



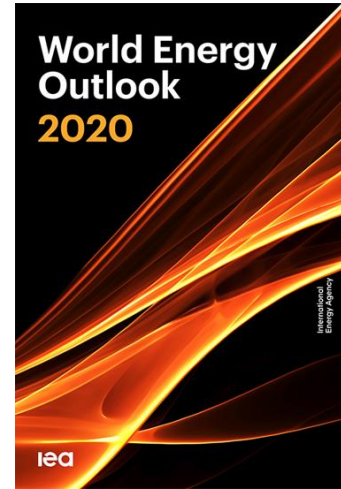
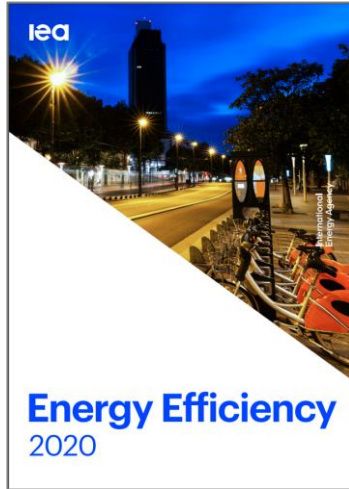
# **Energy Efficiency 2020 and WEO 2020**

## **Behaviour changes and energy demand**

Jeremy Sung

Paris, 10 February 2021

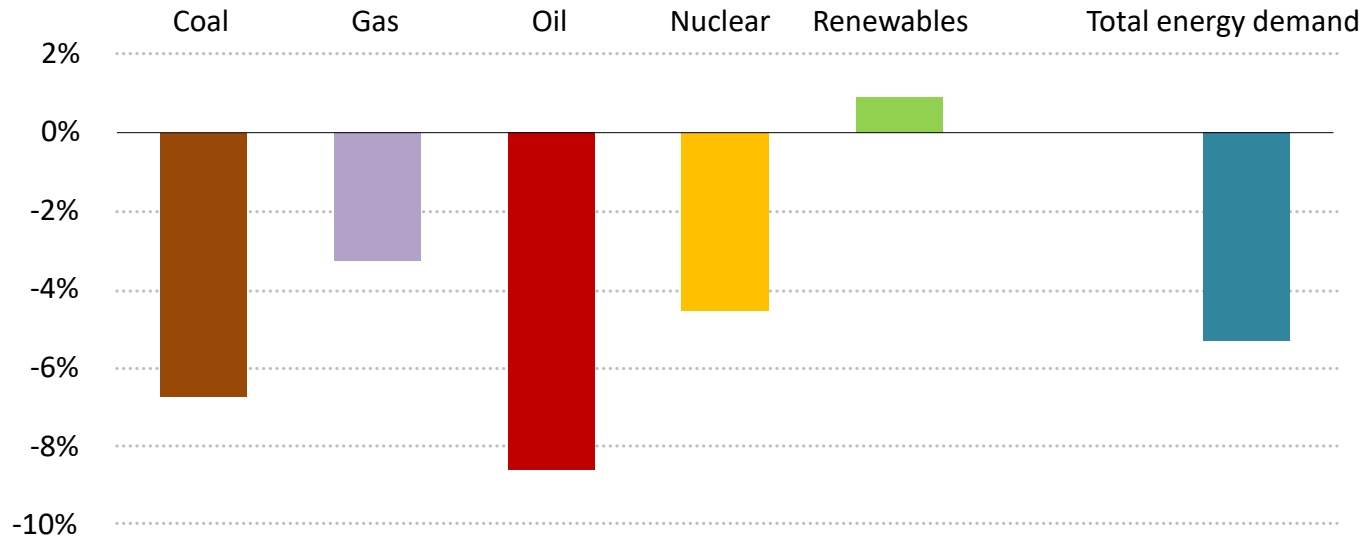
To read more...



[www.iea.org](http://www.iea.org)

