

# Webinar: Climate Change Mitigation: What can you do right now?

## *Climate Change Mitigation: KONE Experience*

Ir. Henry N S Cheung  
Managing Director  
KONE Elevator (Hong Kong) Limited

Remarks: This material/event is funded by the Professional Services Advancement Support Scheme of the Government of the Hong Kong Special Administrative Region. Any opinions, findings, conclusions or recommendations expressed in this material/any event organised under this project do not reflect the views of the Government of the Hong Kong Special Administrative Region or the Vetting Committee of the Professional Services Advancement Support Scheme.



The image is a vertical split composition. The left half shows a vast, flat, blue landscape under a clear blue sky, with distant mountains on the horizon. The right half shows a vast, flat, brown landscape with cracked, parched earth under a clear blue sky, with distant mountains on the horizon. The text is overlaid on the left side.

# Climate Change Mitigation

KONE EXPERIENCE

# Made in Finland

- KONE, as a global leader in the elevator and escalator industry, we provide elevators, escalators and automatic building doors, as well as solutions for maintenance and modernization to add value to buildings throughout their life cycle. Through more effective People Flow®, we make people's journeys safe, convenient and reliable, in taller, smarter buildings.

The background of the slide is an aerial photograph of a vast, lush green forest in Finland. A large, winding lake is visible in the middle ground, surrounded by dense coniferous trees. The sky is a deep blue with some light clouds. The overall scene is serene and natural.

# Finland – Green Trail

## Clean Technology in Finland

- Finland’s long-term goal of “National Energy and Climate Strategy” is become a carbon-neutral society.
- This strategic theme on carbon neutrality includes the following objectives:
  - will achieve carbon neutrality by 2035
  - aims to be the world’s first fossil-free welfare society (i.e. freeze any new investment in fossil fuel companies)
- Finland has launched “The Strategic Cleantech Program” in 2012, aims to develop into one of the world’s leading countries in clean technology\*.

---

\* Clean Technology: is any process, product, or service that reduces negative environmental impacts through significant energy efficiency improvements, the sustainable use of resources, or environmental protection activities

Sustainable success with customers



URBANIZATION

MEGATRENDS

SUSTAINABILITY

TECHNOLOGY

Dedicated to People Flow™ **KONE**

STRATEGIC TARGETS

- Great place to work
- Most loyal customers
- Faster than market growth
- Best financial development
- Leader in sustainability

WAYS TO WIN

We will ensure our success through:

- Empowered people
- Marketing and sales renewal
- Digital + physical enterprise
- Lean KONE



CULTURE

SAFETY  
QUALITY  
SUSTAINABILITY

- CARE
- COLLABORATION
- CUSTOMER
- COURAGE

WHERE TO WIN

We will lead the way in:

