Transport and climate change

Climate Change mitigation: United Nations Economic Commission for Europe For Future Inland Transport Systems tool.

François Cuenot, UNECE Secretariat

(WP.5) Working Party on Transport Trends and Economics (34th session)
15-17 September 2021

UNECE

ForFITS recent and forthcoming activities

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- Reach out activities of ForFITS
  - ForFITS as registered model for IPCC AR6
  - ForFITS data used in AR6 report
  - Research partner to the International Energy Agency (IEA) Mobility Model
  - Scenario development assistance at the International Transport Forum (ITF) Decarbonizing Transport Initiative
- Related activities
  - UNRSF Project on safer and cleaner used vehicles for Africa
  - ITF policy paper and Low and zero emission heavy duty vehicles
- Next steps / Conclusion
  - Environment Performance Review in Azerbaijan
  - Paper on Realtime emissions of EVs during recharge

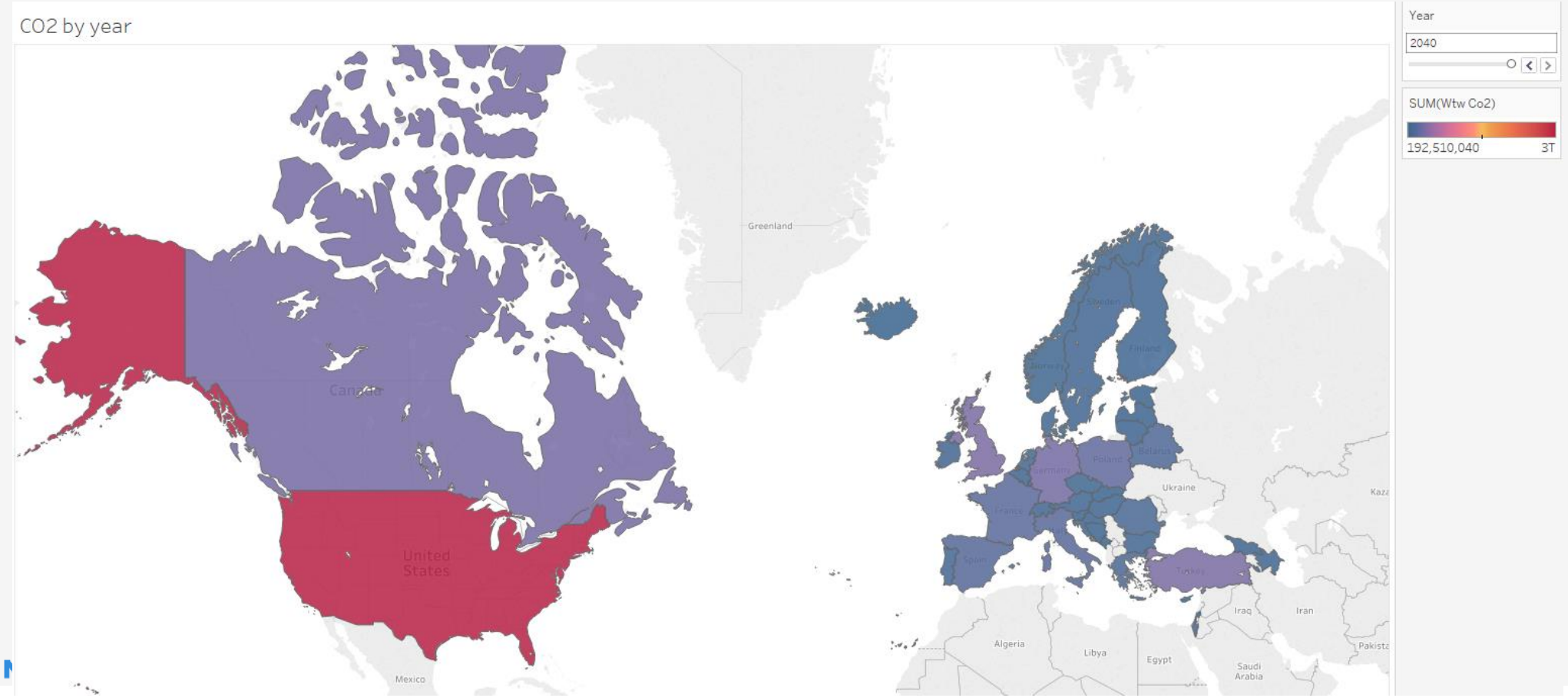
ForFITS as a registered model for IPCC AR6 process

- The IPCC is now in its sixth assessment cycle, in which the IPCC is producing the Sixth Assessment Report (AR6) with contributions by its three Working Groups and a Synthesis Report, three Special Reports, and a refinement to its latest Methodology Report.

