

# THE NEW ARCHITECTURE OF GLOBAL POWER



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A shift towards more volatile private capital flows is changing the foundations of U.S. external financing, with implications for the dollar and global markets.

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The dollar's enduring dominance highlights the challenge facing the euro—and the financial integration needed for Europe to strengthen its global monetary role.



Since 2024, the fundamentals of the U.S. balance of payments have been shifting towards higher dependency on far less reliable and far more price sensitive foreign capital inflows than in the past



The U.S. is much more reliant on private rather than public official creditors, with a far larger share of capital inflows going into inherently more risky equity rather than bond markets



The dollar is more tied to AI's success than recognized, and no longer a reliable backstop

## THE LOSS OF U.S. EXCEPTIONALISM

### Franklin GILL

Former Managing Director, Sovereign Ratings, S&P Global. Head, Florentina Sovereign Advisors

The recent sell-off in U.S. Treasuries, which pushed the 10-year yield above 5% for the first time since 2007, exposes a structural shift in how the country finances its external deficit. Private capital now drives U.S. financing 10 times more than public official creditors, and over half of recent private inflows have gone into equities rather than the bonds that traditionally anchored foreign demand, leaving both the dollar and U.S. stock markets more exposed to a rapid change in trends. Public official creditors, including those linked to longstanding allies, have already trimmed their Treasury holdings by hundreds of billions since the war with Iran began, in a context additionally marked by the political tensions surrounding tariffs, NATO, and Federal Reserve independence. Without a credible alternative reserve asset to the U.S. dollar, coordinated central bank intervention remains the likely backstop in the event of a crisis, but the need for such intervention would itself confirm that U.S. exceptionalism is fading. European bond markets have already begun to feel the spillover, with French, Italian, and Spanish yields widening meaningfully over the past three months, and further steepening of sovereign bond yield curves and currency pressure are likely over the coming six months.

### Introduction

While there are a number of credible theories explaining the recent sell-off in the U.S. Treasury market, the sharpness of the move over the autumn, and its implications for real interest rates and the U.S. dollar highlight fragilities in U.S. as well as global

- 
- i. Includes foreign central banks and monetary authorities plus foreign governments, foreign public entities including sovereign wealth funds and multilateral institutions.

financial markets. One way of assessing these fragilities is by closely examining the U.S. Balance of Payments, and more specifically the financial account. The financial account of an economy records transactions resulting in a change of ownership of international financial assets and liabilities between a nation's residents and non-residents. Because the U.S. has been running a structural current account deficit for decades, representing a shortfall in domestic savings compared to investment, it must run a financial account surplus, all else being equal.

Many economists have argued that balance of payments analysis does not apply in the case of a reserve currency economy, as there will presumably always be net demand for that currency, while G7 central banks have the ability to create reserve money without limits. The “exorbitant privilege” of the U.S. dollar is a reflection of long-standing formal and informal demand for dollars globally; at present, dollar assets make up 57% of allocated international reserve holdings compared to the U.S. share (in PPP) of global GDP of 14.5%, according to IMF data. Moreover, despite rising competition from other currencies, the U.S. dollar continues to dominate international trade invoicing, foreign exchange turnover, international debt issuance, and banking and wealth management. These advantages are well-established; and they provide international capital markets with enormous efficiency gains that would be difficult to replace in the absence of U.S. dollar exceptionalism.

Nevertheless, the fundamentals of the U.S. balance of payments have since 2024 been shifting in a way that signifies a much higher dependency on far less reliable and far more price sensitive capital inflows than in the past. Such a dependency is generally not the hallmark of a provider of risk-free assets.

At present, private sector capital inflows into dollar assets outpace public official inflows by a factor of 10 to 1: amounting to \$1.60 trillion (or over 5% of U.S. GDP) out of the \$1.75 trillion financial account surplus that the U.S. posted in the twelve months to July 2026

Compared to the past, the U.S. is far more reliant on private rather than public official creditors. At present, private sector capital inflows into dollar assets outpace public official inflows by a factor of 10 to 1: amounting to \$1.60 trillion (or over 5% of U.S. GDP) out of the \$1.75 trillion financial account surplus that the U.S. posted in the twelve months to July 2026.

