

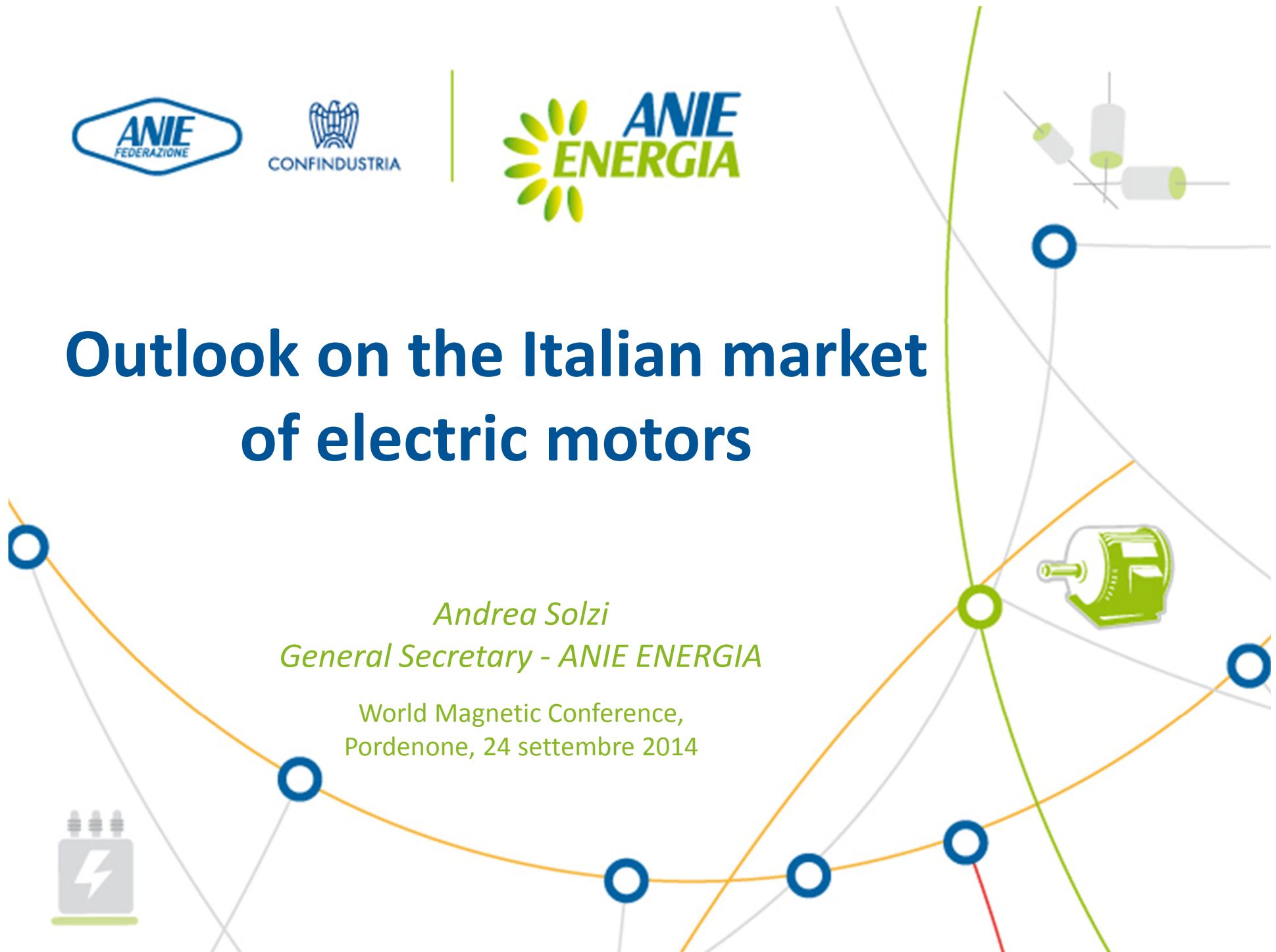


# Outlook on the Italian market of electric motors

*Andrea Solzi*

*General Secretary - ANIE ENERGIA*

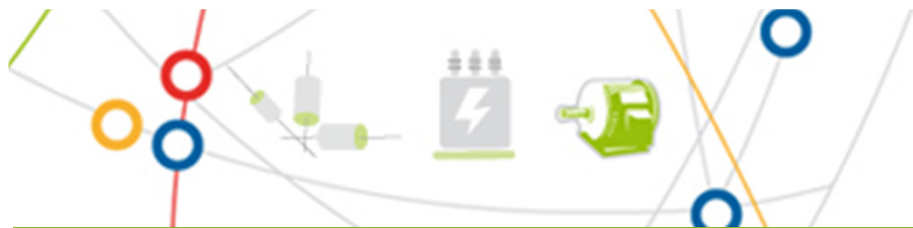
World Magnetic Conference,  
Pordenone, 24 settembre 2014





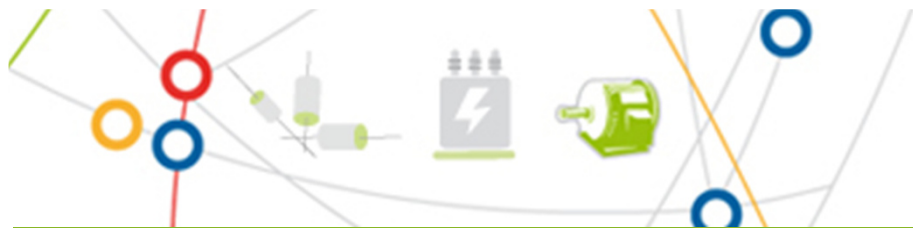
## Contents

- ☀ Who we are
- ☀ The Italian market of the electric motors (EM)
- ☀ Beyond the 640/2009: what's next?
- ☀ A tool for the market surveillance



