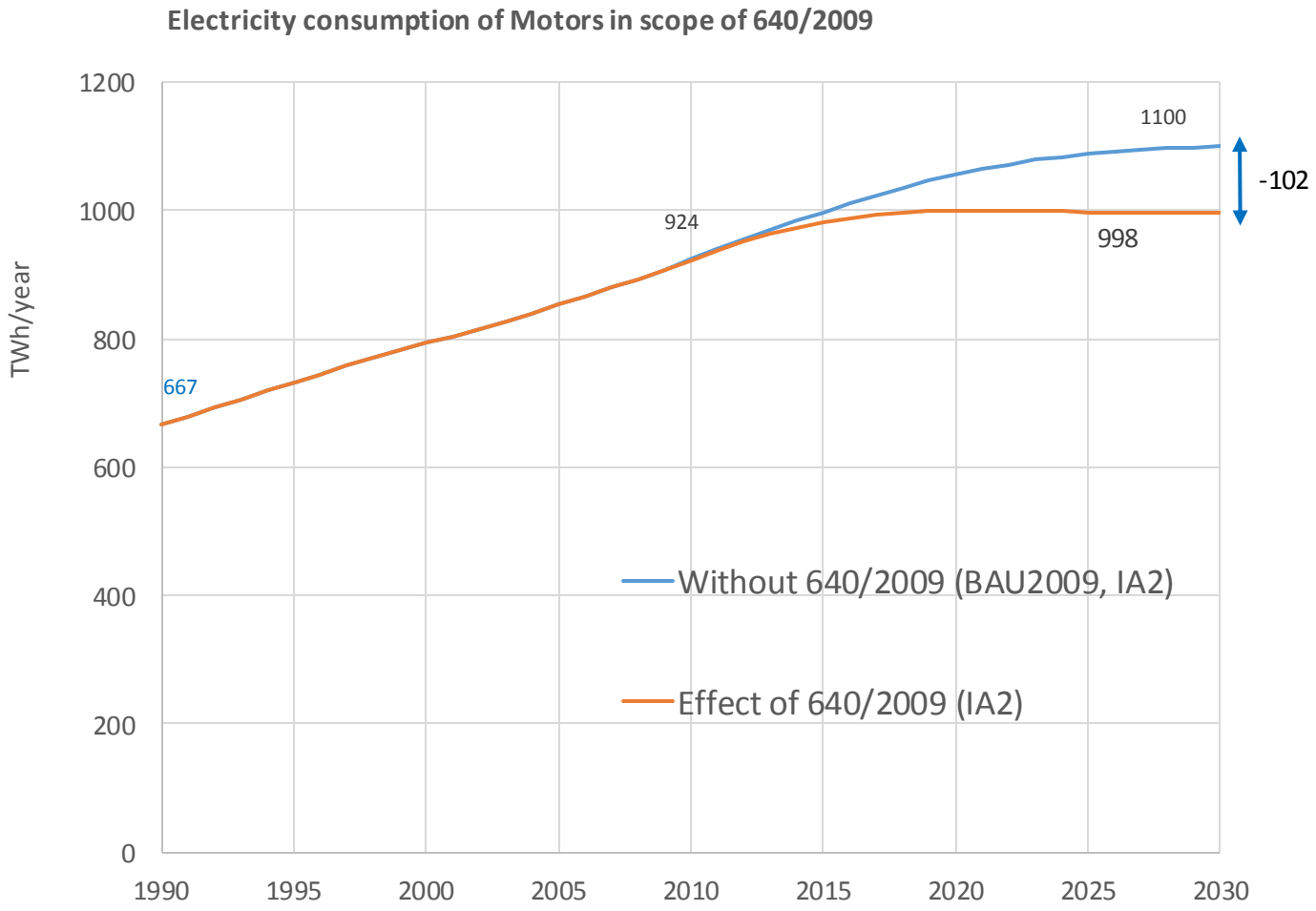
- Text voted by Member States on 14 Jan available on Comotology Register

  http://ec.europa.eu/transparency/regcomitology/index.cfm?do=search.dossierdetail&Dos_ID=17081&dos_year=2018&dc_id=3506
- Now under scrutiny by EP and council
- Expected adoption by mid 2019
- Repeals Regulations (EC) 640/2009
- Application date: 1 July 2021
- Includes variable speed drives