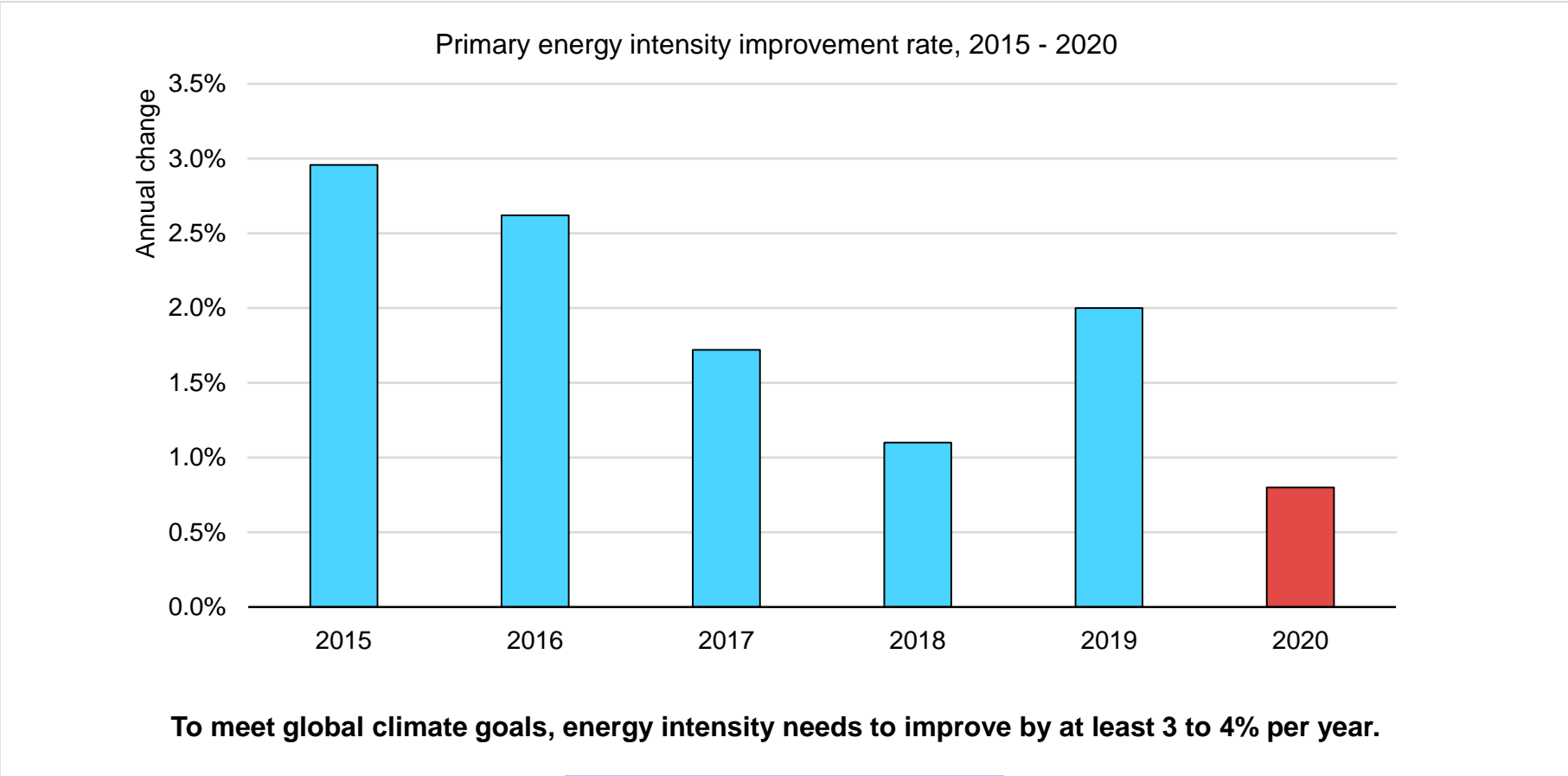
# Impacts of Covid-19 on energy demand

Change in primary energy demand in 2020

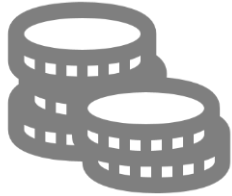


**Oil has been the fuel most affected by the Covid-19 crisis; the pandemic erased almost a decade of growth in oil demand in a single year**

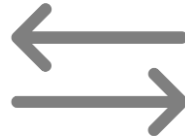
# Efficiency progress, already weakened, faces setbacks from the pandemic