## ANIE Energia | who we are

- ☀ It is part of **Confindustria ANIE**.
- ☀ It represents companies involved in the construction, distribution and installation of equipment, components and systems for the energy production, transmission, distribution, storage in all market segments
- ☀ **Some data:**
  - ☀ 335 member companies
  - ☀ over 20.000 employees
  - ☀ Turnover 2013: 8.8 mld€
  - ☀ Export 2013: 4.3 mld €



## ANIE Energia | who we are

<b>Energy production</b>	<b>Transmission &amp; Distribution</b>
Plants and components for energy production	MV equipments and switchboards
<b>Energy systems</b>	HV power stations
Storage, smart grid, EV chargers, energy efficiency	HV power lines
	<b>Electric transformer</b>
<b>Equipments and componets for energy use</b>	
<b>Electric motors</b>	
LV equipments and switchboards	



## ANIE Energia | who we are

### Group "Electric motors"

- ☀ 25 member companies
- ☀ 400 Mln € total turnover
- ☀ 80% national market share

### Sub Group "LV electric motors"

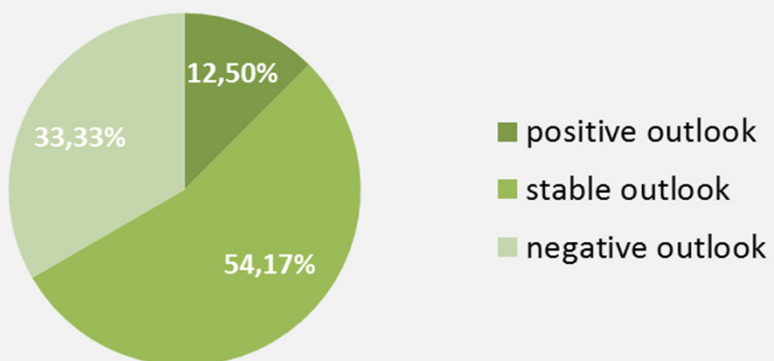
- ☀ 21 member companies
- ☀ 260 Mln € total turnover
- ☀ 70% national market share



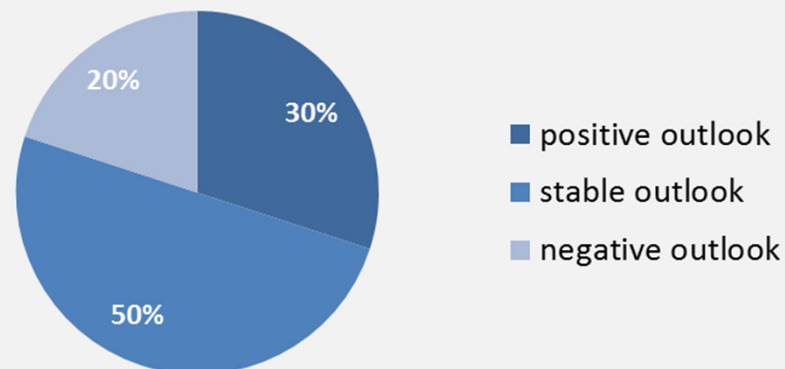
# The Energy market

## Industry short term vision (4Q14)

### Italian energy technologies market



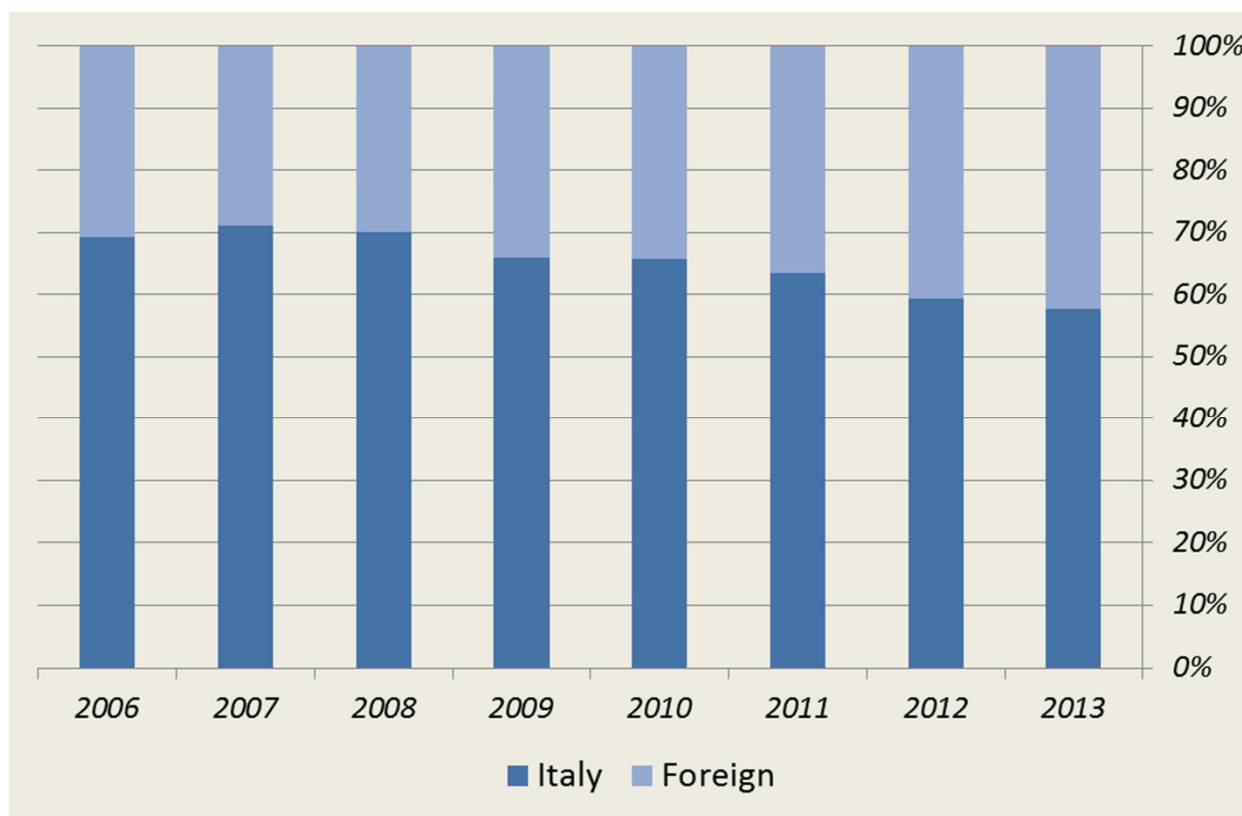
### 4Q14 - Foreign energy technologies market





