

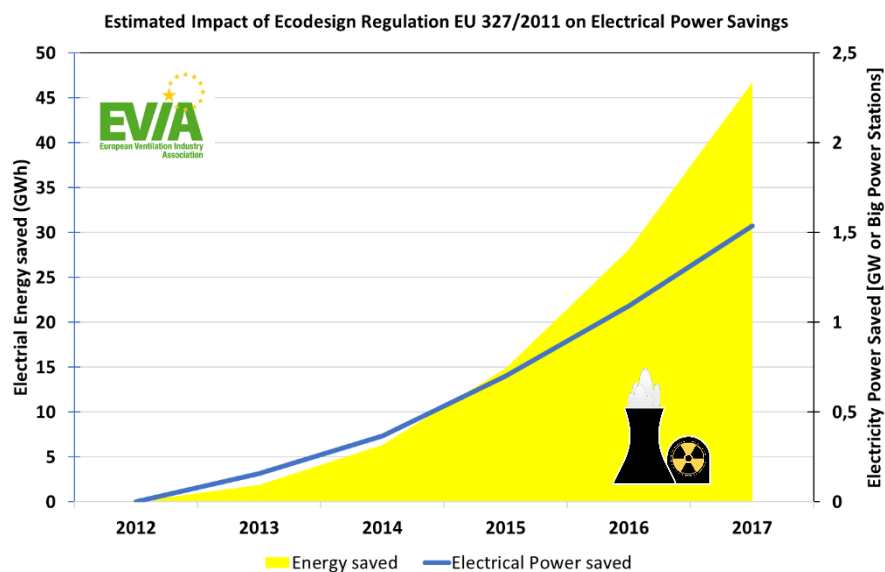
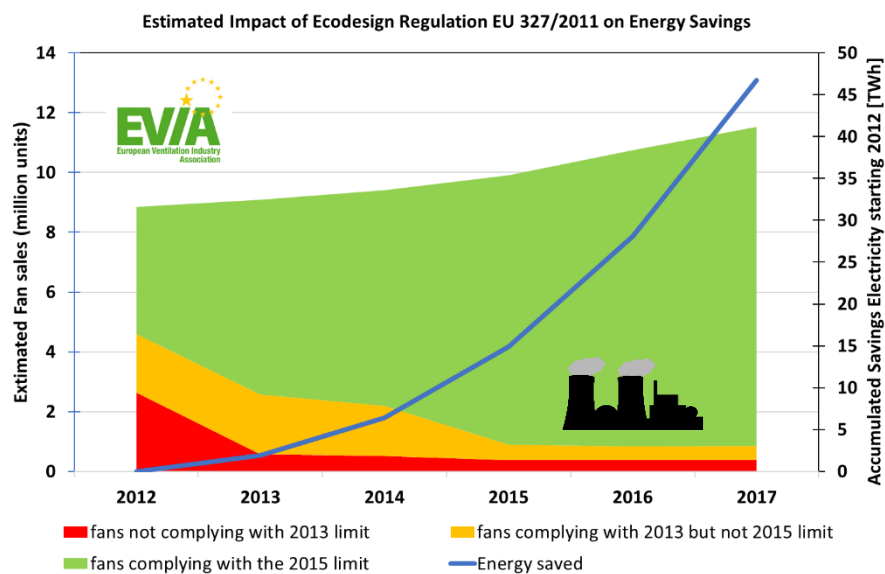
European Ventilation Industry Association Working Document

ECODESIGN REGULATION 327/2011 – June 2018



46,800 GWh saved since 2012

The eco-design regulation for fans has had a positive impact. The European Ventilation Industry Association (EVIA) has calculated that since 2012 46,800 GWh of electricity or 21.5 Mt CO₂ has been saved as a result of regulation 327/2011, eco-design requirements for fans driven by motors with an electrical input between 125 W and 500 kW. The savings in 2017 are the equivalent of one or two medium size coal power station. Electrical energy savings of fans where in 2017 approximately 18.6 TWh or related to 8.6 Mt of CO₂-Emissions. This means 0.5 % of total EU-CO₂-Emissions, which is a significant contribution for Europe. And this is a conservative figure as it does not consider calculated savings from the use of speed control.