- Transport work supported by IIASA and the iTEM (International Transport and Energy Models) partnership, to which UNECE/ForFITS is a member.
- ForFITS registered as a model recognized by IPCC AR6
- Data from ECE study (ITC Document No. 13 form the 78th session) submitted, projection up to 2040.

ForFITS as a registered model for IPCC AR6 process – Data submitted

- Data submitted as to be part of a publicly available publication and/or peer-reviewed literature

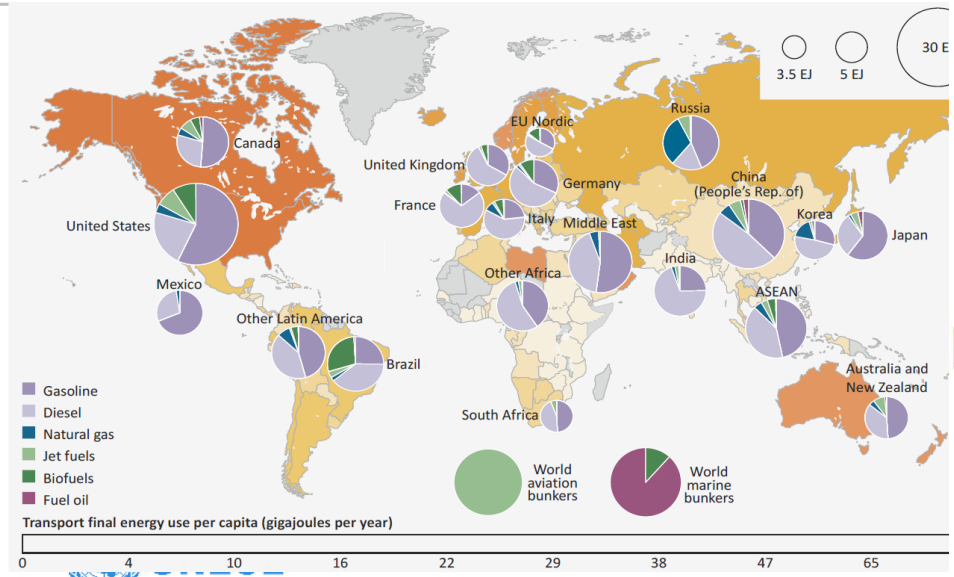


Potential partnerships

INLAND TRANSPORT COMMITTEE

- Invitation to join the IEA Mobility model as research partner
  - Share model development strategies and combine resources to find synergies
  - 20+ public private partners
- Legal aspects being discussed

Per capita transport energy use by country and by fuel, 2015



Who supports the work: MoMo partners

iea

ExxonMobil HONDA TOTAL MIT

sasol

MICHELIN TOYOTA equinor NAVIGANT ECOFYS

أرامكو السعودية saudi aramco BOSCH BR

ClimateWorks FOUNDATION icct THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION ifp ITDP Institute for Transportation & Development Policy KAPSARC King Abdullah Petroleum Studies and Research Center

bp

Carbon Tracker Initiative ITS UC DAVIS RENAULT NISSAN

On-going collaboration with the International Transport Forum (ITF)

- Steering committee member of the ITF «Decarbonizing Urban Transport in Europe»
  - Participation to several workshop
  - Support scenario development for the study

- Reviewer of the Transport Climate Action Directory

Transport Climate Action Directory

  - Translate decarbonisation ambitions into actions to achieve climate objectives.
  - Over 60 mitigation measures with the evidence-base needed to assess their effectiveness.

On-going collaboration with the International Transport Forum (ITF)

- Contributor to forthcoming report “Technical regulations and standards for clean trucks and buses - Are we on the right track?”

- Aim to identify safety and environmental policy and standardization gaps for low and zero emission heavy duty vehicles
  - Focusing on battery-electric, hydrogen and electric road system (eg. trolley trucks)

UNECE as partner of “safer and cleaner used vehicles for Africa” UNRSF project

- “The objective of the project is to put in place regulations, standards and processes to ensure that Africa will only receive quality used vehicles, which will have major road safety benefits, for both car drivers and other road users, and co-benefits on the environment and economy”
- Engaging exporting and importing countries in common set of requirements for cross border used vehicles exchange
  - Vehicle met minimum safety and environmental performance when new (vehicle fitted with minimum set of technologies / met certain legal requirements)
  - Vehicle operation still adequate when exported (roadworthiness still adequate)
- Relying on digital information exchange between exporting, (transit), and importing countries
- Data collection / modelling might be deployed during a second phase of the project
- Partners: UNEP, UNECE, UNECA, WHO, CITA, ITF, FIA