# The Italian market of the electric motors (EM)

## Historical trends | Turnover: Italy vs foreign

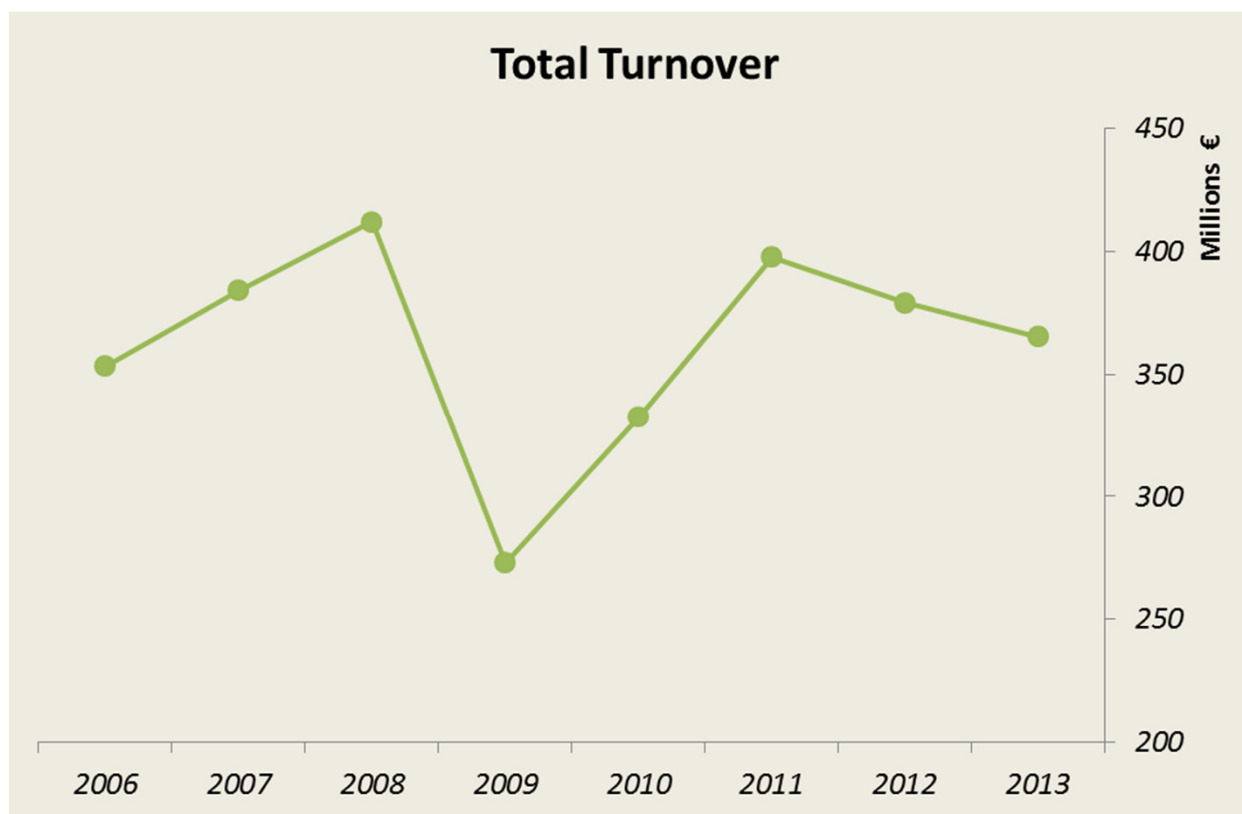


Data refer to member companies which account for the 60% of the national market as from 2010 onwards



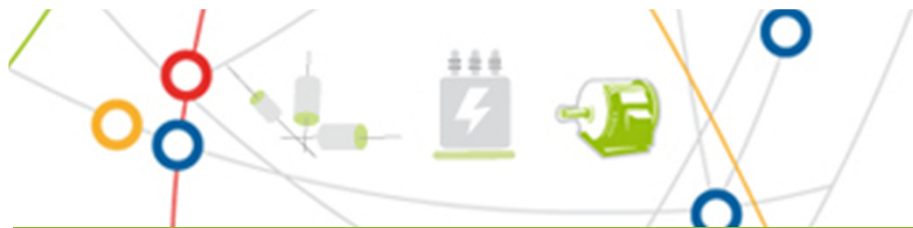
# The Italian market of the electric motors (EM)

