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Energy Demand changes Induced by Technological and Social innovations

RITE Research Institute of Innovative Technology for the Earth

IIASA

Demand-side opportunities for crisis response

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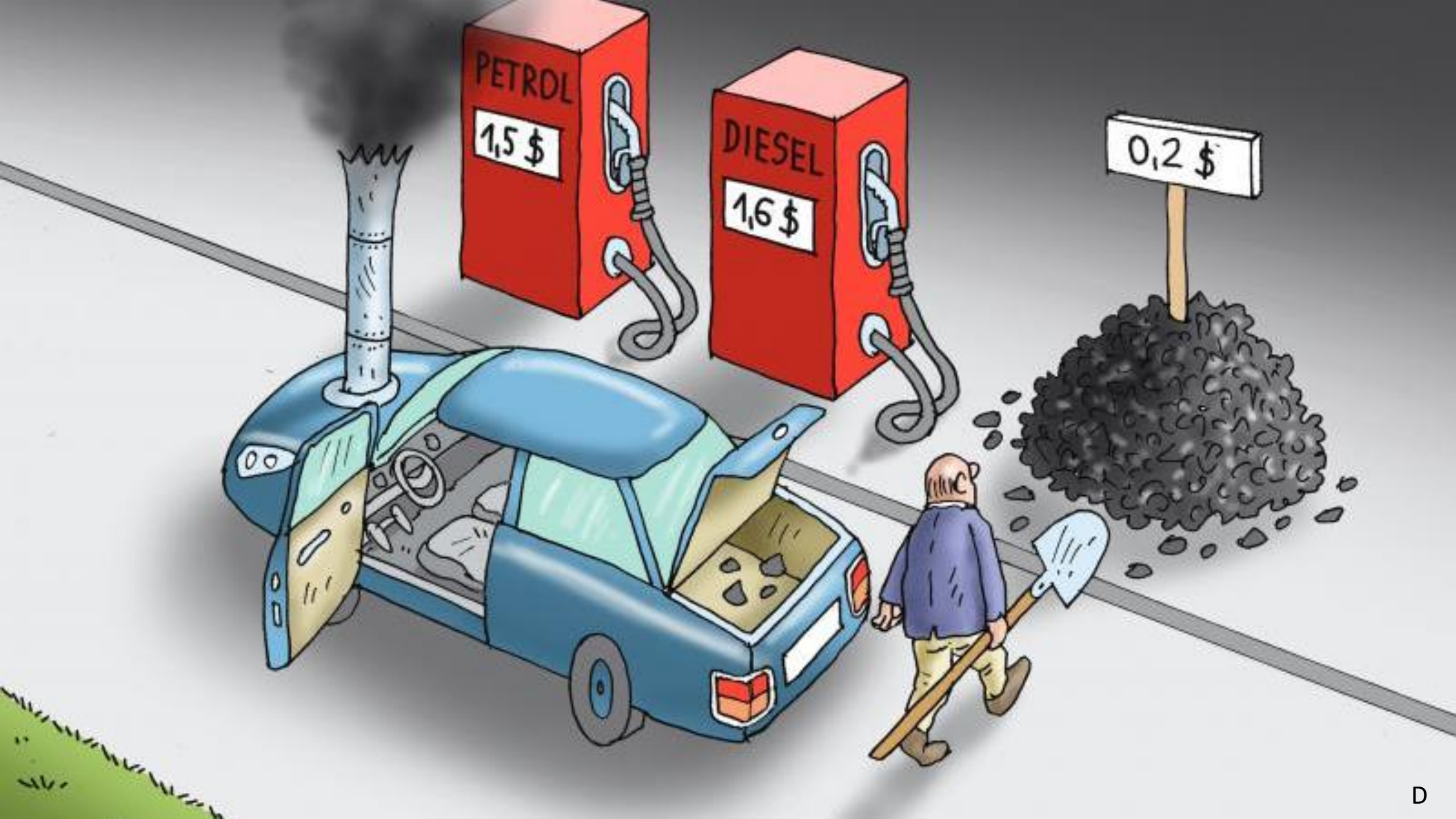
REUTERS®

World Business Legal Markets More

United States

1 minute read · December 24, 2022 11:46 PM GMT+1 · Last Updated 2 days ago

Factbox: Power outages hit more than 500,000 in the U.S. due to storms



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Source: the Guardian news on 7th Jan,2022

