



# Energy efficiency in the Time of Covid-19: Highlights from *Energy Efficiency 2020*

Jeremy Sung & Yannick Monschauer

Paris, 9 December 2020

# Interpretation

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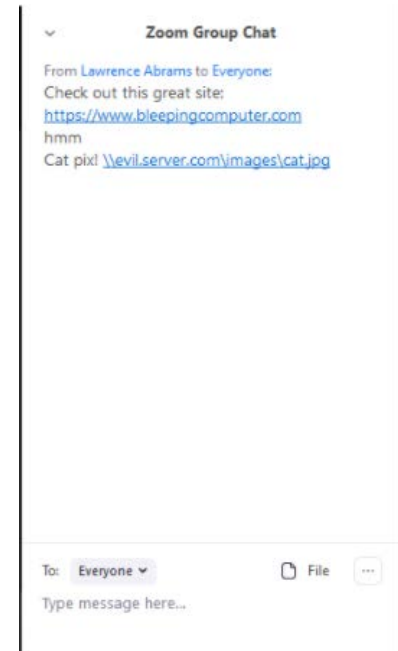
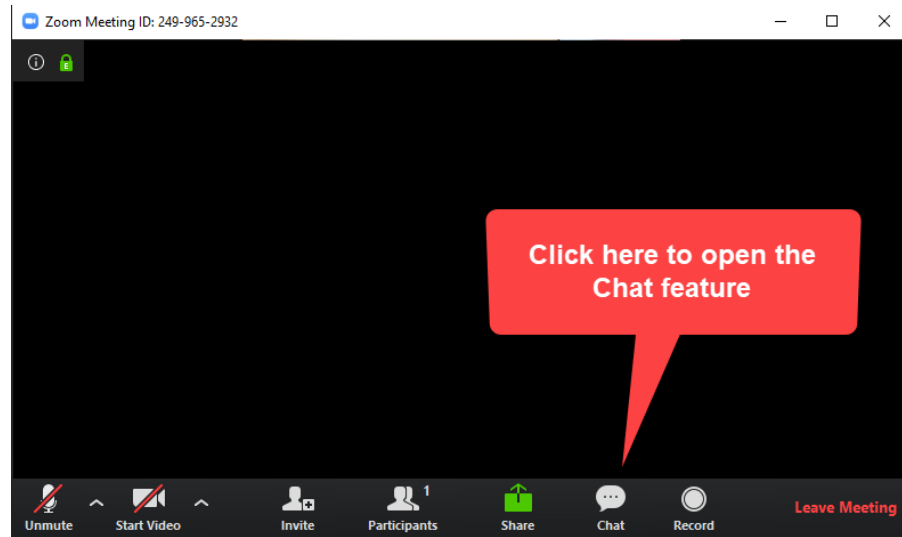


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Por favor, escriba sus preguntas/comentarios en inglés, español o portugués!



- 1. Introductory remarks**
- 2. Global findings**
- 3. Insights from Latin America**
- 4. Q&A**



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# Today's presenters



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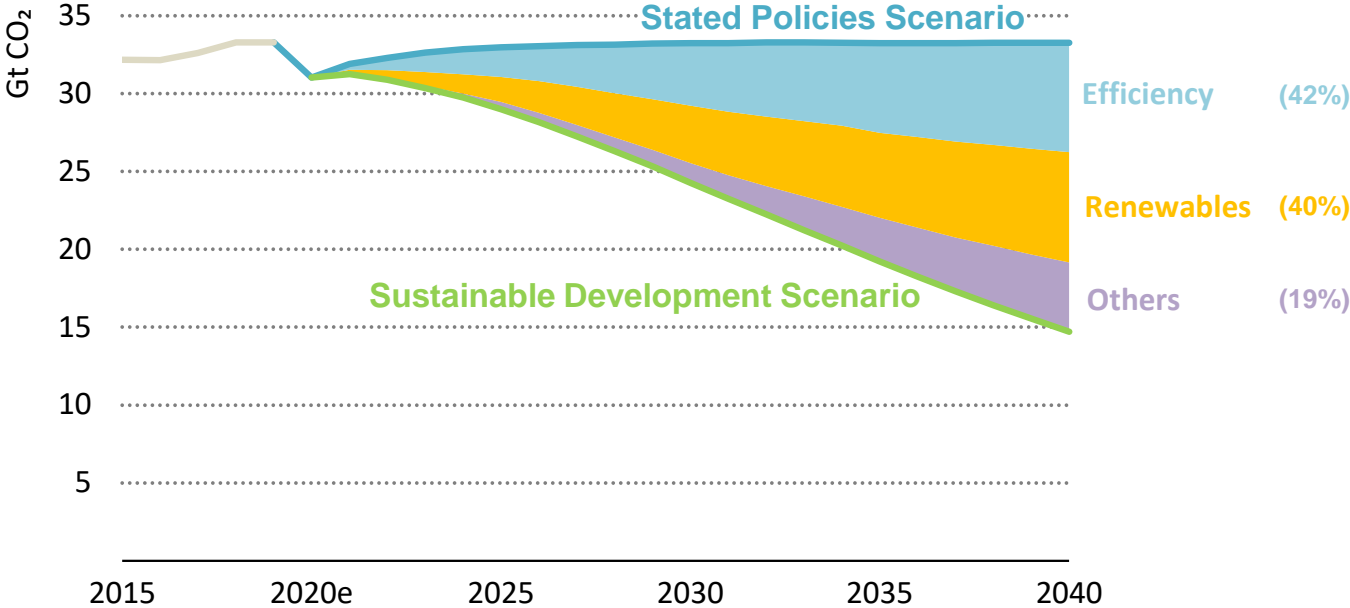
# Global energy efficiency trends

- The pandemic threatens to set back already-weakened energy efficiency progress
- **Investments** in efficient technologies have fallen
- Short-term **structural shifts** are likely to make the economy more energy intensive
- **Behaviours** are changing, which could have future benefits, but will need policy support
- **Energy efficiency is at a crossroads** – near-term decisions will lock in its future path
- **Policy actions** in the next three years will determine the next decade of efficiency progress



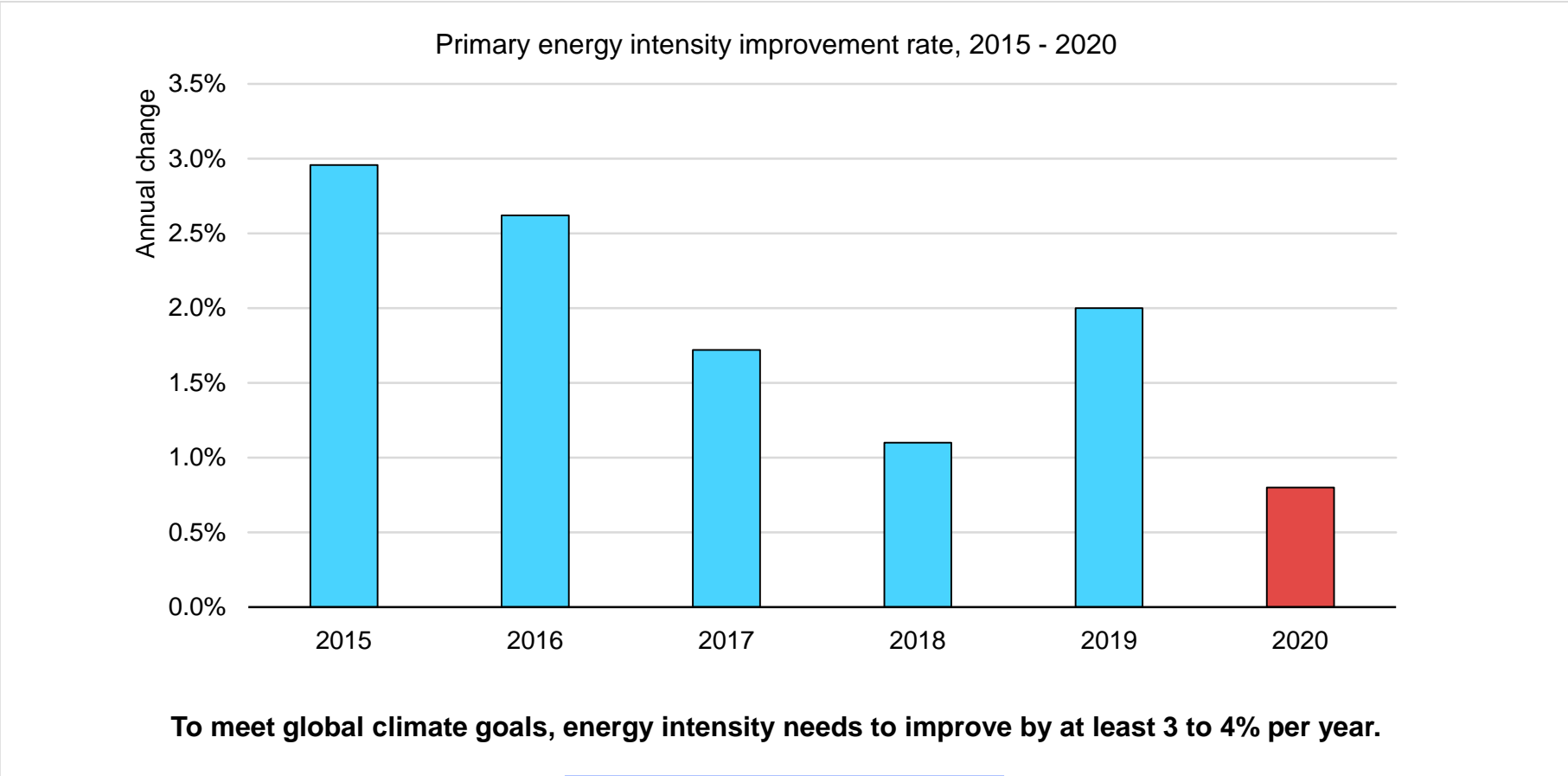
# Energy efficiency is crucial for achieving global climate goals

CO<sub>2</sub> emissions reductions in the Sustainable Development Scenario relative to the Stated Policies Scenario

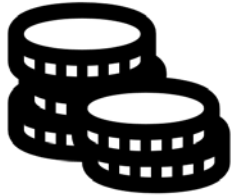


**Energy efficiency is expected to contribute over 40% of energy sector GHG abatement up to 2040. A slowdown in energy efficiency today lessens the chance of meeting long-term climate goals.**