## Historical trends | Total turnover



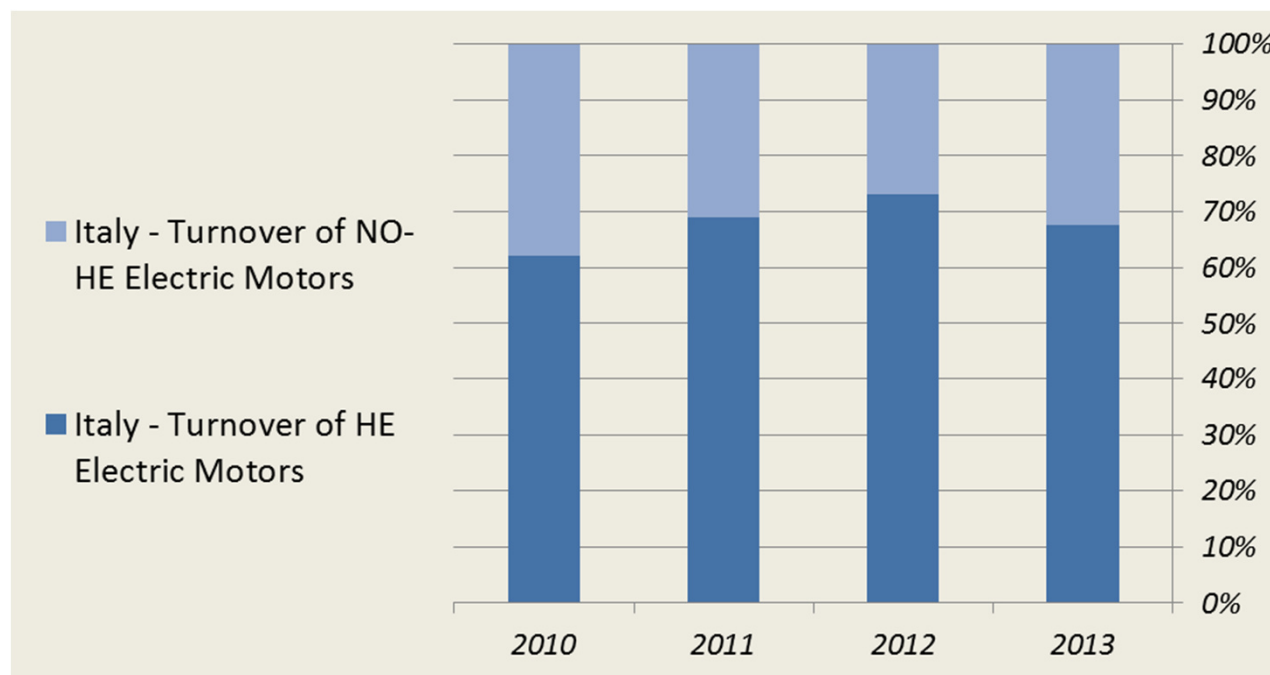
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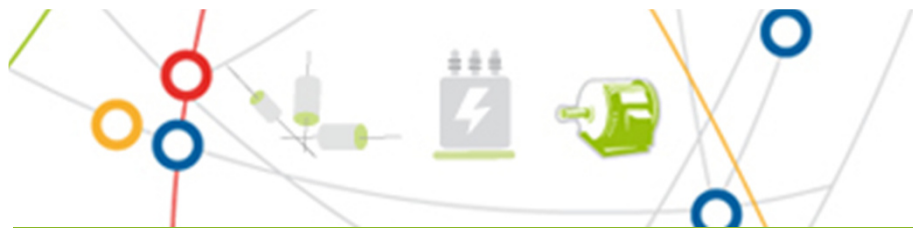


# The Italian market of the electric motors (EM)

## Historical trends | Italy - impact of Reg. 640/2009

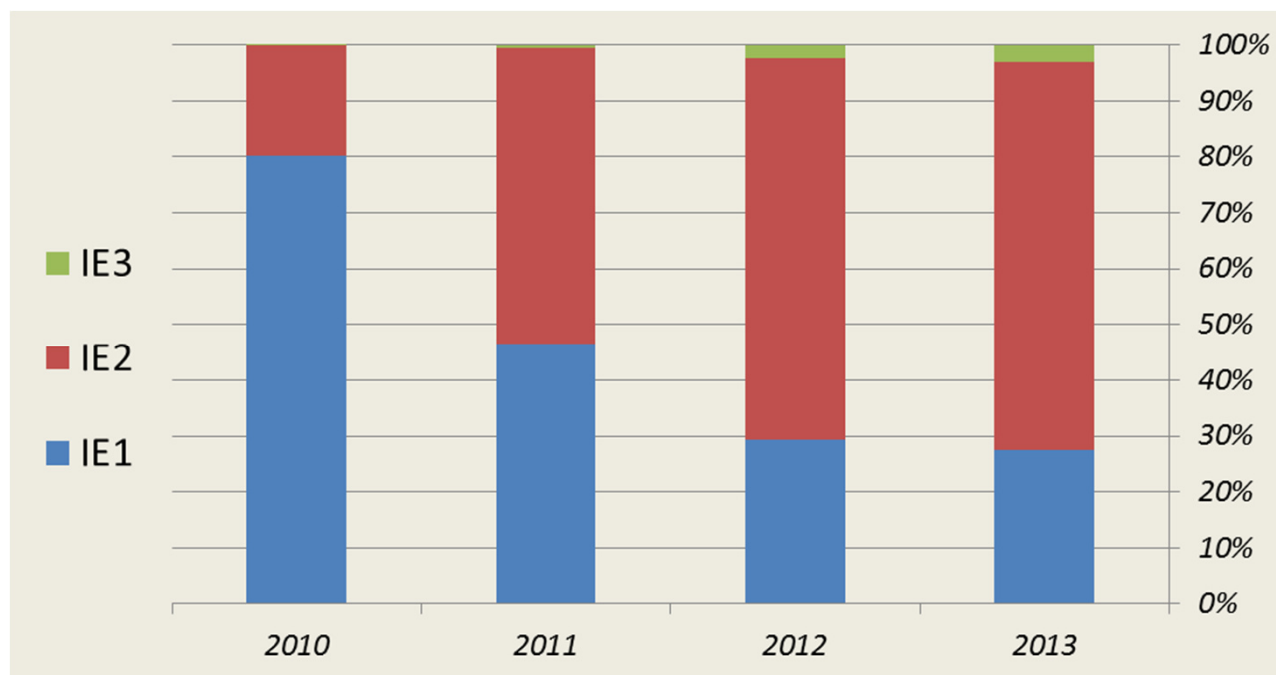


Data refer to member companies which account for the 60% of the national market as from 2010 onwards



