

FINANCING THE FUTURE OF ENERGY: INSURANCE AS AN ENABLER

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Energy in 2026: a motor for growth



Access to energy has a major influence on the economic growth of a nation, as evidenced from the wealth of North America, the Middle East and other fuel-producing regions. In 2026, this access is becoming more critical than ever, for two reasons.

The first is that economic growth in advanced economies is increasingly being linked to the development of artificial intelligence, which is adding to energy demand at a time when infrastructure is already stretched through the electrification of sectors such as transport and heating.

In the United States, utilities face large-load commitments exceeding 160 gigawatts of power, or up to 22% of the nation's peak load in 2024, according to the analyst firm Wood Mackenzie. Grid operator PJM only has half the generation it needs to serve its future commitments, the analyst firm said.¹

The other factor behind energy's rising importance is an increase in geopolitical tensions affecting global trade. Such tensions have always existed but have come to the fore in recent years due to events such as the Ukraine conflict, which has forced Europe to reduce Russian fuel imports.

In December 2025, the European Union agreed to phase out Russian gas imports altogether by late 2027, highlighting the need for a rapid buildout of new energy infrastructure to replace the supplies lost from Russia.²

In theory, this paints a rosy picture for energy infrastructure investors, with the International Energy Agency (IEA) predicting capital flows into the sector could have risen by 2% to \$3.3 trillion globally during 2025.³

But in practice there are issues with financing energy sector growth: in 2024, the consulting firm Deloitte put the global funding shortfall facing grid infrastructure alone at up to \$14.3 trillion by 2050.⁴

With financing delays and shortfalls threatening to derail economic growth and destabilize the global economy, there is a clear need for all stakeholders to help improve capital flows into energy. And the insurance industry, it turns out, could play a vital role in making that happen.

The issues of financing energy infrastructure



Capital flows into energy markets are susceptible to a range of risks. Infrastructure buildouts, for instance, can involve credit risks as large upfront investments are threatened by planning issues, permitting problems, construction delays and cost overruns.

Electricity generation and storage projects also face grid interconnection and offtake risks that can jeopardize revenues. Novel technologies may not work as expected. Mergers, acquisitions and project transfers may not go as planned. Projects can fall foul of environmental or other regulations.

Insuring against these and other risks can give financiers and lenders the reassurance to invest at the scale needed to meet the growth in global demand for energy.

And insurance is not just important for generation assets, but also for all associated infrastructure and services, from transmission equipment to transport electrification facilities.

Insurers can help assure energy technology and infrastructure investments at all stages of a project lifecycle, from scoping and raising capital to operations and decommissioning.

The impact of insurance can be considerable. One insurance-backed initiative helped the International Finance Corporation raise an extra \$2 billion of lending to low- and middle-income countries in 2020.⁵

But to deliver the greatest value, it helps for brokers and insurers to be involved early on, according to Debbie Durkan, Head of Global Distribution, Energy Transition, at AXA's XL specialty and property and casualty arm.

"The sooner we can be brought in during that due diligence process, the more we can support clients by looking at where there are additional risk financing vehicles that we can support or where there's risk engineering help that we can provide," she says.

Giving investors a stable outlook



Early engagement and collaboration are particularly important for energy projects because the resulting infrastructure can be highly visible, long-lived and controversial.

Wind farms, electricity pylons and nuclear power plants all have supporters and critics, while energy security and utility bills are politically charged topics in most major markets. This can put energy projects at risk from changing regulations and trends in permitting, potentially affecting revenues.

Political risk is often viewed as an issue in low- and middle-income countries, where social instability and regime change can endanger infrastructure investment.

But regulatory and sovereign uncertainty can be a problem in mature markets, as has been demonstrated recently with attacks on energy infrastructure in the Russia-Ukraine conflict, the halting of renewable energy projects in the U.S.⁶ and delays to offshore wind schemes in Taiwan.⁷

Insurers can help investors identify potential uncertainties with energy sector risk consulting services that include an assessment of third-party and environmental liability exposures, among others.⁸

Further protection can be obtained through political risk, credit and bond insurance, which helps investors secure assets and protect payment streams and dividend flows.

Factoring credit insurance into financing packages at the outset allows financiers to channel much greater capital flows into the energy market, says Rafael Docavo-Malvezzi, Global Chief Underwriting Officer for Political Risk, Credit and Bond at AXA XL.

"A lot of banks are using credit insurance as an integral part of their decision making," he says. "They think, if we can get insurance then instead of doing a \$200 million ticket, we can do \$300 million because we have the backing of these insurance institutions."

Making sure there is a return on investment



Achieving the right conditions for a final investment decision is only part of the story. Investors will not contemplate a market or technology investment unless it can offer a reliable and sustainable return on investment.

