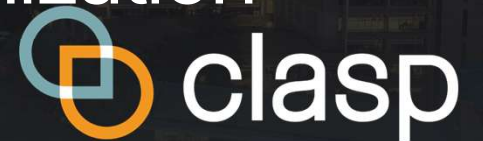




Advancing Motor System Energy Efficiency Standards for China's Industrial Decarbonization

5 June 2025, Hu Bo

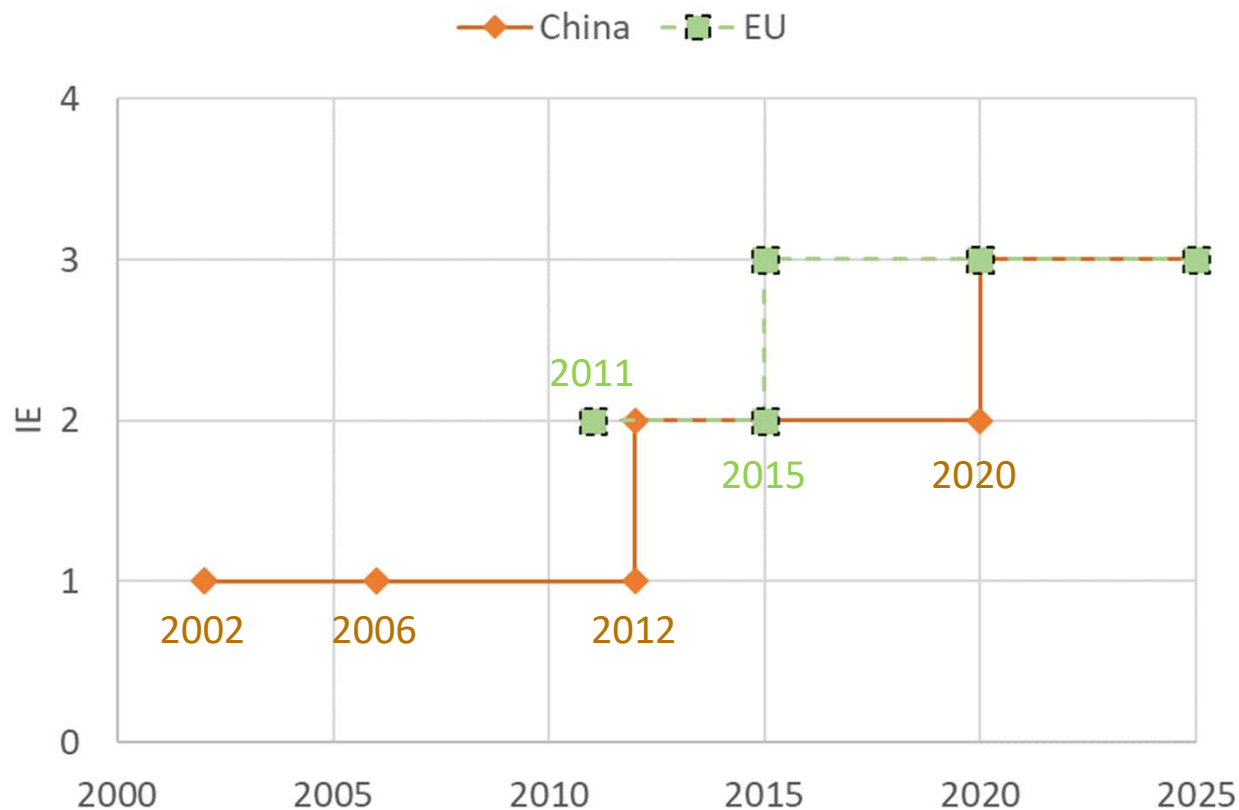


CLASP Introduction



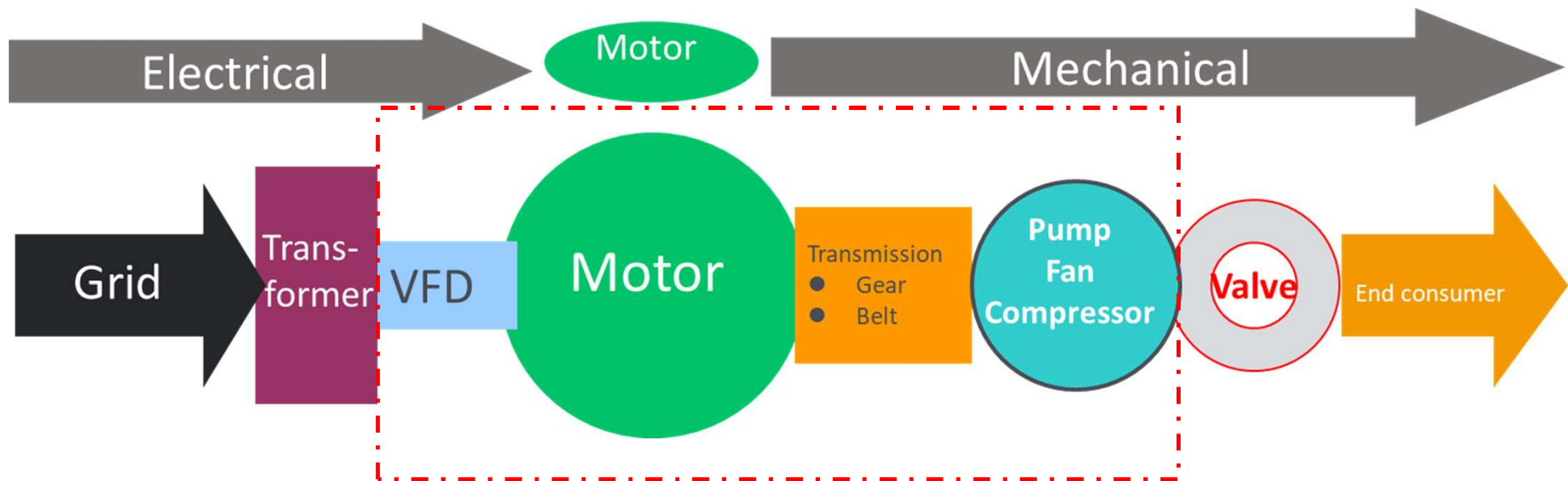
CLASP improves the energy and environmental performance of the appliances & equipment we use every day, accelerating our transition to a more sustainable world.

China induction motor MEPS development overview



- National policies:
 - Five-Year Plan for Energy Conservation and Emission Reduction
 - Dual carbon goal from 2019
 - World-leading MEPS
- Financial incentives:
 - Industrial Subsidy Program (2010–2012)
 - Industrial Equipment Upgrade Initiative (starting in 2024)
- Technology development & innovation
- International MEPS benchmarking

CLASP insights – from component to system



Components

- All types of motors
- Pump
- Blower
- Fan

Motor Driven Unit (MDU)

