# Prioritizing *energy transition* in IMF surveillance

## WHAT HAPPENS IF MEDIUM-TERM RISKS BECOME A NEAR-TERM REALITY?

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Ongoing conflict in the Middle East has prompted a renewed focus on energy security, leading many countries to seek domestic sources of supply. At the same time, the declining cost of renewables and batteries often makes clean energy the most economical choice. Together, these factors promise to accelerate a global shift away from fossil fuels, presenting economic management challenges and opportunities for country authorities.

The IMF is well-positioned to use existing tools and processes to assess transition scenarios and potential impacts on a country's balance of payments, fiscal accounts, and domestic and financial stability. Where energy transition is deemed macro-critical, the IMF should prioritize its coverage in bilateral surveillance and provide member countries with much-needed analytical support and policy advice, working with partner institutions. Failing to do so would increase the macroeconomic and financial risks associated with a disorderly transition.

The transition to a low carbon economy extends well beyond the energy sector, but the foundational nature of energy to economic production, as well as its contribution to emissions, places it at the forefront of decarbonization efforts. At the same time, consecutive energy shocks have focused attention on energy security, while the declining cost of renewables and batteries supports a shift away from fossil fuels in a growing number of countries. These forces have combined to accelerate a move toward electrification and prioritization of domestic renewable power production, with impacts on

domestic and balance of payments stability for many IMF members. These macro-critical aspects of energy transition warrant its prioritization in IMF surveillance, where the IMF can leverage existing tools, processes, and partner institutions to bolster country preparedness in support of macroeconomic and financial stability.

## IMF bilateral surveillance and "macro-criticality"

A core responsibility of the IMF is monitoring countries' economic and financial policies and providing relevant policy advice. This activity, known formally as "bilateral surveillance," applies to all 191 IMF member countries, who are obliged to engage with the IMF in formal consultations regarding each member's economic and financial policies. The selection of topics covered under these "Article IV consultations" has evolved over the years, with updates generally introduced during periodic surveillance policy reviews and operationalized via staff guidance notes.

The 2022 **Guidance Note** for Surveillance under Article IV Consultations established that policies should be examined "only to the extent that they significantly affect present or prospective BOP (balance of payments) or domestic stability," a concept known as the "macro-criticality" criterion.

As the IMF nears completion of the 2026 Comprehensive Surveillance Review next month, a key question will be the degree to which climate-related considerations – encompassing climate adaptation, mitigation, and transition management – are deemed macro-critical and how they are covered in bilateral surveillance. While there is general agreement on the need to cover adaptation in response to climate change, notably for the most vulnerable countries, coverage of mitigation and transition pathways to lower emissions has been more contentious. Yet as a forward-looking institution, the Fund should be equipped to provide analytical support and candid policy advice to IMF members on the macroeconomic and financial implications of an accelerating and transformative trend, the energy transition.

## Postcards from the future?

Numerous developments support the accelerated adoption of clean energy technologies in the global energy system. These include decarbonization goals, energy security considerations, attractive economics of renewables and batteries, along with other country-specific factors, such as a desire to limit exposure to a fossil fuel-related balance of payments and/or fiscal shock.

## Mitigation efforts have been a key driver of energy transition in some countries.

Countries have established emissions reduction targets to limit the scale of damages caused by climate change.[1] These country pledges have played an important role in driving sectoral transitions, through a combination of investments in research and development (R&D) of low carbon technologies as well as a suite of economic, regulatory, and informational policies.

For example, Norway's success in achieving more than 95% electric vehicles (EVs) in new car sales was initially driven by the government's commitment to decarbonize its transportation sector. While the enabling policies date to the 1990s, the acceleration in EV adoption is a more recent phenomenon, demonstrating the rapid pace at which sectoral transitions can happen when technology and economics catch up with policy.

In the power sector, Germany pioneered the use of "feed-in tariffs" to expand the portion of electricity generated by renewables from roughly 6% in 2000 to more than 55% today. Australia's power sector provides another example of accelerating transition away from fossil fuels. Policy mechanisms aligned with an official target to secure 82% renewable electricity generation by 2030 have driven large-scale deployment of solar and battery technologies, reshaping the electricity market, lowering wholesale prices, and reducing both gas- and coal-fired generation, with gas generation falling sharply as export-linked domestic prices for gas have made it increasingly uncompetitive.

