



# How photonics can shine consumer centric innovation at Electrolux

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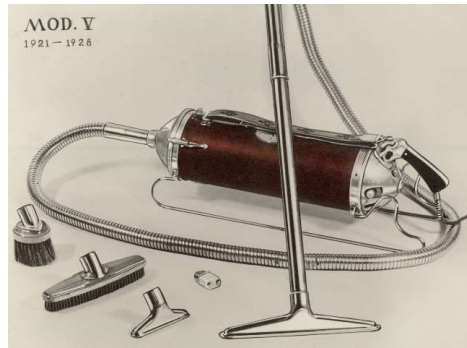
Our heritage

# 100 years of entrepreneurship and innovation



1919

Swedish entrepreneur Axel Wenner-Gren establishes AB Elektrolux, based on a cooperation with AB Lux.



1921

Production begins of Model V – the first easy-to-use cleaner for household use.



1926

Electrolux introduces its first refrigerator – the D-fridge – based on an invention by Baltzar von Platen and Carl Munters.



1940

Launch of the Electrolux Assistent, sold door to door and making life easier for many home cooks.

Our heritage

# 100 years of entrepreneurship and innovation



1962

Electrolux first major acquisition – Elektro Helios – to be followed by hundreds more.



1984

Italian appliance manufacturer Zanussi is acquired, making Electrolux the leader in kitchen appliances for consumers and professionals.



1986

Electrolux acquires the third largest appliance company in the U.S., White Consolidated, with brands such as Frigidaire, Kelvinator and Westinghouse.



1994

German appliance manufacturer AEG is acquired.



# Consumer experience innovation in three focus areas



## Taste

The offering includes cookers, hobs, ovens, hoods, microwave ovens, refrigerators, freezers, and small appliances for cooking.



## Care

The offering includes washing machines, tumble dryers, dishwashers and small appliances for fabric care, such as irons.



## Wellbeing

The offering includes vacuum cleaners, air conditioning equipment, water heaters and heat pumps.