- Pump MDU
- Air compressor MDU
- Fan MDU

Motor system

- Compressed air station
- Pump station

Energy Efficiency of Fan Systems

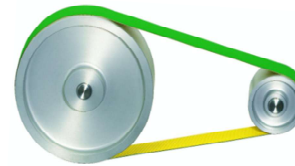
VFD



Motor



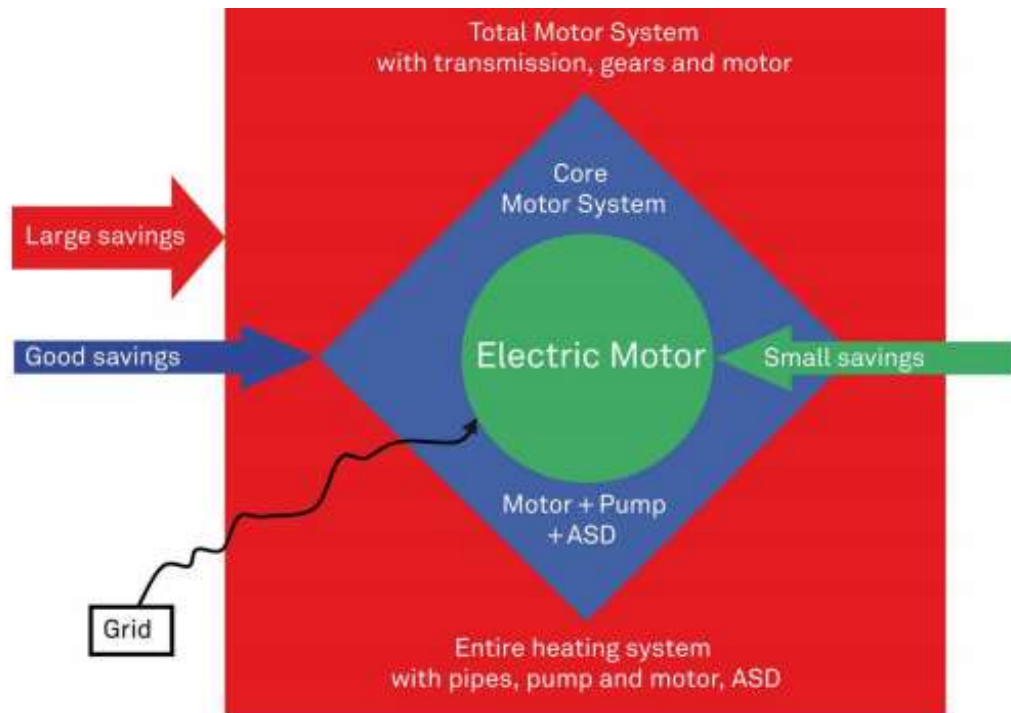
Transmission



Fan

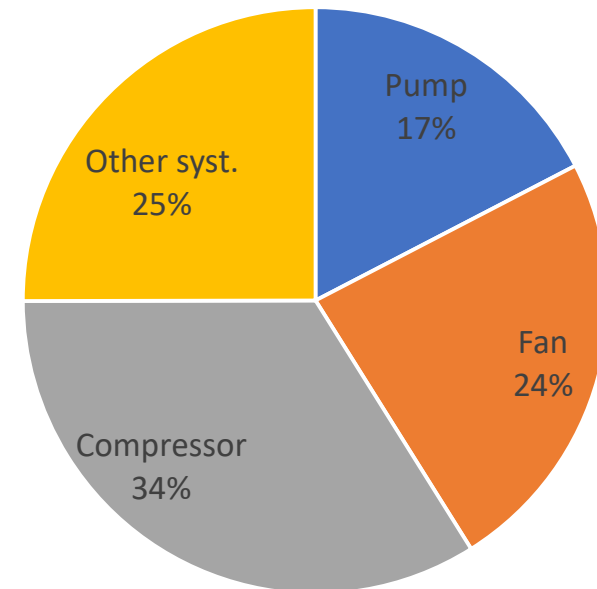


Where are the potential from?