Use and further development of the ForFITS tool

Plans going forward

- Foster and sthrenghten collaboration with other institutions
- Continue internal activities:
  - Environmental Performance Review of Azerbaijan paused and resumed with a ForFITS analysis being developed
  - ForFITS data collection to be resumed
  - Potential collaboration with ITF considered
- Develop specific activities on specialized topics, such as used vehicles, circularity
  - Paper and ForFITS Module on Realtime emission of EVs during recharge

ForFITS module: impact of recharging time and duration on CO2

- Workshop between UNECE Sustainable Transport and Sustainable Energy Divisions “Real-Time Upstream Emissions of Electric Vehicles During Recharge”, 27 May 2021, following UNECE 69th Commission session on circular economy

- With colleagues from Transport statistics, paper looking at impact of metric used, recharge time and duration on CO2 emissions

- ForFITS Module to make own assessment
  - Data input needed: Hourly carbon content of electricity
  - Output : CO2 emissions depending on electricity demand (annual mileage), recharging power, time and duration of recharging events

Thank you!

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UNECE
Date 16 I 09 I 2021, Geneva

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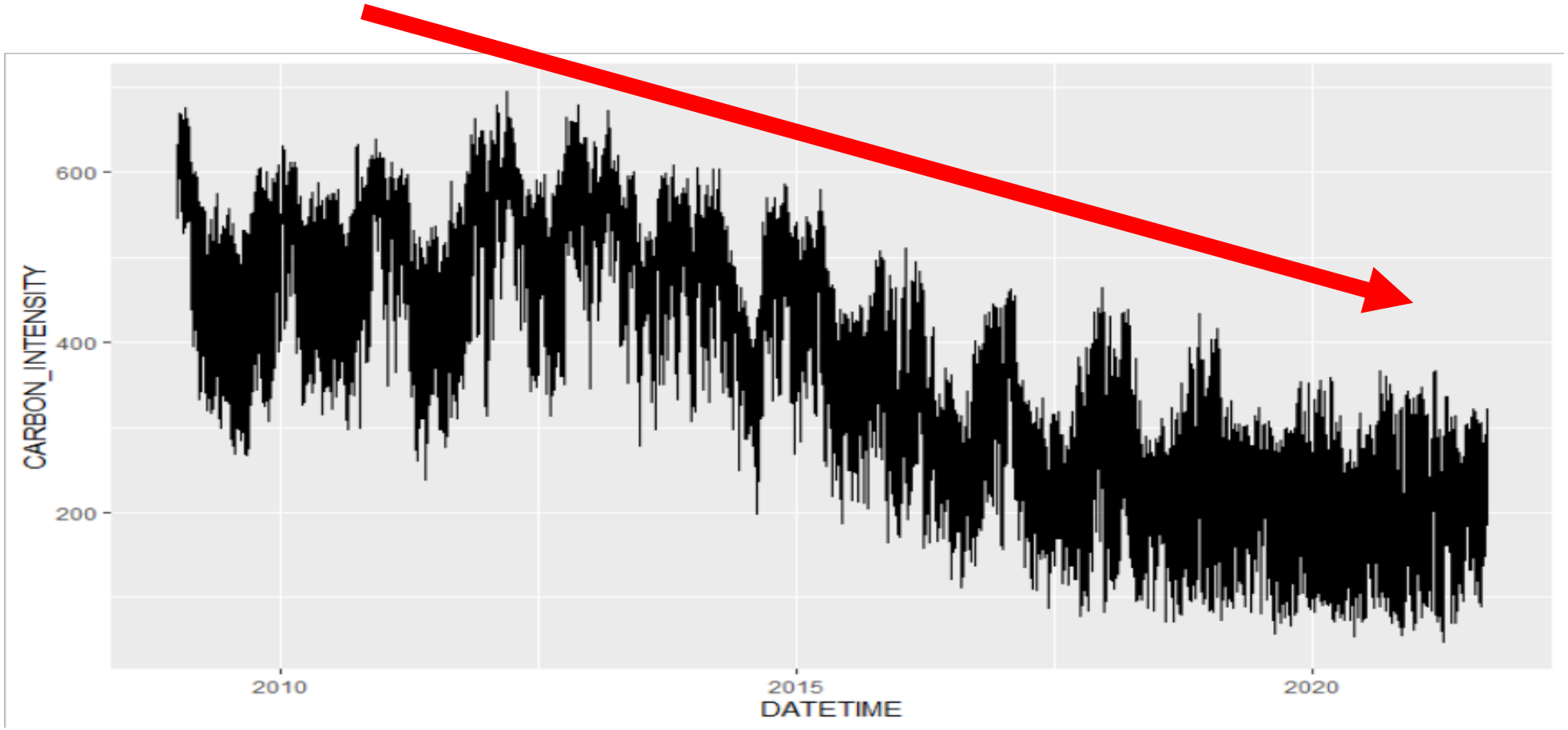
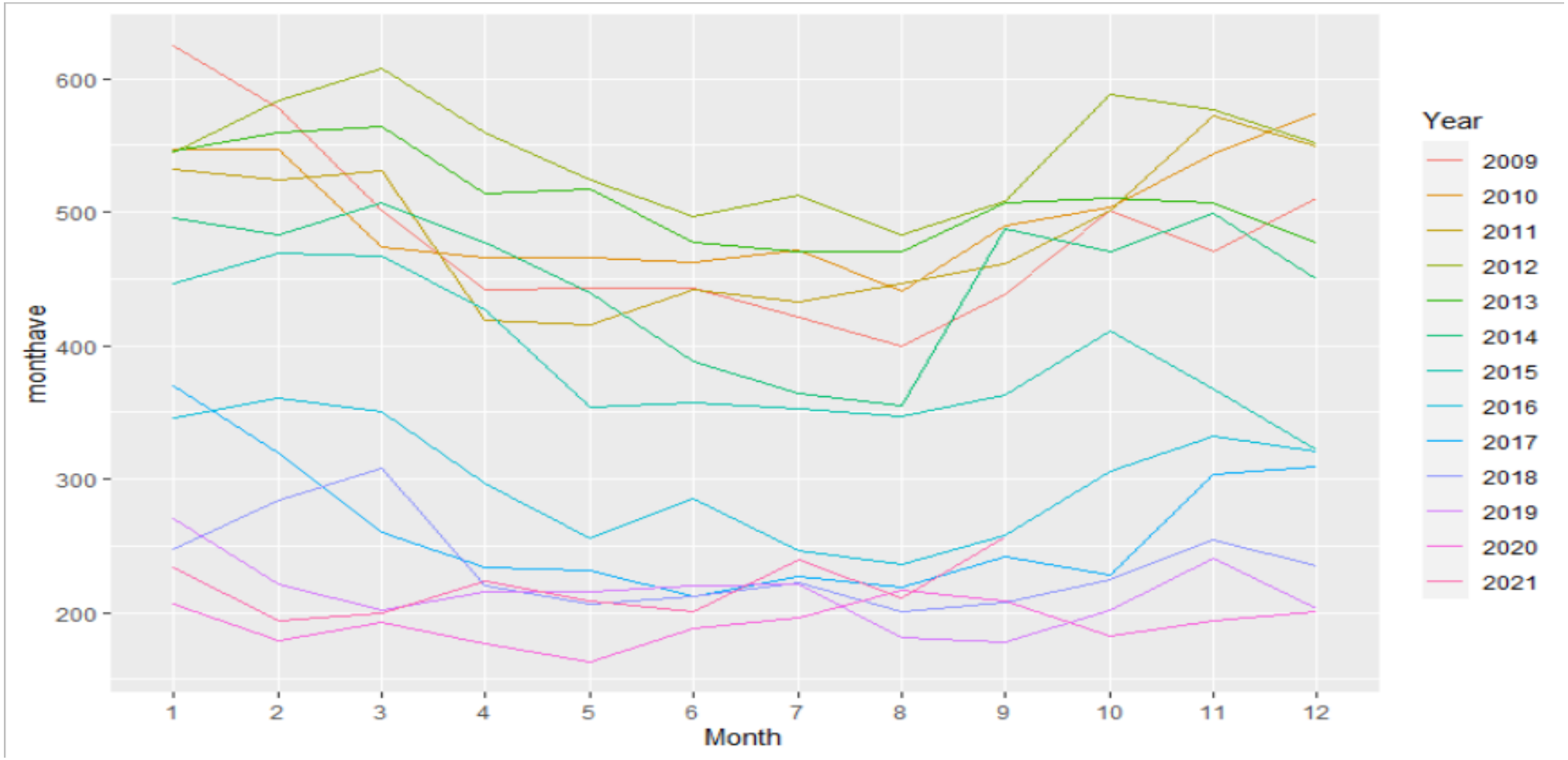
UK average CO2 per kWh dropped by 61% between 2010 and 2020. But how does seasonality/daily variation affect the environmental impact of charging BEVs?

