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Efficient Products Team
Department of Energy &Climate Change
3 Whitehall Place
London
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Dear Sirs

ECO DESIGN DIRECTIVE (Lot 30: Special motors and variable speed drives)

We are writing in response to your request for comments on the above proposed European regulation relating to electric motors and variable speed drives.

The principle guiding the IET's response is to promote the use of practical technologies which improve the life-cycle environmental impact including energy efficiency.

The IET is fully supportive of the draft regulation. It is considered a timely and sensible approach to ensure the uptake of significant energy saving technology, and to provide a marker to drive future development in this market.

We would however like to make the following detailed comments in relation to the draft regulations:

Page	Para	Comment	Recommended action
3	(15)	The term "variable speed and load applications" may be interpreted as excluding constant torque or constant power loads.	Replace the phrase by "variable speed applications".
2/3 4 5	(5) (23) Definitions (1)	The regulation tackles the challenge of embracing motors for direct connection to a sinusoidal supply and variable speed drives, whereby motors are fed by a power electronic converter. Some motor types, designed to be fed from variable speed drives, do not fall comfortably within the terms of the regulation e.g. efficiency cannot readily be measured independent of the variable speed drive. Whilst they appear outside the regulations motor definition, specifically excluding these motor types would avoid any confusion.	Specifically exclude motors which are designed to operate only with a variable speed drive.

4	(25)	The present regulation does not explicitly address the difficult area of regulating the overall efficiency of a motor (of whatever type) and variable speed drive operating together. This is a very important practical aspect.	Add a review of motor and variable speed drives operating together to the next assessment process.
4	(25)	Sales of Variable Speed Drives for the control of medium voltage motors are becoming significant, and should be reassessed at the same time as motors.	Add a review of medium voltage variable speed drives to the next assessment process.
12 & 13	Variable Speed Drive Efficiency Requirements	The maximum losses quoted are practical. However: • A modern general purpose variable speed drive is highly flexible and losses can vary considerably depending upon the operational settings. For example, a drive could be set to operate with a low switching frequency or in the limit, a square wave output at 90% speed. Under these conditions losses would be much lower than at practical operational settings. • Many modern general purpose variable speed drives incorporate considerable functionality beyond motor control. For example, process control, sequencing, motion control, system control, handling remote I/O. The losses associated with the control can be significant (for small drives). This is a very important element of drive system design and should not be discouraged by this regulation.	It is recognized that such flexibility makes regulation difficult. As a minimum, the published efficiency level should specify the conditions / configuration. Exclude from the maximum loss figures loss associated with signal level electronic functionality beyond motor control, and where this cannot be measured independently of the motor control the signal electronic losses can be excluded.
14	Product information requirements for variable speed drives 4(2)	See above first bullet	Efficiency level should specify conditions / configuration
14	Product information requirements for variable speed drives 4(3)	For high volume general purpose products, the year of manufacture, is rarely a practical variable to put on the web site, and customers may not be aware of the year of manufacture of their product.	The regulation should be changed to put the onus on the manufacturer to ensure access to loss data for each model and build variant.

The above comments have been collated by the IET Power Electronics, Machines and Drives Technical and Professional Network and take into account comments received from the wider membership.

Should you have any questions in relation to any aspect of these comments please do not hesitate to contact us.

Yours faithfully

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