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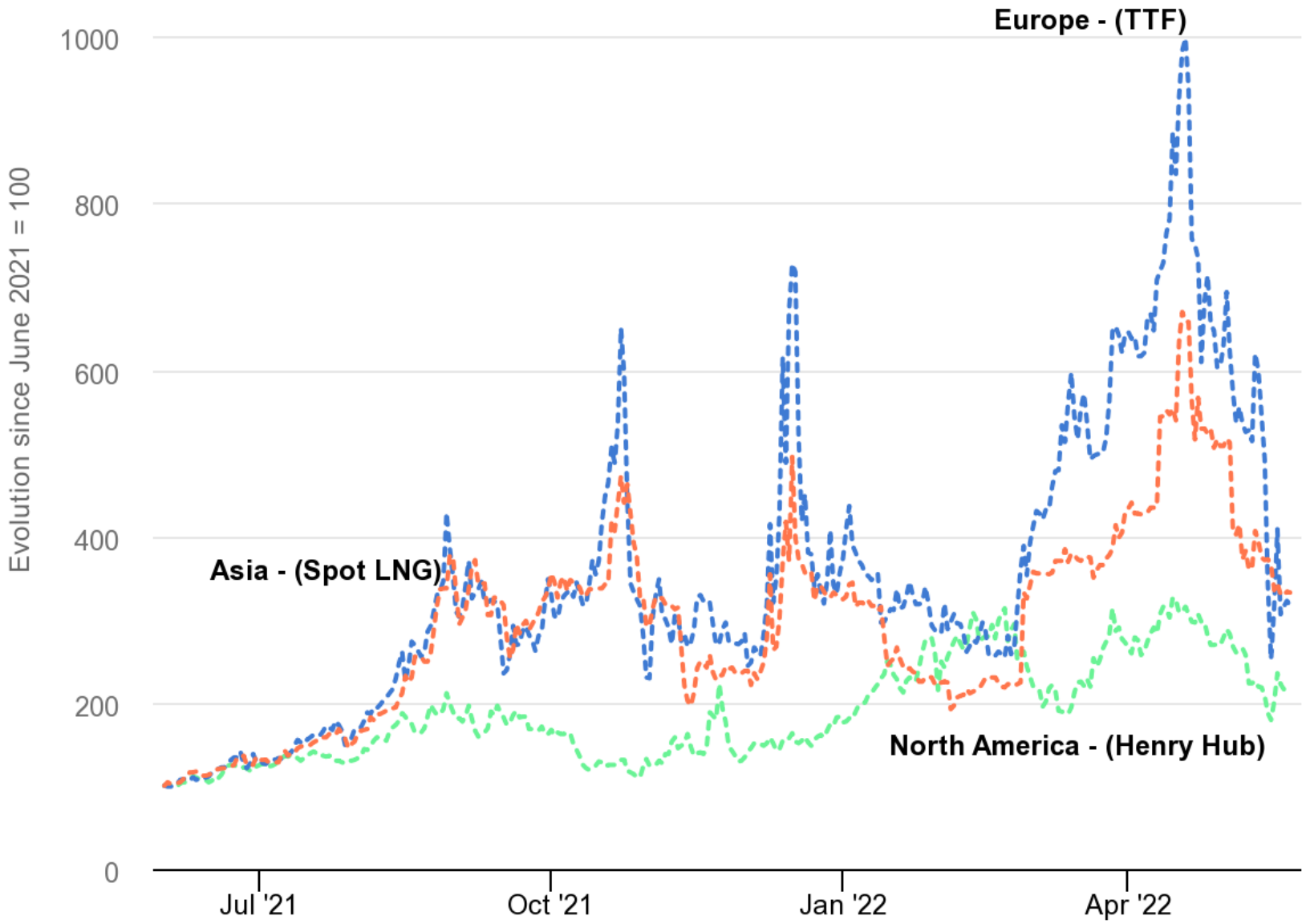
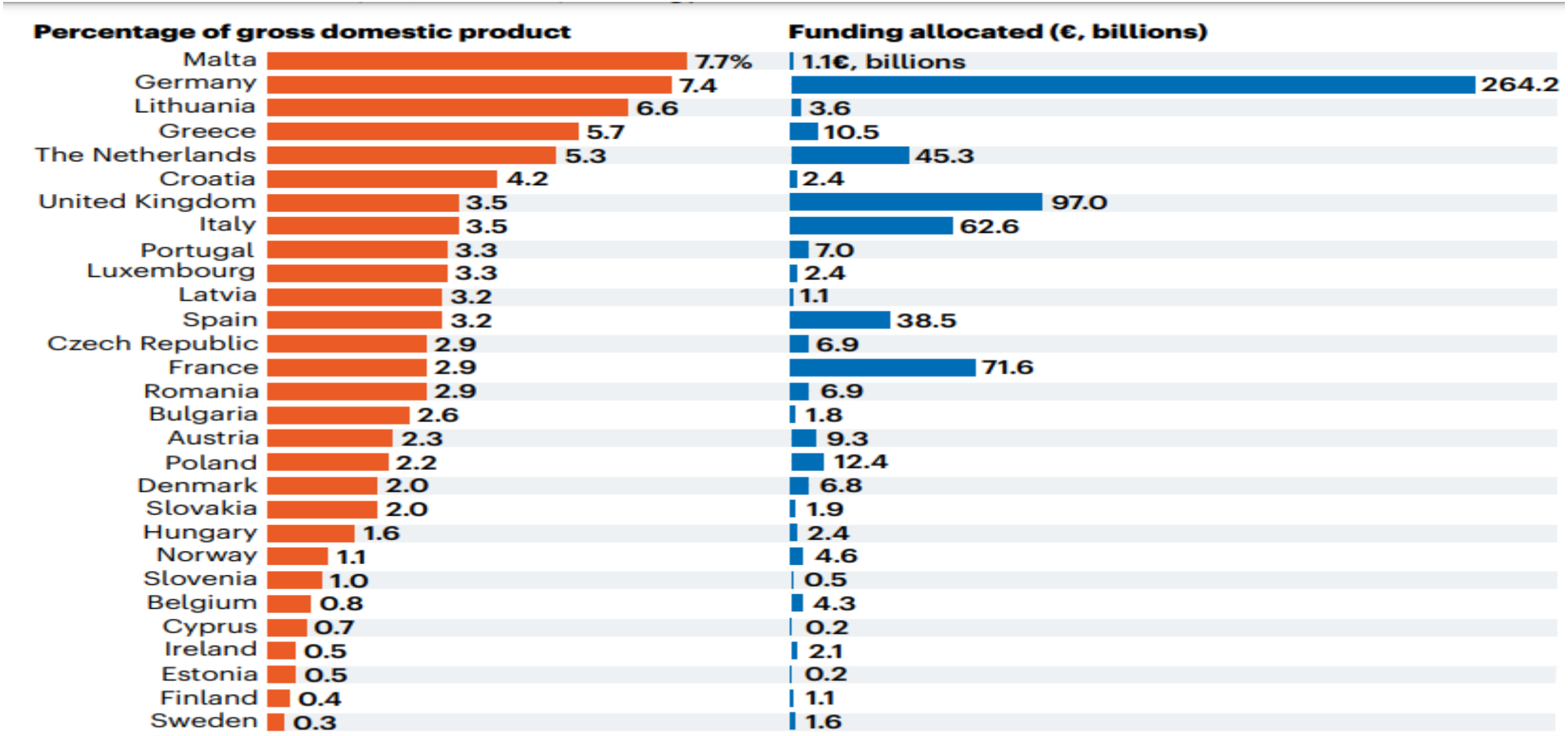


