Assessing Sovereign Climate-related Opportunities and Risks (ASCOR) Explainer Series

Area CF4. Renewable energy opportunities

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ASCOR framework

Emissions Pathways (EP)	**Climate Policies** (CP)	**Climate Finance** (CF)
EP1. Emissions trends	**CP1.** Climate legislation	**CF1.** International climate finance
EP2. 2030 targets	**CP2**. Carbon pricing	**CF2.** Climate costing
EP3. Net zero targets	**CP3.** Fossil fuels	**CF3.** Climate spending
	CP4. Sectoral transitions	**CF4.** Renewable opportunities
	CP5. Adaptation	
	CP6. Just transition	

Note: ASCOR framework: methodology note - Version 1.1 was used to assess 70 countries in 2024.

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2. How does ASCOR assess renewable energy opportunities?
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1. Introduction to renewable energy opportunities

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Why does ASCOR assess renewable energy opportunities?

Electricity demand is expected to increase through to 2050 (IPCC).

To meet demand and align with climate goals, **low-carbon energy must be rapidly deployed.**

The **cost of renewable electricity has decreased** rapidly over the last two decades.

Renewable energy is both a **lever for mitigation and an investment opportunity.**

The renewable energy pipeline **is a proxy for potential transition investment opportunities.**

What are the main types of renewable energy sources?

Solar

Energy harnessed from the sun's radiation using photovoltaic cells or solar thermal collectors to convert sunlight into electricity or heat.

Wind

Energy generated from the kinetic energy of wind, captured by wind turbines that convert wind movement into mechanical power and then electricity.

Geothermal

Energy derived from the natural heat stored beneath the Earth's surface, used for electricity generation or direct heating applications.

Hydro

Energy produced from the movement of water in rivers or dams, where flowing or falling water is used to drive turbines and generate electricity.

2. How does ASCOR assess renewable energy opportunities?

Metrics

CF4i. What is the country's prospective solar energy capacity?

CF4ii. What is the country's prospective wind energy capacity?

CF4iii. What is the country's prospective geothermal energy capacity?

CF4iv. What is the country's prospective hydroelectric energy capacity?

How does ASCOR assess renewable energy opportunities?

We rely on Global Energy Monitor (GEM) data on 'prospective' renewable energy capacity, which includes projects that have been **announced or are under construction**.

This '**renewable energy pipeline**' is normalised by GDP sourced from the World Bank to provide a more comparable measure of national low-carbon investment opportunities.

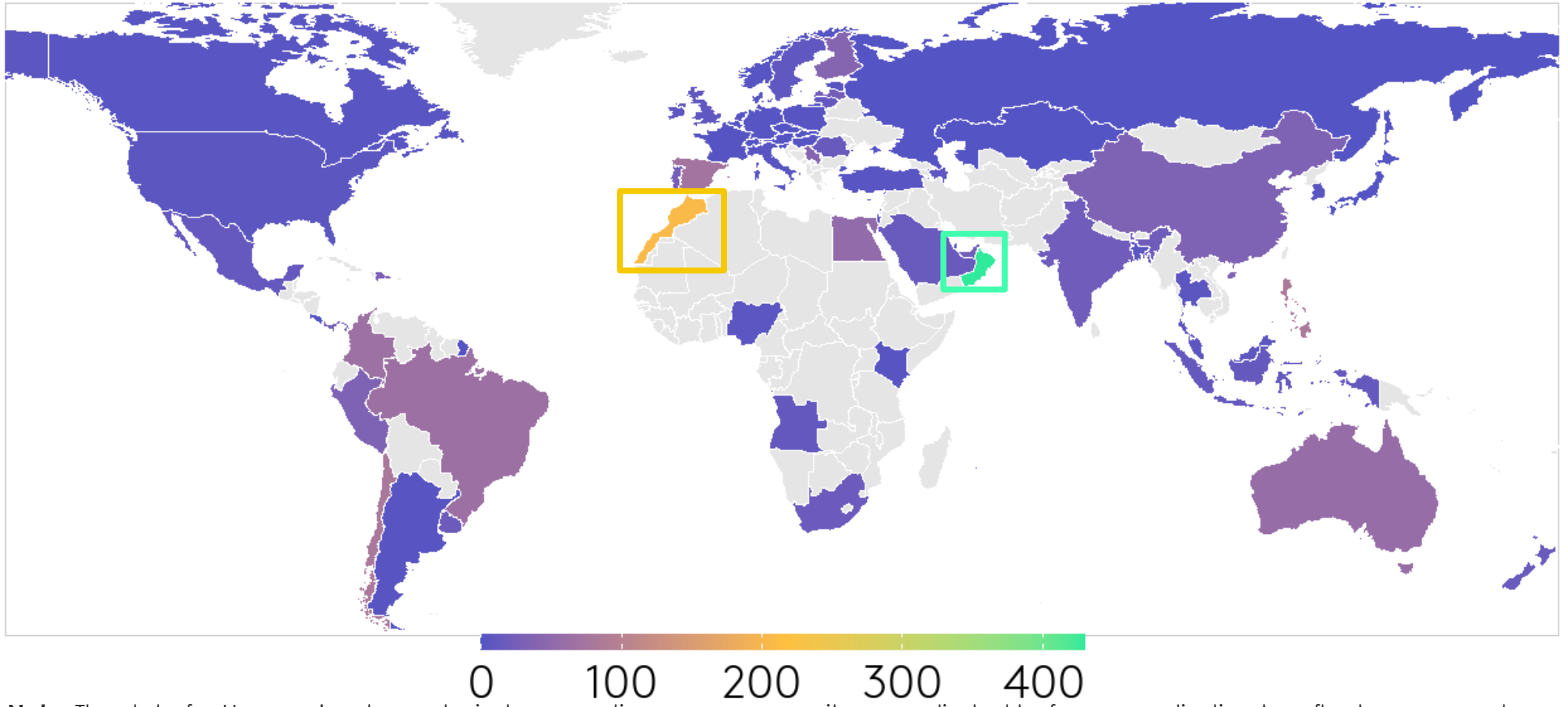
Rather than focusing on the geophysical (and fully hypothetical) potential of renewable energy, we assess the **actual progress in scaling up renewable energy capacity**.