Core products and services

New solutions for customer value

Smart and sustainable cities

Service business in China

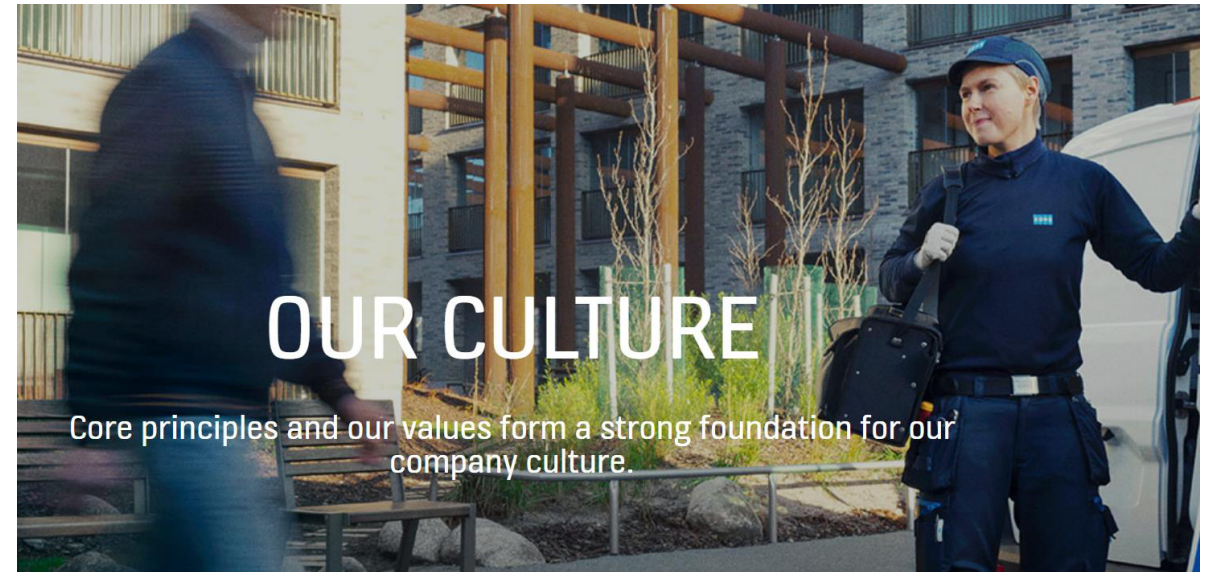
# Our Culture

MISSION  
OUR MISSION IS TO IMPROVE THE FLOW OF URBAN LIFE

VISION  
WE CREATE THE BEST PEOPLE FLOW™ EXPERIENCE

# Our Culture

- We are passionate about safety, quality, sustainability and the KONE values
- Our culture is created by each one of us, by every action we take, every day, all around the world.



# Our Culture

- Safety

We design our products and processes for industry leading safety performance. We work safely, care for others, and actively encourage safe practices.

- Quality

We think and act proactively throughout the customer journey and solution lifecycle. Lean and continuous improvement culture makes us the choice of our customers and creates the best user experience.





# Our Culture

- Sustainability

We are fair and inclusive. We are committed to carbon neutrality. We lead the way with the most sustainable solutions and services for a better society.



KONE CORE PRINCIPLES

## Sustainability

**We choose sustainability every day**

We are fair and inclusive. We are committed to carbon-neutrality.

We lead the way with the most sustainable solutions and services for a better society.

# Our Ambitions

# Our Ambitions

- KONE has set science-based targets for significant reductions in our greenhouse gas (GHG) emissions by the year 2030. KONE's targets are the most ambitious in the industry and have been validated against the latest climate science by the Science Based Targets initiative (SBTi). In another first for the industry, KONE has pledged to have carbon neutral operations by 2030.
- KONE has also signed the Paris Pledge for Action climate initiative in 2015 to limit global warming.



# Our Action

# Our Action

## REDUCTION OF SCOPE 1, 2, 3 EMISSION

- Scope 1
  - The first lift company introduce electric driven motorcycle to replace fossil fuel motorcycle
  - Electric/hybrid vehicles are the only consideration for new purchasing/leasing in the future
  - Encouraging staff to consume less fossil fuel, “Fuel Saving Campaign” has been convened and fuel consumption cost saved can be redeemed by cash



Remarks: Total fuel saving up to \$140,000 in 2021

# Our Action

## REDUCTION OF SCOPE 1, 2, 3 EMISSION

- Scope 2
  - As it is infeasible to make use of solar energy or other renewable energy facilities, we procure renewable electricity certificate to support the use of Green energy
  - Encouraging staff to consume less electricity, “Electricity Saving Campaign” has been convened and electricity consumption cost saved can be redeemed by cash

# Our Action

## REDUCTION OF SCOPE 1, 2, 3 EMISSION

- Scope 2
  - In our Kunshan factory, using LED lighting saving the power consumption up to 1372448kWh having a saving of RMB1440220.48 annually
  - Kunshan factory was successfully awarded to be a Green factory in 2020 in Jiangsu Province



# Our Action

## REDUCTION OF SCOPE 1, 2, 3 EMISSION

- Scope 3
  - Vendor Policy; Say no to plastic packing
    - Through redesign the packing of vendor's delivery focusing on reduction of use of plastic bag/sheet in order to eliminate scope 3 generation
  - Encouraging vendors use more environment friendly material by giving preference in tendering stage as well as performance evaluation.(scorecard)
  - Application of electronic forms and E-name card in achieving paperless working environment
  - Say no to one off utensil, we encourage staff not to use one off utensil by distributing stainless utensil to them.