# The Italian market of the electric motors (EM)

## Historical trends | Italy - impact of Reg. 640/2009

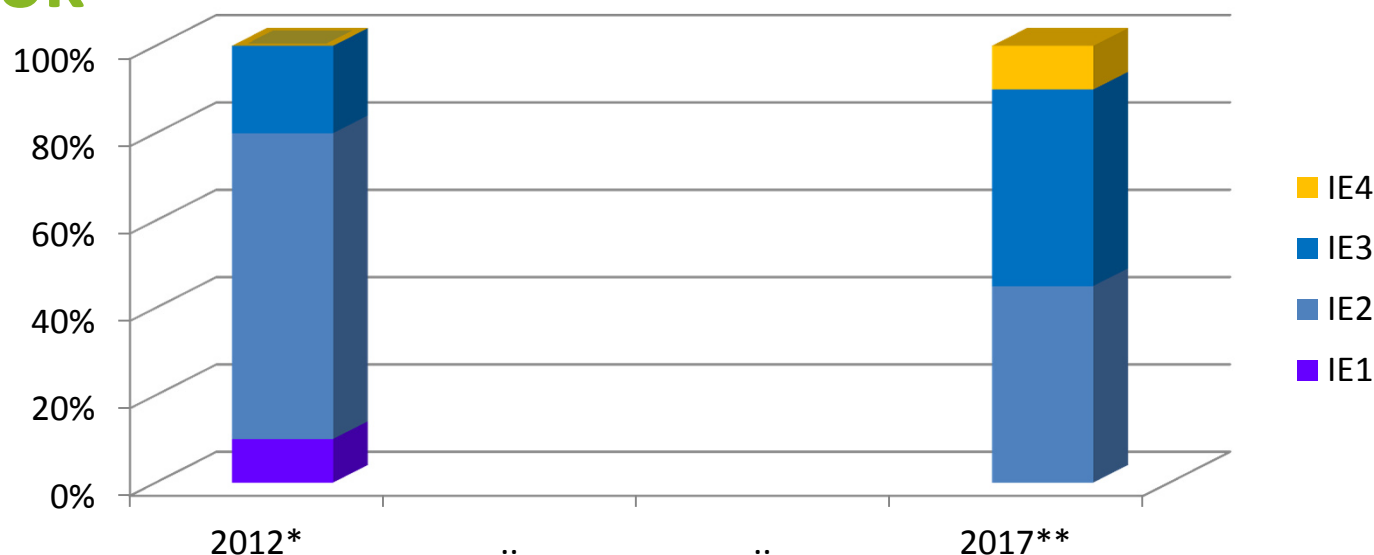


Data refer to member companies which account for the 60% of the national market as from 2010 onwards



# The Italian market of the electric motors (EM)

## Outlook



\* Shares in 2012, when the scope of the regulation 640/2009 affected only about 70% of the sold motors

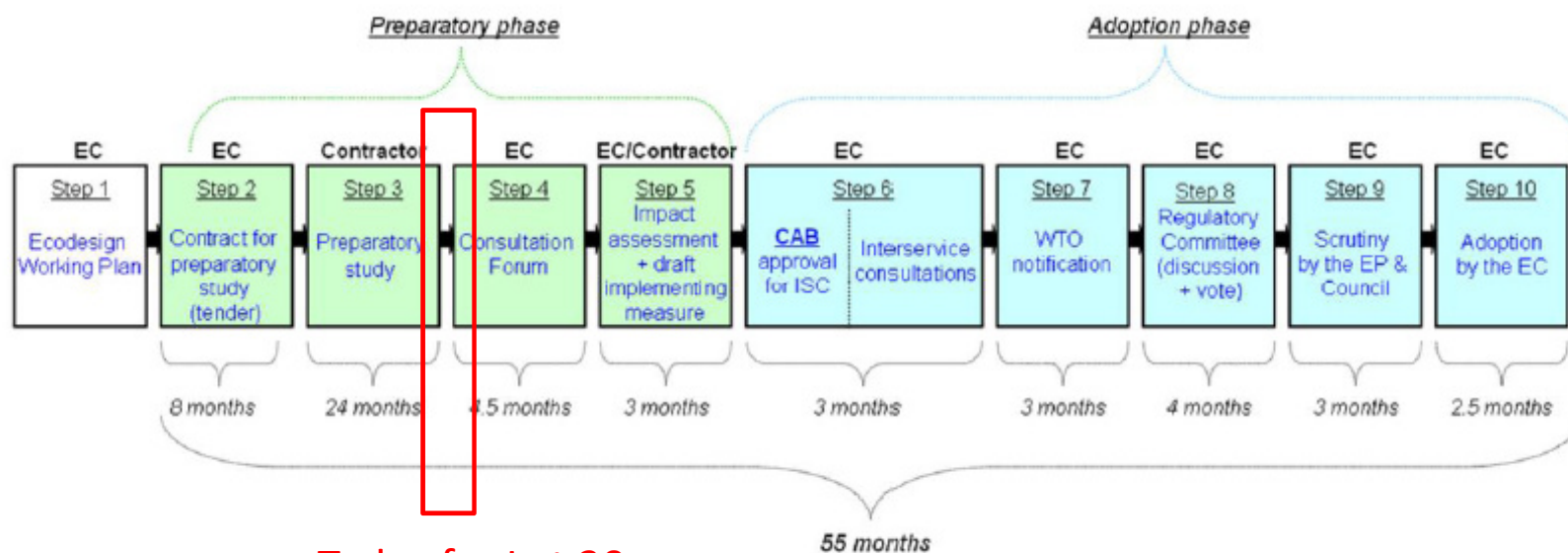
\*\* Outlook 2017: The leading motor technology will be the induction motor (> 90%), about 50% of them might be variable speed



