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Clean tech can strengthen energy and economic resilience but creates new dependencies

- Higher oil-import dependence is associated with an extra 0.25 percentage point GDP loss two years after an oil supply shock
- Electric vehicles are estimated to displace 1.9 million barrels per day of oil demand in 2026, yet create new dependencies on China, which dominates nearly all parts of the clean tech supply chain

ANTALYA, Türkiye , Nov. 12, 2026 /PRNewswire/ -- S&P Global (NYSE: SPGI) today releases a new report, Adopting Clean Technologies: The Energy Resilience Dividend. Released during COP31 in Antalya, Türkiye, the report explores how clean technology adoption can strengthen countries' economic, energy and geostrategic resilience by reducing exposure to imported fossil fuels and global fossil fuel shocks, while also creating new external dependencies, particularly on China.

In the report, the S&P Global Institute brings together joint analysis from S&P Global Energy and S&P Global Ratings. The analysis covers nine advanced economies, plus case studies of Europe and China.

Key highlights:

- **Lower oil-import dependence is associated with greater economic resilience:** Countries that rely less on oil imports reduce GDP impact of oil supply shocks by around 0.25 percentage points.
- **Europe's renewables expansion has helped reduce exposure to energy shocks:** EU non-hydro renewable generation is up nearly 340 terawatt-hours (TWh) since 2021, 70% more than the 2016–2021 increase, and European clean tech investment in 2026 is expected to more than double 2021 levels.
- **Electric vehicles are reducing exposure to oil demand and price shocks:** S&P Global Energy estimates battery electric and plug-in hybrid light vehicles (EVs) on the road globally will displace 1.9 million barrels per day of oil demand in 2026, nearly 2% of global oil demand.
- **China's EV scale is extending resilience beyond its domestic market:** China exported nearly 2.5 million EVs in the first half of 2026, more than double the year-earlier period.
- **Clean technology creates new strategic dependencies:** China dominates nearly all parts of the clean tech supply chain, from mining and processing of key metals and minerals to components and technologies, making supply chain diversification increasingly important to macroeconomic resilience.

"Our analysis suggests clean technology investment can deliver benefits that extend beyond climate objectives by strengthening countries' resilience to energy supply and price shocks," said **Marion Amiot, Head of Climate Economics, S&P Global Ratings.** "But the nature of energy security is also changing. As economies electrify, managing concentrated supply chains and new external dependencies will become an increasingly important part of the resilience equation."

"Energy, geopolitics, technology and capital flows can no longer be understood in silos, and this report shows why," said **Alexandra Dimitrijevic, Head of the S&P Global Institute.** "By bringing together expertise from across S&P Global, the Institute helps leaders see how these forces connect and plan with greater confidence."

To read the full report, visit: https://www.spglobal.com/en/research-insights/special-reports/adopting-clean-technologies-the-energy-resilience-dividend

Media Contacts:

Alexis Weakley

S&P Global
(+1) 610.390.4394
alexis.weakley@spglobal.com

Isabel Allanwood
S&P Global
(+44) 7483 368 605
isabel.allanwood@spglobal.com

Notes to Editors:

- This is a thought leadership report issued by S&P Global. This report does not constitute a rating action, neither was it discussed by a rating committee.

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The Institute delivers insight on the complex and interconnected challenges facing today's global leaders. Geopolitics, artificial intelligence, energy transition, and capital flows can no longer be understood in silos. They are colliding to fundamentally reshape the markets and the global economy.

To navigate this complexity, the Institute brings together data, research, and specialized expertise from across the entire S&P Global enterprise (Ratings, Energy, Market Intelligence, S&P Dow Jones Indices).

Operating at the intersection of capital markets, technology, energy, economy and geopolitics, we are dedicated to connecting the dots on these structural transformations, delivering the forward-looking perspectives that clients and decision-makers need to lead with confidence.

To find out more and read the full report, visit:spglobal.com/en/research-insights

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