

EU-MORE



European M0tor
REnovation initiative

Review of policies for accelerated motor replacement in EU



EU-MORE is an acronym for
EUropean **M0**tor
REnovation initiative

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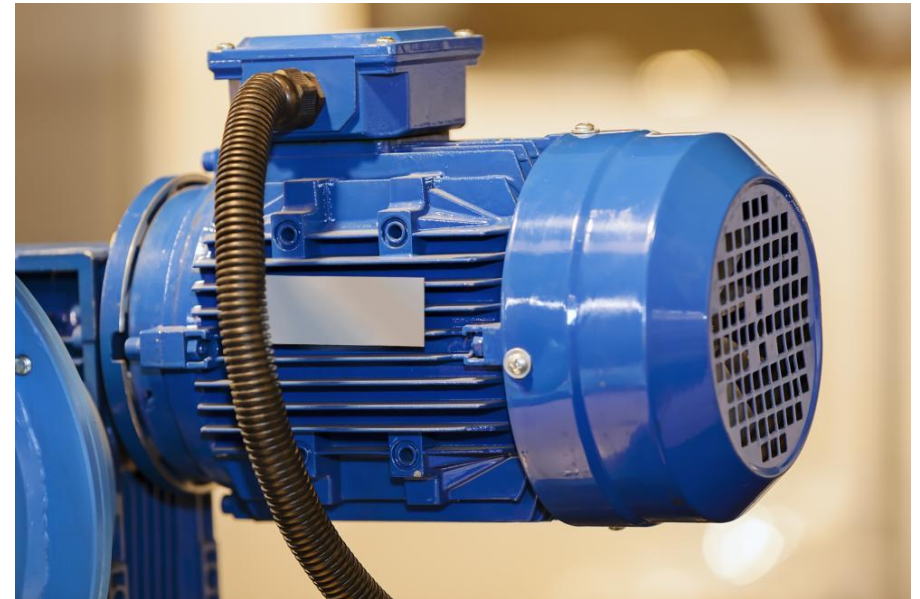
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Objectives



- The review, along with EU-MORE's motor market analysis, builds the foundations for the process of **design of new policies** for accelerated electric motors replacement in the EU
- It allows to assess **policy requirements** to speed-up the renovation of the European electric motors stock



Source: European Commission



Background & Similar Initiatives



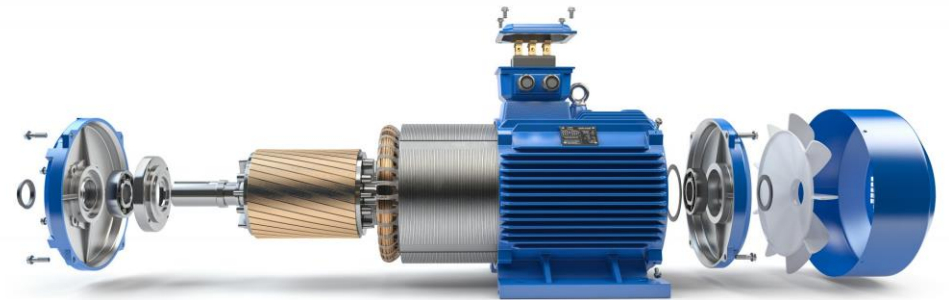
- Reviews and mapping of policies supporting energy efficiency measures have already been conducted in grey and scientific literature
- **ODYSSEE-MURE** project has developed a database of policies implemented in the EU ([MURE database](#))
- EU-MORE Policy review built upon these results focusing on **motor replacement actions** across the EU



Scope & Focus



- The review consisted in an analysis of the policies supporting (directly or indirectly) the **replacement of old inefficient motors or motor systems upgrading**
- The analysed policies are mostly targeting the **industrial and service sectors**
- Past, current and planned policies in the 27 EU Member States have been considered



Review methodology (1/2)



- The review is based on the contribution of **country experts** able to provide a high-level perspective on the national policies under exam
- For each Member State, the following aspects have been analysed:

General national policy framework, major national programmes and measures (also based on NECPs)

General evaluation of the **national actions concerning the replacement of electric motors**

List and description of relevant policy measures



Review methodology (2/2)



- Each policy measure was analysed according to:

Overview

- Responsible authority
- Status (ended, ongoing, planned)
- Issue, start and ending dates
- Reference sources of information

Characteristics

- Budget
- Source of financing
- Policy focus (Physical/Service intervention)
- Key barriers and drivers
- Replicability

Impacts

- Case level and policy level impact (qualitative)
- Impact on energy savings/GHG emissions (quantitative)
- Impact on number of motors replaced (quantitative)



Analysis of results



- Policy measures were categorised* according to:

Measure Type

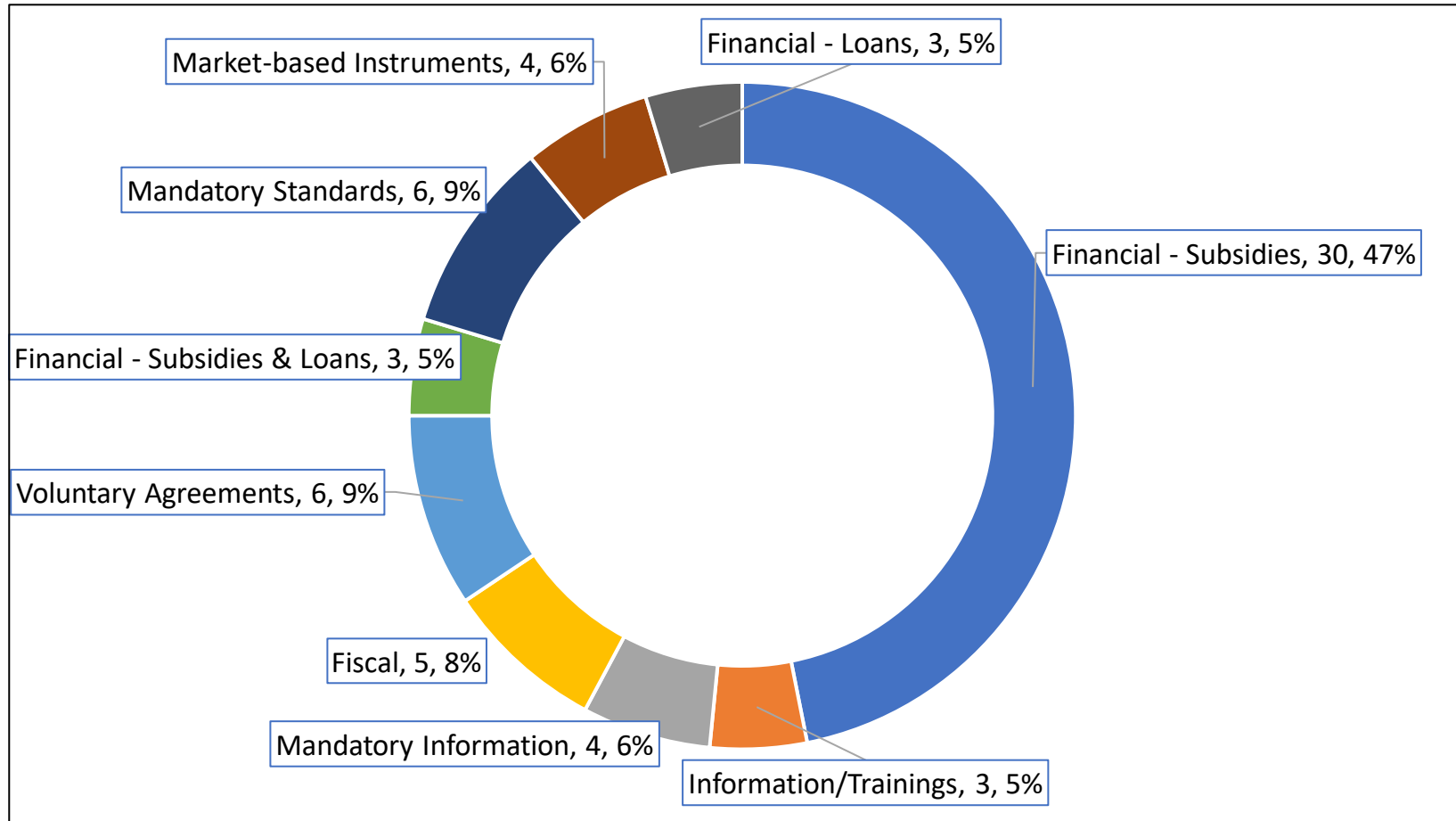
- Mandatory Standards
- Financial – Subsidies + Loans
- Financial – Subsidies
- Financial – Loans
- Fiscal
- Market-based Instruments
- Information/Trainings
- Voluntary Agreements
- Other