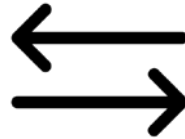
# Efficiency progress, already weakened, faces setbacks from the pandemic



# The crisis has affected energy intensity in three main ways



Changes to investment  
in efficient technologies



Structural shifts in the  
economy

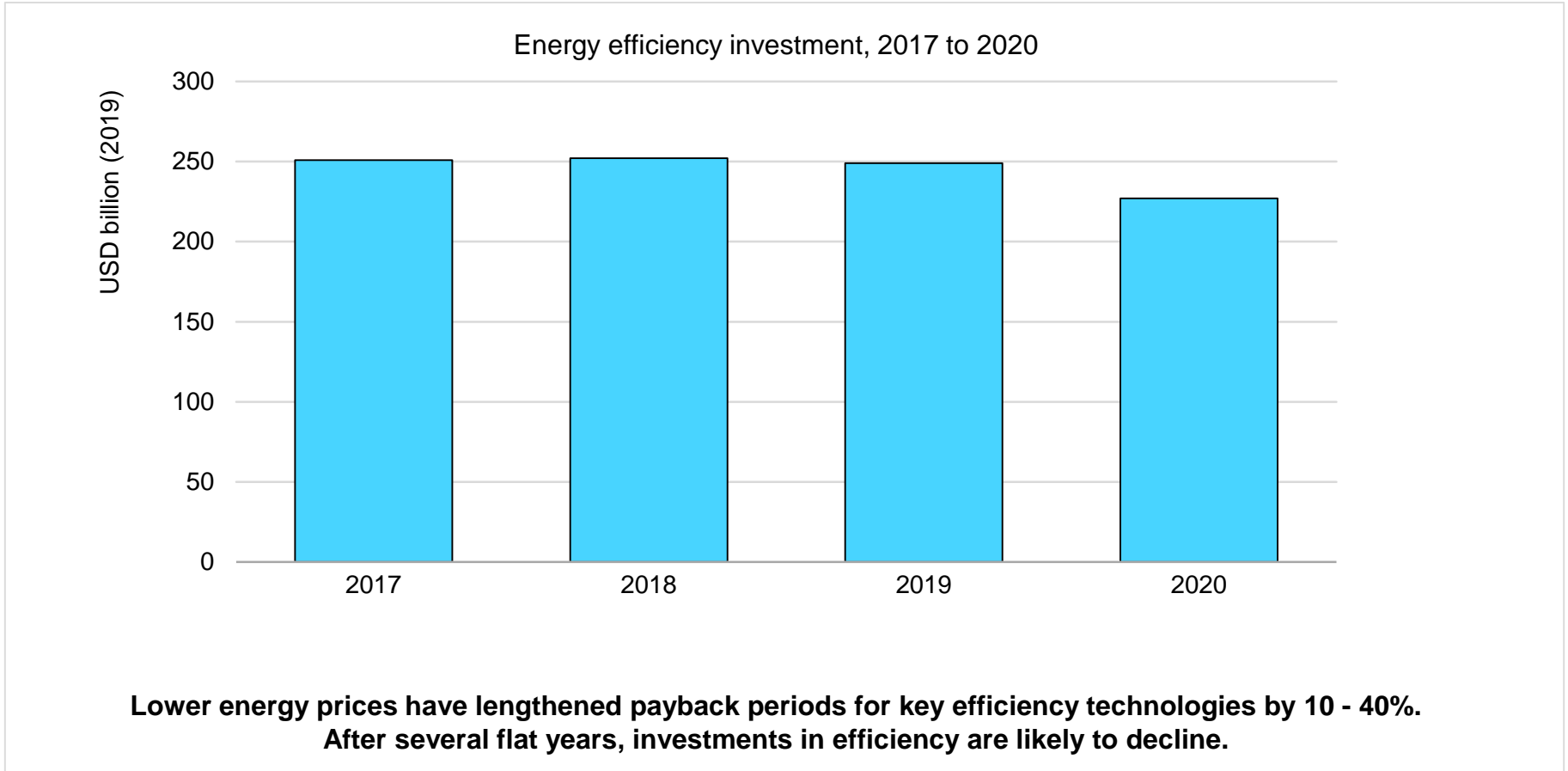


Changes to energy  
using behaviours

**These factors have combined to halve the global energy intensity improvement rate in 2020.**

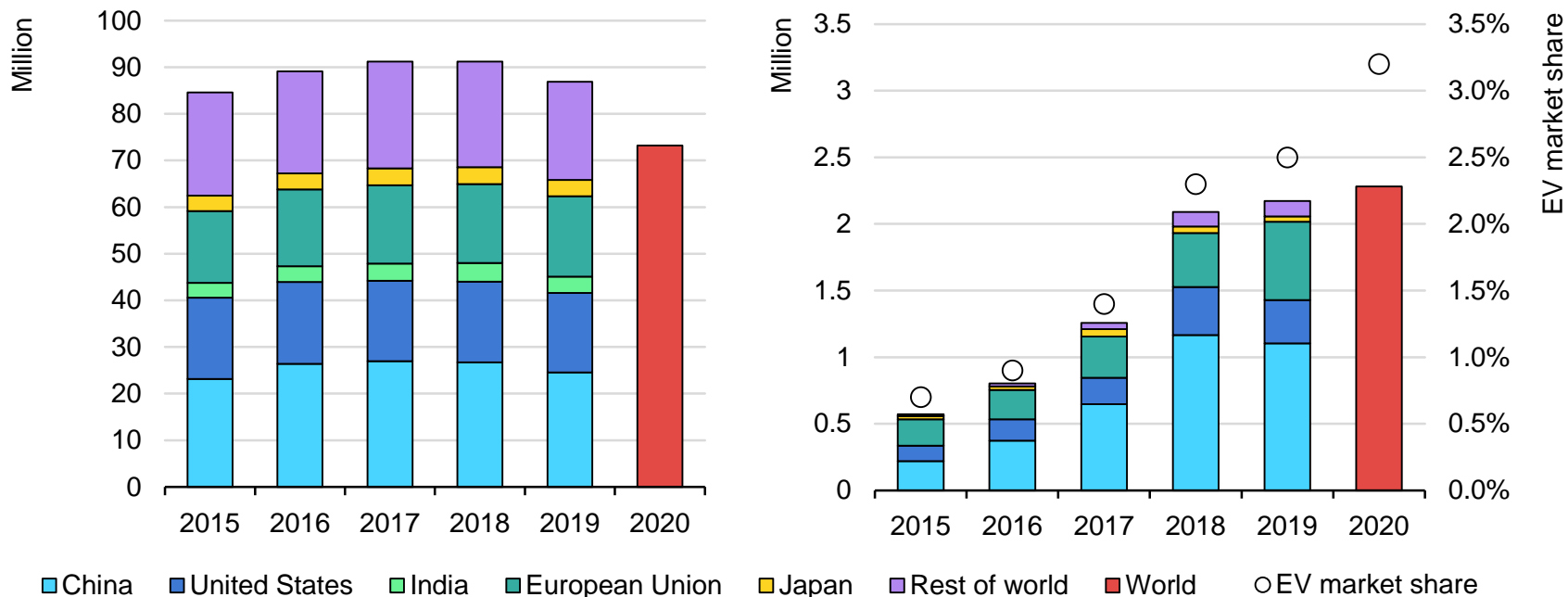
# Impacts on energy efficiency investment

# Overall investment in efficiency is expected to decline 9% in 2020



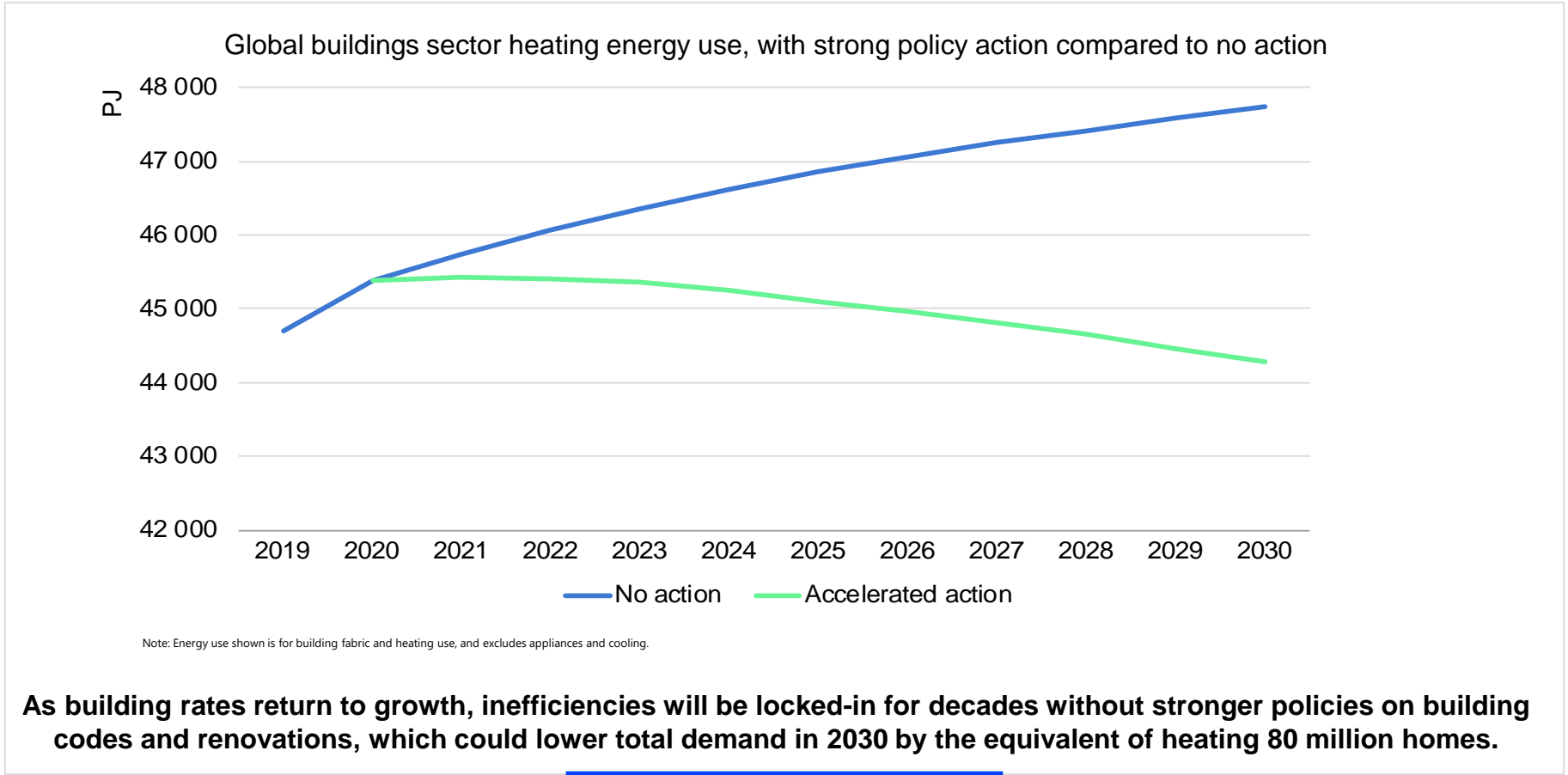
# Some bright spots remain, despite lower overall investment