A further look at what private creditors are actually buying raises concerns about the stickiness of foreign investments into the United States, and hence the future stability of the U.S. dollar, and—over the longer term—its reserve currency status. This is because since mid-2024, over one half of the assets being acquired by the non-resident private sector (\$802bn during the twelve months to July 2026) are equity securities, a figure completely at odds with the historical bond-to-equity purchase ratio of around 13 to 1. In other words, the current composition of foreign purchases of U.S. assets is unusually geared towards U.S. stock markets, which are inherently more volatile than bonds. That is particularly the case now given the concentration of tech and semiconductor companies in the S&P 500—and their increasing dependency on the success or failure of AI business models to justify rich valuations and price-to-earnings ratios. At the very least, foreign private investors have accumulated substantial exposure to both U.S. equities and the dollar. This

leaves the dollar in a vulnerable technical position: given the size of these existing holdings, particularly in highly valued technology stocks, a deterioration in market sentiment could prompt foreign investors to reduce their U.S. equity exposure and repatriate the proceeds, adding selling pressure on the dollar rather than generating fresh demand for it.

While there is no Treasury data for cross border financial flows since end July, 2026, and while much of the pressure on U.S. government bonds is coming via short selling, rising U.S. yields also suggest that like their public official peers, private sector non-residents may also be cutting back their holdings of U.S. government bonds even as the large long U.S. stock market position remains in place. Indeed, the monthly data for July confirms large net selling of Treasuries by foreign private accounts for the first time since the autumn of 2025. Given the enormity of foreign private holdings of U.S. bonded debt up until now (through end July 2026, the private foreign sector was a net buyer of U.S. government, agency, and corporate bonds worth just under \$800bn on a 12m rolling basis), there is likely more of a selloff anticipated.

On top of this, the widening and steepening of U.S. rates would—if historical patterns hold—tend to trigger a correction in U.S. equity markets, as customers of U.S. tech companies face higher refinancing costs. A sell-off on U.S. equities and Treasuries would, under this scenario, feed off of each other unless there were an improvement in underlying macroeconomic and fiscal fundamentals.

A sell-off in U.S. equities and Treasuries would feed off itself unless underlying macroeconomic and fiscal fundamentals improve, but in an election year, there appears to be little chance of a re-think by U.S. authorities on fiscal, trade, or immigration policies

### **When financial vulnerability meets policy risk**

However, in an election year, there appears to be little chance of a re-think by U.S. authorities on fiscal, trade, or immigration policies. The recurrent budgetary deficits and high debt of the United States, the persistence of underlying inflationary pressures, and the rise in disagreements between the U.S. and its traditional allies over tariffs, NATO, and Greenland, not to mention the conflict in Ukraine, all pre-date the war with Iran. These tensions come on top of questions around Federal Reserve independence, the politicized 2025 firing of Bureau of Labor Statistics (BLS) Commissioner Erika McEntarfer, and the November 2024 publication of “A User’s Guide to Restructuring the Global Trading System,” in which the author (former chair of the Council of Economic Advisers and Federal Reserve Board of Governors member Stephen Miran) proposes that the U.S. reschedule its longer duration Treasury bonds held by those public official foreign creditors which benefit from a U.S. security guarantee.

Despite tensions between the U.S. and its traditional allies were there really to be a balance of payments shock on the financing side, foreign central banks would likely coordinate actions with the Fed to stabilize the dollar and U.S. financial markets. This is the case despite the decision of public official creditors of the United States to cut their holdings of U.S. Treasuries by a cumulative \$1.59 trillion since 2015. More recently, since the onset of the U.S. war with Iran in February, 13 out of the 20 largest public official creditors of the U.S. government—including longstanding U.S. allies Japan, Taiwan, Saudi Arabia, South Korea, the UAE, Switzerland, and Norway - have

The top 20 public official holders of U.S. debt have reduced their holdings by just under 6% or \$233bn since the war started