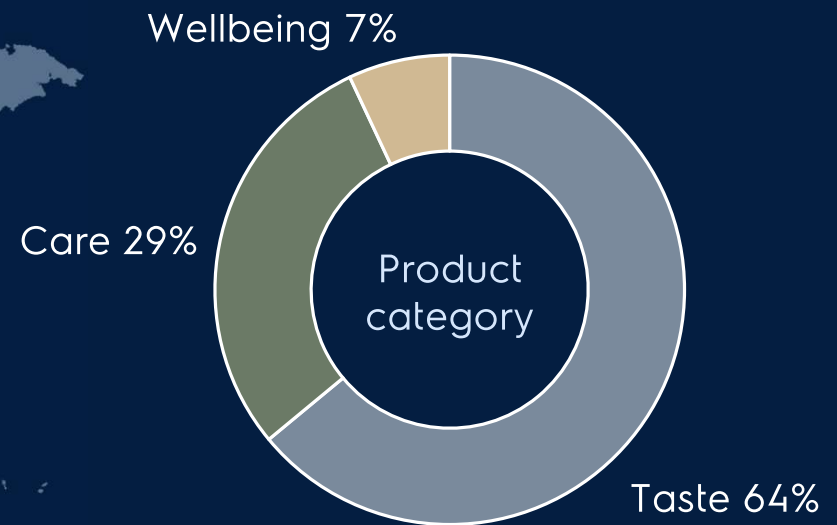
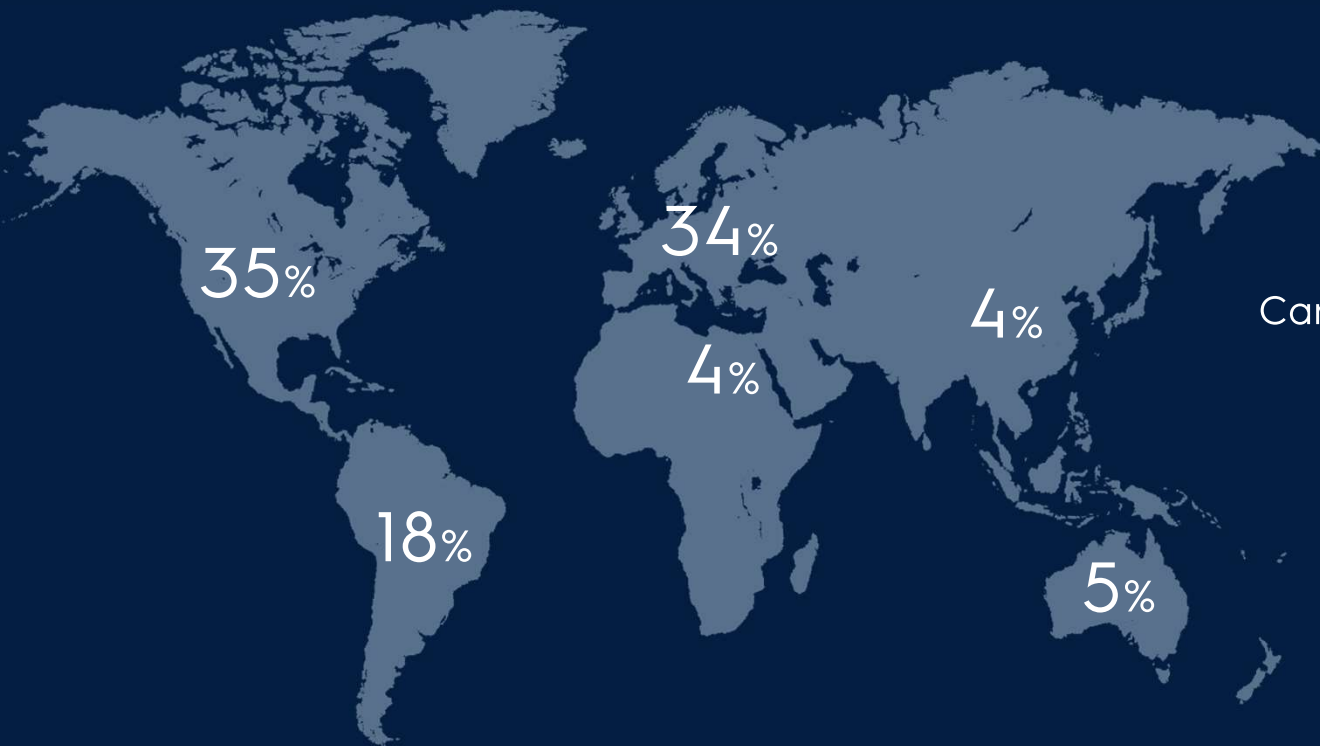
**AEG**