## Energy security concerns have accelerated the push for domestic sources of energy.

Even before the most recent disruption in global energy supplies, the International Energy Agency (IEA) had **projected** a peak in fossil fuel demand by the end of the decade and elevated critical minerals in the discourse on energy systems. But over the past six months, war in the Middle East and closure of the Strait of Hormuz have led to "a seismic shift in the global energy landscape"[2] and strengthened many countries' resolve to accelerate the shift away from fossil fuels in the name of energy security.[3]

The IEA's World Energy Investment 2026 **report**, published in May, highlights the role of energy security concerns in shaping investment priorities, with the Middle East conflict "reinforcing a shift towards security, trust and diversity as key considerations when choosing energy projects and partners, alongside costs, prices, and environmental

[1] In economic terms, recent research published in *The Quarterly Journal of Economics* finds that 1°C warming reduces world GDP by over 20% in the long run: Adrien Bilal, Diego R Känzig, **The Macroeconomic Impact of Climate Change: Global Versus Local Temperature**.

[2] Fatih Birol, ***The Global Energy Map Is Being Redrawn in Real Time***, Foreign Policy, July 8, 2026.

[3] See for example, **comments** by EU Commissioner for Energy and Housing Dan Jørgensen, **comments** by Türkiye Minister of Energy and Natural Resources Alparslan Bayraktar, both June 2026, and **comments** by Thailand Deputy Prime Minister and Minister of Finance, Dr. Ekniti Nitithanprapas, April 2026.

performance." Among nations most impacted by the current energy shock, many Asian and African countries have reaffirmed commitments to develop clean power generation and reduce reliance on fossil fuels,[4] while trade data show a dramatic pick-up in imports of clean tech by these same countries.

Alongside and reinforcing an energy security agenda is the push for electrification, with Türkiye, as co-chair of the upcoming UN climate negotiations in November, calling for a global 35% target for electricity's share of final energy consumption by 2035 and joining a growing group of countries supporting a new global Electrify Now campaign. The view of electrification as a means of improving energy security is shared by private actors. A recent **poll** of business executives across 18 countries – commissioned by E3G, We Mean Business Coalition, and the Global Renewables Alliance – finds that 91% believe electrification would improve energy security. At the same time, new investments in low-carbon energy systems now substantially exceed those for fossil-fuel. For 2026, the IEA **forecasts** roughly two-thirds of new energy investments will go to low carbon-energy technologies – namely renewables, grids, storage, nuclear, low-emissions fuels, efficiency, and electrification – almost double that of fossil fuels.

## Beyond energy security considerations, the declining cost of clean technologies supports a shift away from fossil fuels.

The maturation and ongoing improvements in clean technologies bolster the economic case for energy transition. In the power sector, solar is often the most cost-effective generation source and increasingly partnered with storage to address intermittency issues. Last year, clean energy accounted for 90% of all new power generation capacity added to the global grid, while wind and solar **generated** more electricity globally than natural gas for the first time this year. Renewable energy now represents close to half (49.4%) of global installed power capacity and BloombergNEF's **New Energy Outlook** 2026 forecasts solar to become the largest power generator overall by 2032, propelled by overcapacity and collapsing prices.

In the transport sector, EV sales reached more than 20 million vehicles globally in 2025, representing roughly 25% of total sales and about 5% of the global car stock. Recent research **published** in *Nature* shows empirically that a tipping point towards EVs is occurring in two of three leading markets, China and Europe, and a self-propelling transition to EVs is approaching. At the same time, the IEA **reports** that EV sales are supported in some "later-entry" markets by economies of scale and cost competitiveness of Chinese-made EVs. In addition, more than half of the 2 million EV sales outside the United States, Europe, and China took place in countries across Latin America, Asia Pacific, and the

[4] There are cases where renewables are not only being deployed as additional sources of energy but also substituting some fossil fuel generation. **Examples** of this are found in Indonesia with an acceleration of its diesel-to-solar generation conversion programme and in Vietnam where "a developer has requested to swap a planned 4.3-GW LNG power plant for a solar, wind and (battery storage) BESS installation."

Middle East with an EV sales share of more than 10%, suggesting the approach of tipping points already evidenced in more mature mobility markets.

### Country-specific economic drivers also support the transition away from imported fossil fuels.

Economic considerations (independent of the current shock) have also been an important driver in accelerating the transition away from fossil fuels. BloombergNEF's **New Energy Outlook 2026** finds that the transition to low carbon energy technologies improves individual nations' resilience to fossil-fuel price shocks, with Asian economies in particular standing to gain the most given the **current energy import bills**.