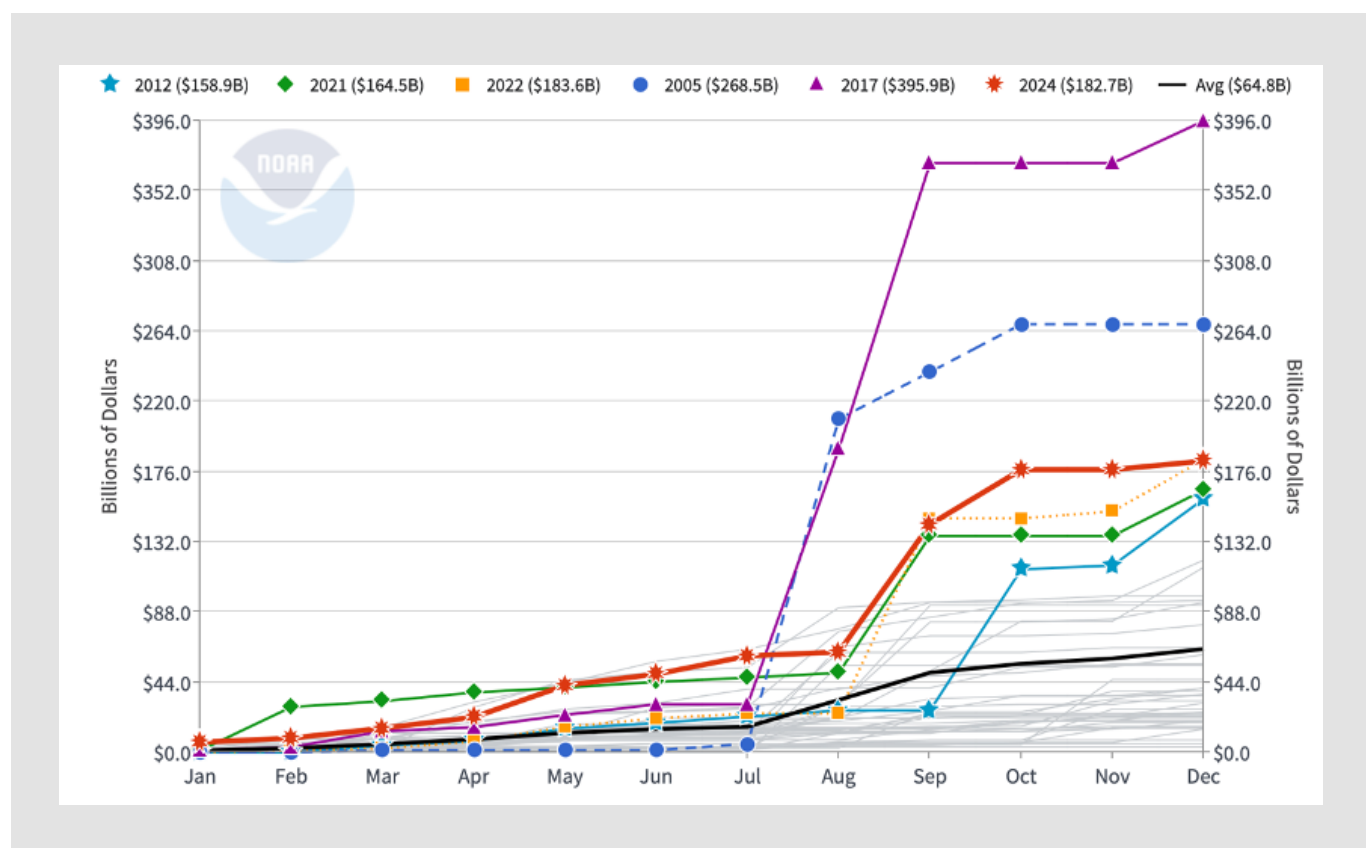
In energy, this means achieving promised returns over the lifetime of a project or technology. While this is relatively straightforward in the case of some mature technologies and stable markets, there may be risks attached to novel energy infrastructure assets such as advanced nuclear plants.

Even formerly safe bets could be affected by emerging risks in areas such as cybersecurity and climate, with rising atmospheric carbon levels increasing natural catastrophe threats.⁹

Insurers have long protected infrastructure operations through property and casualty insurance. Increasingly, such products are being complemented with offerings such as cybersecurity insurance, technology performance guarantees and parametric solutions. These define coverage linked to a parameter, such as a climate index, that can be monitored in real time and allows payouts in shorter timeframes.

U.S. natural catastrophe losses have been mounting in recent years

Event cost of billion-dollar natural disasters in the United States, from 1980 to 2024.