Country-specific factors are important when interpreting these metrics. Some countries lack the land area required and others already have nearly 100% renewable energy generation.

3. Results of 2024 assessments

Solar energy pipeline normalised by GDP

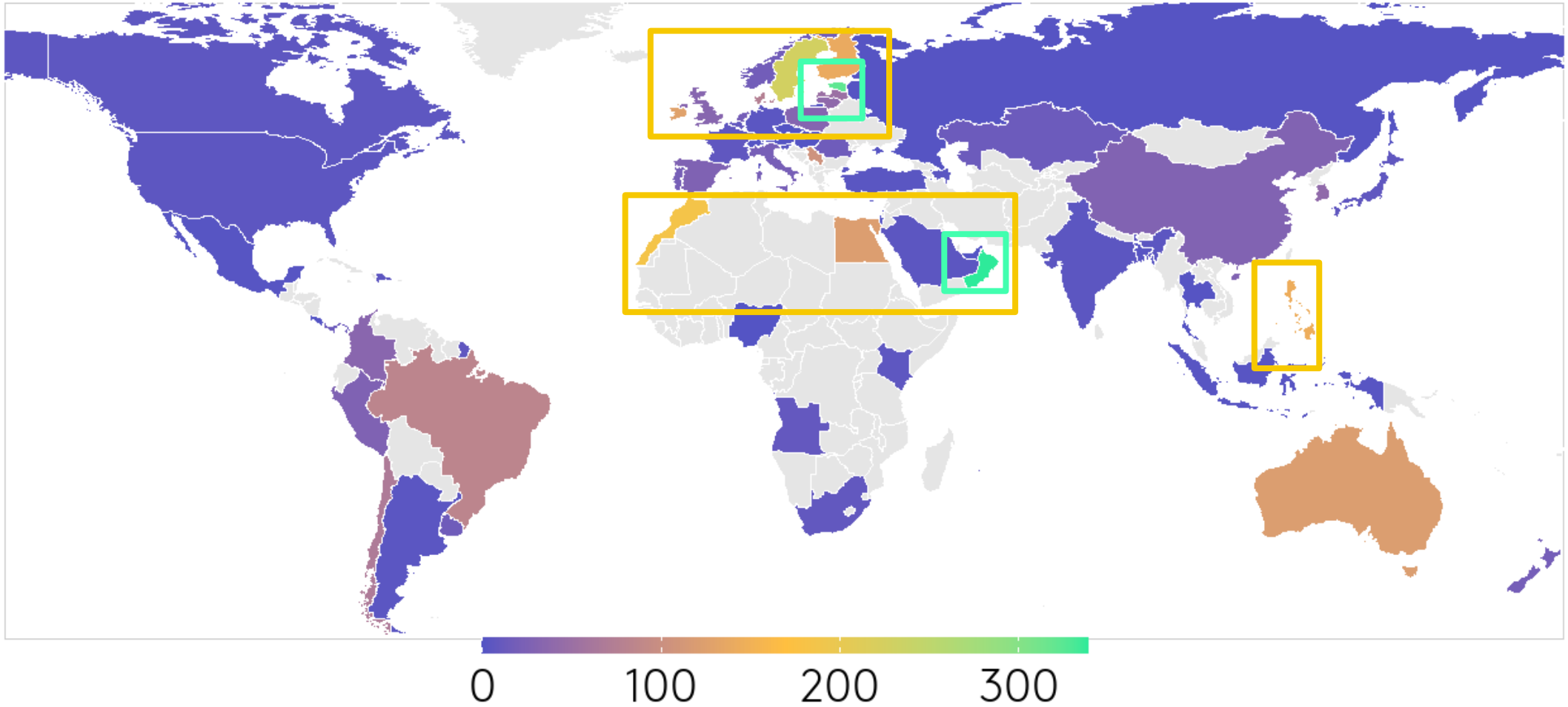
(MW per US$ billion of GDP)