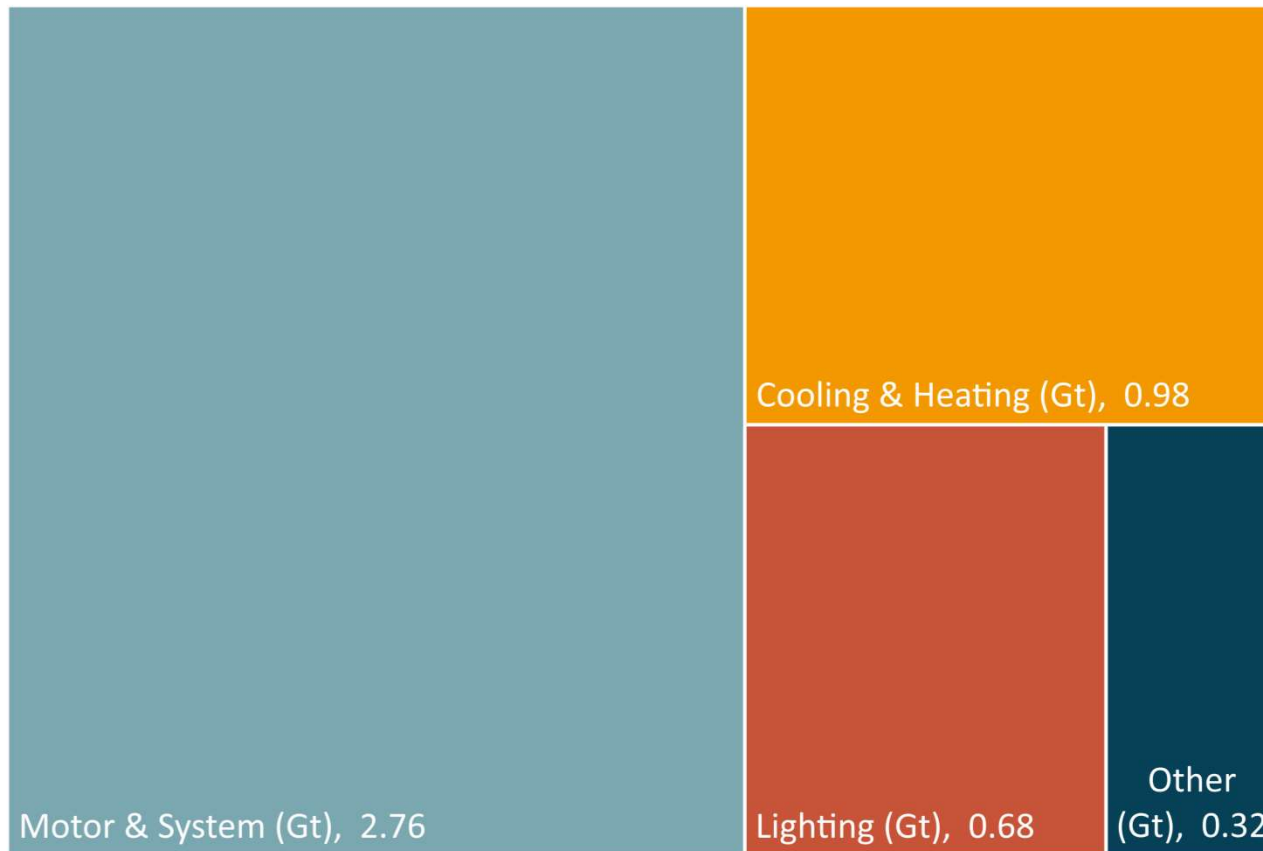
Source :A+B International, 2008

Global Electricity use



Source: IEA World Energy Outlook 2016

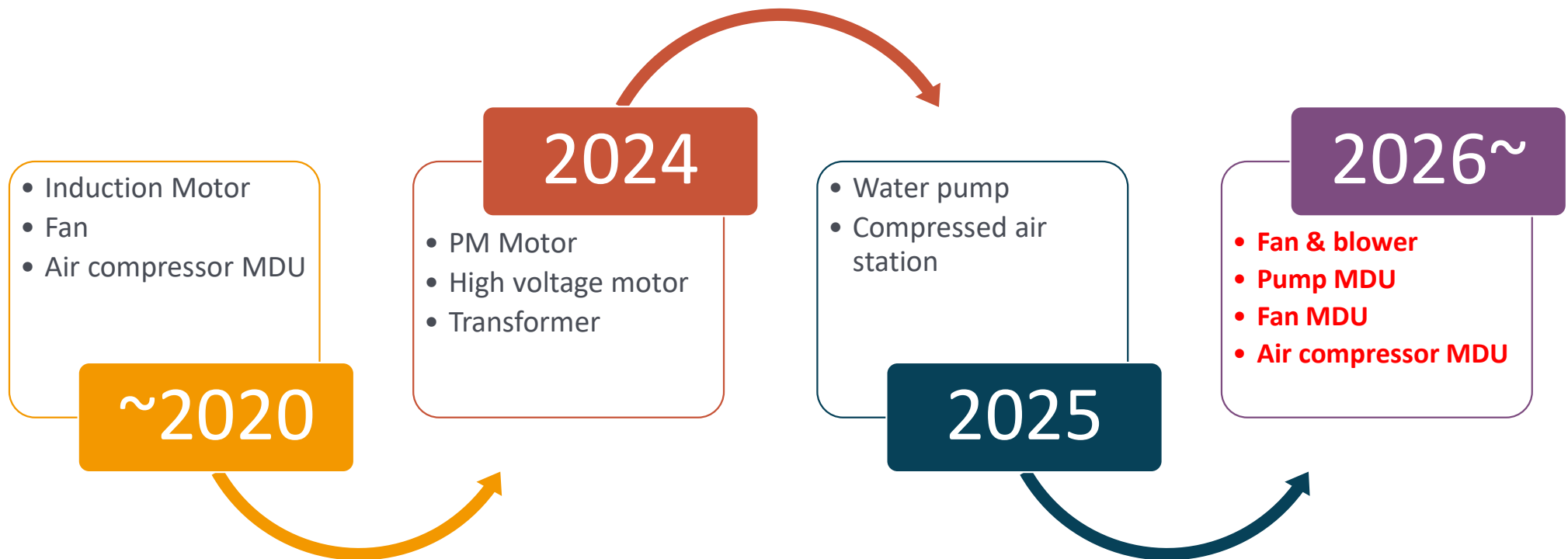
Why motor system matters?



Appliance CO2 emission share (2023)

- Motor system accounts for about 21% of China's total carbon emission in 2023.
- Decarbonizing motor systems is critical for China's industrial emissions reduction and its 2060 carbon neutrality goal.

Motor system standards outlook



Opportunities and Challenges



- Motor system (including MDU) possess significantly greater efficiency improvement potential.
- CLASP focuses on motor system efficiency, with progressing from individual equipment to MDUs and ultimately to full system.
- However, standardizing motor systems presents growing challenges as system complexity increases, particularly in:
 - Defining product scope boundaries
 - Developing consistent testing methodologies and facilities
 - Establishing appropriate energy efficiency metrics and classification systems
 - Ensuring effective compliance monitoring and enforcement

Thank you!
Any questions?

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