Source: Natural Centers for Environmental Information.¹⁰

Such products can help financiers cope with evolving energy risks, says Katherine Gerber, Head of Energy and Energy Transition, Americas, at AXA XL. With natural catastrophe losses on the rise,¹¹ "parametrics are not going away," she says. "They'll become more and more important."

Insurers are continuing to develop products to meet the evolving needs of the market, Gerber adds. "Being creative as an insurer is going to be a key differentiator as we move forward," she says.

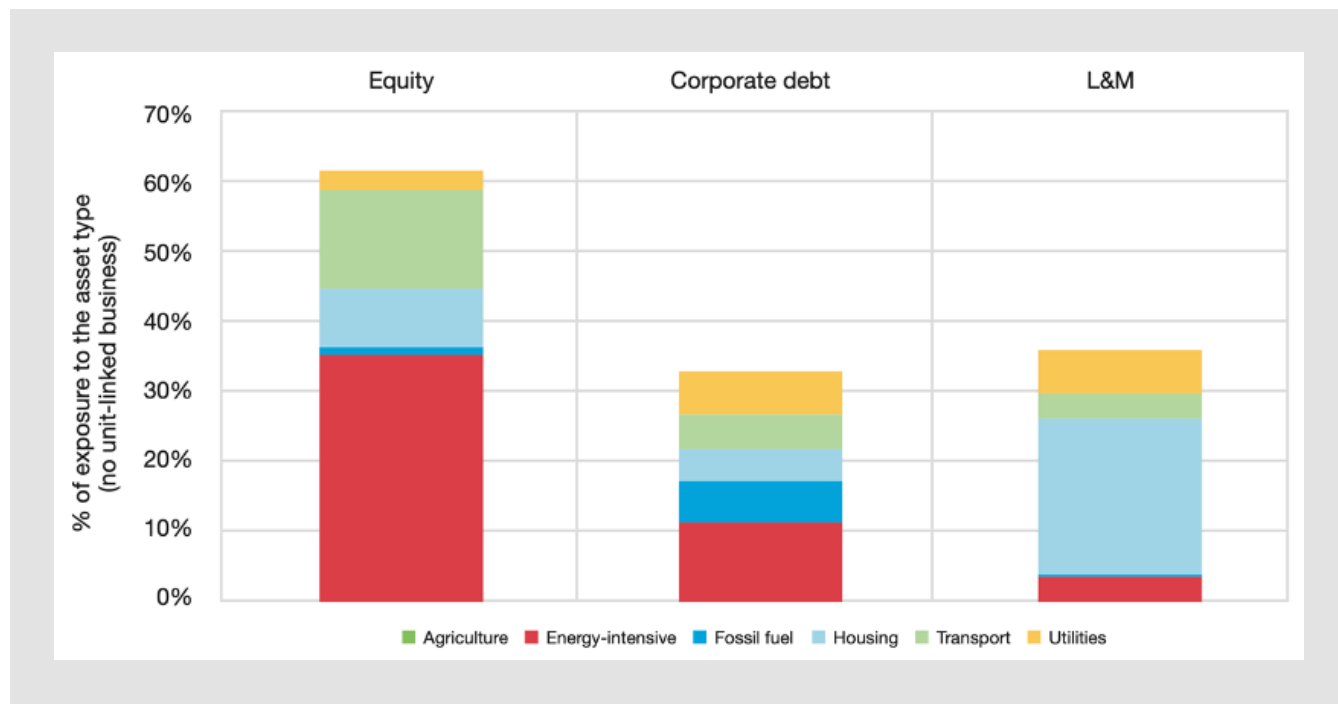
Skin in the game: from finance to captives



Beyond insuring against risks in the investment and operating environments, insurance companies support global energy infrastructure buildout in other less obvious ways. One is simply by acting as investors themselves. The insurance sector boasted \$42 trillion in assets at the end of 2024.¹²

The insurance sector is a major investor in energy infrastructure

Share of insurance industry assets held in climate-relevant sectors.



Source: International Association of Insurance Supervisors.¹³ L&M = loans and mortgages.

Insurers also foster energy sector growth by insuring commercial transactions such as mergers and acquisitions, divestitures, spinoffs and private equity investments. The industry provides cover for issues including contract disputes, employee retention, IT integration and post-closing tax treatment.

More ingeniously, insurers can deliver wider and deeper assurance for energy sector investments through alternative risk solutions, which provide bespoke, non-traditional insurance and reinsurance structures tailored to specific industries and risks.

One alternative risk mechanism is the use of captives. In this model, an energy company establishes its own in-house insurance unit to retain a portion or all of its risks. Captives

typically collaborate with established insurance carriers for program development, risk transfer capacity, policy issuance and claims management, among other services.