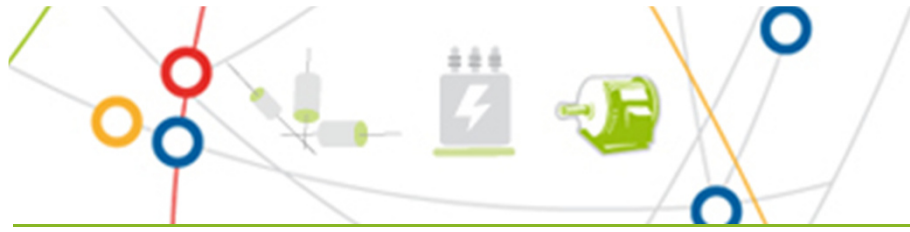
# Beyond the 640/2009: what's next?

## Adoption timeline

### Ecodesign preparatory and adoption procedure



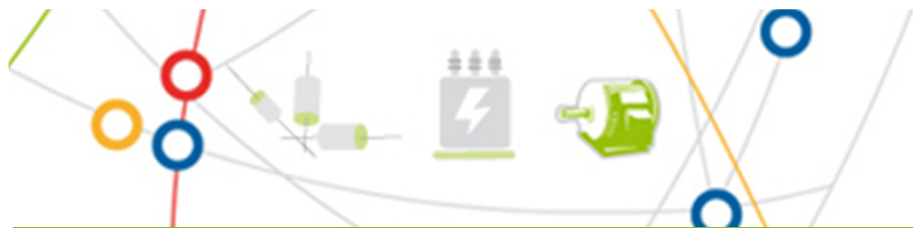
Today for Lot 30



# Beyond the 640/2009: what's next?

## A new regulation

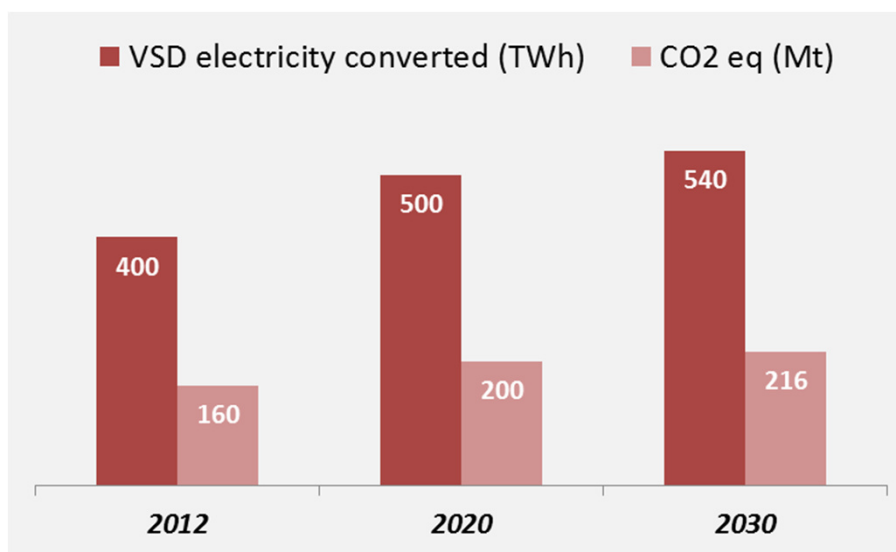
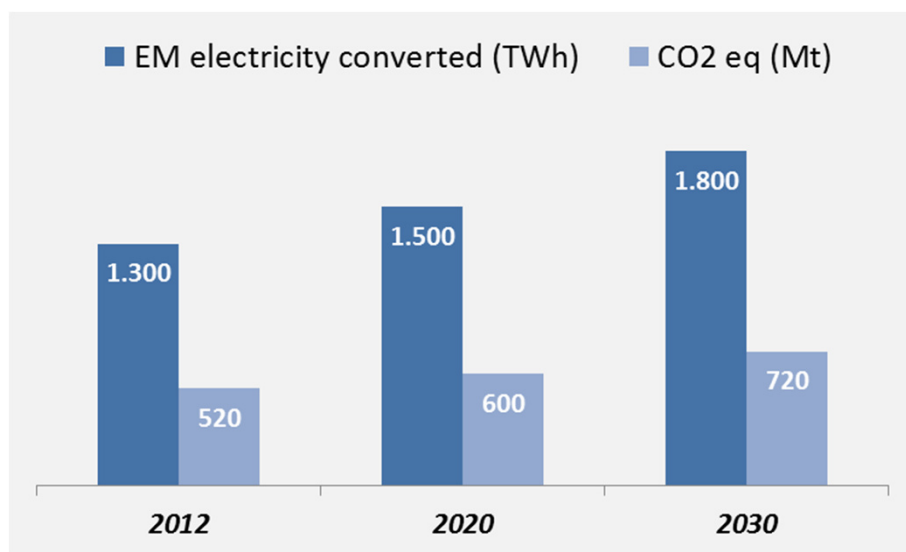
- ☀ Implementing Directive 2009/125/EC  
*eco-design requirements for energy-related products*
- ☀ It introduces measures for products offering a high potential for cost-effective reduction of greenhouse gas emissions, such as EM and VSD
- ☀ EM account for about 70% of the electricity consumed by the industry.
- ☀ EM potential for cost-effective improvement of the energy efficiency: from 20% to 30%.