Natural gas prices during crisis period

- Source: IEA, *Evolution of key regional natural gas prices, June 2021-October 2022*, IEA, Paris

Government interventions to reduce energy bills



Source:Goldthau, A., & Tagliapietra, S. (2022)

forrás: Klemens Schlögl, Schöber & Pöll, Austrian World Summit 2018, Vienna, May 2018

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Advances Toward a Net-Zero Global Building Sector

Annual Review of Environment and Resources

Vol. 45:227-269 (Volume publication date October 2020)
First published as a Review in Advance on September 1, 2020
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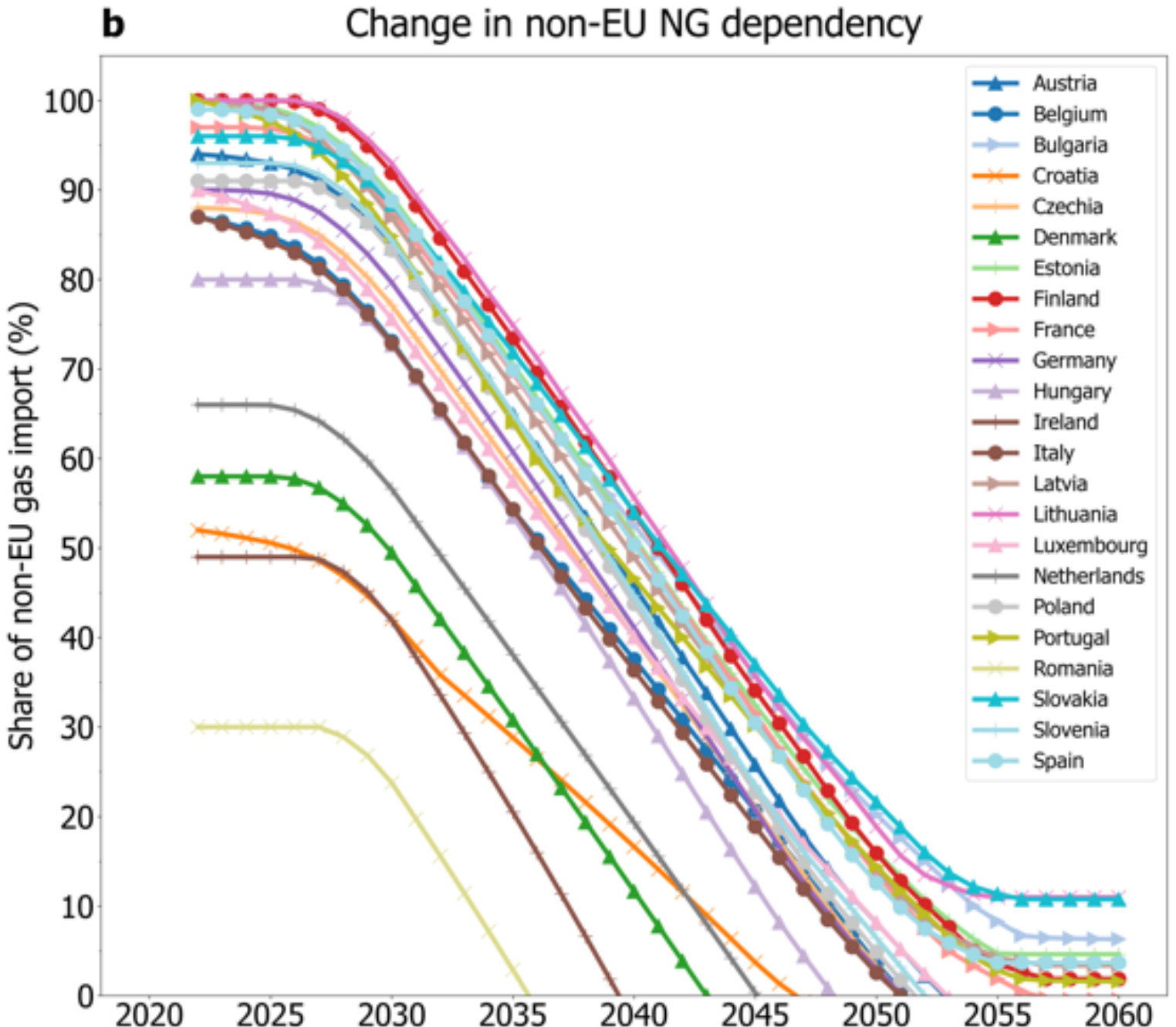

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How can demand side efforts in the buildings sector help address recent crises? highlights

- Half of all European final energy is for heat, we can almost eliminate that energy demand
- Elimination of all non-EU natural gas import dependence
- Very low energy bills and self-production isolate residents&businesses (and countries) from energy market disruptions, price volatilities
- Buildings become much more resilient to power outages, extreme weather events, other crises –> security
- Locally produced power is more resilient to power system disruptions, political conflicts
- Whereas all energy generation in large scale results in geopolitical dependencies, only the energy never used can relieve us from these (energy efficiency)
- With very low demand on the grid from buildings (formerly 70% of power demand) existing production capacities are freed up for electrification of other sectors

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Working hypotheses

- Demand-side responses to recent crises may have offered more (cost-) effective, and socially/economically/environmentally beneficial responses
- More structured focus on the demand-side responses to future crises might bring more results and social co-benefits

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Aim

- To synthesise a diverse set of quantitative and qualitative findings from recent EDITS research that have relevance for demand-side focus to crisis response
- Product: perspective paper, highly policy relevant