# Behaviour is one of several factors affecting energy intensity



Changes to investment  
in efficient technologies



Structural shifts in the  
economy

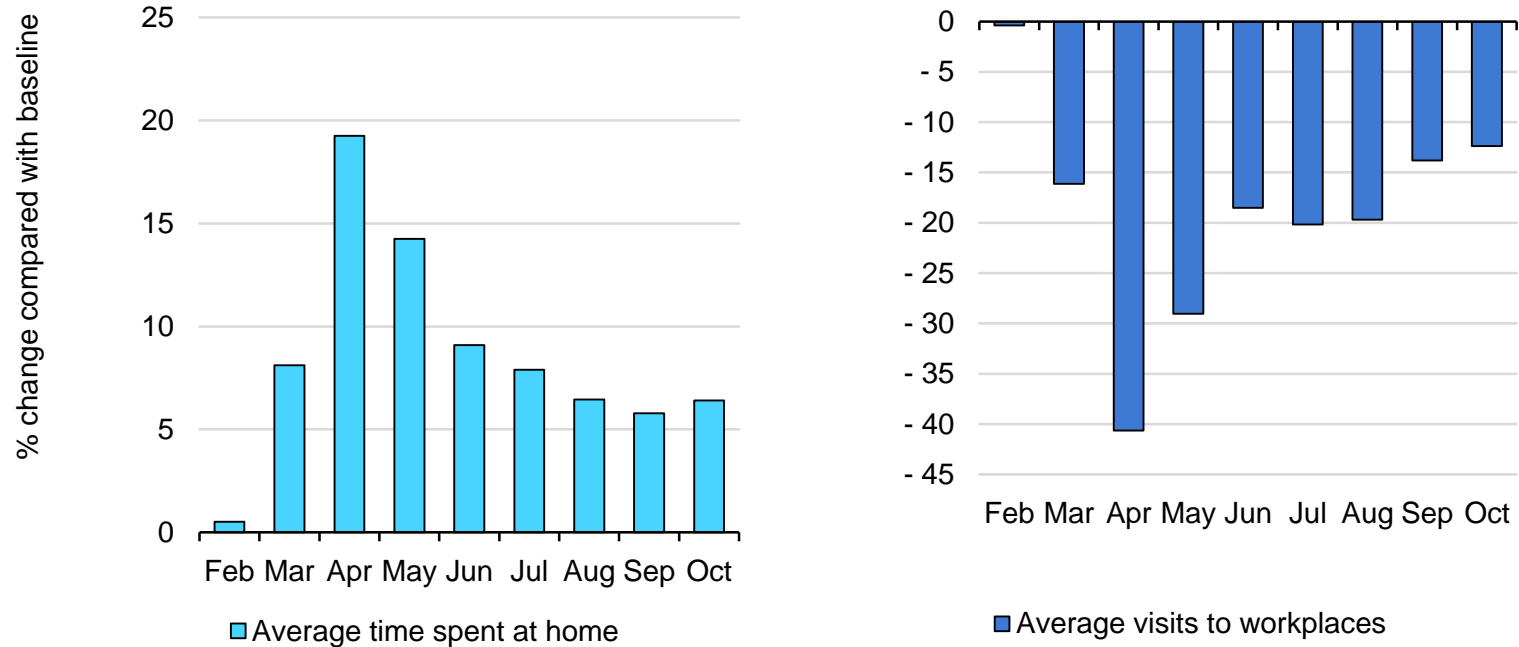


Changes to energy  
using behaviours

**Some behaviours have been more energy intensive, while others have been less energy intensive**

# People are spending more time at home...

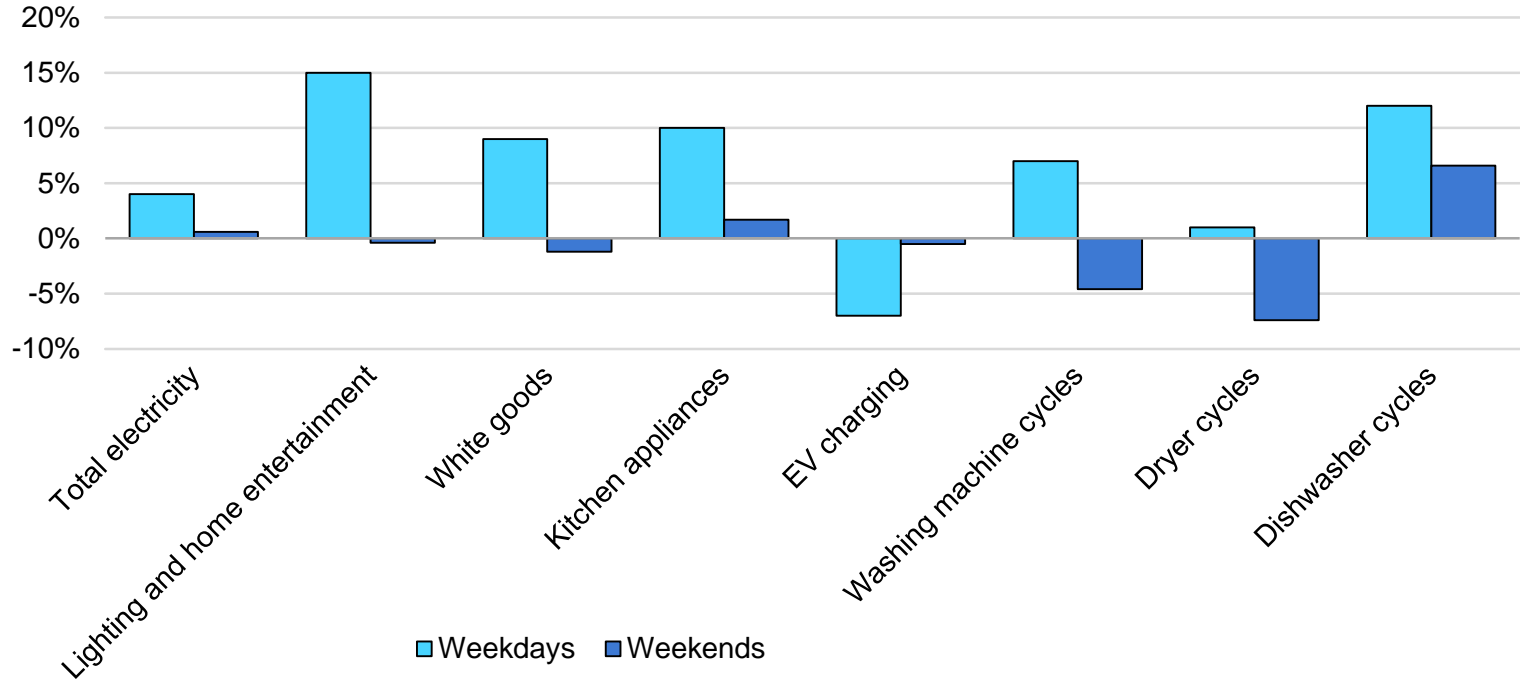
Changes to average time spent at home (left) and visits to workplaces (right), Feb-Oct 2020