# Beyond the 640/2009: what's next?

## A new regulation

- It will include EM integrated in other products where the efficiency can be tested separately

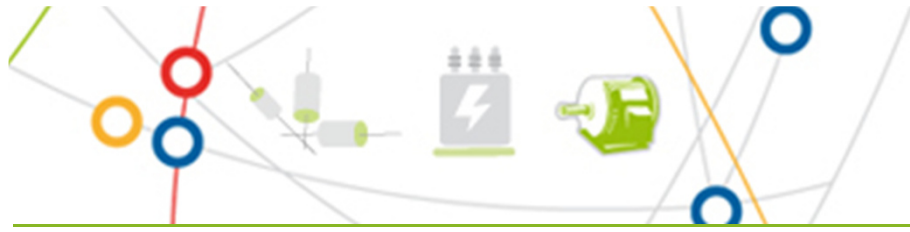




## Beyond the 640/2009: what's next?

### A new regulation

- ☀ Internal losses in EM estimated to 134 TWh in 2012.
- ☀ Internal losses in VSD estimated to 31 TWh in 2012.
  
- ☀ Repealing Regulation 640/2009/EC
- ☀ Requirements for EM and VSD

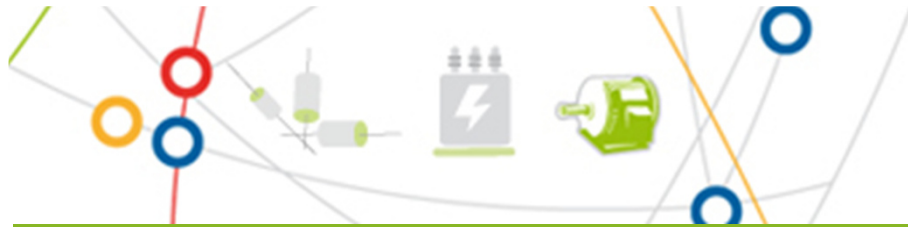


# Beyond the 640/2009: what's next?

## New definitions

- ☀ **Motor:** electric single speed, 50 Hz or 50/60 Hz motor rated for operation on a sinusoidal voltage
  - ☀ has 2,4, 6 or 8 poles;
  - ☀ has a rated voltage  $U_N$  up to 1 000 V;
  - ☀ has a rated output  $P_N$  from 0.12 kW to 1 000 kW;
  - ☀ is rated on the basis of continuous duty operation.





# Beyond the 640/2009: what's next?

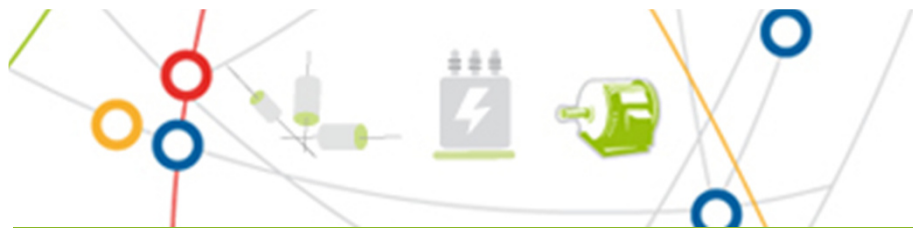
## New definitions

### ☀ Variable Speed Drive (VSD)

- ☀ is specified to operate with a motor with a rated output equal or above 0.12 kW and equal or below 1 000 kW.

- ☀ **Increased safety motor:** motor designed and certified to operate in explosive atmospheres in increased safety enclosure

- ☀ **Brake motor:** motor equipped with an electromechanical brake unit operating directly on the motor shaft without couplings.



# Beyond the 640/2009: what's next?

## Timeline and Requirements

Draft under discussion

from the date  
of coming into  
force of the  
new Regulation

From 1<sup>st</sup>  
January 2018  
????

From 1<sup>st</sup>  
January 2017  
????

From 1<sup>st</sup>  
January 2020  
????

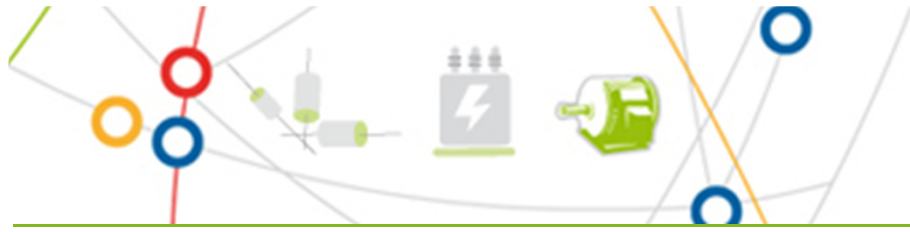


# Beyond the 640/2009: what's next?

## Timeline and Requirements

Draft under discussion

- ✿ from the date of coming into force of the new Regulation
  - ✿ squirrel cage motors  $\geq 0.75$  kW and  $< 7.5$  kW shall not be less efficient than the IE2 efficiency level;
  - ✿ squirrel cage motors  $\geq 7,5$  kW and  $< 375$  kW shall not be less efficient than the IE3 efficiency level or meet the IE2 efficiency level and be equipped with a VSD;



# Beyond the 640/2009: what's next?

## Timeline and Requirements

Draft under discussion

- ☀ from 1 January 2017
  - ☀ squirrel cage motors  $\geq 0.75$  kW and  $\leq 375$  kW shall not be less efficient than the IE3 efficiency level or meet the IE2 efficiency level and be equipped with a VSD;



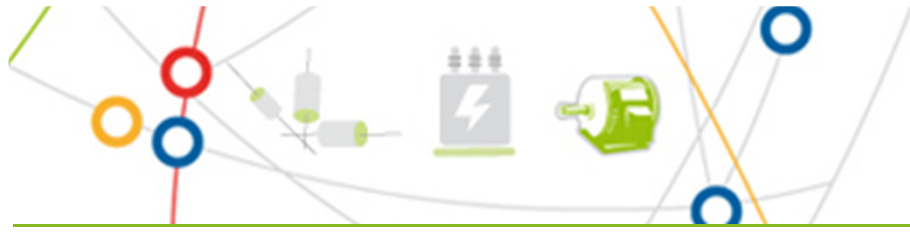
# Beyond the 640/2009: what's next?