Targeted audience

- Industry – All
- Industry – SMEs
- Industry - Large Companies
- Industry - Energy Intensive Companies
- Municipalities
- Services
- Buildings – Public
- Buildings – All
- All Sectors (excluding Transport)



Analysis of results



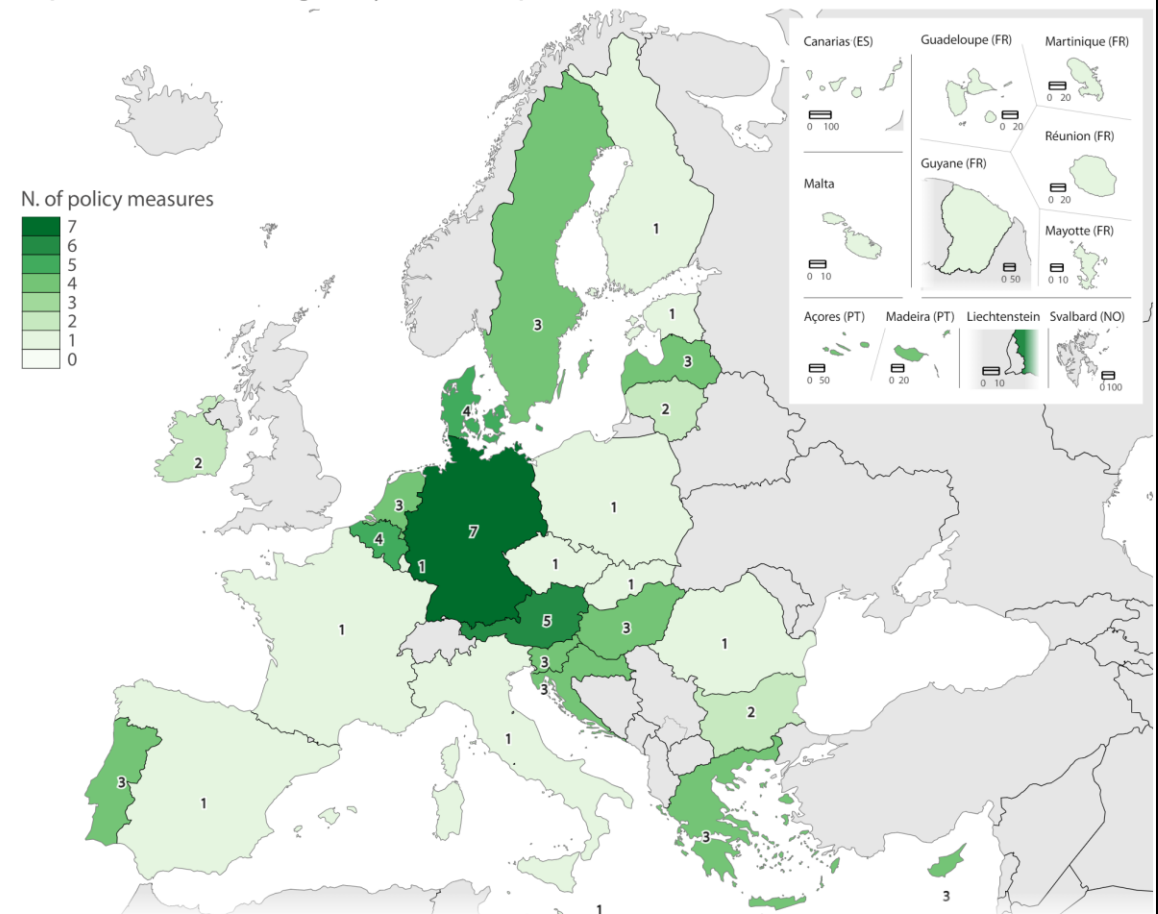
Analysis of results



