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## Homeworking study: Hybrid working guided by seasonal energy savings could lead to a greener Europe

*Berlin (ots) -*

- New Study by the Carbon Trust, commissioned by the Vodafone Institute, calculates carbon savings and rebound effects of home office models pre, during and post the pandemic in Czech Republic, Germany, Italy, Sweden, Spain and the UK
- Potential carbon savings aided by hybrid working could save up to 12.2mt of CO<sub>2</sub> emissions per year in Germany - equivalent to 83 million flights from London to Berlin
- In most countries, offices generate higher carbon emissions than commuting creates
- Seasonal, regional and individual behaviour patterns lead to different saving scenarios for Home Working

The potential carbon savings from home working could save Germany up to 12.2Mt of CO<sub>2</sub> emissions per year, the highest amount in a country-comparison. This is equivalent to 83 million flights from London to Berlin. This is the result of a new study conducted by the Carbon Trust on behalf of the Vodafone Institute for Society and Communication. The study assumes that around 17.5 million jobs in Germany will be 'teleworkable', meaning they can work remotely, and that people will do so on average 2.7 days a week. The UK has a relatively high number of teleworkable jobs (15.1 million) but could save significantly less carbon with 4.1 MtCO<sub>2</sub>/year. The Czech Republic with 1.7 million teleworkable jobs has a carbon savings potential of only 0.1Mt/CO<sub>2</sub> per year.

The Homeworking report analyses the carbon savings of teleworking pre, during and post the pandemic, with projections on carbon savings from expected changes to working patterns in the post-COVID future in the Czech Republic, Germany, Italy, Spain, Sweden and the UK. The study included avoided commuting emissions, avoided office emissions and additional domestic emissions.

### Homeworking carbon savings balance is net positive across all countries

In all countries, the overall annual carbon savings during COVID-19 from avoided commuting and avoided office emissions outweigh the individual's annual additional domestic emissions, resulting in a net annual carbon saving. Per teleworker, the savings in each country came to:

- Italy 1.861kgCO<sub>2</sub>e
- Germany 1.144kgCO<sub>2</sub>e
- Spain 890k CO<sub>2</sub>e
- the UK 889kgCO<sub>2</sub>e
- the Czech Republic 270kgCO<sub>2</sub>e
- Sweden 243 kgCO<sub>2</sub>e

For reference, the emissions for an individual passenger flight from London to Berlin are approximately 140kgCO<sub>2</sub>e. The main driver for carbon savings were the avoided office emissions by teleworkers. They are higher than the avoided emissions from commuting and are not counteracted by any rebound effects of additional domestic energy consumption. Only in Sweden commuting was the higher factor in carbon savings.

### Different seasonal saving scenarios per country

Even if home working on average leads to higher individual carbon savings throughout the year, a more granular look shows that the impact of seasonal, regional and individual behaviour patterns leads to different scenarios on carbon consumption. A comparison of Germany and Spain shows: Due to the high heating demand and the prevailing energy mix of oil and natural gas, the additional domestic emissions in Germany increase during winter, making office work more efficient in this season. When commuting by train the carbon emissions are 7.46 kgCO<sub>2</sub>e/day working from office versus 12.71kgCO<sub>2</sub>e/day from home office. In Spain the widespread domestic use of air conditioning in summer leads to increased carbon emissions making office work more climate-friendly, especially when commuting by train (office emissions: 3.49 kgCO<sub>2</sub>e /day versus home office emissions: 5.78 kgCO<sub>2</sub>e /day).

### Recommendations for businesses and governments

Based on these findings, the report recommends ways in which businesses and governments can plan and incentivize hybrid working to accelerate decarbonization, while also addressing the challenges changes may pose to cities, transport, local economies and infrastructure suppliers. For example:

- By helping to accelerate the rollout of connectivity and ensuring everyone has access to fast and reliable internet whether they work remotely in rural or city areas
- Increasing the energy efficiency of homes and buildings to alleviate additional strain on countries' power systems
- Incentivising low-carbon movements by implementing e-mobility or hybrid company car policies at a corporate level

- Re-considering urban planning based on how people will engage with their cities when spending more time at home
- Anticipating how migration from urban to rural areas could impact the power grid, promoting decentralized, renewable electricity supply as well as smart technologies

**Andie Stephens, Associate Director Carbon Trust:** "The report shows that while homeworking offers great potential for carbon savings, it is important to understand regional nuances and working patterns, and to identify inefficiencies that increase consumption in order to create actual saving scenarios. To fully realize the long-term environmental benefits of increased hybrid working models in the future we need to ensure that we adopt different approaches beyond the home. Otherwise, offices operating at full energy demand while only being half-occupied or transport systems being unable to respond to changing demand could lead to an overall increase in carbon emissions."

**Joakim Reiter, External Affairs Director Vodafone Group:** "This report indicates early signs of carbon savings, fueled by hybrid remote working and reminds us of the importance of tailoring policies to the needs of individual countries. Vodafone believes that Europe can lead the way and meet its goal of climate neutrality by 2050 if governments and policy-makers are guided by research, invest in technology and put in place the right frameworks. In addition, the European Commission's Recovery and Resilience Faculty and the minimum 37% earmarked for climate investment, will help achieve the twin green and digital transitions."

Find the full report [here](#).

Find images for publication [here](#).

### Methodology

The analysis conducted by the Carbon Trust calculated the average annual carbon savings per teleworker by country. The scope of the sources of carbon emissions accounted for from an average teleworker included three key areas: average avoided commuting emissions from teleworking; average avoided office-related emissions from teleworking; average domestic-related emissions from teleworking. Please see the report for thorough explanation.

### About Vodafone Institute for Society and Communications

The Institute is Vodafone's think-tank. We explore the potential and responsible use of digital technologies for innovation, growth and sustainable social impact. Through research and events, we provide thought leadership and offer a platform for dialogue between business, academia and politics.

Contact:

Press Contact

Ina Krings

Senior Expert Communications and Campaigns

Mobile: +49 172 612 45 00

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Vodafone Institute for Society and Communications

Office Berlin

Behrenstraße 18

10117 Berlin

[www.vodafone-institut.de](http://www.vodafone-institut.de)

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