**In some countries, where the pandemic is largely under control, visits to workplaces have remained lower**

# People are using more energy in the home and at different times

Changes in energy usage for one utility in the Netherlands, lockdown period compared with pre-lockdown period



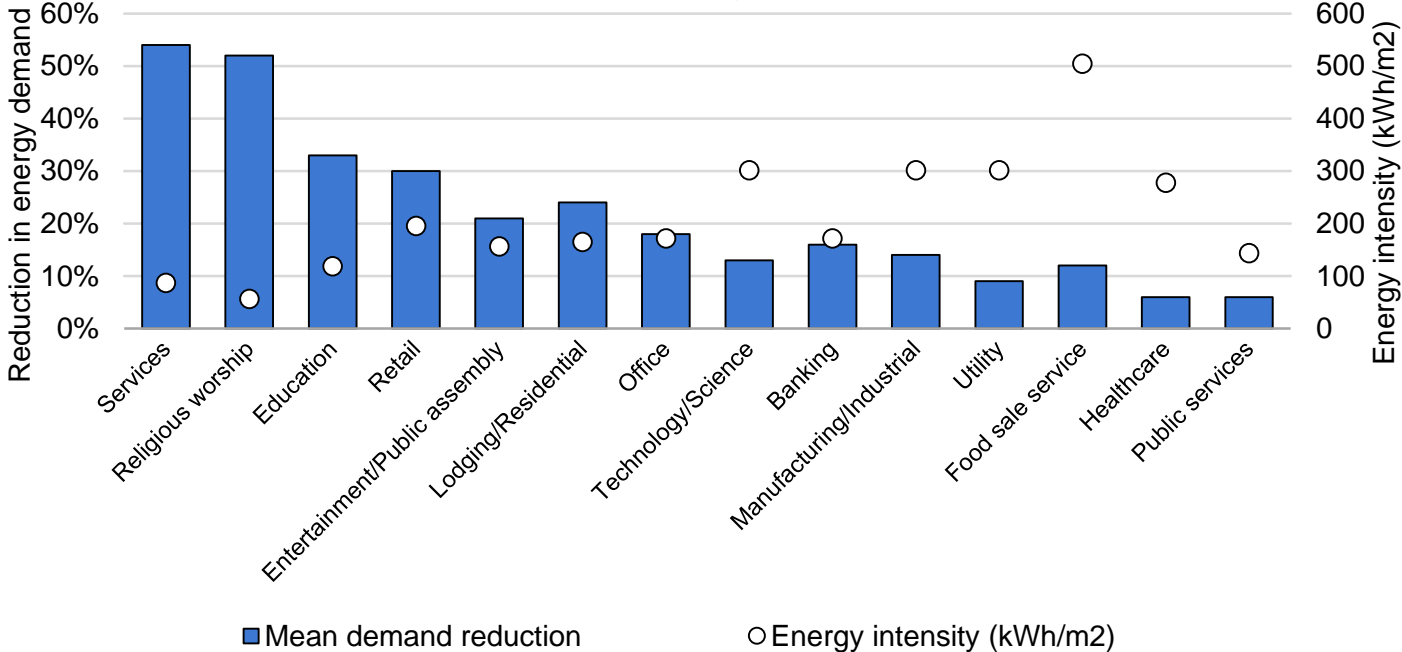
Source: Quby (2020), What self-quarantine does to household energy usage: while others guess, Quby measures.