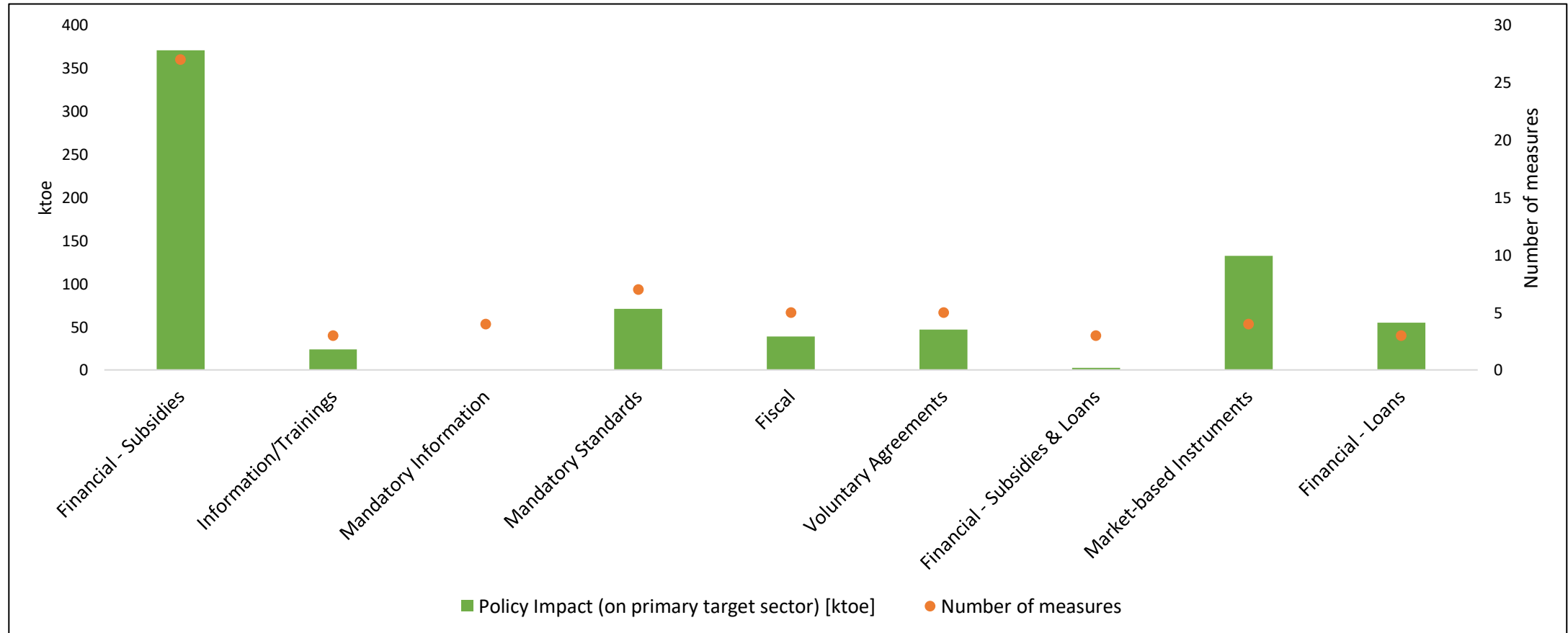
- On a national level, Germany resulted the country with the highest number of policies involving electric motors, followed by Austria
- In some countries, such as Italy and France, actions addressing motor renovation are eligible under the white certificate scheme