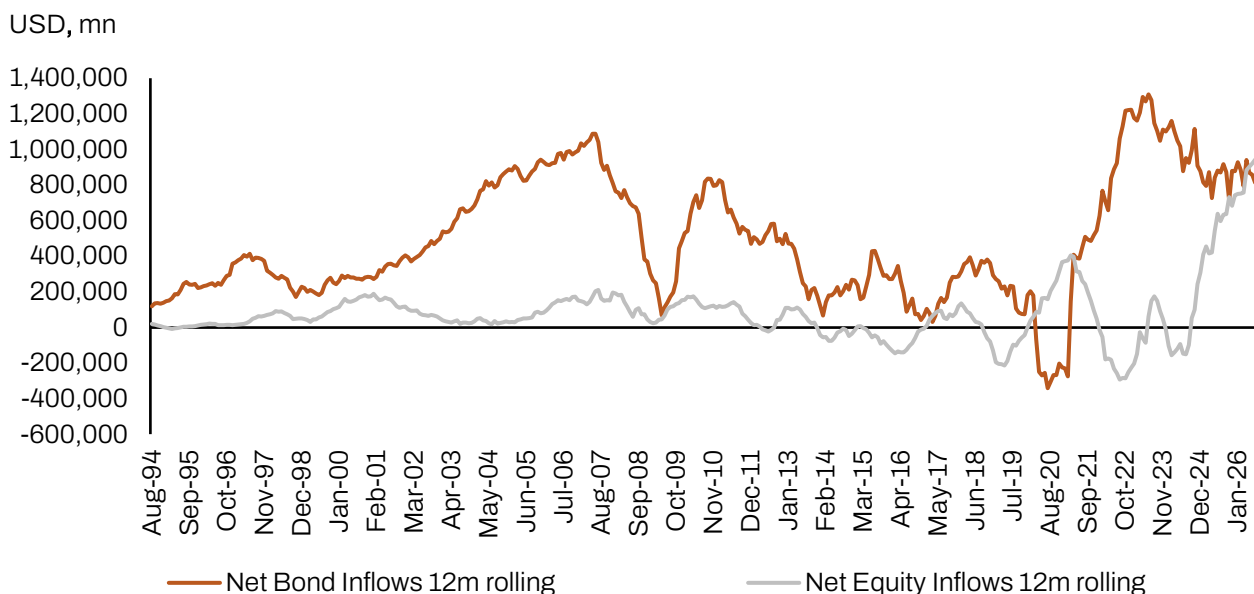
pared back their holdings of Treasuries. Treasury International Capital (TIC) data for end June 2026, shows that the top 20 public official holders of U.S. debt have reduced those holdings by just under 6% or \$233bn since the war started. Faced with a weaker dollar and a weaker U.S. economy, however, U.S. allies and adversaries would likely take steps to coordinate an intervention in currency and financial markets. That they would be forced to do so, however, would tend to reinforce the sense that U.S. exceptionalism is quickly eroding.

It is of course also fair to ask what is the viable alternative to U.S. Treasuries and the U.S. dollar. Neither Europe nor China is keen to operate balance of payments deficits with the rest of the world, nor do they issue sufficient volumes of tradeable, risk-free securities that they could sell to offset those undesired external deficits. After all, that the U.S. runs external—including trade—deficits with the rest of the world largely reflects this demand from trading partners to invest in U.S. bonds, and increasingly equities, as well as the policy choices and structural features that explain the high propensity of private companies and households in Asia, Europe, and the Middle East to save more than they spend. These excess savings must be invested somewhere else, and for decades that somewhere has been the United States.