**People have been doing more energy using activities on weekdays**

# People are using less energy in commercial buildings



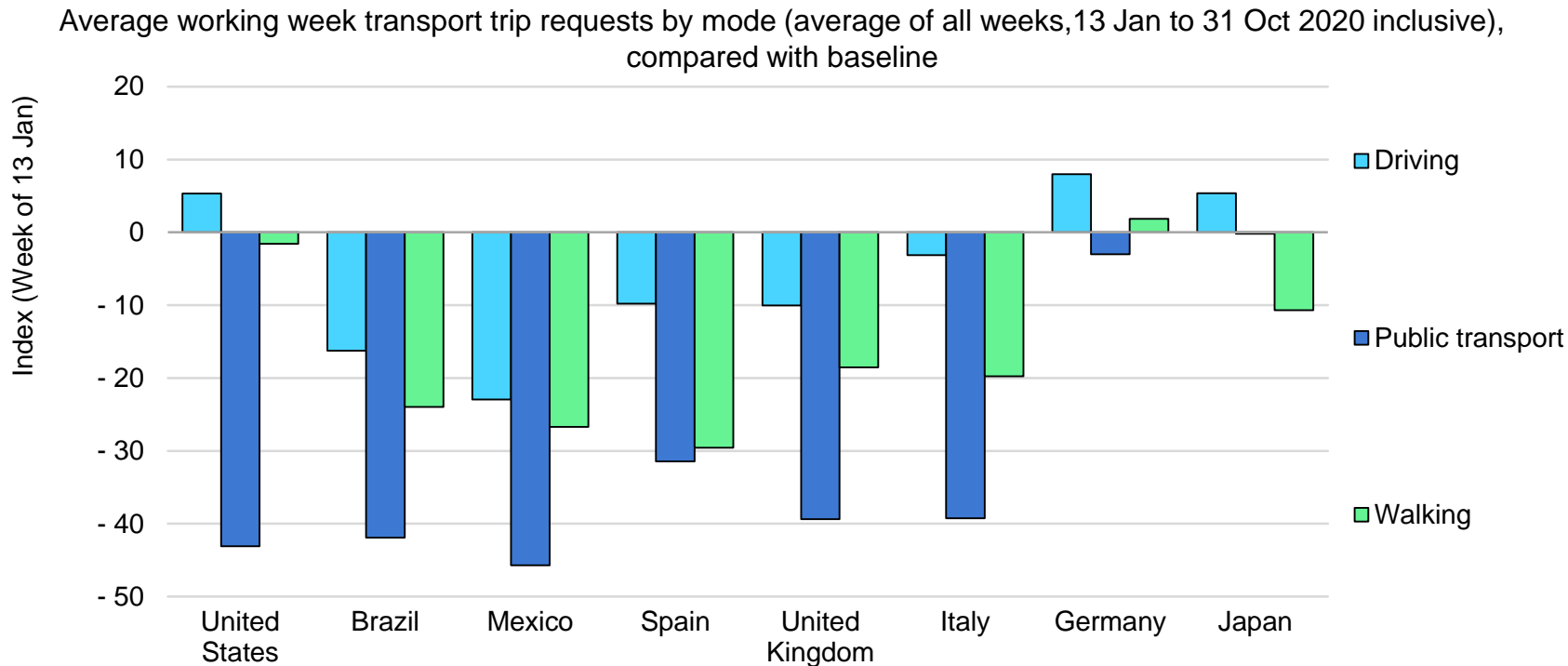
Reduction in energy demand under stay-at-home orders and average energy intensity by building type, in two United States regions



**Commercial buildings that have remained open tend to be more energy intensive**



# People are shifting from public to private transport modes



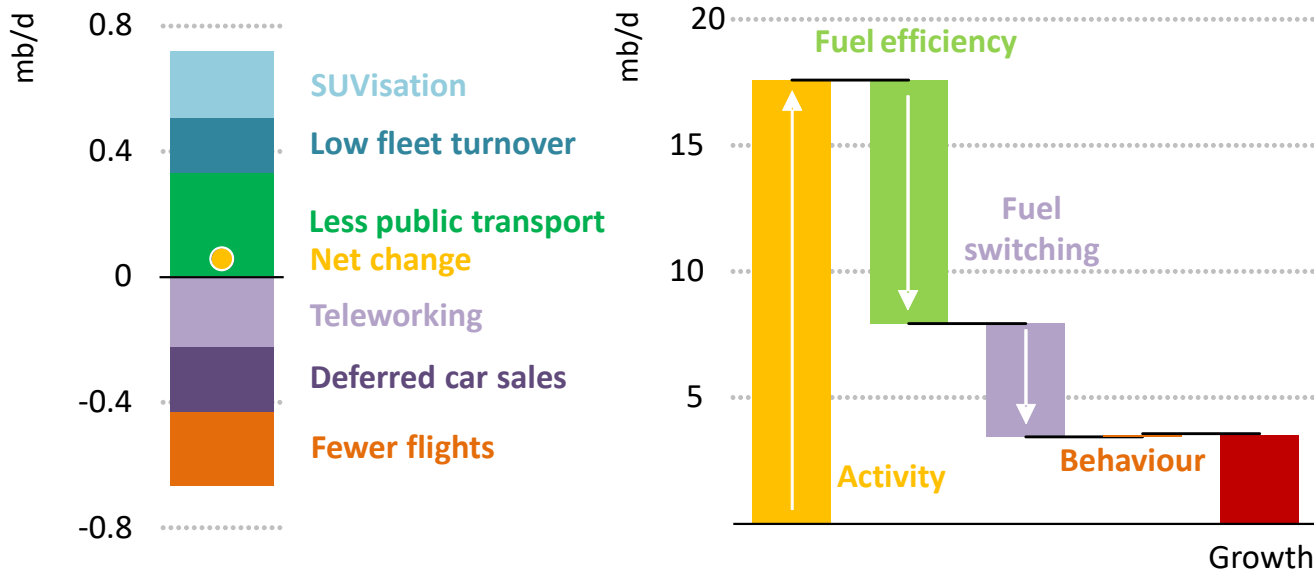
Note: Baseline is average over the working week beginning 13 January. A trip request is a request for routing directions made via the [Apple Maps](#) smartphone application.