EU-MORE

EU policies addressing early motor replacement



Analysis of results



Analysis of results



- Subsidies, loans and fiscal measures (financial policies) are predominant
- Non-subsidy policies (mandatory standards/information, informational measures) represent about 1/3 of the analysed policies
- **Implementation barriers**, particularly relevant for SMEs, are not adequately taken into account



Analysis of results



- Motor replacement is generally included in **cross-cutting energy efficiency programmes**
- Motor replacement is usually described as an eligible intervention, but **criteria are often too vague**
- Very few national policies include systemic approaches to motor systems, which generate usually the highest energy savings, as evidenced from case studies.



Remarkable policies in EU



- The **Energy Investment Allowance (EIA)**, administered by the Netherlands Enterprise Agency RVO, allows companies to receive a tax deduction for eligible energy-saving investments (45.5% of investment costs that can be deducted from taxable profit)
- Eligible investments are listed in the official Energy List
- The Energy List include **explicit and specific criteria for electric motor replacement:**
 - a. electric motor, designed for direct connection to the electricity grid: 2-, 4- or 6-pole electric motor with a nominal power greater than 200kW or 8-pole electric motor, which complies with the IE4 efficiency class measured in accordance with NEN-EN-IEC 60034-30-1: 2014;
 - b. Ex eb electric motor, designed for direct connection to the electricity grid, which complies with the IE3 efficiency class measured in accordance with NEN-EN-IEC 60034-30-1:2014;
 - c. electric motor, designed for variable speed and not directly connected to the electricity grid, which complies with the IE5 efficiency class in accordance with NVN-CLC-IEC/TS 60034-30-2:2021,



Remarkable policies in EU



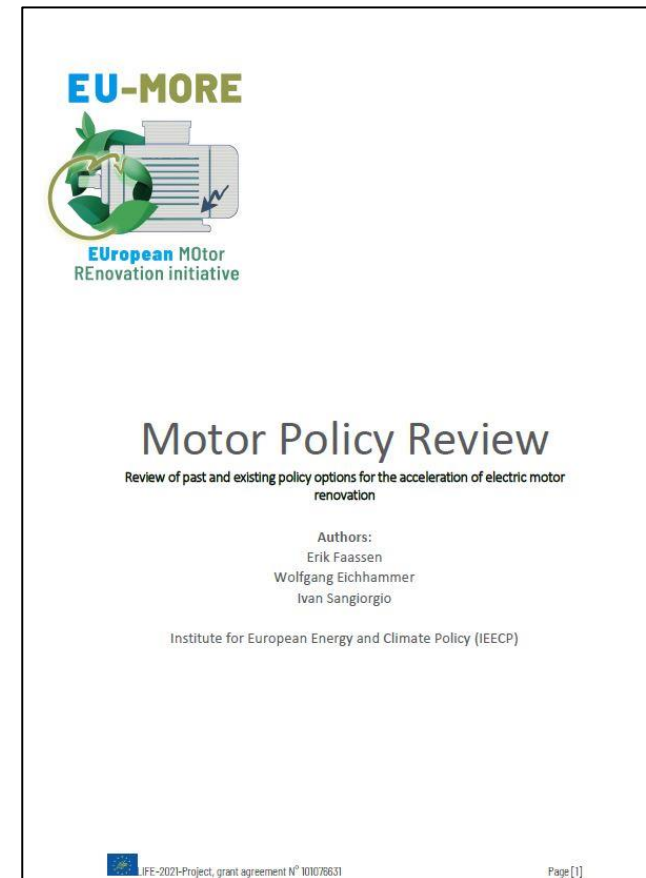
- The **Energy Efficiency Promotion Plan (PPEC)** promotes actions to improve efficiency in electricity consumption through an incentive mechanism (51% of tot. installation cost)
- The 6th edition (2017-2018) included a measure to promote the **replacement of sub-IE1 motors in the 0.75kW to 400kW power range with IE3 or IE4 motors**
- With a budget of 900 k€, the measure allowed the **replacement of 420 motors**, with estimated electricity savings of 115 GWh and GHG emission reduction of 43 thousand tCO₂eq.