# Our Action

## COLLABORATION

- Strategic partner/ vendor
  1. Carbon reduction commitment
    - Work out policy for environment protection
  2. Prohibit polystyrene
  3. Reduce plastic sheet wrapping
  4. Encourage vendor use environment friendly packing



Scorecard is used for evaluating vendor's performance, marks will be deducted if using polystyrene. Higher the mark of scorecard, greater the opportunity of winning tender.

# Our Action

## PROCESS

- Scaffold Installation - use of bamboo for traditional lift installation, bamboo scaffolding will be constructed inside lift shaft and approximately 10,000 bamboo members will be consumed for one lift shaft.
- Scaffold-less installation – sustainable  
reusable  
safe  
high quality



# Our Action

## EDUCATION

- E-learning
  - Launching environment awareness in-house E-learning program for every employee
- Edify employee and stakeholder
  - Appoint Environment Ambassadors to promote environment awareness
  - Planning to work with university to organize joint event namely “綠識日常創意大賽” to advocate the use of renewable energy
- Customer visit
  - Promote environment mindset and consciousness during visit



The background of the entire image is a wide-angle photograph of the New York City skyline, viewed from across a body of water. The Freedom Tower is the most prominent building in the center. The sky is a clear, pale blue with some light, wispy clouds. The water in the foreground is dark and reflects the buildings and sky.