**FRIGIDAIRE**

# Electrolux Group sales per region and category



Sales by region 2022



# Global macro trends are accelerating



## 700 million

The global middle class is expected to increase by 700 million people by 2030



## 93%

of consumers wish to lead a more sustainable life



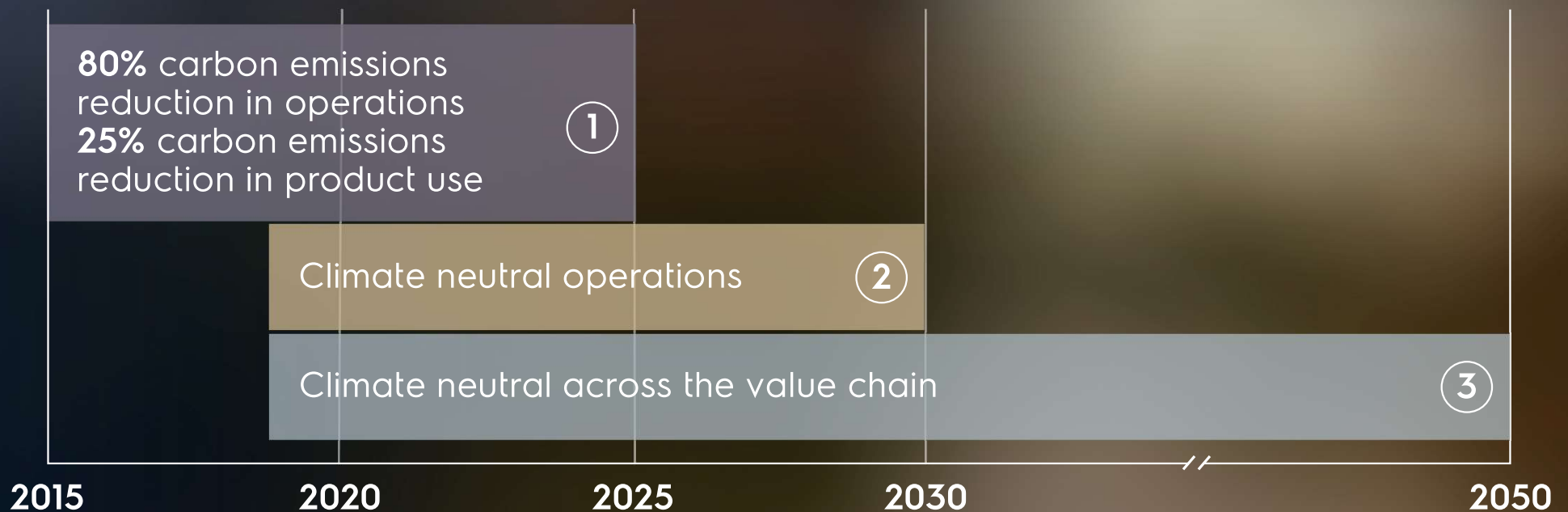
## 2/3

Globally, 2 out of 3 consumers consider sustainability as an important factor when<sup>2</sup> buying electrical appliances

# One of the most sustainable companies in the world



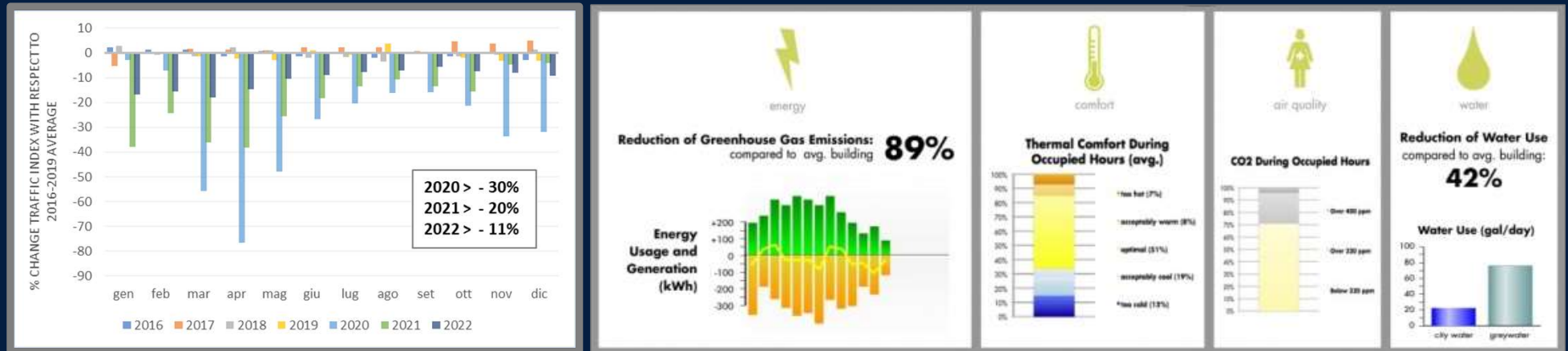
# Electrolux Group roadmap to climate neutrality



1. Science Based Target (SBT) Scope 1 + Scope 2 – 80% reduction and Scope 3 – 25% reduction by 2025
2. Company target, Climate neutral operations (Scope 1 + Scope 2 = 0) by 2030
3. UNGC Business ambition for 1.5°C – climate neutral value chain by 2050



# Towards smart & sustainable lifestyles at home



Source: ANAS Traffic index

- Pandemic increased the time spent at home
- Sustainability requires time: going smart provides a unique opportunity to devote more time to sustainability-oriented behaviours
- Several sustainability indexes can be made available to users at home such as: energy usage and generation, heating equipment performances, water usage and food storage and consumption