Global car sales (left) and electric car sales (right) by key markets, 2015-20



**Despite lower car sales overall, new cars added to the fleet will be more efficient.  
3.2% of sales are expected to be electric in 2020.**

# What we build next will shape future energy demand



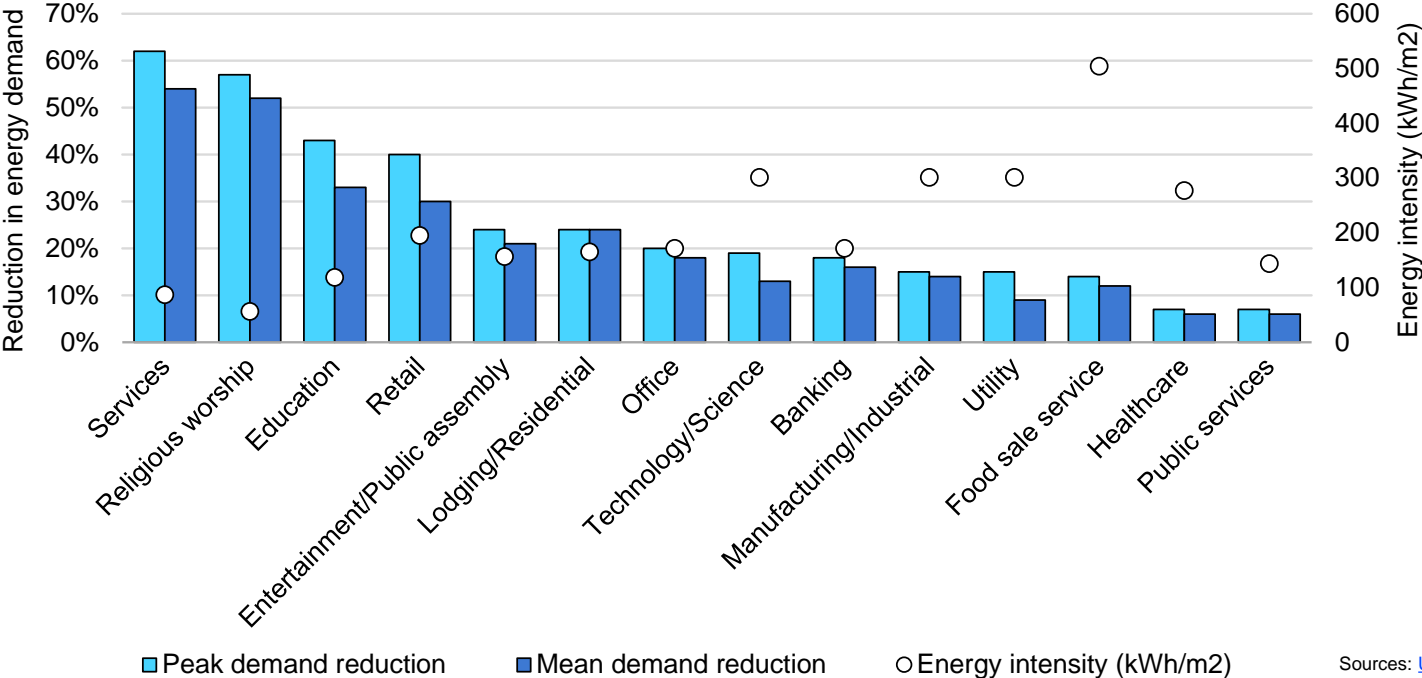
# Structural impacts



# Energy intensive structural shifts in commercial buildings



Reduction in energy demand under stay-at-home orders and average energy intensity (by building type), two US regions

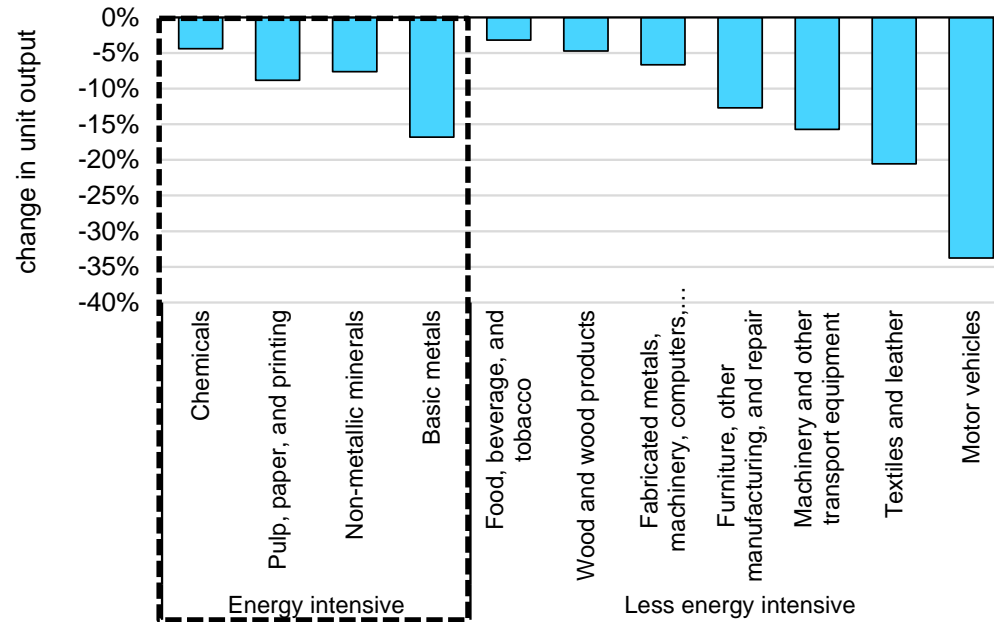


Sources: [Uplight](#); [EIA](#)

**Essential services, which tend to be more energy intensive, have been more active during the crisis, meaning commercial building energy intensity is likely to increase in the short term.**

# Short-term structural shifts in industry also increasing energy intensity

Average change in industrial subsector output in the EU-27 and US, H1 2020 vs H1 2019

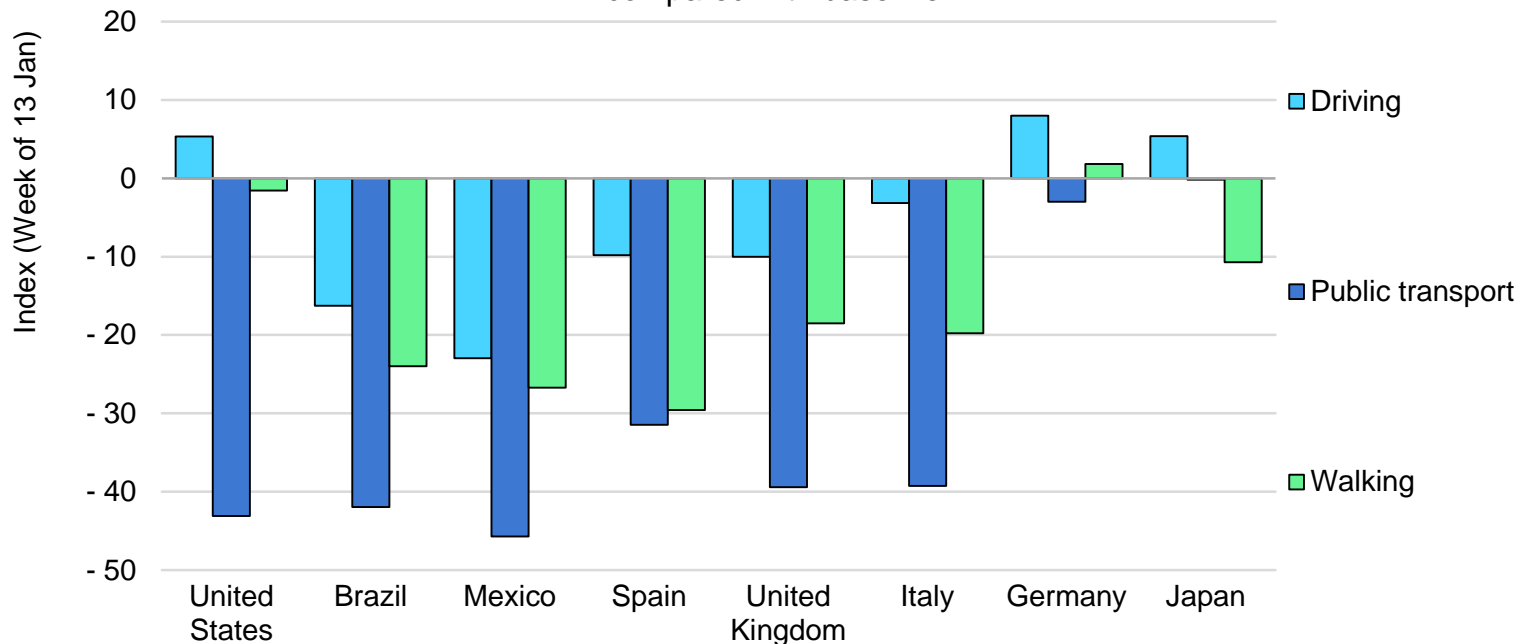


**Energy intensive industries appear to have been less affected by the crisis, meaning industry energy intensity is likely to increase in the short term.**