## Timeline and Requirements

Draft under discussion

### ☀ from 1 January 2018

- ☀ **all motors  $\geq 0.12$  kW and  $< 0.75$  kW** shall not be less efficient than the IE2 efficiency level;
- ☀ **brake motors** or motors specified to operate exclusively in potentially explosive atmospheres  **$\geq 0.75$  kW and  $\leq 375$  kW** shall not be less efficient than the IE3 efficiency level or meet the IE2 efficiency level and be equipped with a VSD;
- ☀ **all motors  $> 375$  kW and  $< 1\ 000$  kW** shall not be less efficient than the IE3 efficiency level;
- ☀ **all VSD** shall not be less efficient efficiency than the IE1 efficiency level;



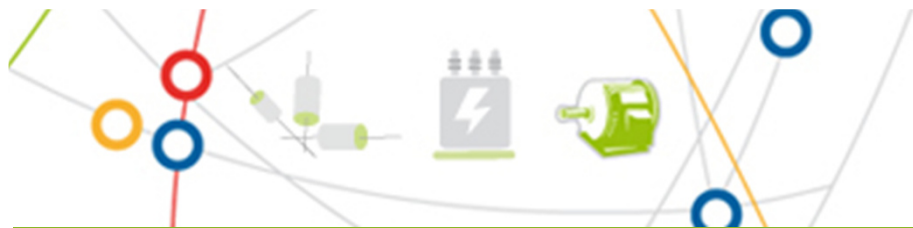
# Beyond the 640/2009: what's next?

## Timeline and Requirements

Draft under discussion

- ☀ from 1 January 2020

- ☀ all motors  $\geq 0.75$  kW and  $< 1000$  kW shall not be less efficient than the IE3 efficiency level;



## A tool for the **market surveillance**

- ✿ ENEA and ANIE Energia jointly developed an online tool:
- ✿ Website address: **[motorielettrici.enea.it](http://motorielettrici.enea.it)**
  - ✿ *Voluntary subscription of companies that construct and/or distribute HEEM compliants with Reg. 640\2009*
  - ✿ *Legal liability on the information presented on the site in relation to the Compliance Rules*
  - ✿ *Hyperlink to companies website*



## A tool for the market surveillance

The screenshot displays the ENEC website interface. At the top, there is a green header with the ENEC logo and the text "Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile". To the right of the header are fields for "Username" and "Password", a "Need Help?" link, and "Log In" and "Sign Up" buttons. Below the header is a navigation bar with "Home" and "Motors" tabs. The main content area features a grid of motor manufacturer logos, including ABB, BONORA, BRONZONI, ELECTRO ADDA Group, FELM srl, FIMET, LAFERTGROUP, MarelliMotori, MGM, ME (ELECTRIC MOTORS TOP EFFICIENCY), seipee (MOTORI ELETTRICI), and SEW EURODRIVE. On the left side, there is a search bar and a list of filters: "Manufacturer", "Power", "Efficiency", and "Current", along with a "Search" button. At the bottom left, there is a "LINKS" section with a link to "REGOLAMENTO (CE) N. 640/2009 DELLA COMMISSIONE".





# A tool for the market surveillance

Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile

🇮🇹 🇬🇧  
   
[Need Help?](#)

🏠 Home
⌵ Motors
🔒 Log In
➕ Sign Up

## Motor List

➤ Manufacturer

➤ Poles

➤ Power

▼ Efficiency

-  %

IE2
  IE3

➤ Current

🔍 Search

**LINKS**  
 REGOLAMENTO (CE) N. 640/2009 DELLA COMMISSIONE del 22 luglio 2009 recante modalità di applicazione della direttiva 2005/32/CE del Parlamento europeo e del

Model	Manufacturer	Power <sup>↓</sup>	Poles	Voltage	Efficiency at load 100%	Test report
➤ AMEE 71Z AA	LAFERT	0.75 kW	2	400 V	IE2 77.5 %	🟡
➤ AMEE 80Z AA	LAFERT	0.75 kW	2	400 V	IE2 77.4 %	🟡
➤ 3EMA 80 C2	FIMET	0.75 kW	2	400 V	IE2 77.6 %	🔴
➤ IE2 1LE10	SIEMENS	0.75 kW	2	400 V	IE2 77.4 %	🟢
➤ DRE 80M 2	SEW-EURODRIVE	0.75 kW	2	400 V	IE2 79.2 %	🟡
➤ DRE 80M 4	SEW-EURODRIVE	0.75 kW	4	400 V	IE2 81 %	🟡
➤ DRP 80M 2	SEW-EURODRIVE	0.75 kW	2	400 V	IE3 83.2 %	🟡
➤ DRP 90M 4	SEW-EURODRIVE	0.75 kW	4	400 V	IE3 83.3 %	🟡
➤ IE2 1LE10	SIEMENS	0.75 kW	4	400 V	IE2 79.6 %	🟢
➤ DRP 90L 6	SEW-EURODRIVE	0.75 kW	6	400 V	IE3 80 %	🟡
➤ DRE 90L 6	SEW-EURODRIVE	0.75 kW	6	400 V	IE3 80 %	🟡
➤ IE2 1LE10	SIEMENS	0.75 kW	6	400 V	IE2 75.9 %	🟢
➤ AMEE 80Z AA	LAFERT	0.75 kW	4	400 V	IE2 80 %	🟡



*Thanks for your attention*

🐦 @ANIEnergia | #industriaefficiente

*[www.anienergia.it](http://www.anienergia.it)*



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