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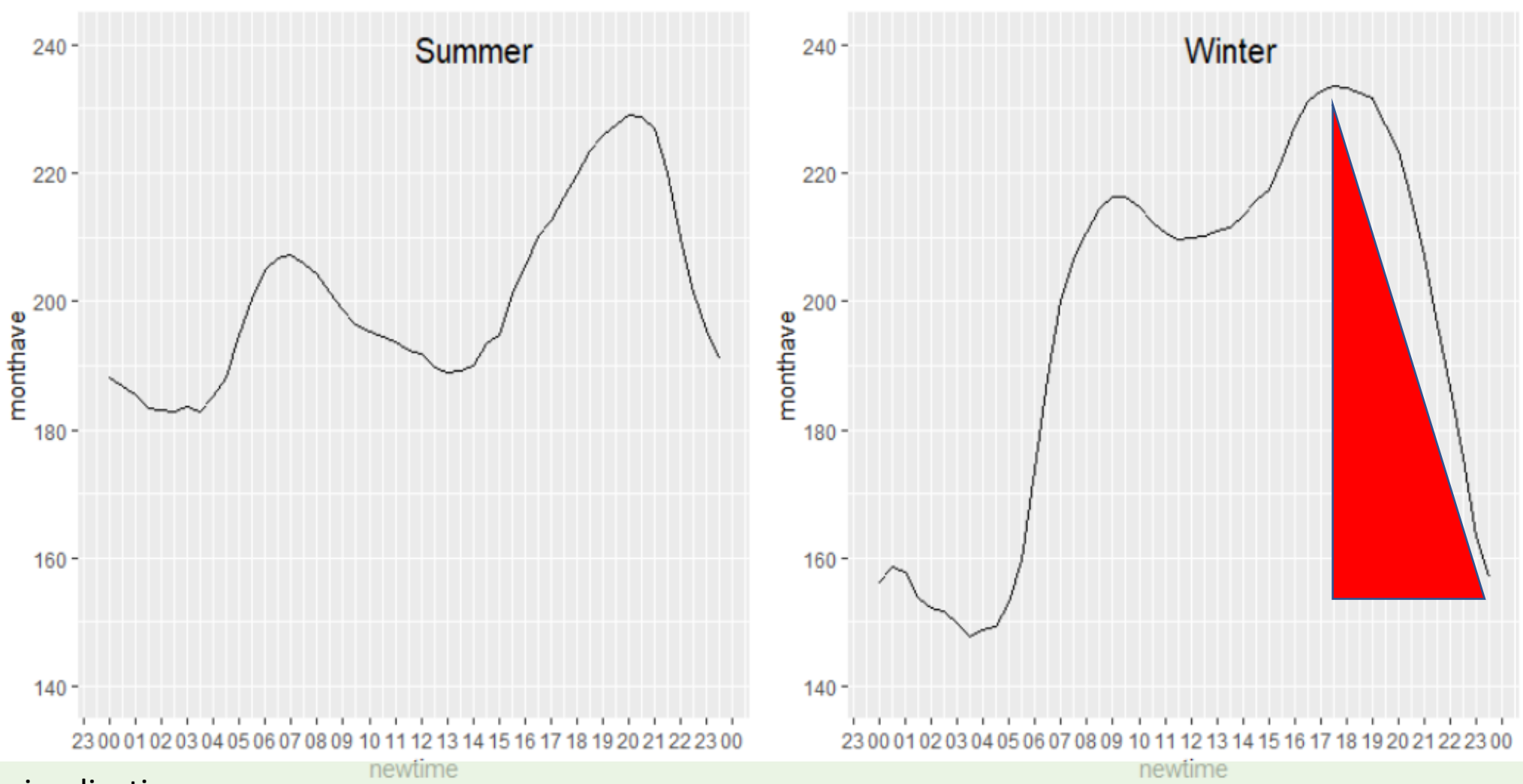

Possible policy implications:

- While BEVs have lower emissions than ICE vehicles (when electricity is below a certain CO2 threshold), user behaviour in charging times can have a big impact.
- A commuter returning home can save X tonnes CO2/year if she waits until after 21h to charge her vehicle
- User behaviour will be more crucial at certain times of year (Winter in UK and most of Northern Europe, but different elsewhere?)