Austin Su, Head of Structured Risk Solutions, Americas, at AXA XL, says "Utilizing a captive offers an energy company two benefits. First, it enables access to coverage for risks that are otherwise not available through the traditional insurance market. Second, it allows for more efficient risk retention financing, optimizing the company's overall risk management strategy."

Conclusion: no time to spare

A full consideration of the insurance sector's capabilities and influence shows it is well positioned to support an increase of capital flows into the energy sector.

Naturally, though, the insurance industry cannot drive energy investment volumes alone. Nor is it equipped to take on types of risk more appropriate to lenders and equity holders.

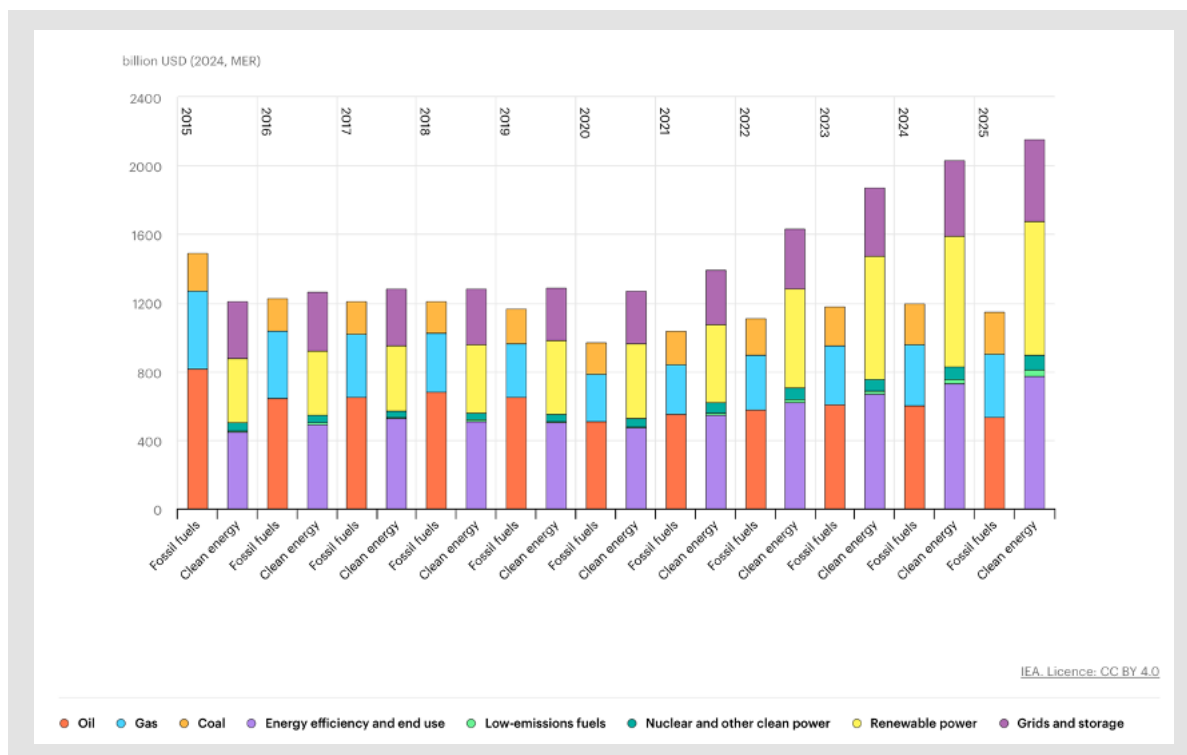
"The challenge here is unlocking a conversation around the value of insurance, beyond 'I pay a premium, I receive a claim',"

says Vicky Roberts-Mills, Global Head of Energy Transition at AXA XL.

The need to unlock these conversations is urgent. While significant amounts have been committed to the energy sector, "open questions about the economic and trade outlook means that some investors are adopting a wait-and-see approach to new project approvals," says the IEA.¹⁴

Energy sector investments are on the rise... but more is needed

Grid investment in clean energy and fossil fuels, 2015 to 2025.



Source: IEA¹⁵

At a time when economic leadership tracks developments in AI and electrification, a wait-and-see attitude towards energy infrastructure buildouts could significantly imperil the prospects for growth in the global economy.

For this reason alone, investors and lenders should find common cause with insurers in seeking the lowest-risk pathways for financing energy at scale.

From the insurance side, "the value is around enabling financing, enabling research and design, enabling protection of portfolios," says Roberts-Mills. "I can't see another industry that can do that, with a set of skills in terms of the ability to identify risk, quantify risk and price risk."

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