In Pakistan, high prices for imported fossil fuels following Russia's invasion of Ukraine and declining prices for solar panels led to a sharp increase in solar installations, with solar now accounting for more than one-quarter of Pakistan's electricity generation while gas-fired generation for the 2025 financial year was "**40% lower** than in 2022." In Ethiopia, the authorities introduced a ban on the import of internal combustion engine vehicles in 2024, motivated by a desire to reduce foreign exchange outflows stemming from fossil fuel imports. Unlike past crises, the IEA 2026 **report** highlights how "new technologies that enhance energy efficiency and boost electrification – using power increasingly generated from low-emissions sources – now offer a pathway to eliminate entire categories of exposure" to volatile international fossil fuel markets.

While energy transition is compelling from climate, energy security, affordability and macroeconomic perspectives, it also presents stability risks if it dents fiscal revenues, reduces foreign exchange inflows, and/or leads to a sudden reassessment of associated financial exposures. The IMF has a central role to play in avoiding surprises and giving country authorities and market participants the tools to prepare not only for the transition but potential price fluctuations along the way.[5]

## Macro-criticality of energy transition

The **IMF's climate strategy** calls transition management "a macro-critical policy challenge for almost every IMF member" and recommends coverage of transition management to a low carbon economy for all countries every 5-6 years.[6] Notwithstanding that guidance, the recently completed **review** of the IMF's climate-related work by the IMF's Independent Evaluation Office (IEO) found that "issues related to the global transition to a low-carbon

[5] In recent years, various publications including, *inter alia,* IMF **working papers** have evaluated risks associated with a disorderly transition.

[6] *Targeted Outputs* under the IMF's climate strategy call for "in-depth coverage" of transition management to a low-carbon economy in 8-9 Article IV reports per year and "more standardized coverage" in 25 Article IV reports per year.

economy received comparatively less coverage than adaptation or domestic mitigation," although were more prominent among emerging market and middle-income economies.

The potential impact of transition is difficult to assess *ex ante*, but managing this uncertainty is important to maintaining macroeconomic and financial stability. Under current **IMF guidance**, and consistent with the IEO's interpretation, the macro-criticality assessment of transition management can be understood as the extent to which both:

- a country's domestic emissions reduction targets (i.e., Nationally Determined Contributions or "NDCs") require domestic policy changes that may significantly affect its real, fiscal, external or financial sectors; and
- other countries' climate-related policies may significantly affect the real, fiscal, external, or financial sectors of fossil fuel producers and exporters ("spillovers"), as well as those countries that rely on inflows from fuel-exporting countries and/or have related financial exposures.

Beyond climate-related motivations for the transition, the security, economic, and affordability motivations are gaining momentum in a broader structural change to energy systems. The IMF's current approach, as defined above, could under-estimate the potential winners (and macroeconomic benefits) from energy transition, including the producers of clean tech along the entire supply chain.

Rather than keying-off the motivations for sectoral transition, an effective approach to covering energy transition in bilateral surveillance would assess possible scenarios of energy transition – regardless of the motivation or driver – while maintaining focus on its balance of payments and domestic stability impacts:

- **Balance of payments**: Energy transition will impact trade flows, not only for fossil fuel exporters and importers,[7] but also for the producers of clean tech and associated commodity inputs.[8] Investment in energy infrastructure could boost foreign investment flows, as well as drive imports, depending on the supplier. Impacts on countries' external stability and exchange rate assessments will reflect the overall balance of payments and country policies.
- **Fiscal accounts and debt sustainability**: Energy transition will have fiscal impacts on nearly all countries, depending on the structure of the economy and policy choices related to subsidization and taxation of both fossil fuels and clean technology. For net fossil fuel exporters, lower demand for fossil fuels will likely reduce fiscal revenues (e.g.,

[7] For example, the IEA **estimates** that investments in renewables, nuclear, electrification and efficiency over the last decade in China, the European Union, Japan and Korea, Southeast Asia, and India avoided around $260 billion in fossil fuel import costs in 2025 and are expected to be considerably larger in 2026.

[8] Select Article IV consultations, related **IMF products**, and **research** discuss the macroeconomic implications of commodity exports linked to the energy transition.

direct proceeds or profit taxation), depending on price and volume effects and global market developments, with implications for current budgets and fiscal sustainability over the medium-term.[9] Net importers would benefit from decreased exposure to fossil fuel price volatility and lower subsidies where applicable. For all countries, the transition will require upfront capital investment, with returns dependent on the cost of capital as well as the structure of individual countries' power, transport, and manufacturing sectors.