# Impacts on behaviours

# The crisis is changing energy using behaviours

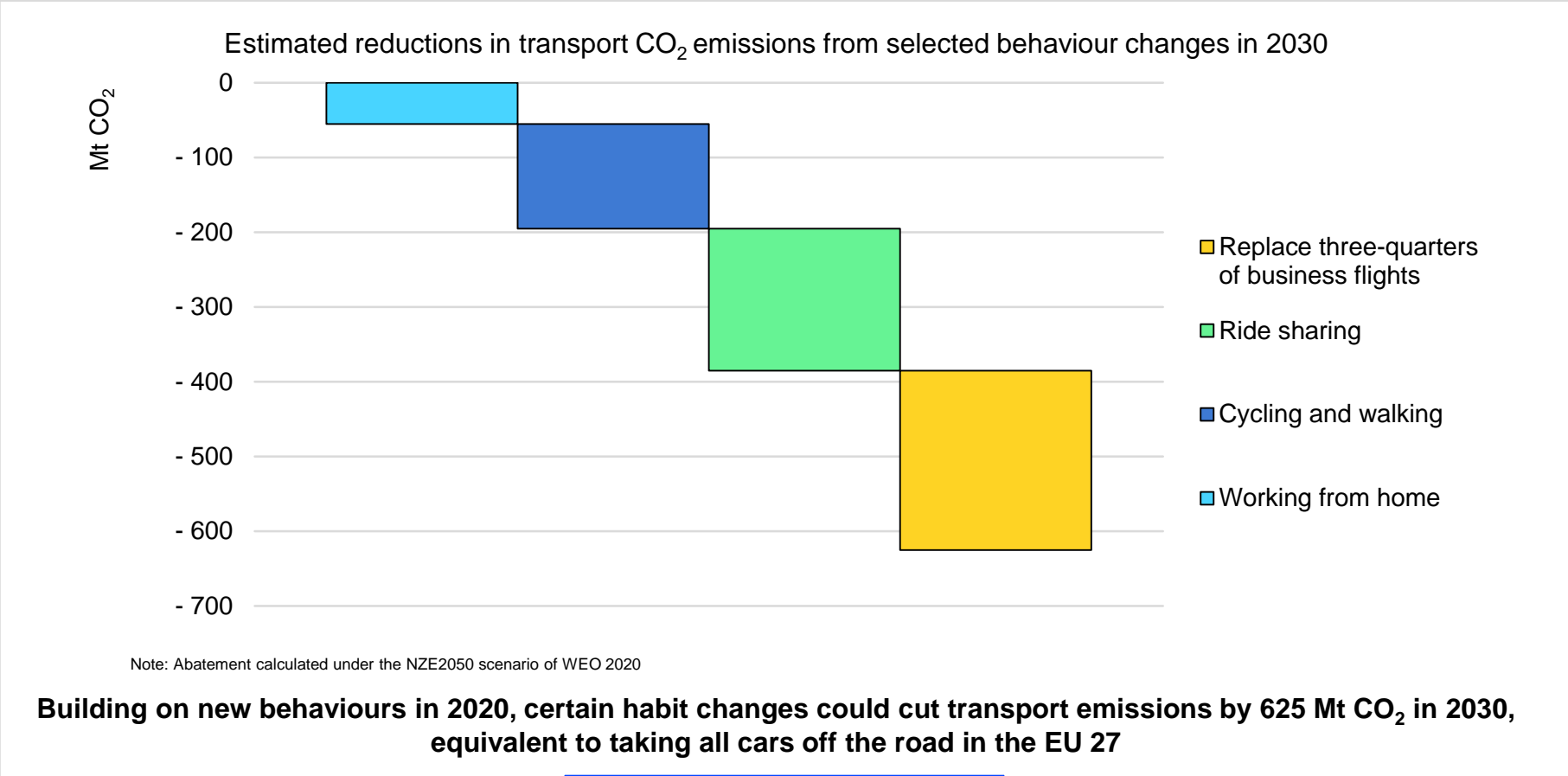
Average working week transport trip requests by mode (average of all weeks, 13 Jan to 31 Oct 2020 inclusive), compared with baseline



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.

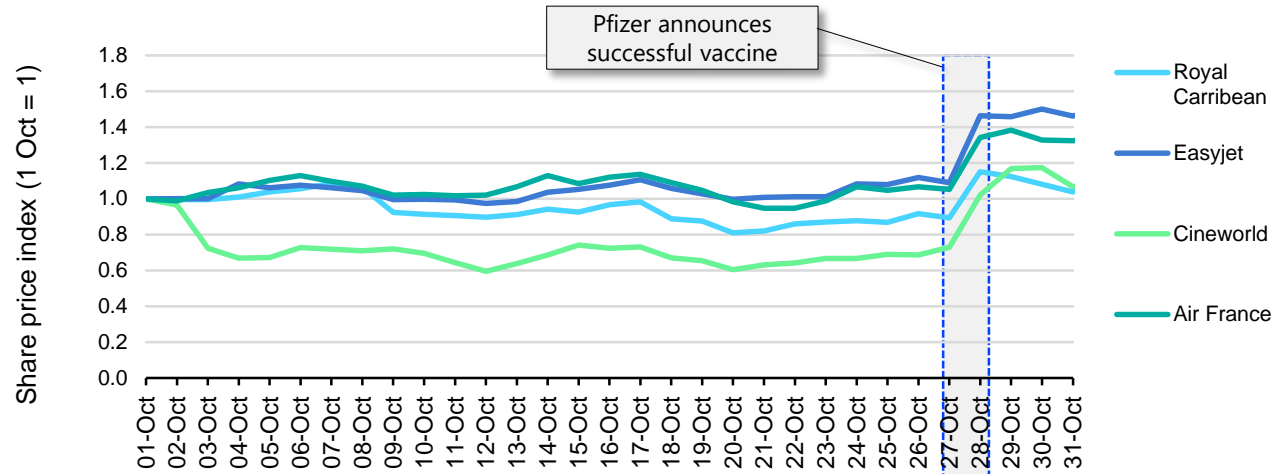
**In many countries, public transport use has plummeted by 40% on normal levels, while car use, walking and cycling are less affected, and sometimes higher than usual.**

# Behaviour at a crossroads: Positive impacts are possible...

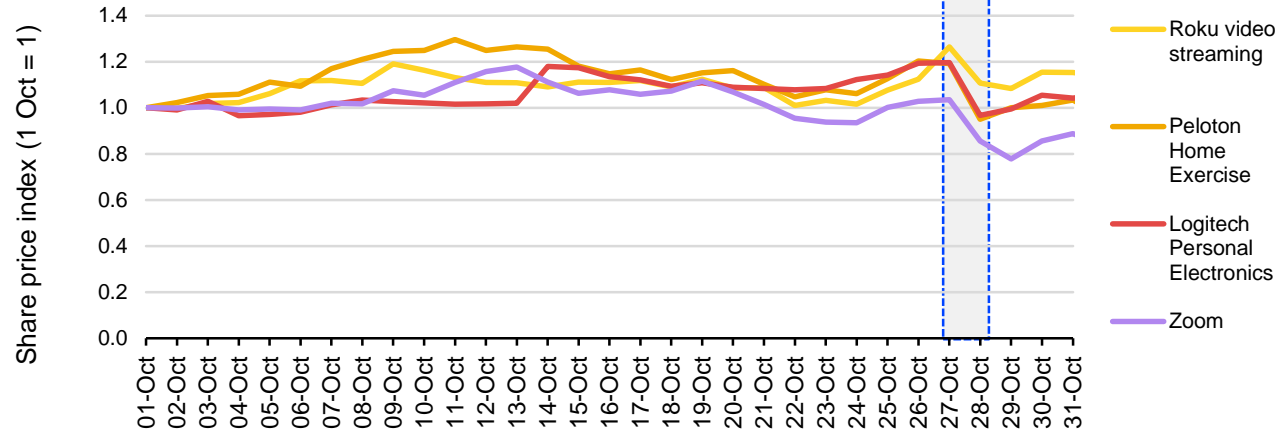


# ...but will old habits return?

**Travel and leisure stocks** suffered due to lockdowns, but were boosted by vaccine news



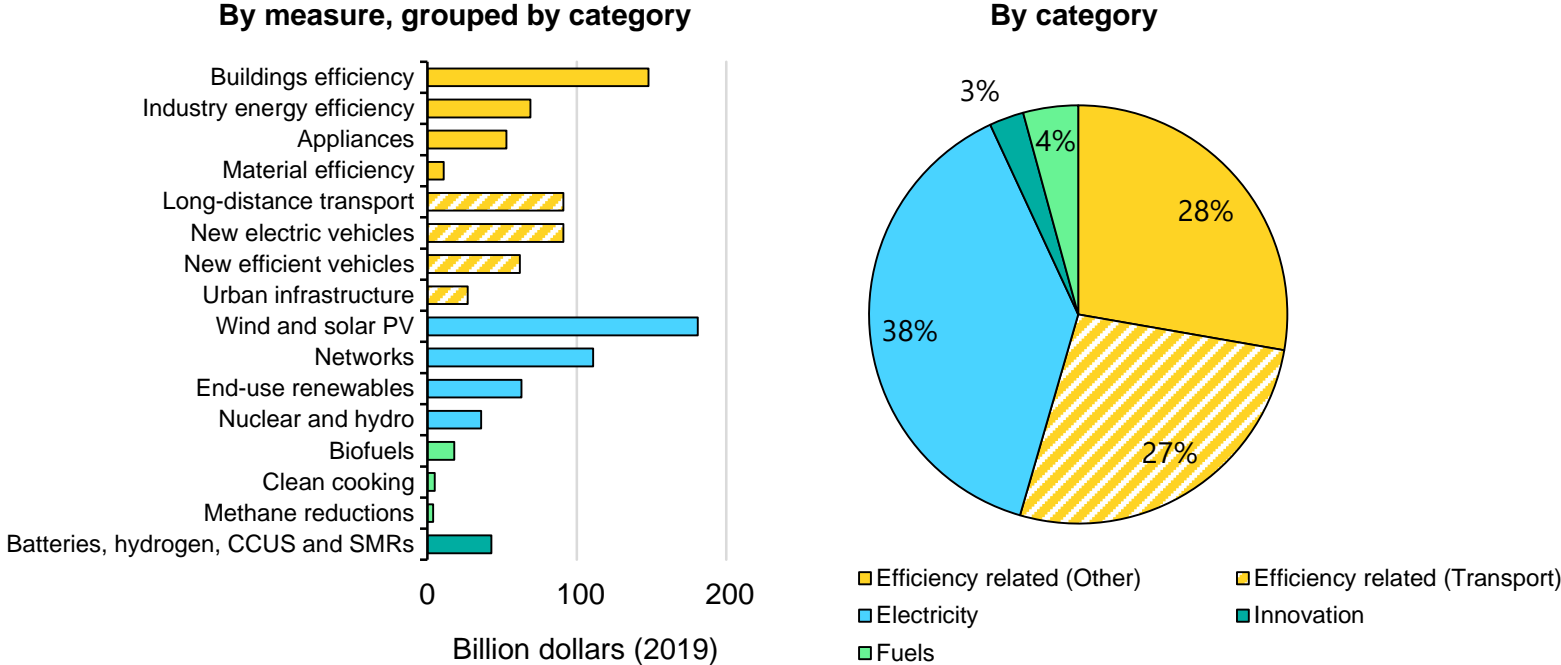
**“Stay-at-Home” Stocks** that benefitted from lockdowns saw prices drop