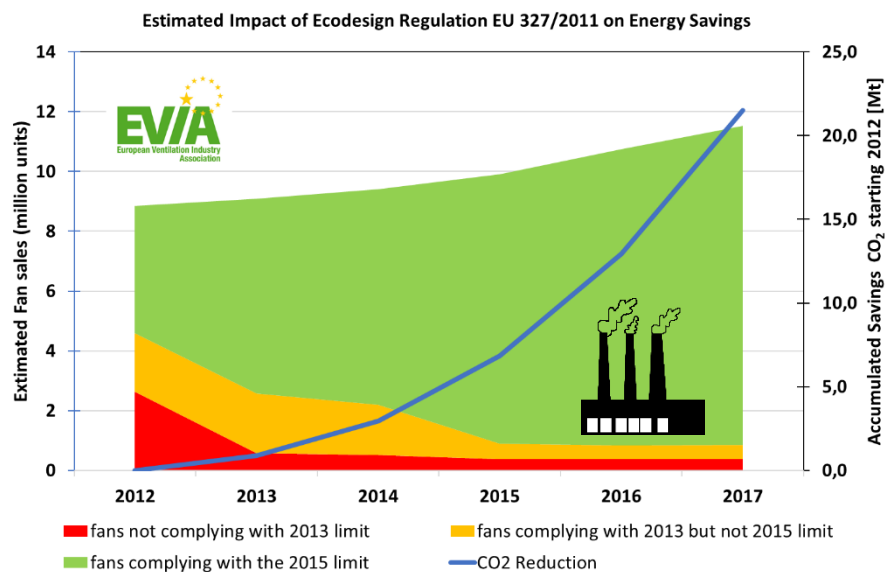


Figure 1 – Energy impact of eco-design regulation 327/2011

Regulation 327/2011 was a challenge to the fan industry in 2011 with half of the fans placed on the market being less efficient than the minimum efficiency limits that came into force in 2013. The industry accepted the challenge and invested many millions of Euros in the development of new products. In the process creating and securing jobs in Europe.

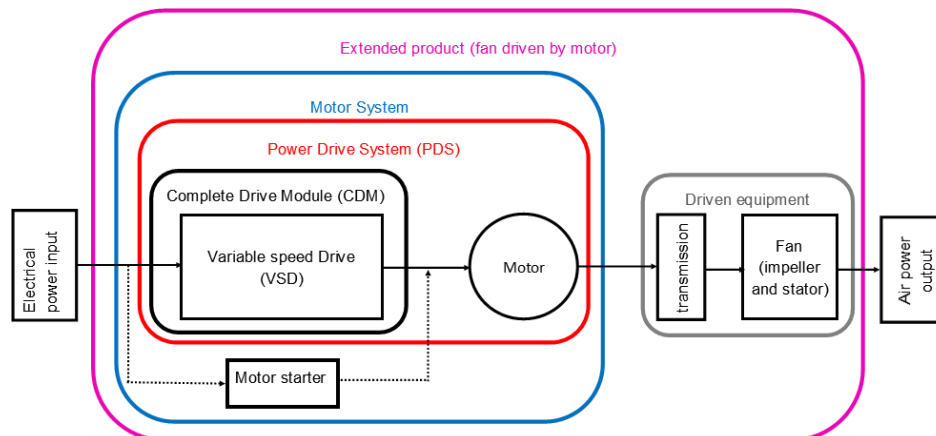


Figure 2 – an extended product – adapted from IEC61800-9-1

The regulation sets limits for an 'extended product', one that includes a motor and may include a variable speed drive (VSD). Historically a fan was considered to be just the impeller and housing (stator), but this regulation determines the efficiency based on the electrical power input compared to the air power output, so called wire to air metric.

The regulation includes an incentive to use a VSD. When used to its full potential a VSD will significantly increase the savings. Just a 20% reduction in fan speed is a 50% reduction in electrical energy consumption. The estimated saving of 46,800 GWh since 2012 is likely to be much bigger if the VSD benefits are being exploited.

Basis for EVIA savings calculations:

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- Data are given for EU market when placing on the market
- EVIA collected data of fan manufacturers representing approx. 33% of estimated market size for different fan sizes (fan power).
- The results are extended to the estimated market size.
- Typical power savings, defined for each fan size groups for each year, lead to energy savings by considering 4 000 operating hours per year, which was estimated as a good average of all fan applications.
- CO₂-Faktor for Electricity 460 g CO₂/kWhElectricity
- Considering exports and spare parts, there is always a stock of non-complying fans.
- It does not include very big fans and the impact of variable speed drives (depending on application)