Policy Review - Report



- Final overview report which includes:
 - Overview and description of the policies, for each Member State
 - Policy impact analysis
 - Identification of best practices
 - Identification of barriers and shortcomings
- Per country 'sub-reports' were produced for all 27 Member states, then collected into the final overview report



Non-EU Policies for motors



- The US **Federal Energy Conservation Program**, governed by the Department of Energy (DOE), regulates the energy efficiency of consumer products and industrial equipment, including electric motors.
- The 2023 efficiency standards (MEPS) apply to **single speed induction motors** manufactured or imported into the US from June 1, 2027.
- DOE estimated that the standards will introduce electricity and GHG savings of **880 TWh and 0.9 Mton CO2**



Non-EU Policies for motors



- The **Energy Technology List (ETL)** is a UK government list of energy efficient products and machinery.
- Products in the list must meet ETL's energy saving criteria
- ETL features products such as boilers, **electric motors**, air conditioning and refrigeration equipment.
- For motors: contact of the manufacturer, type of motor, technical parameters (rated power, # of poles, operating voltage) and presence of a VSD.



Converter-fed motors

Search for products in this technology

Filters Clear filters 106 products Sort by Date added to ETL (newest)

Listing status

Currently listed
 Removed from list
 Current or removed

Manufacturer

Product category

Number of poles

Does the product comprise a brushless dc multi-phase motor and an integral electronic control device?

Rated operating voltage of the motor (V)

Does the product incorporate an electronic VSD?

	V Series Motor by FUTURE MOTORS LIMITED Model number: V03 Date added to ETL: 15 July 2021	<input type="checkbox"/> Compare
	V Series Motor by FUTURE MOTORS LIMITED Model number: V02 Date added to ETL: 15 July 2021	<input type="checkbox"/> Compare
	V Series Motor by FUTURE MOTORS LIMITED Model number: V01 Date added to ETL: 15 July 2021	<input type="checkbox"/> Compare
	Dyneo+ by NIDEC INDUSTRIAL AUTOMATION UK LIMITED Model number: 6000 80Kw LSHRM 180 L1M Date added to ETL: 1 September 2020	<input type="checkbox"/> Compare
	Dyneo+ by NIDEC INDUSTRIAL AUTOMATION UK LIMITED Model number: 6000 90Kw LSHRM 200 L1M Date added to ETL: 1 September 2020	<input type="checkbox"/> Compare



Project website



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EU-MORE

Accelerating early replacement of old inefficient electric motors
in industry and the service sector

Project website & newsletter registration:
<https://eu-more.eu/>



LIFE project funded under grant agreement N° 101076631

Knowledge Exchange



• Policy Forum & Multi Stakeholder Platform

Motor Policy Forum

General

Topics	Posts	Forum Participants
1	1	

Past & Current Policies for Motor Renovation

Subforums: Extra-EU Policies General Austria Belgium France Germany Greece Italy Portugal Sweden Netherlands

Topics	Posts	Forum Participants
13	13	

UK - Energy Technology List (ETL)
By Ivan, 2 weeks ago

Past & Current Policies for Motor Renovation

Extra-EU Policies

Topics	Posts	Forum Participants
2	2	

General

EU-MORE

Austria

Topics	Posts	Forum Participants
1	1	

Belgium

UK - Energy Technology List (ETL)
By Ivan, 2 weeks ago

Behind the Scenes of EU-MORE Policy Review: Estimation of the Policy Im
By Ivan, 2 months ago

The Klimaaktiv Programme
By Ivan, 1 month ago

Flanders - Voluntary Agreements in Industry
By Ivan, 4 weeks ago



Future Work



- Continuous update of the policy measures repository
- Policy co-creation process with policymakers
- Modeling and projection of energy/GHG-related policy impacts







Design of policy recommendations





Thank you!

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