**In many countries, public transport use has plummeted by 40% on normal levels, while car use, walking and cycling are less affected, and sometimes higher than usual.**

# Future scenarios for behaviour change and energy demand

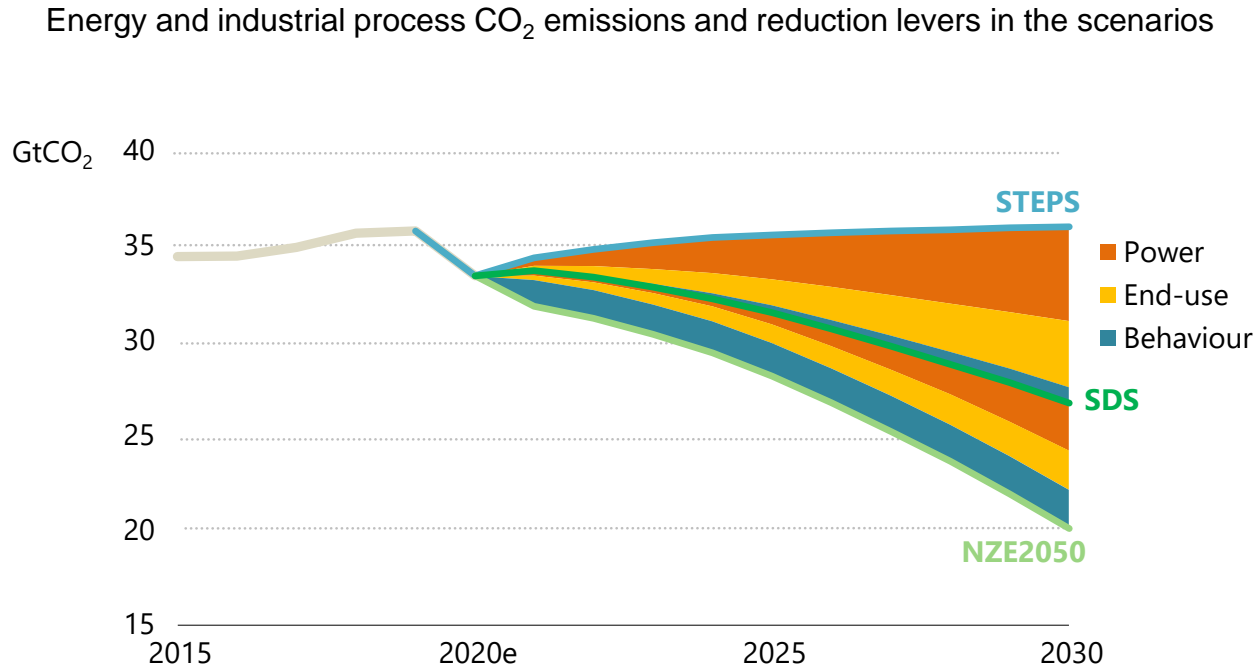
# Under current policies, behaviour is unlikely to have large net impacts

Impacts of behaviour changes in transport oil demand and drivers of changes in the STEPS, 2019-2030



**While some behaviours are expected to lower demand, others are expected to increase demand, resulting in a small net impact, compared with other changes to the energy system**

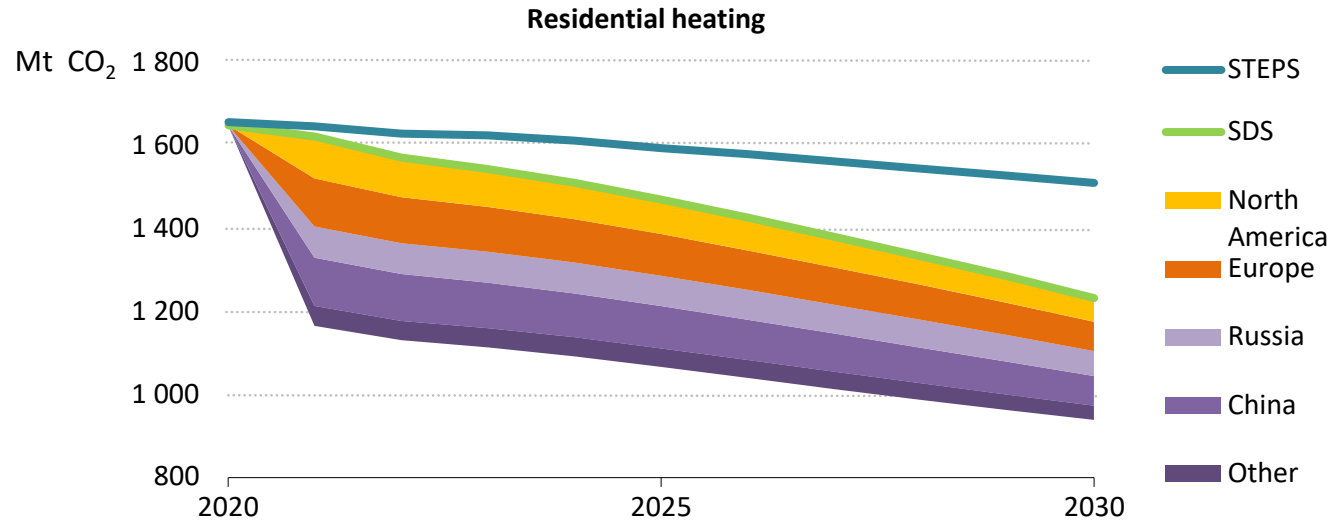
# But behaviour changes will be needed to meet Paris goals and beyond



