

EGU26 media tip sheet: Roads, ships, and repercussions of energy choices: Infrastructure and energy

From oil spills to nuclear accidents, our energy choices have affected Europe and beyond. What might the future of energy look like? And how will climate change, which is largely driven by our energy choices, impact our infrastructure? This selection of abstracts tackles these questions and more.

Quantifying Coastal Mediterranean Oil Spill Hazards

Small oil spills from operational activities impact the Mediterranean coast. A new study simulates large ensembles of hypothetical spills under diverse weather and oceanographic conditions to quantify these hazards. Among the findings: autumn shows the lowest beached oil hazard, whereas spring is generally highest.

Monday 04 May 10:45–10:55 CEST; Room 1.34 [EGU26-11222](#)

[Session OS3.4: Monitoring, Modeling, and Risk Mapping of Marine Pollution and its Environmental and Socioeconomic Impacts \(oral\)](#)

Do Urban Trees Reduce Energy Usage?

High humidity makes it hard for people and air conditioners to cool down. Trees can mitigate heat and reduce cooling demand in urban settings, but can increase humidity, and therefore increase energy usage. This work found that greening efficiency is highest in hot, arid cities, and weaker in hot, humid climates, so the former should prioritize tree-based cooling.

Tuesday 05 May 09:55–10:05 CEST; Room D3 [EGU26-9395](#)

[Session ITS3.12/NP8.8: Urban geosciences: modelling and monitoring complex cities \(oral\)](#)

Nuclear Accidents, Sustainability, and Land Use: Lessons from Chernobyl

The Chernobyl nuclear accident contaminated the area around it at such a scale that returning to baseline is unrealistic. This study integrates four decades of observations in and around the Chernobyl Exclusion Zone, and evaluates what has changed, what has not, and what these observations imply for sustainable land and resource use.

Tuesday 05 May 16:15–18:00 CEST; Hall X1, X1.68 [EGU26-8971](#)

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Session GI2.5: Geoscience problems related to radioactive contamination originated from nuclear power plants and other human activities: Chernobyl, Fukushima, and Zaporizhzhia (poster)

How Will Old Roads Weather Climate Change?

As climate warms and weather variability increases, roads will likely experience more wash outs and landslide blockages. Increased temperature will also accelerate aging of road materials. This work provides two approaches to evaluate road failures—direct failure related to hazards and delayed failure related to deterioration over time.

Wednesday 06 May 11:45–11:55 CEST; Room E2 [EGU26-15482](#)

Session NH9.2: The costs of Natural Hazards: direct, indirect, tangible and intangible aspects (oral)

Swapping Gas for Wind Could Decarbonize Shipping

Wind-Assisted Propulsion Systems (WAPS) can help decarbonize the shipping sector. WAPS systems take more flexible routes than conventional ships. This work develops an algorithm to identify energy-optimal routes, finding average energy savings of 75%, and up to 100%, for certain low-speed trans-Atlantic crossings.

Friday 08 May 12:20–12:30 CEST; Room 1.85/86 [EGU26-19969](#)

Session AS3.31: Towards sustainable road traffic, shipping and aviation: from emissions to climate and air quality effects (oral)

Improving Air Quality with Data-Driven Traffic Management

A sensor network installed in Leipzig continuously monitors air quality parameters $PM_{2.5}$, PM_{10} , O_3 , and NO_x . The network spans 36 square kilometers and includes both known and potential air quality hotspots. Using various scenarios, scientists have modeled ways to promote traffic management strategies anchored by data.

Friday 08 May 14:00–15:45 CEST; Hall X5, X5.41 [EGU26-16591](#)

Session AS3.32: Transport and urban air quality: Characterization and monitoring of real-world emissions, impacts on health, and mitigation strategies (poster)

Old Basalts Successfully Produce Hydrogen, Store CO₂

Experiments in Cretaceous basalts in Texas evaluate hydrogen generation potential, illuminating the optimal CO₂-rich fluid for hydrogen production. The team demonstrates

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that these rocks have significant potential for producing hydrogen and sequestering carbon.

Friday 08 May 17:40–17:50 CEST; Room K1 [EGU26-15365](#)

[Session GMPV3.1: Understanding fluid-rock interactions of ultramafic rocks for CO₂ mineralization, natural H₂ resources and critical element mobility \(oral\)](#)

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