# Our Innovation

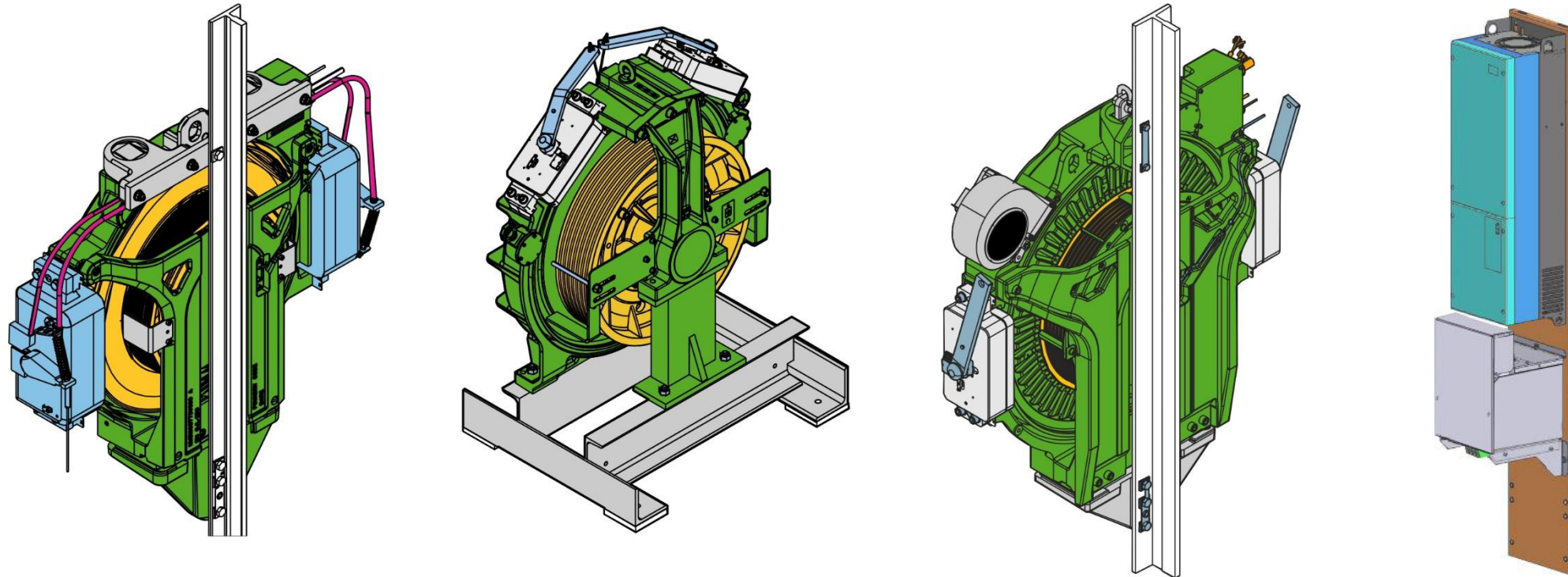
# Our Innovation



## Application of new technology

Energy regeneration

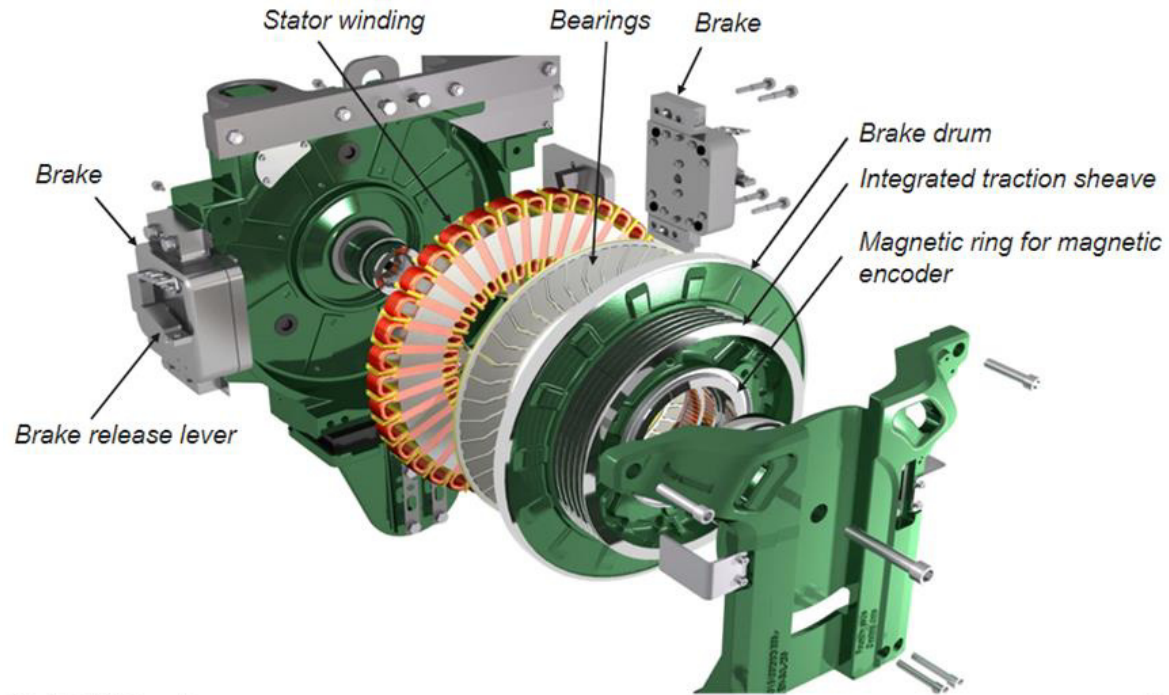
# NMX Hoisting Machine & KONE Regenerative Solution