# Government responses to the crisis

# Energy efficiency is at the heart of a sustainable recovery

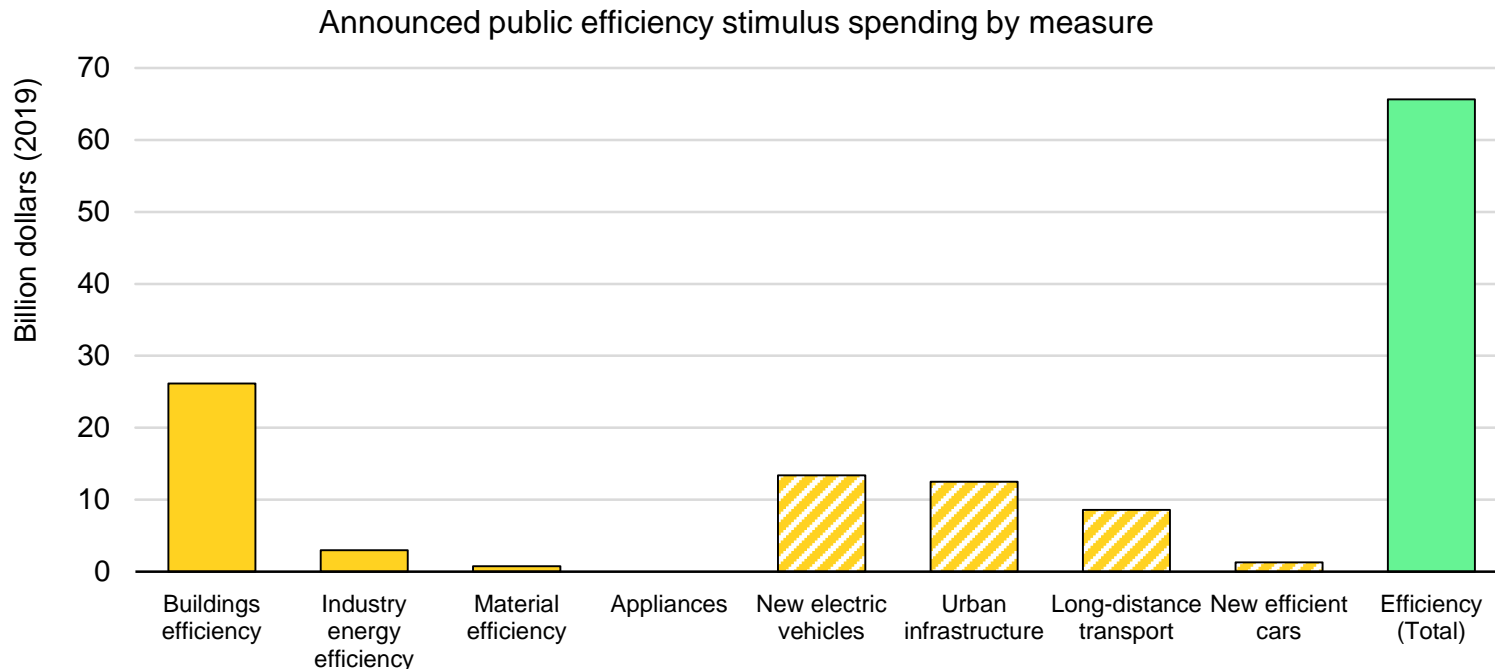
Proposed allocation of average annual spending under the Sustainable Recovery Plan by measure and category



**The IEA Sustainable Recovery Plan envisions average annual investments of USD 1 trillion for the next three years. Energy efficiency related investments are the largest category of spending.**



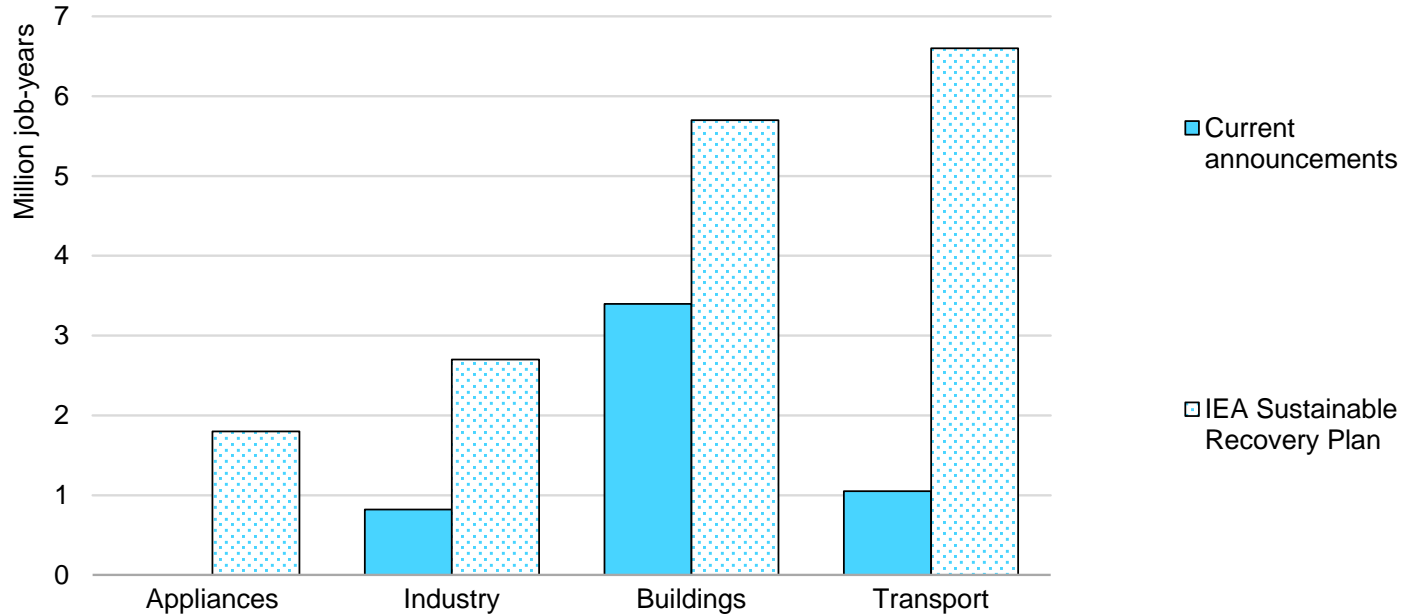
# Governments are supporting efficiency, but spending is uneven



**European countries are responsible for 85% of announced spending for efficiency, even before accounting for the new Next Generation EU package, which could add USD 200 billion more.**

# 5 million job-years could be created, but 10 million remain untapped

Estimated energy efficiency job creation potential from announced stimulus investments to date and in the IEA Sustainable Recovery Plan

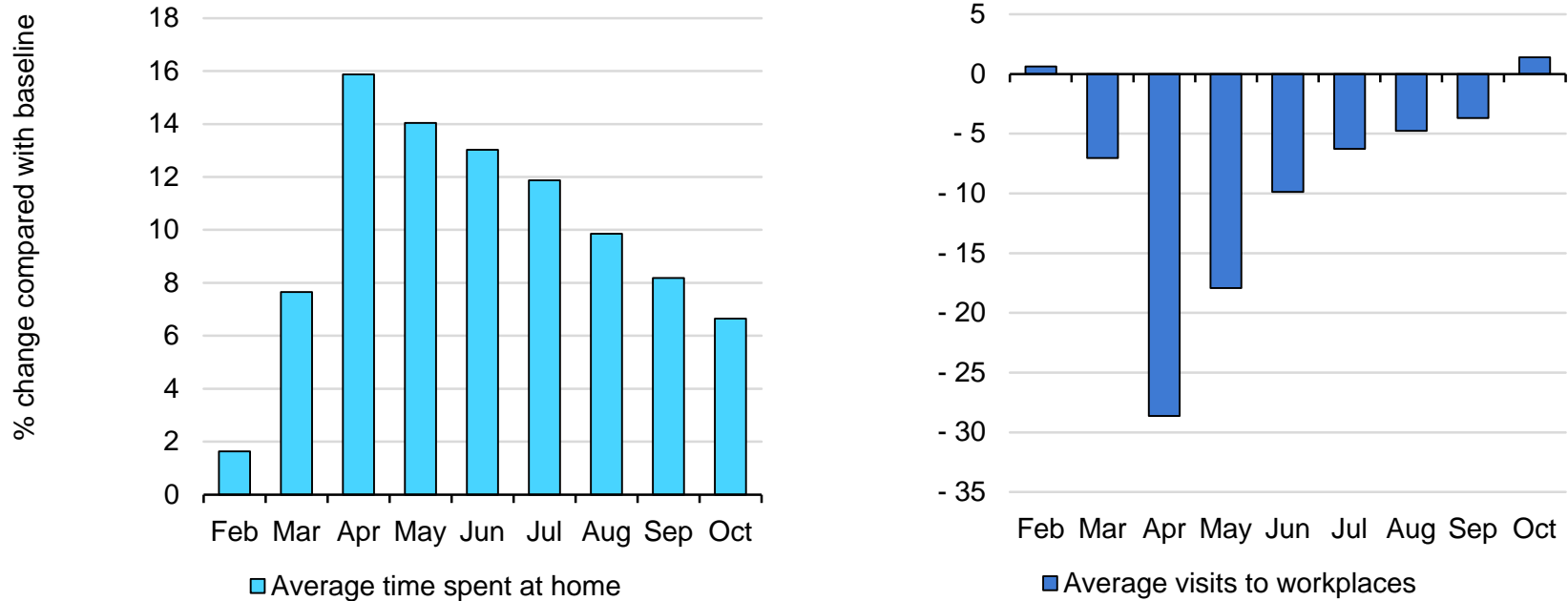


**Announcements to date are estimated to create over 1.8 million jobs in the next three years. Increasing investment to the levels in the IEA Sustainable Recovery Plan could triple that.**