Main changes

- Motors in current scope (0,75-375 kW) IE3 level (IE2+VSD option removed)
- Scope extensions:
  - large motors 375-1000 kW: IE3
  - small motors 0,12-0,75 kW: IE2
  - 8 poles motors: as any motor
  - single phase motors: IE2 (2nd tier - mid 2023)
- Increased ambition for large motors 75-200 kW : IE4 (2nd tier)
- Closing loopholes:
  - non-integral brake motors: IE3
  - explosion protected motors: IE3, except ex eb class IE2 in 2nd tier
- Variable speed drives are covered: IE2 level
- Information requirements for both motors and drives, including efficiency at additional load points to enable extended product approach
- 7 years exemption for motors that substitute identical motors integrated in products (spare parts) + other reasoned exemptions
- Similar exemption for circulators (amending regulation 641/2009)
- Special measures facilitating enforcement for large motors
- Alignment on other eco-design measures (circumvention …)

Proposed scope		Year and minimum efficiency requirements (2016 onwards)						
AC induction motors <= 1000 V		**2016**	**2017**	**2018...2020**	**2021**	**2022**	**2023**	**Onwards**
0.75-7.5 kW	3 phase, 2/4/6 pole	IE2 →	IE2+VSD/IE3 →		IE3 →			
7.5-375 kW (*)	3 phase, 2/4/6 pole	IE2+VSD/IE3 →			IE3 →			
(*) 75-200 kW	3 phase, 2/4/6 pole						**IE4** →	
375-1000 kW	3 phase, 2/4/6 pole				IE3 →			
0.75-1000 kW	3 phase, 8-pole				IE3 →			
0.75-1000 kW	ATEX/non-integr. brake				IE3 →			
0.75-1000 kW	Increased safety Ex eb						IE2 →	
0.75 - 7.5 kW	1 phase						IE2 →	
0.12-0.75 kW	**1 & 3 phase**				IE2 →			
Variable speed drives		**2016**	**2017**	**2018...2020**	**2021**	**2022**	**2023**	**onwards**
0.75-1000 kW					IE2 →			


Electricity consumption of Motors in scope of 640/2009
TWh/year
1200
1000
800
600
400
200
0
1990
1995
2000
2005
2010
2015
2020
2025
2030
667
924
1100
998
-102
Without 640/2009 (BAU2009, IA2)
Effect of 640/2009 (IA2)

Fans

- *Impact Assessment being revised (negative opinion RSB June 2018)*
- *ISC expected before the summer*
- *Possible adoption by 2020*
- *Do not miss the feedback*
  - **Feedback portal https://ec.europa.eu/info/law/better-regulation/initiatives_en**

Main changes considered

- *Clarify fan definition and boundaries*
- *Reduce the number of fan types, improved definitons and simpler calculation (reduced number of equations)*
- *Jet fans in scope*
- *increased allowance for dual use fans*
- *clarify/improve current exemptions*
- *new exemption where safety or functonality are at risk (nuclear installations, wind turbines …)*
- *conversion factor for DC fans*
- *Increased performance requirements (N-grade)*

Test methods:

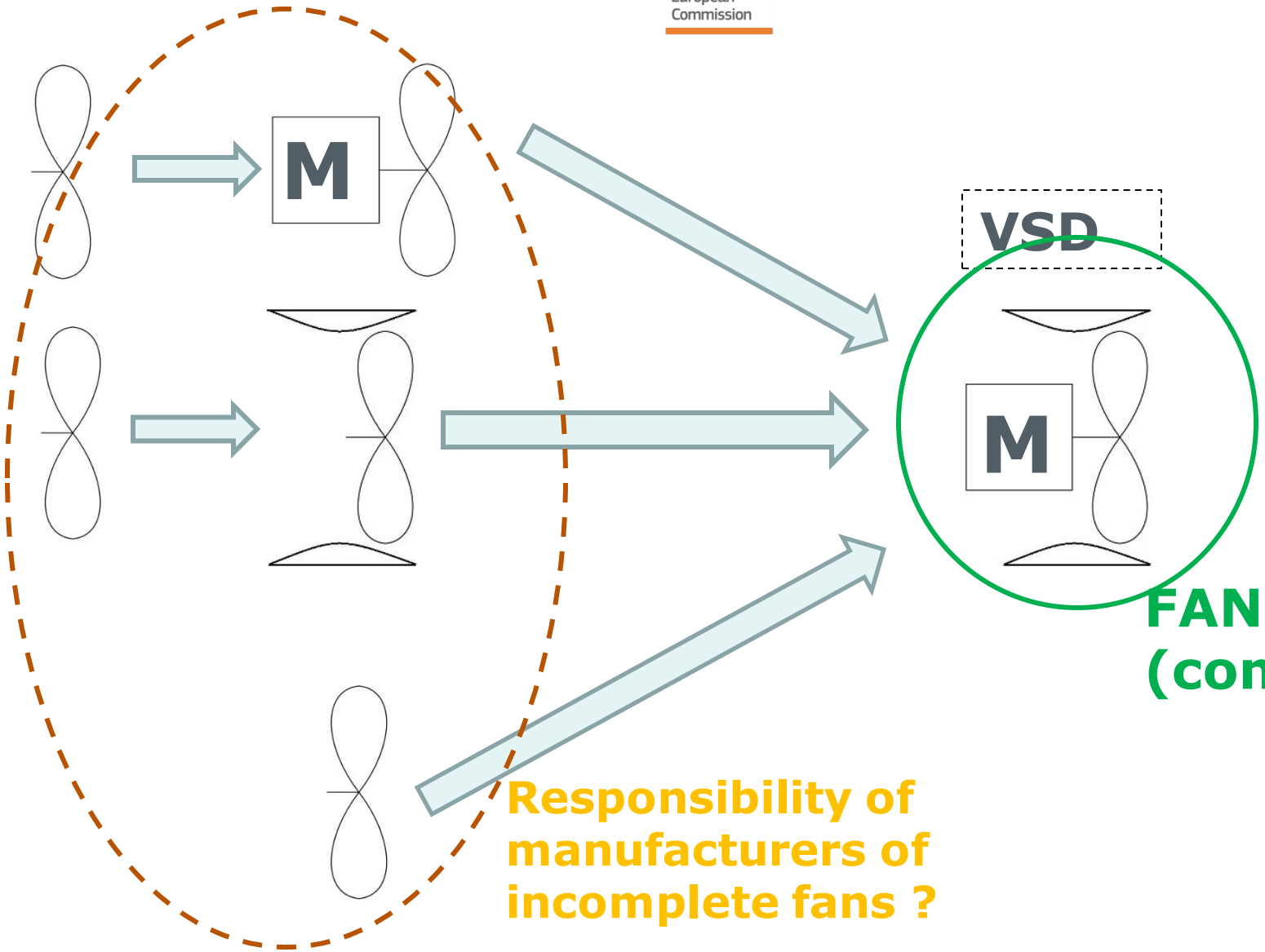
- Tests may be conducted with the 'geometrical equivalent' of the stator inner surface
- Non-essential elements may be removed

For large fans (see INTAS project)

- *Fans task force with MSAs (outside regulation)*
- Scaled model allowed (reliable method ?)
- MSAs can verify at manufacturers premises with own equipment
- MSAs can gather information during witness testing
- MSAs can request disclosure of information about FAT
- Testing at customer premises ?

Circular economy

- Marking of plastic parts > 50g
- Exemption for spare parts fans



FAN (complete)

Responsibility of manufacturers of incomplete fans ?

Thank you for your attention!

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