- **Monetary policy:** Both the policies to promote energy transition (e.g. carbon pricing) and the transition itself can affect prices and output over time horizons relevant to monetary policy,[10] while the transition to renewable technologies has the potential to reduce an economy's exposure to volatile fossil fuel prices. As highlighted recently in a **speech** by external member of the Bank of England's Monetary Policy Committee, Swati Dhingra, "climate change, energy security and the green transition have become increasingly important determinants of price stability itself" and call for "a more coherent monetary-fiscal policy mix, particularly in response to supply shocks." At the same time, the IEO found that "practically no Article IV reports covered climate-related issues linked to either exchange rate or monetary policies," due to limited availability of relevant methodologies and data in current academic literature.

- **Financial stability**: Absent adequate preparation, financial stability risks stemming from the transition to a lower carbon economy include the possible revaluations of financial firms' assets and liabilities, threatening a so-called "Climate Minsky Moment". Despite considerable efforts to develop the **methodology** used to assess physical and transition risks within the Financial Sector Assessment Program (FSAP), the IEO found that "the determination of climate-related financial risks across countries remains relatively ad hoc and inconsistent" in part due to "data limitations, country authorities' priorities and capacity constraints, and availability of relevant expertise."

Strengthening IMF bilateral surveillance to better incorporate energy transition considerations does not require a radical departure from current IMF practice; in fact, many Article IV reports already cover certain macro-critical impacts of energy and other sectoral transitions, some utilizing in-house models that have been developed in recent years. However, coverage appears to depend, in part, on the authorities' willingness to engage on climate policy as well as an assessment of actual risks.

[9] Forthcoming analysis from E3G finds that even modest changes in prices or demand expectations can trigger fiscal stress, where volatility itself disrupts budgeting, borrowing and other core state functions, especially in highly exposed producers. See also IMF **research** on key challenges for fossil fuel exporters.

[10] **Analysis** published by the Network for Greening the Financial System (NGFS) shows that mitigation policies can affect inflation and economic activity, depending on the level of ambition and the choice of mitigation policy instruments.

A more systematic and standardized approach to assessing transition scenarios and commodity volumes and price assumptions would improve the country-specific management of associated macroeconomic and financial stability risks.

# Recommendations: improving transition coverage in IMF surveillance

While the IMF's own climate strategy acknowledges that energy transition is likely "a macro-critical policy challenge for almost every IMF member," establishing macro-criticality *ex ante* is a challenge. Here the IMF is well-positioned to leverage its existing tools, processes, and partner institutions to quantify macroeconomic outcomes of transition scenarios. In so doing, the Fund can preserve a case-by-case approach to bilateral surveillance, tailored to individual country circumstances, while improving the macro-criticality assessment and the quality of advice to its members.

## Assess global scenarios of energy transition to provide shared assumptions and inputs to country teams

Past WEOs have evaluated, for example, the **macroeconomic impacts of decarbonization policies** and **disruptions in commodity trade**, but possible pathways for global energy transition – and the resulting range of potential impacts on commodity volumes and prices – are not disseminated on a regular basis to provide shared assumptions and inputs that can be utilized by country teams.[11] A more consistent approach to modelling energy transition scenarios, perhaps leveraging the IEA-IMF-World Bank high-level coordination group and/or other energy expertise, to produce a jointly agreed matrix for various inputs (e.g., range of global and select country-level demand trajectories and prices for relevant commodities) would provide country teams with more timely and consistent inputs to evaluate the possible impacts of a given transition pathway.[12]

## Use shared inputs and assumptions to evaluate through simple standardized metrics the macro-criticality of energy transition for individual countries

With the benefit of shared inputs for energy transition scenarios, country teams could evaluate an individual country's exposure to a given energy transition scenario through

[11] Individual country teams incorporate global baseline ("current policy") assumptions, for example economic growth rates of trading partners, baseline interest rates, and prices for key commodities, into individual country forecasts.

[12] The IEA's **World Energy Outlook** uses scenario analysis to compare the effects and implications of different energy choices against a common backdrop. The World Energy Outlook 2025 included a Current Policies Scenario, a Stated Policies Scenario, and two normative scenarios.

simple standardized metrics and tools already developed by the IMF.[13] Discussion of the results would elaborate staff's assessment of macro-criticality,[14] serve as an input under the Fund's "prioritization framework" for surveillance (SPP), inform the evaluation of risks covered in the Risk Assessment Matrix (RAM), and improve the quality of engagement with country authorities.