# Insights from Latin America

# As people spend more time at home...

Changes to average time spent at home (left) and visitors to workplaces (right) in Brazil

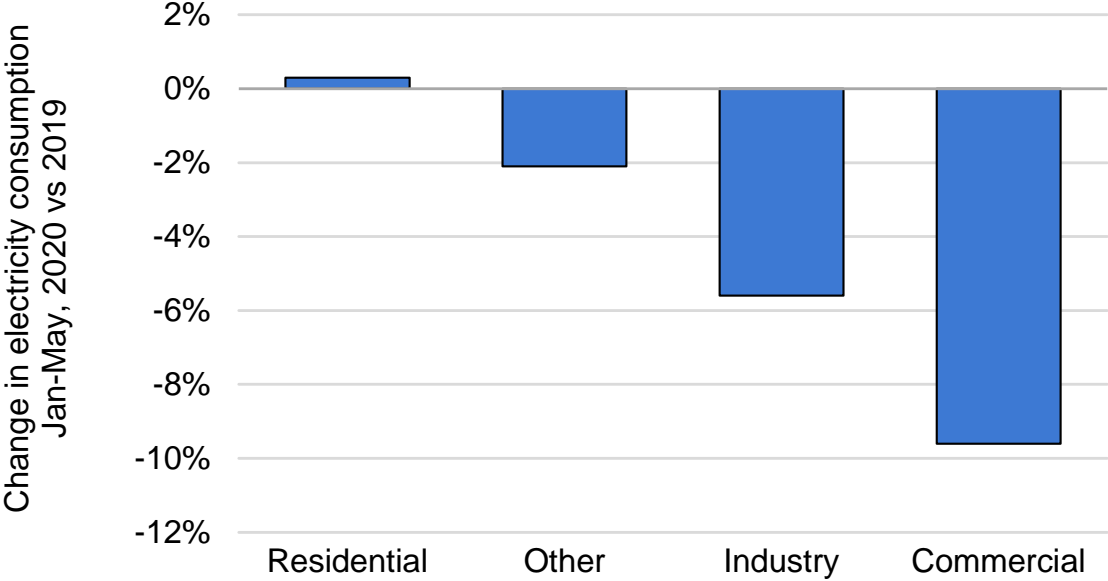


Source: Google, [Google COVID-19 Community Mobility Reports](#)

**In Brazil, available data suggest a dramatic drop in average visits to workplaces and a corresponding increase in the average time spent at home as a result of teleworking and mobility restrictions.**

# ...energy demand patterns shift

Change in electricity consumption (grid) by sector in Brazil, Jan-May, 2020 vs 2019

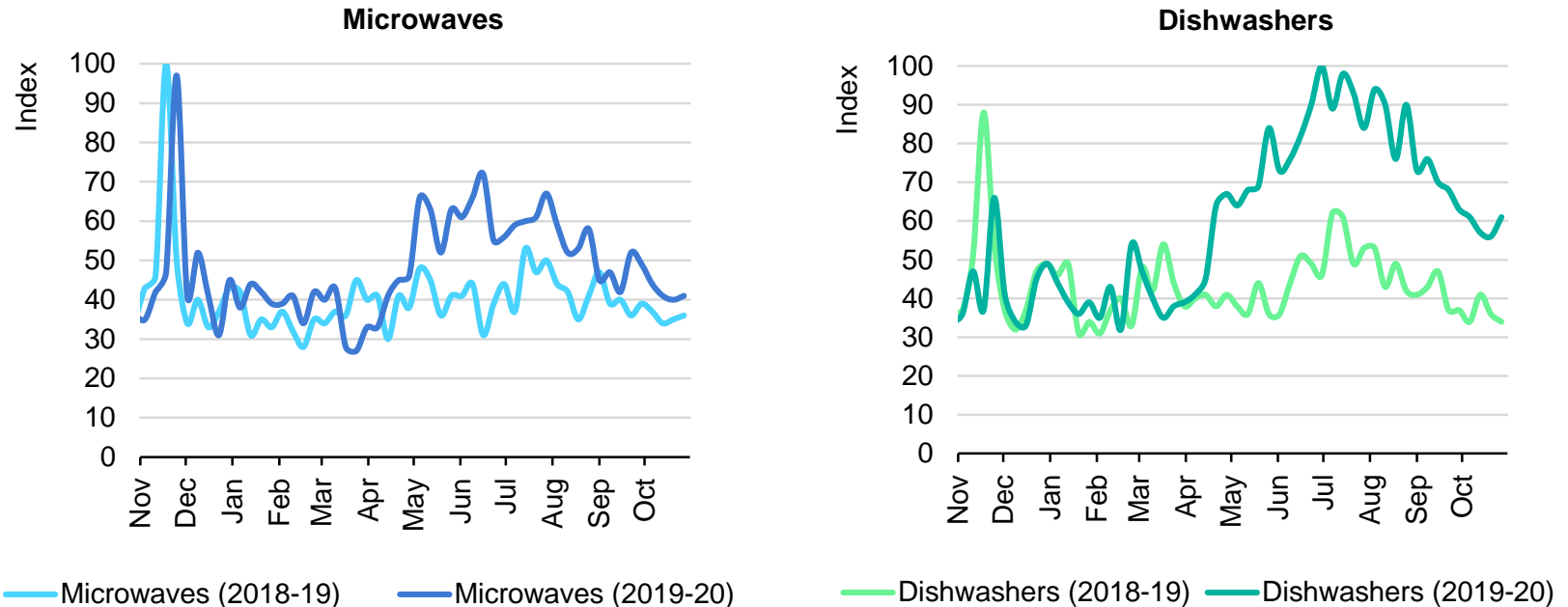


Source: EPE, [Covid-19 Outlook Brazil](#)

**Social distancing and teleworking reduce use of commercial buildings and increase activities that use energy in the home, resulting in a partial shift in energy demand from commercial to residential buildings.**

# Appliance efficiency is likely to improve in the short-term

Weekly online shopping search indices for dishwashers and microwaves, 2018-2019 vs 2019-2020, Brazil

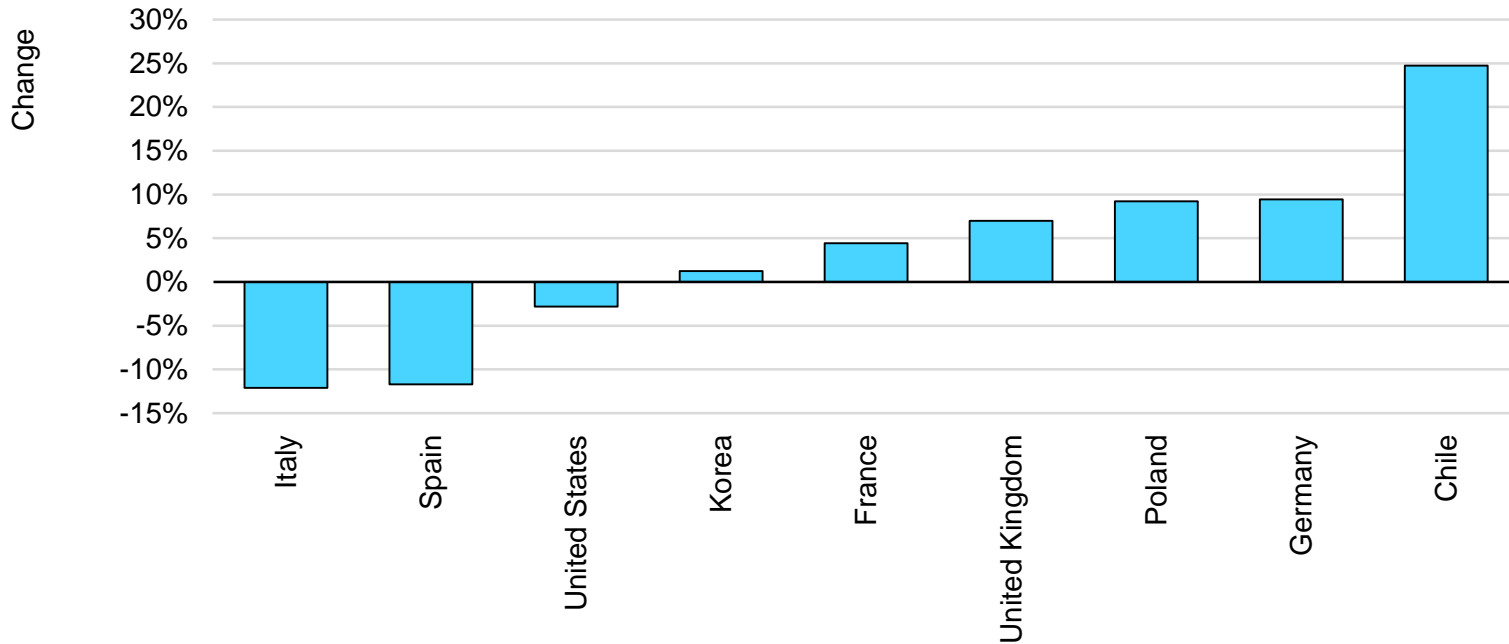


Source: [Google Trends](https://www.google.com/trends/)

**Demand for dishwashers increased markedly in Brazil since the beginning of the pandemic. Similarly, demand for microwaves increased in Brazil, particularly during May – August.**