Methods

1. Workshop to brainstorm on:
   - What types of crises can we or do we want to relate to based on EDITS research provided evidence?
   - What types of evidence can we gather if we draw on existing or upcoming EDITS research?
   - Finalise a methodological framework to synthesise the diverse types of findings
   - Should we focus on cities or broader?
2. Collection and synthesis of existing research from EDITS partners,
   - By core partners, lower time requirement for those submitting existing results
3. Webinars to discuss progress
4. Workshop to finalise the draft (EDITS annual?)
5. Submit manuscript

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Thank you for your attention

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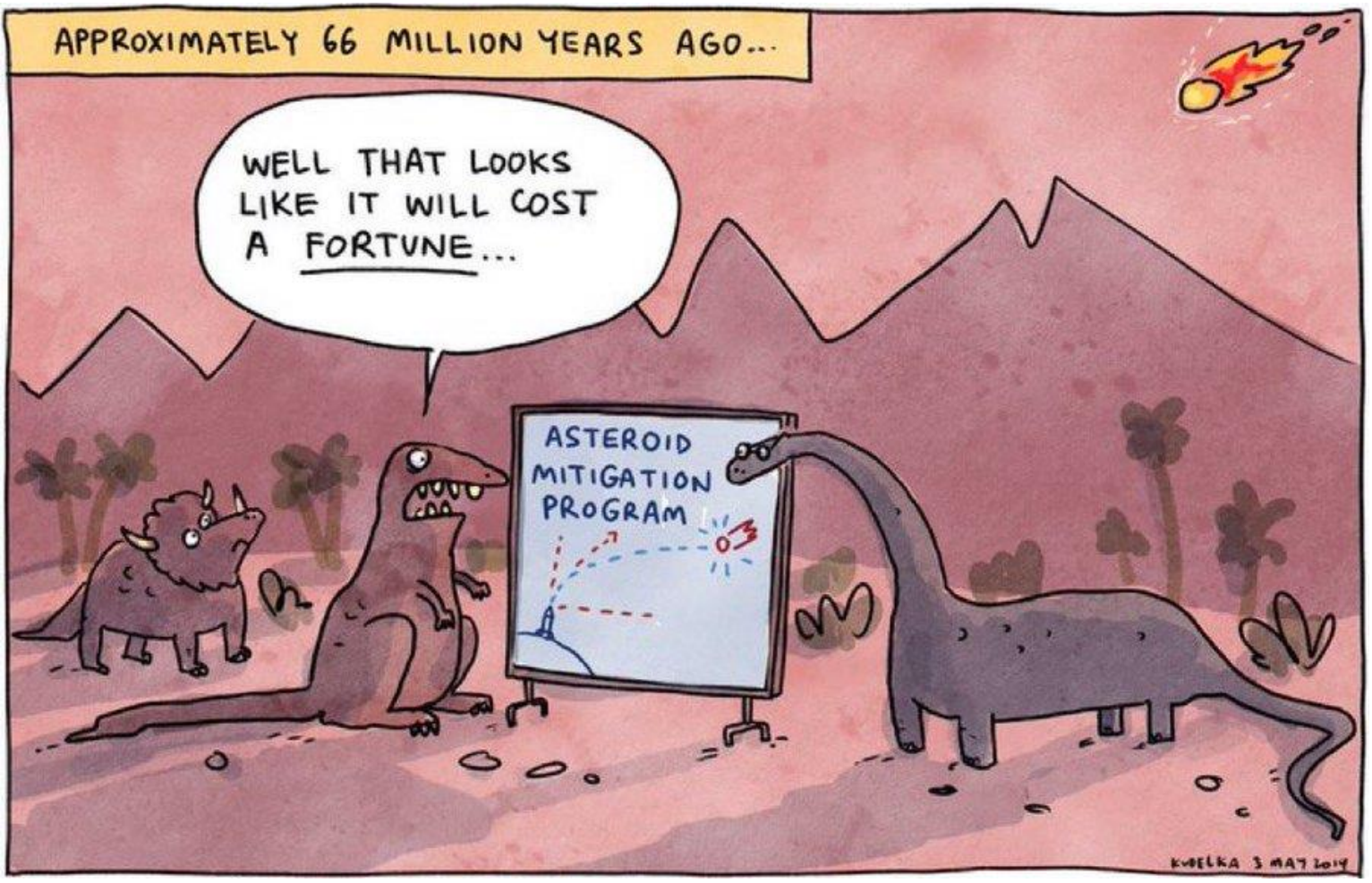

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