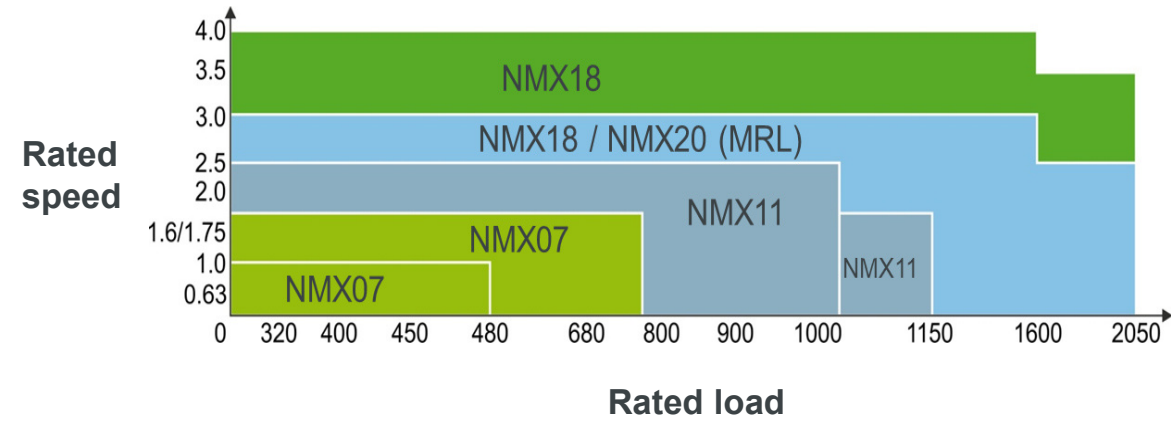
# NMX Hoisting Machine



Exploded view of NMX machine

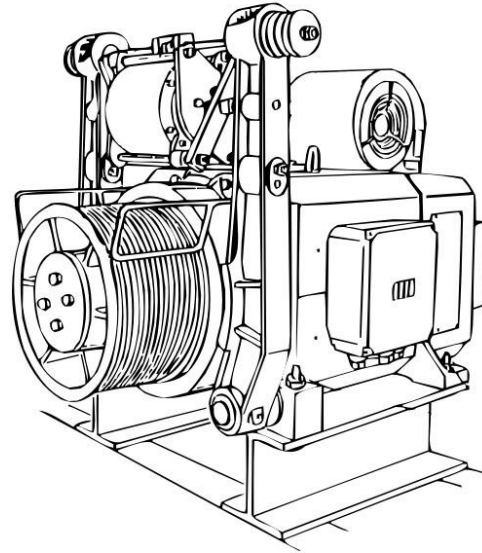


**NMX Range:**

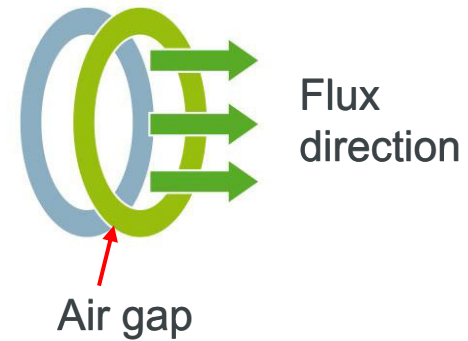
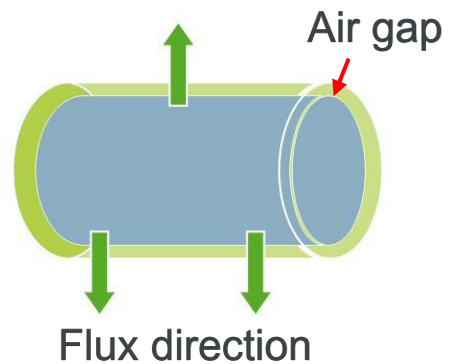
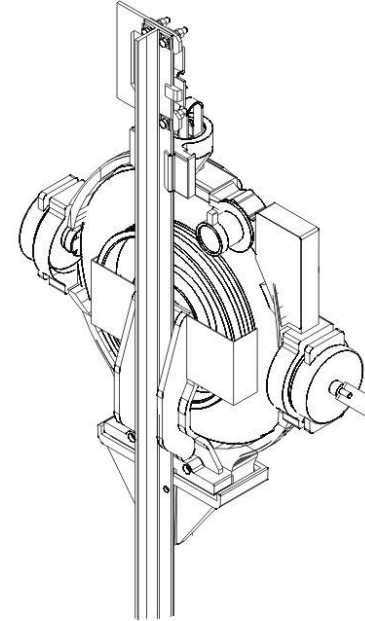