# Industry efficiency progress is uncertain

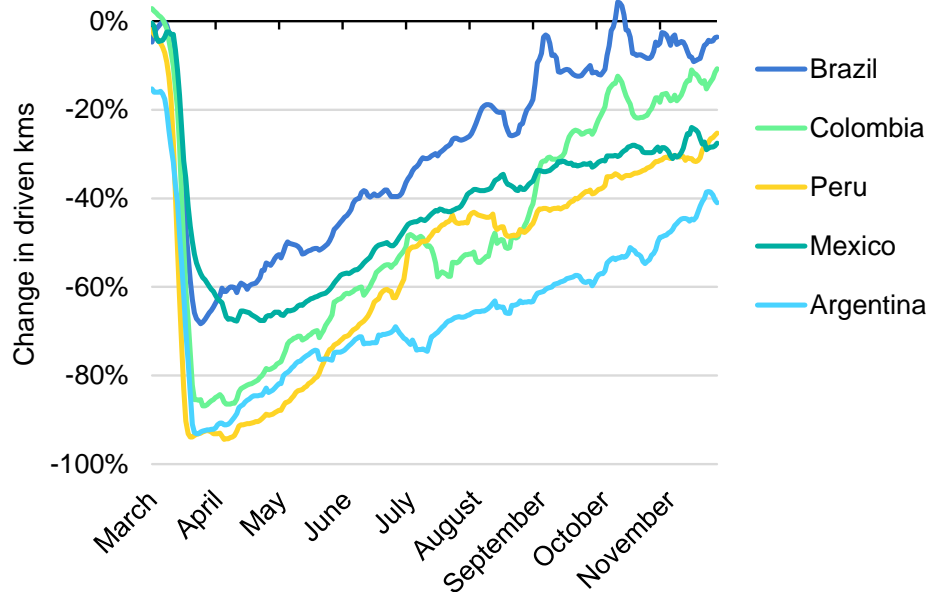
Industrial electricity prices in major economies, first half of 2020 vs first half of 2019



**Higher industrial electricity prices shorten payback periods for industrial motors, but a focus on core business issues could slow motor upgrade progress.**

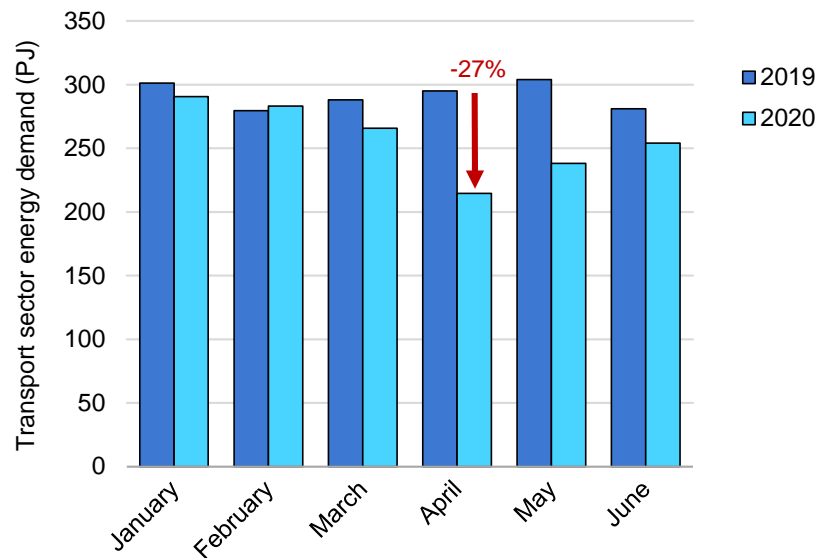
# Transport energy demand decreased as mobility levels dropped

### Change in driven kilometres in select countries



Source: Waze, [COVID-19 Impact Dashboard](#)

### Transport sector energy demand, Brazil



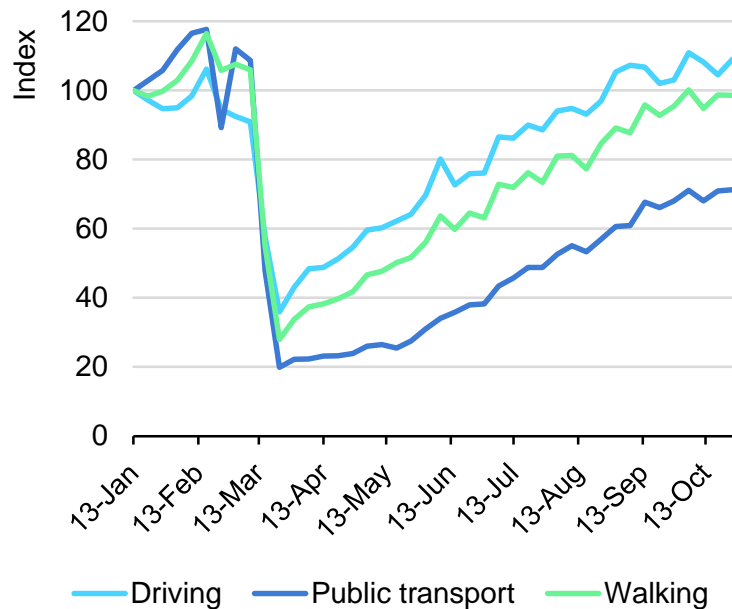
Source: EPE, [Covid-19 Outlook Brazil](#)

**Movement restrictions decreased mobility levels and energy demand in the transport sector, but impacts differed across the region.**



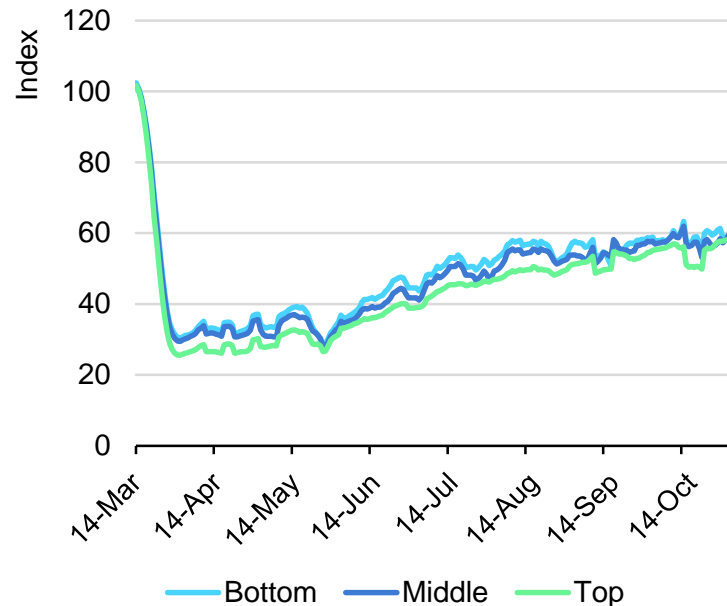
# Transport activity partially shifted to less efficient modes

### Index of changes in work week transport trip requests by mode in Brazil, Jan-Oct 2020



Source: Apple, [Mobility Trends Reports](#)

### Index of change in ridership of São Paulo's SPTrans bus system by socioeconomic status, Mar-Oct 2020

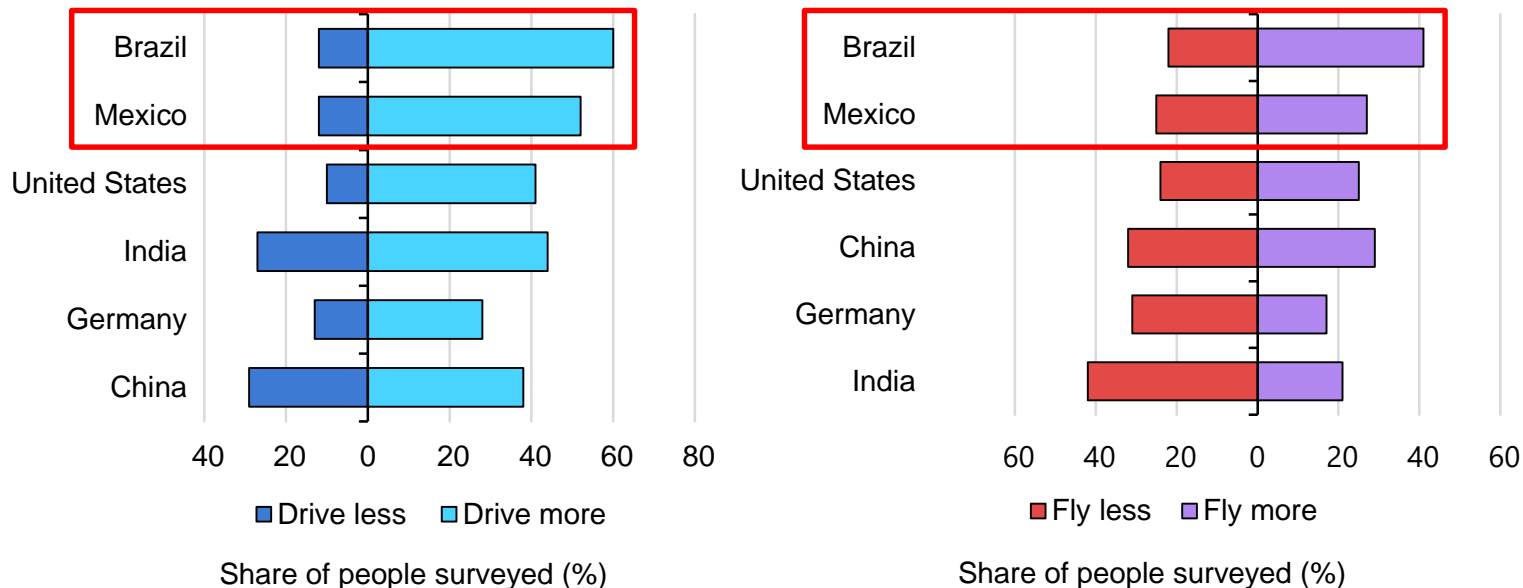


Source: IADB, [Coronavirus Impact Dashboard](#)

**The decline in public transport trips exceeds declines in private transport modes such as walking and driving, especially for wealthier population segments.**

# Without policy action, rebounds are likely

People's expectations of driving and flying in the future compared with the pre-pandemic period