**An unparalleled transformation of the energy sector and major behaviour changes in the next ten years would be needed to achieve global net-zero emissions by 2050**

# Would changing air temperatures at home mitigate climate change?

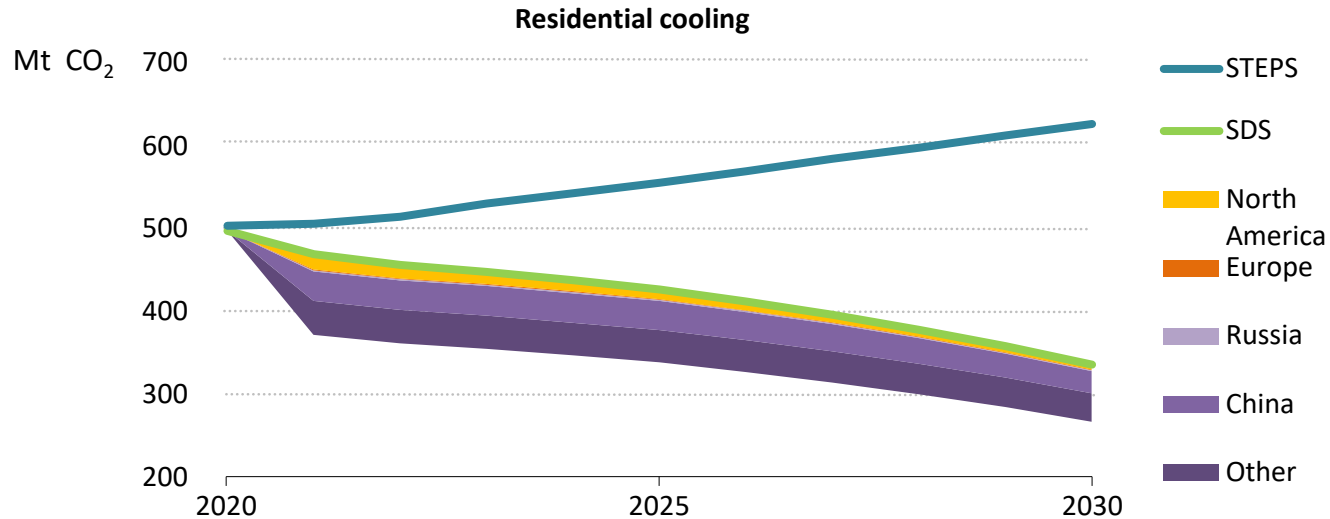
Impact on CO<sub>2</sub> emissions from reducing space heating temperature settings by 3 °C in the NZE2050



**Emission savings from moderating the use of space heating and space cooling are substantial, but fall over time as the emissions intensity decreases**