# COMPARING AXIAL VERSUS RADIAL AC MOTOR PRINCIPLES

Radial AC motor

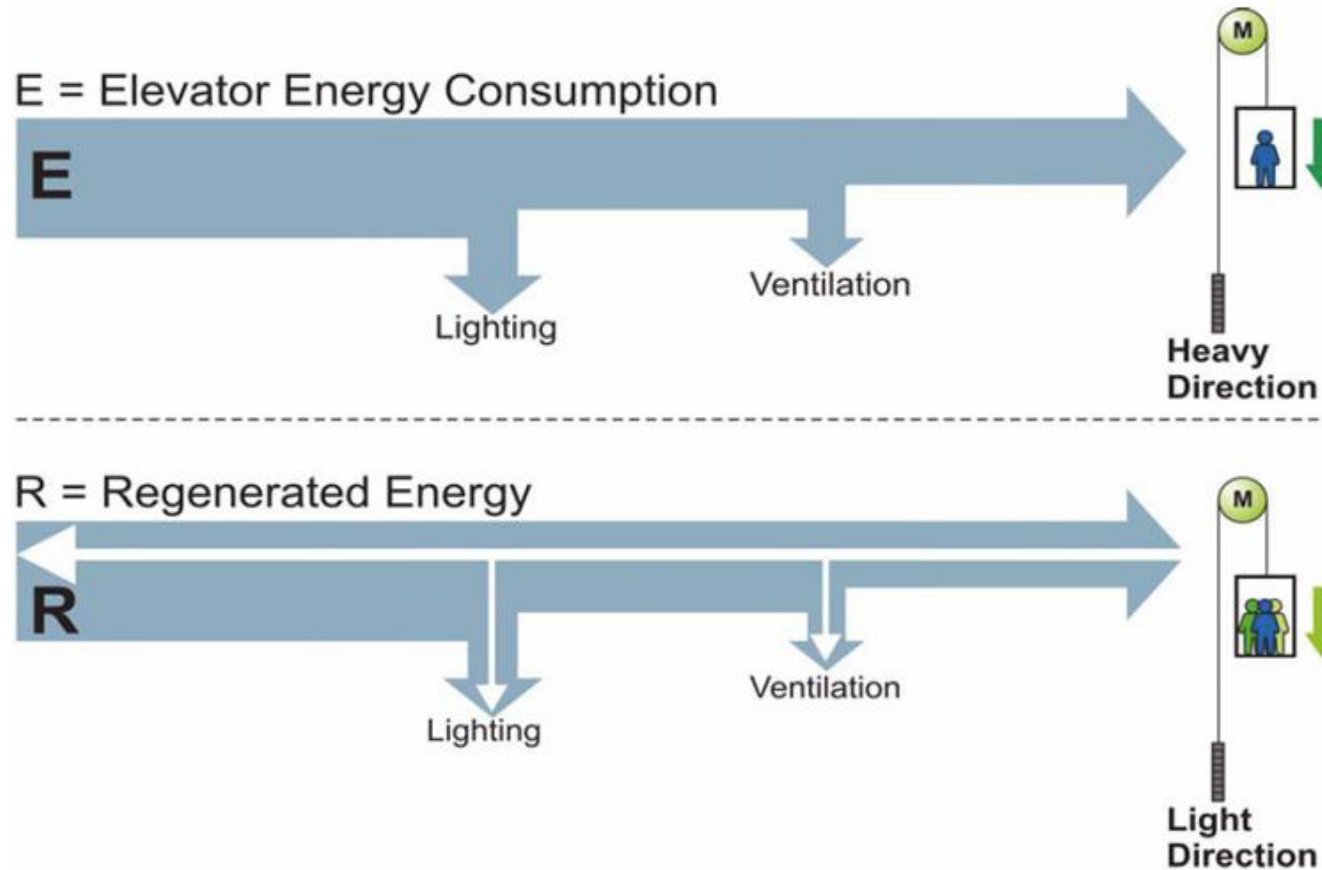


Axial AC motor



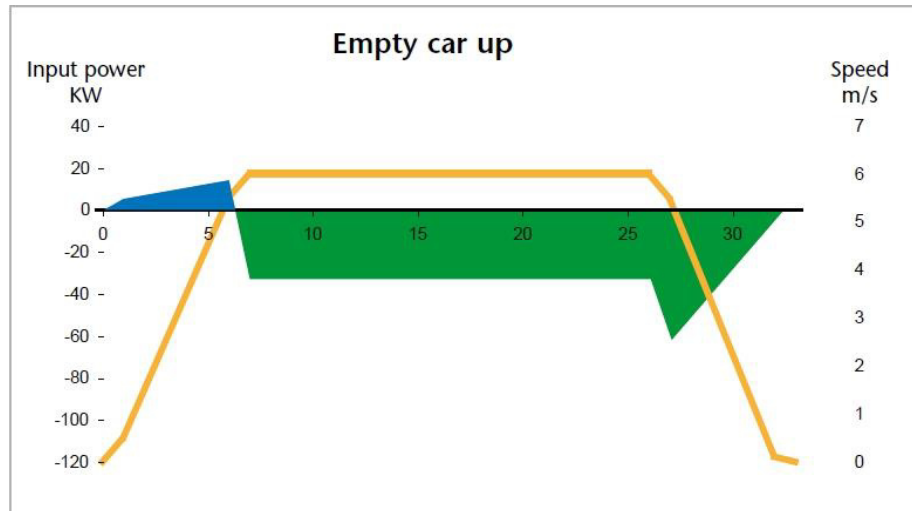
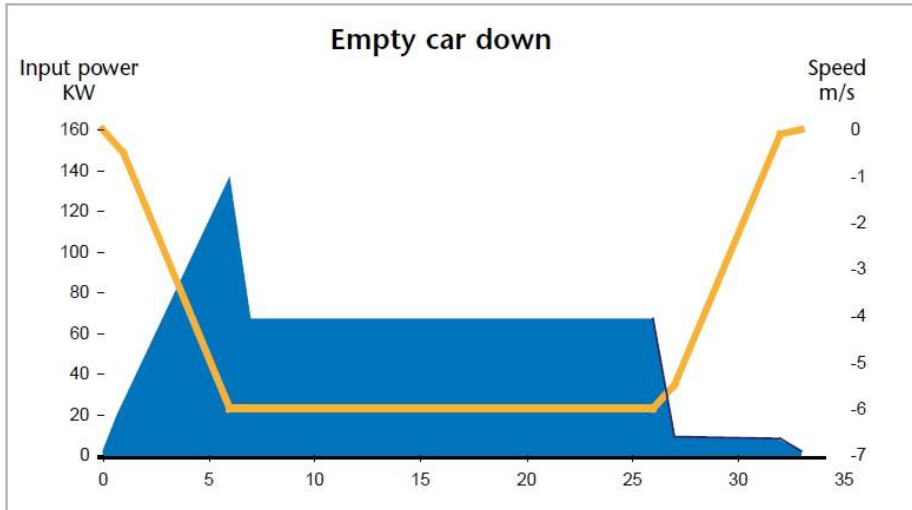
# Regenerative braking

- When the motor functions as a generator, this extra energy is regenerated back to the electrical network
- In regenerative drives, such as KDM, a braking resistor is not needed





# KONE KDM Drive - Regenerative Solution



- Elevator speed
- Input power
- Regeneration power

Car size: 1600 kg | Speed: 6 m/s | Travel: 160 m | Machinery: KONE EcoDisc®



# KONE KDM Drive - Regenerative Solution



- Seamless integration with power supply
  - Low harmonic distortions
  - Low electromagnetic interference
  - Power factor of 0.95 or better
  - High under-voltage tolerance (Voltage Dip)
- Economy in operation and installation
  - Up to 35% total energy saving
  - Lower starting current
  - Low kWh in operation mode
- Good ride comfort
  - Optimum speed curves
  - Adjustable acceleration and jerk values
  - Accurate stopping
- Performance for low- to high-rise building



# Our Innovation

## APPLICATION OF NEW TECHNOLOGY

- Steel rope
  - The Global steel industry emitted around 3.7 gigaton of CO<sub>2</sub> (Gt CO<sub>2</sub>) emissions in 2019
  - The global steel industry accounts for around 11% and 7% of total global CO<sub>2</sub> emissions and total global GHG emissions.