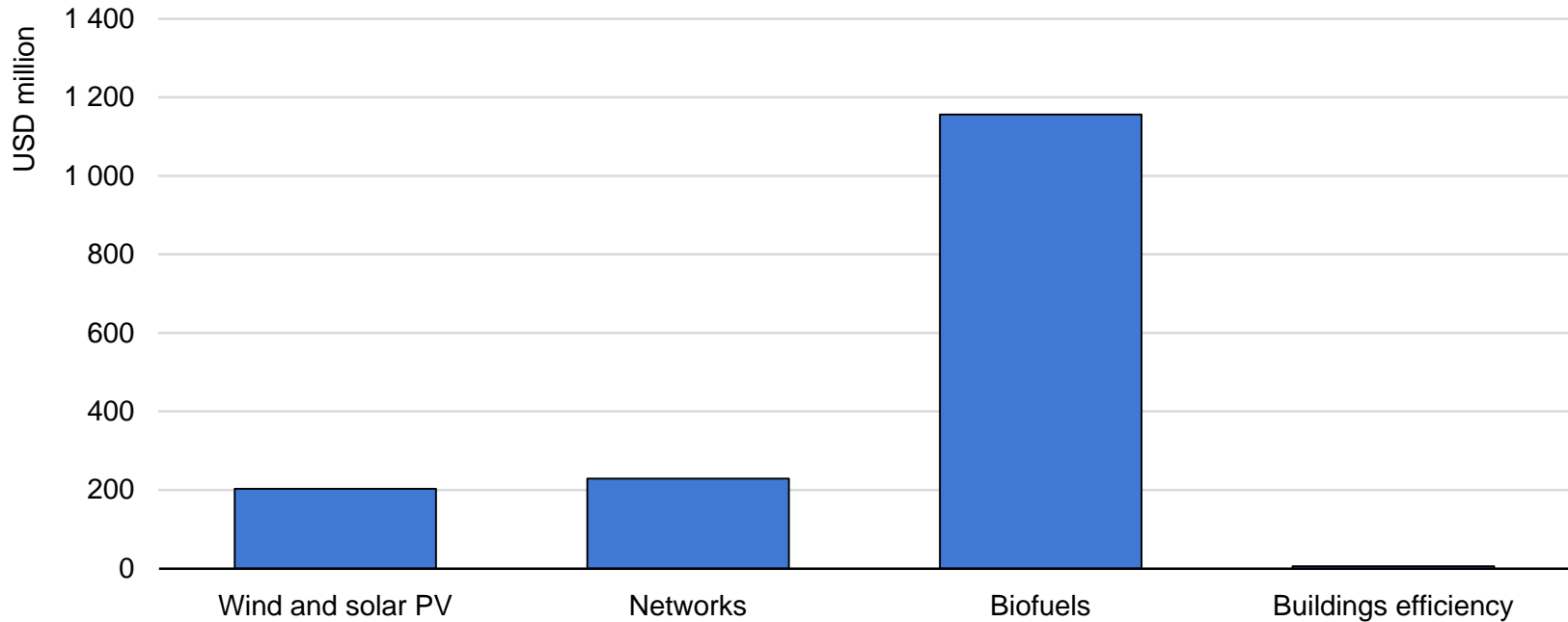


Source: Yougov and Cambridge Globalism [Survey](#) conducted between 30 July and 24 August, 2020

**Without new policies to encourage and support behaviour change a trend towards lower-emission behaviours seems unlikely.**

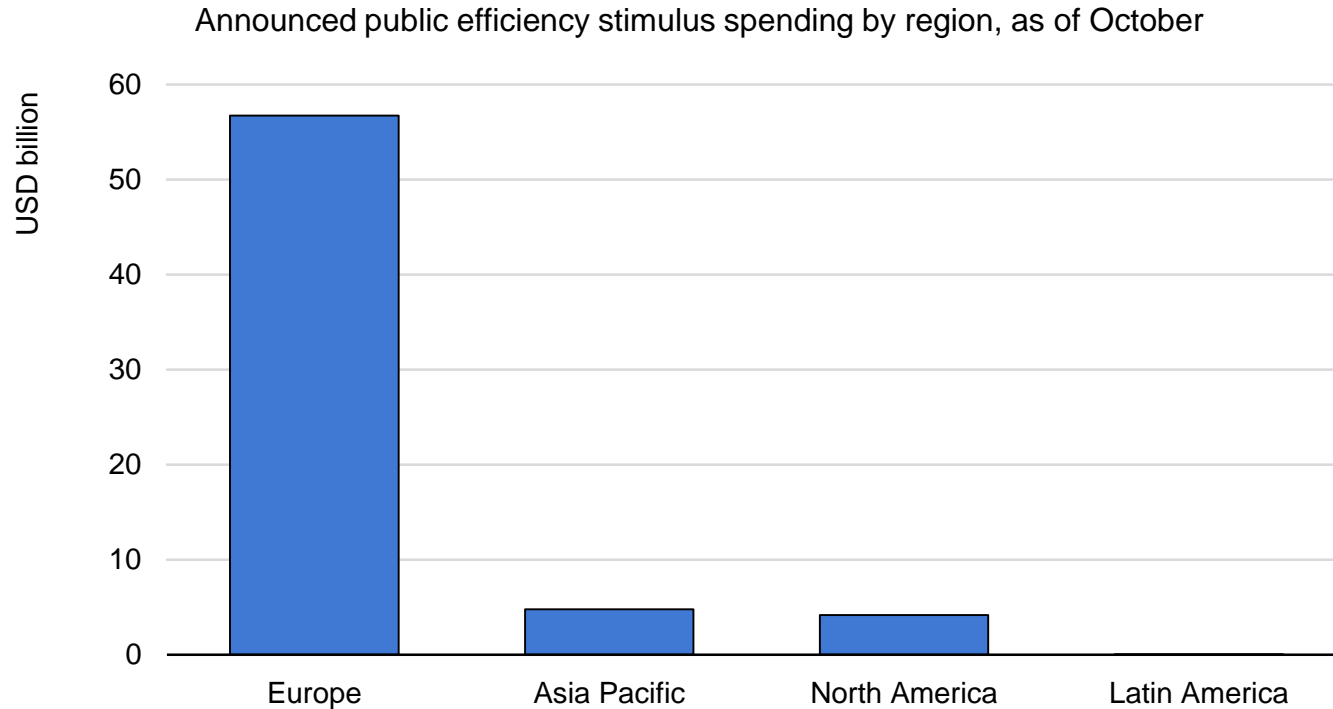
# Clean energy stimulus in Latin America focused on biofuels

Announced public clean energy stimulus spending in Latin America by measure, as of October



**Clean energy stimulus spending for biofuels in Latin America is higher than in other regions, but stimulus spending on efficiency remains at low levels.**

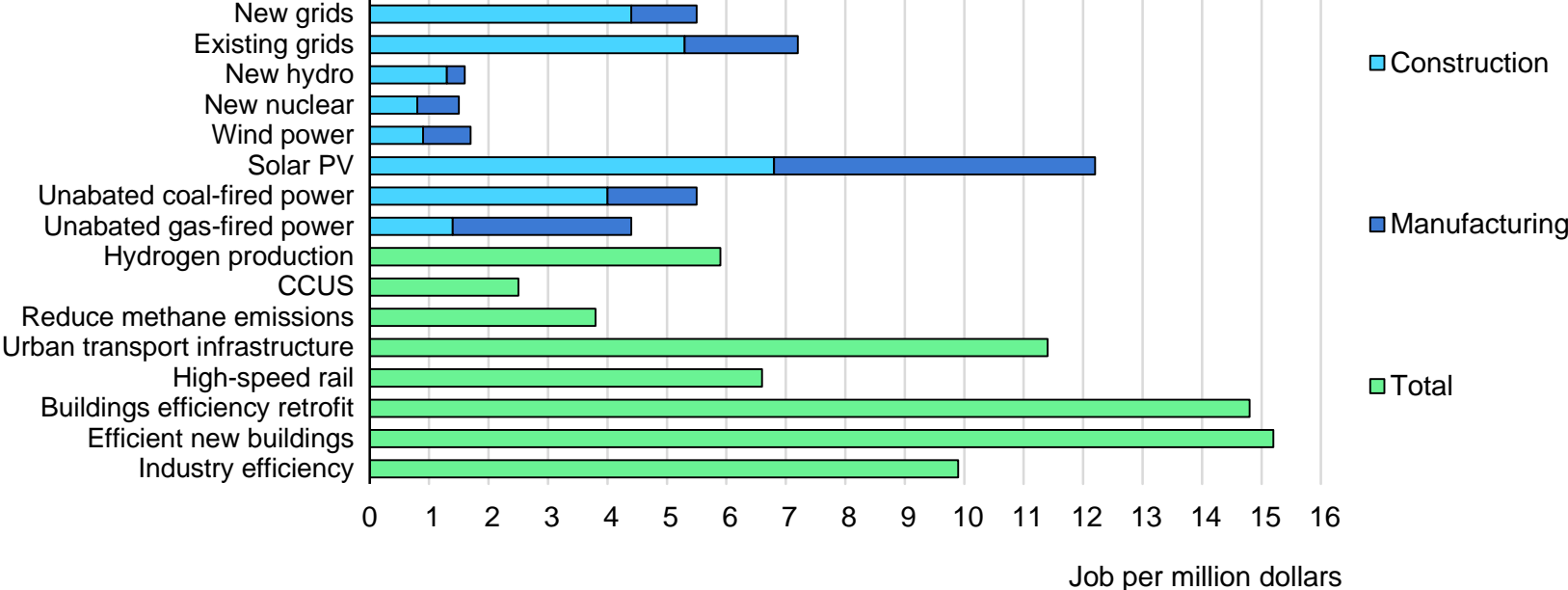
# Efficiency stimulus spending dominated by European countries



**European countries are currently responsible for 85% of announced spending for efficiency. However, efficiency focused packages are under development in Latin America.**

# Efficiency stimulus has a high potential to create jobs

Construction and manufacturing jobs created per USD 1 million of capital investment in the Sustainable Recovery Plan



**Stimulus spending on efficiency is beginning to tap into its job creation potential but opportunities remain.**

- The Covid-19 crisis has brought great uncertainty, right when energy efficiency action should accelerate
- Structural and behavioural impacts in Latin America resemble trends in other regions
- Energy efficiency is at a crossroads, and the next three years are crucial
- Building energy efficiency into the crisis response has the potential to create millions of jobs as well as ensure lower energy bills and lower emissions in the future

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