Note: The data for Uruguay's solar and wind prospective energy capacity was adjusted before normalisation to reflect announced projects not yet included in the Global Energy Monitor database.
Source: Authors' analysis adapted from Global Energy Monitor data.

Wind energy pipeline normalised by GDP

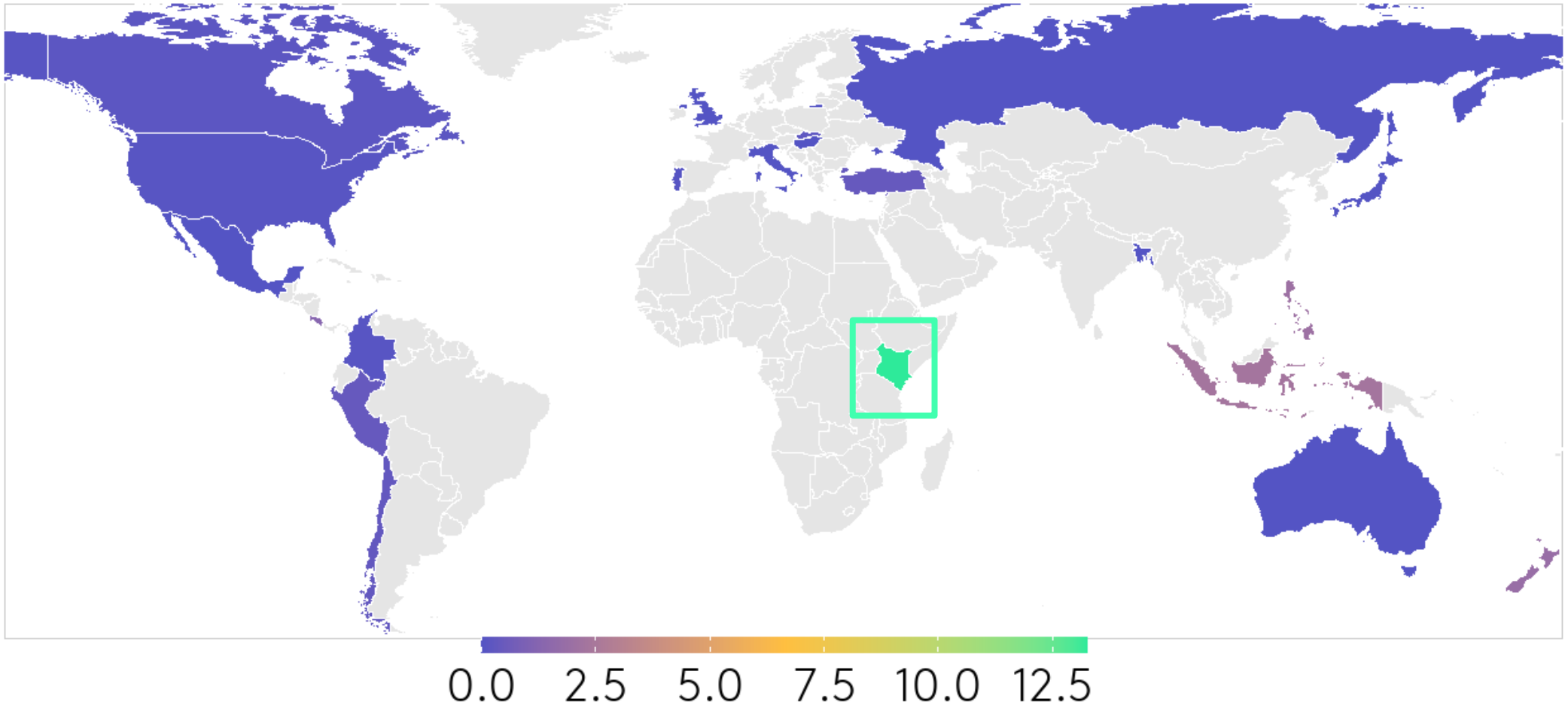
(MW per US$ billion of GDP)



Note: The data for Uruguay's solar and wind prospective energy capacity was adjusted before normalisation to reflect announced projects not yet included in the Global Energy Monitor database.
Source: Authors' analysis adapted from Global Energy Monitor data.