### If found macro-critical, equip country teams with the expertise and resources needed for rigorous tailored analysis of energy transition

If a country team finds that the considered energy transition scenarios would have a "high" or "medium" impact (as assessed in the RAM) on the country's present or prospective BOP or domestic stability if realized, the country team would then leverage more granular and comprehensive tools to help quantify their macroeconomic impacts and transmission channels and support country authorities to navigate policy trade-offs, enhancing the tailoring of coverage.[15] Such analysis would not require new models but rather leverage the Fund's in-house expertise and models,[16] diffusing their use to extract their full potential.

### Increase collaboration with partners to deepen granularity of policy advice related to energy transition

In the Executive Board discussion of the IMF's approach **to implement** its climate strategy, Directors had "stressed the importance of partnering with other institutions, including the World Bank Group, on climate-related work." The IMF should make greater use of its relationship with expert partners through institutional collaboration to enhance the quality

[13] Common metrics to evaluate a country's exposure to energy transition could include, for example, fossil fuel exports (imports) as a % of total exports (imports), % of government revenue linked to fossil fuel sales, and % of financial assets (liabilities) linked to fossil fuels.

[14] Staff guidance could remedy current gaps in the analysis of macro-criticality of climate, an assessment characterised by the IEO as **often** "only indirectly or implicitly included in staff reports, raising questions about how the concept is and should be applied."

[15] See for example the **IEO review's** findings that "member countries generally believed that the inclusion of climate-related issues in Article IV consultations added value and had traction," but that current advice was often "too vague and/or insufficiently tailored to the country-specific context."

[16] The IMF has developed a broad suite of models and analytical tools including the IMF-ENV, the Global Macroeconomic Model for the Energy Transition (GMMET), and the Climate Policy Assessment Tool (CPAT) which are particularly apt to analyse transition. The **IMF-ENV** examines through scenario analysis the medium- and long-term macroeconomic effects as well as structural shifts arising from national and/or global climate mitigation, energy, fiscal and trade. As a New Keynesian model with a rich macroeconomic core, the **GMMET** is well-suited to study short- and medium-term impacts of the energy transition and mitigation policies. **CPAT** is an Excel-based model that helps policymakers assess different mitigation policy options and their national macro-fiscal impacts. In addition, as found in a **recent Article IV**, the IMF is developing an accessible model that analyses the impact of the renewable energy transition on a country's balance of payments (RE BOP). For more detail see Mitra et al "Integrating Climate Change into Macroeconomic Analysis: A Review of Impact Channels, Data, Models, and Scenarios", *IMF **Working Papers*** 2025.

and granularity of energy transition-related policy advice,[17] answering a growing ask from country authorities.[18] Natural partners include the World Bank and regional development banks, International Energy Agency, and Organization for Economic Cooperation and Development.

**Assessments under the Financial Sector Assessment Program (FSAP) should include coverage of transition risks for all highly exposed economies**

Coverage of transition-related vulnerabilities should be strengthened under the FSAP, particularly in oil-exporting economies. Given the central role of hydrocarbon revenues in foreign exchange and fiscal stability, FSAPs should more systematically assess the implications of declining or volatile oil revenues for financial stability, including through stress-testing FX liquidity, bank balance sheets and sovereign-bank linkages under transition scenarios.

# Conclusion

Energy transition is advancing due to a mix of climate, security, economic and affordability considerations. From a risk management perspective, however, the motivation is far less important than assessing the possible macroeconomic impacts. The Fund's mandate of preserving macroeconomic and financial stability, combined with its core surveillance activities, put the institution in a strong position to cover the macroeconomic impacts of energy transition. Building on existing tools, the Fund can quantify the impact of transition scenarios, advance the assessment of macro-criticality, and provide much-needed country-specific policy advice. In an interconnected world, where risks transmit through supply chains and financial systems from one country and region to another, this advice will better equip country authorities for an orderly transition, thereby reducing the risk that countries most vulnerable to transition risks might also be the least prepared.

[17] Egypt's **2025 Article IV consultation** offers a strong example of deeper IMF-World Bank collaboration on energy transition policy and macroeconomic impacts, including a policy sequencing matrix.

[18] In 2025 the Coalition of Finance Ministers for Climate Action published a **survey** highlighting "a notable gap between the *demand for* and the *availability and use* of suitable economic modelling and analytical tools" to inform policy choices around the energy transition. Since then, finance officials have made **explicit references** to the IMF and World Bank climate models as useful tools for ministries, mindful of their current limitations.

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