# Our Innovation

## APPLICATION OF NEW TECHNOLOGY

- UltraRope® :
  - a completely new technology for elevator hoisting. Rope made of a carbon fiber core surrounded by a unique high-friction coating, it weighs only about one fifth of a similar conventional steel rope
- Replacement of tradition steel ropes to ultra rope can reduce significantly of carbon emission scope 1
  - KONE UltraRope® provides unrivalled elevator eco-efficiency, reliability and durability, while also improving elevator performance.
  - It eliminates the disadvantages of existing steel ropes (such as rusting)



# Our Ultimate Goal



## CARBON NEUTRAL

- Cost of Carbon
  - To drive emissions reductions more effectively by linking “emissions performance” to operative result
- Visualizing carbon cost in Financial balance sheet in April 2021  
New items introduced:
  - carbon cost, and
  - carbon-adjusted operative result (new KPI)
- Later from 2022 onwards, carbon cost to be included in pre-tax profit affecting result-related bonuses →encouraging absolute emissions reductions

# Our Ultimate Goal



## SUSTAINABLE SUCCESS WITH CUSTOMERS

In January 2021, KONE entered the next phase of its strategy - Sustainable success with customers. During the four-year strategy period, we will focus on increasing the value we create for customers with new intelligent solutions and embed sustainability even deeper across all of our operations.



# Q&A

Dedicated to People Flow™