Geothermal energy pipeline normalised by GDP

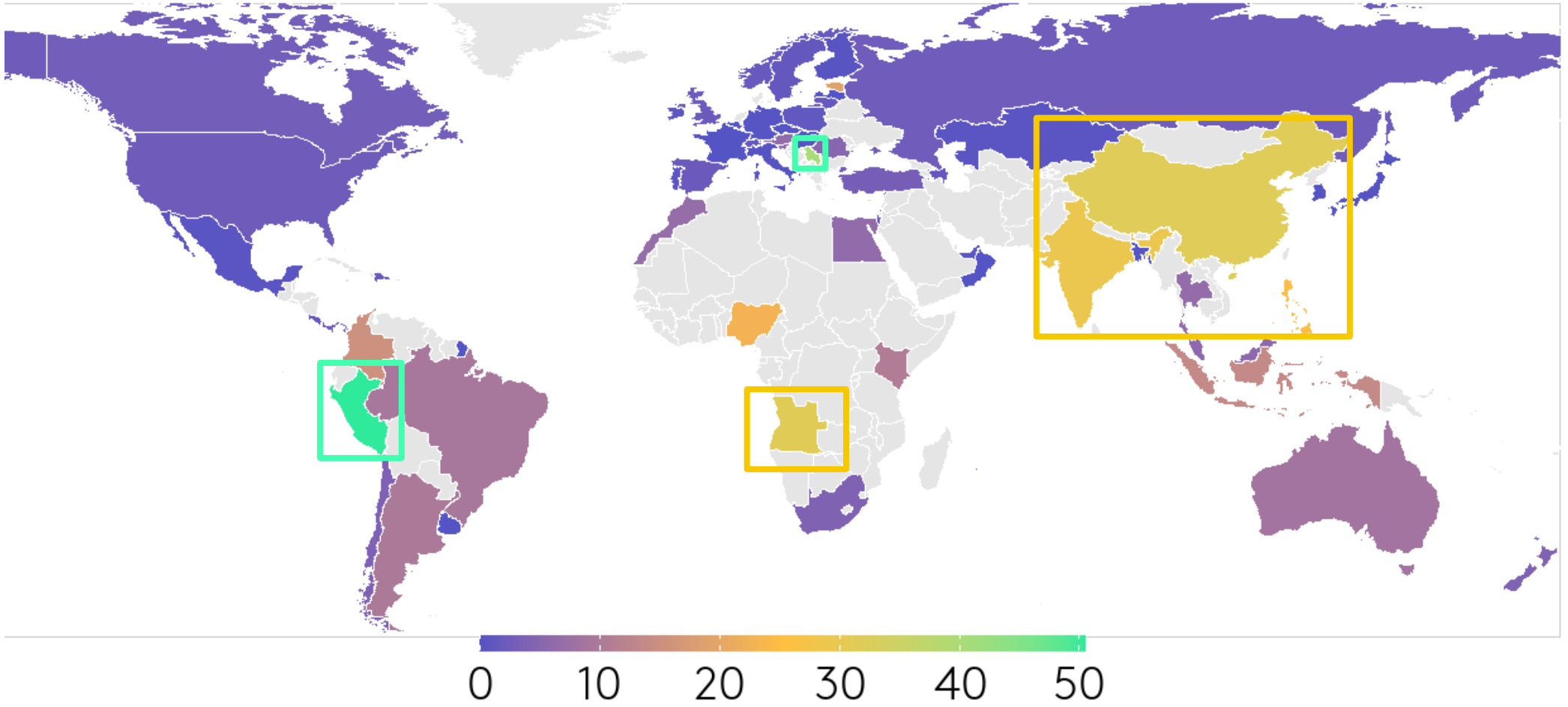
(MW per US$ billion of GDP)



Source: Authors' analysis adapted from Global Energy Monitor data.

Hydro energy pipeline normalised by GDP

(MW per US$ billion of GDP)



Source: Authors' analysis adapted from Global Energy Monitor data.

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Access the ASCOR tool and database:

www.transitionpathwayinitiative.org/ascor

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