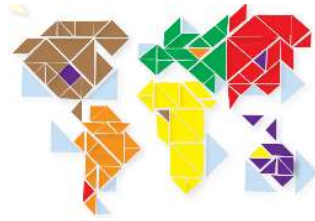




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The atlas of unburnable oil: Spatial criteria for supply-side climate policies

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Abstract

In order to limit the increase in global mean temperature to 2°C, CO₂ emissions from 2020 onwards should be capped at 1,370 Gigatonnes. To remain within this limit, about 96%, 69%, and 54% of existing coal and conventional gas and oil resources, respectively, would need to remain unburned. How to identify the fossil fuels that cannot be extracted? We develop an integrated spatial assessment model that uses estimates and locations of the world's conventional oil resources and socio-environmental criteria to construct the first global atlas of unburnable oil resources. The results show that biodiversity hotspots, richness centres of endemic species, natural protected areas, urban areas, and the territories of indigenous people in voluntary isolation can be kept entirely off-limits to oil extraction, as they only account for 457 Gbl of conventional oil resources, well below the 611 Gbl required to keep global warming under 2°C. Our model provides clear spatial guidelines to select unburnable fossil fuels resources to limit carbon emissions while enhancing collateral socio-environmental benefits.

5 maggio 2022, or1 12,00 SALA LAUREE BLU GRANDE

L'incontro si svolgerà in inglese, **in collaborazione con il Collegio Carlo Alberto** e il programma di Visiting del Collegio che ospita il Prof. Pellegrini.



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