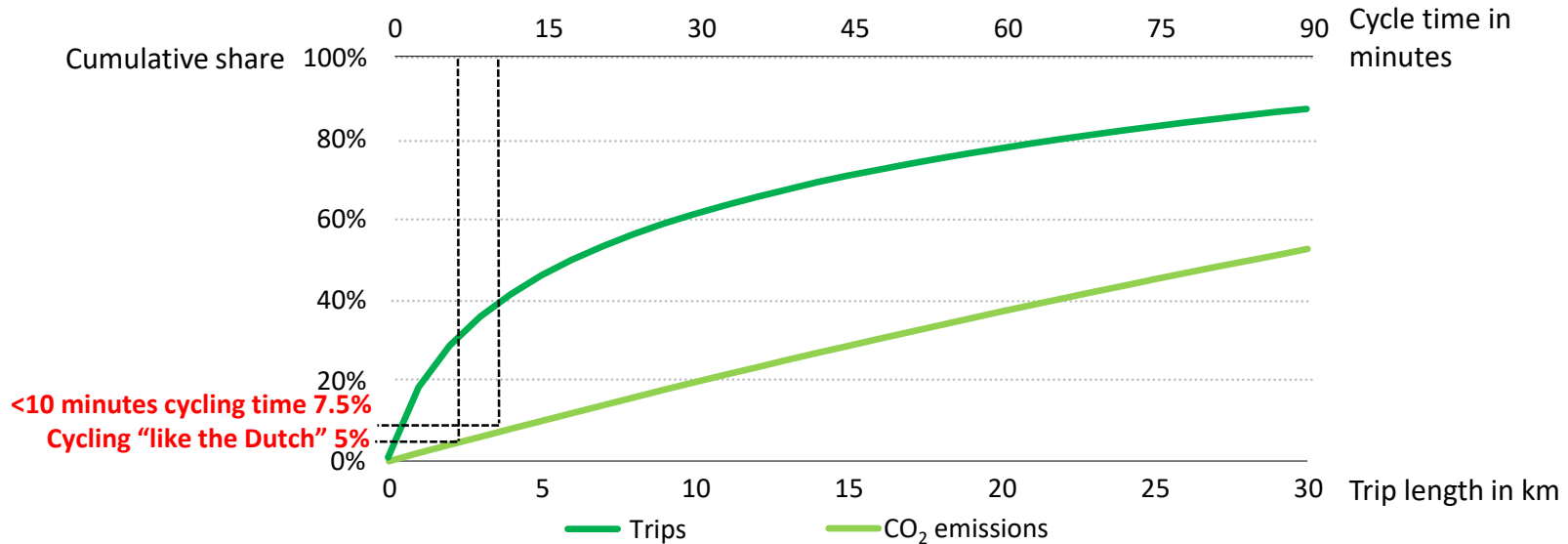
# Would changing air temperatures at home mitigate climate change?

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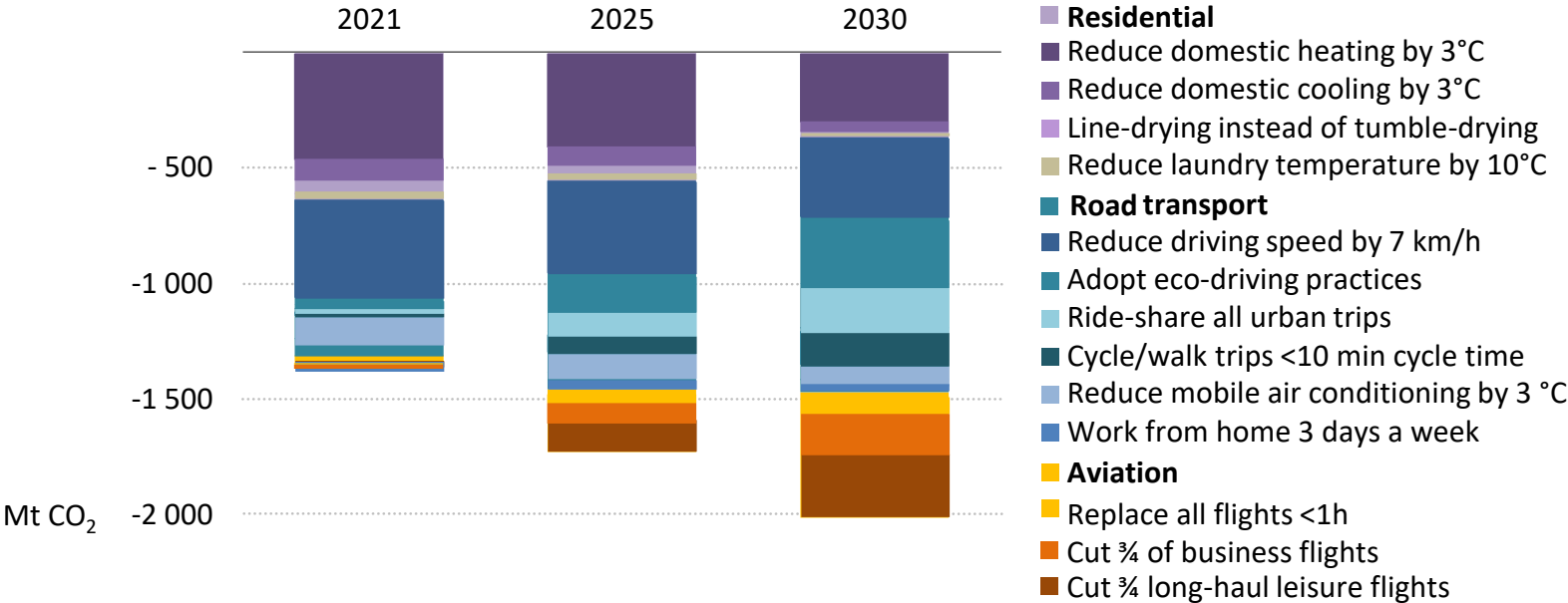
# Cycling or walking short car journeys



**More than 7% of total CO<sub>2</sub> emissions from cars are from trips which could be cycled in less than 10 minutes**

# Emissions reductions from behaviour changes

Impact of behaviour changes on CO2 emissions in the NZE2050



**Some changes in behaviour could happen straight away; others would need to be guided by policy, supported by infrastructure, and would ramp up over time.**



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