# Water usage and consumption



Source 50L Home Coalition

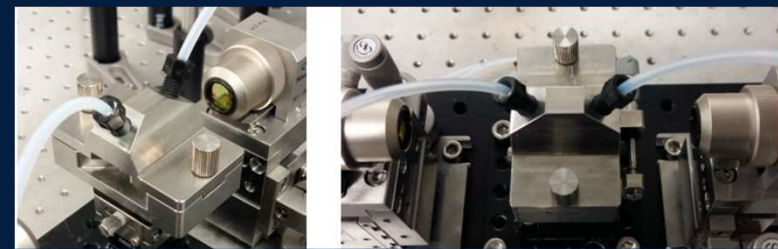
- Efficient household appliances and water-saving products
- Detergent efficiency depends on quality of water
- In particular, water hardness greatly affect detergent efficiency
- Water softening with the aid of ion-exchange resins is a way to improve detergent efficiency
- Water quality monitoring along the process is a way to reduce water usage for washing and rinsing



# Water usage and consumption

Specifications		Notes
Wavelength	[4000 ; 1000] $cm^{-1}$	They might be reduced to a finite set according to target
Materials	--	In line with list of restricted materials and suitable for water contact
Working temperature range	[20; 90] °C	Compatible with washing temperatures

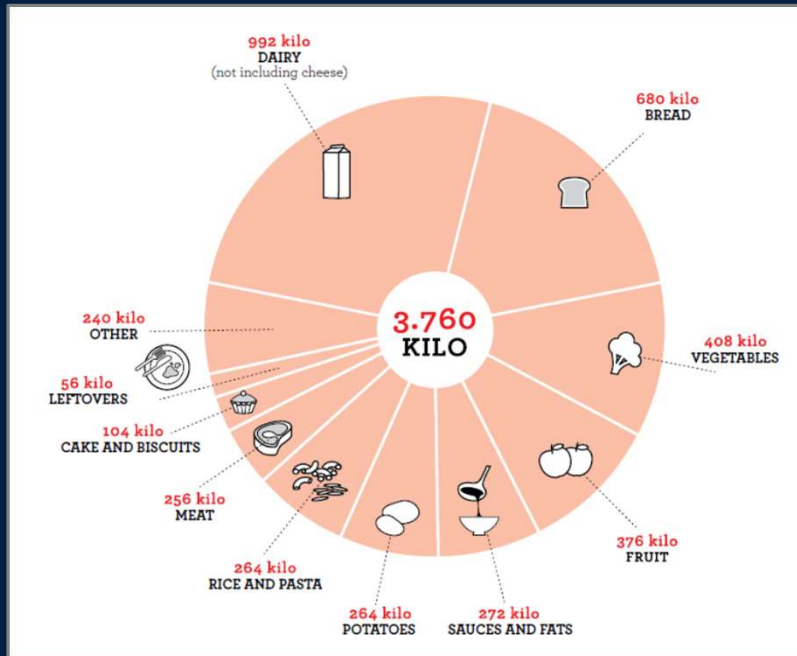
- Actively looking for Mid-IR solutions for water monitoring
- In-line detection



Mira-Guide



# Food storage and consumption



- Consumers are the biggest wasters with a share of 38% (\*)
- Based on a waste-sorting analysis of household waste and consumer surveys, most wasted products are liquid dairy products (25%), vegetables and fruit (20%), bread (17%)
- Hence, the introduction of solutions able to impact significantly on food waste prevention and to provide quickly a payback to the final user can help developing consumer awareness and provide the drive for positive changes in food consumption behaviour

(\*) 2014 Consumer food waste fact sheet





# Food storage and consumption



AEG/Electrolux FridgeCam Plus

- Fridge camera that pairs with a smartphone app:
  - sends images of inside your fridge to the phone
  - keep track of expiry dates
  - provides updated shopping lists and links for on-line shopping
- The ability to check the content of the refrigerator remotely support consumers and helps reducing food waste
- Consumers especially appreciate being inspired through recipe suggestions using the contents of their refrigerator

# MIRPHAB

- Electrolux entered the MIRPHAB consortium in 2019 as end-user
- Specifications together with interferences analysis and Mid-IR spectrum of the target gas mixture
- The Mid-IR module has been characterized at our labs in operational conditions of interest for the final application
- Mid-IR technology miniaturization roadmap could enable large-scale low-cost devices in the near future



MIRPHAB @Electrolux Innovation Factory