### What does this imply for financial markets over the next six months, particularly in Europe?

Further yield steepening is expected particularly across the 2-5 year section of the U.S. yield curve. There has already been considerable spillover into euro area bond markets, with further spread widening, although not the same degree of steepening. French 10 year yields have backed up by over 100bps during the last three months, with Italian and Spanish yields wider by 65bps and 50bps respectively. Given limited growth prospects in much of Europe, a far higher exposure to market oil prices, amid

Figure 1 - Total 12m rolling Net Equity (gray) vs Total Net Bond (orange)



Source: US Treasury Intl Capital Data to July 2026

hydrocarbon import dependency, and generally weak euro area public finances, it seems unlikely that euro area bond market or Gilts will outperform Treasuries. The recent trend of inflows into emerging markets should continue, with depreciation of G7 currencies, including the euro against a basket of EM including Asian currencies. The level of oil prices will influence how much exchange rate appreciation the Chinese will tolerate. Ultimately, U.S. authorities are likely to push for another “Plaza Accord,” in conjunction with domestic policy measures, including possible measures to contain domestic price and wage inflation should the dollar come under severe pressure simultaneous with higher energy prices. U.S. governments of either major political party may be supportive of some price controls, especially of services including housing, in conjunction with maturity transformation of U.S. debt including a swap into longer duration obligations, not excluding a default, albeit this is likely to play out over a longer time horizon. **FI**





The dollar's share of reserves, debt, FX transactions, and trade invoicing far exceeds its 26% share of world GDP



Currency dominance is a network effect built on institutional credibility and deep debt markets, advantages the fragmented euro has never matched



Federalizing euro area debt to 60% of GDP would create a \$10.8 trillion eurobond pool, a viable path to reserve-currency status

## THE FUTURE OF THE EURO: CAN EUROPE BUILD A GLOBAL RESERVE CURRENCY?

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The dollar's dominance in global trade and finance has persisted through 82 years of upheaval, with U.S. shares of global reserves, cross-border debt, and foreign exchange transactions running far above its 26% share of world GDP. Estimates of this privilege's value range from \$3.3 trillion based on seigniorage and interest-rate savings to \$33 trillion when accounting for the broader effect of reserve demand on the dollar's exchange rate and U.S. borrowing costs. The euro enjoys a similar but smaller advantage, while the yuan suffers an outright penalty, trading well below China's weight in world GDP. Currency dominance functions as a network good: the dollar's head start under Bretton Woods, reinforced by petrodollar recycling, SWIFT, and an expanding stock of Treasuries, built a scale advantage that has proven self-sustaining. The euro lacks an equivalent anchor asset, with euro area public debt of \$16 trillion split across 21 sovereign issuers carrying different risk premia. Federalising euro area debt up to 60% of GDP would create a pool of roughly \$10.8 trillion in eurobonds, about a quarter the size of the U.S. Treasury market, marking a genuine turning point for the euro's international role.

### Introduction

In 1965, Valéry Giscard d'Estaing, at the time serving as Minister of Finance and Economic Affairs under President Charles de Gaulle, described the dominance of the dollar in international trade and international finance, calling it a "privilege exorbitant" (exorbitant privilege). This was Giscard's way to complain about the advantage that the Bretton Woods system gave to the U.S. dollar (henceforth dollar) and, consequently, to the United States. Giscard's phrase stuck because it is a compact and

clever description of a situation that started in 1943, at the end of World War II, and that is still true in 2026: the dollar still dominates in international trade and international finance.

Since the days of Giscard d'Estaing, the Bretton Woods system with its dollar-to-gold peg came and went. In 1971, President Nixon suspended the dollar's convertibility into gold. In early 1980, U.S. CPI inflation reached 14.8 %. And yet, dollar dominance in international trade and finance has survived no fewer than 82 years of economic and geopolitical shocks, and technological progress. So much so that, during these last eight decades, dollar dominance has been one of the few features of the global economy that have not changed.

**Table 1 - Global shares in 2025**

|                   | USA  | EUR  | CHN  | RoW  |
|-------------------|------|------|------|------|
| Nominal GDP       | 26.0 | 15.2 | 16.6 | 42.1 |
| Export Invoicing  | 46.0 | 30.0 | 4.0  | 20.0 |
| Reserve Assets    | 56.4 | 20.4 | 2.0  | 21.2 |
| FX Transactions   | 44.5 | 14.3 | 4.3  | 36.9 |
| Cross-Border Debt | 51.1 | 33.2 | —    | 15.7 |

**Notes:** Share in nominal global GDP in USD; Share of global export invoicing; Share of currency composition of official foreign exchange reserves (COFER), allocated foreign exchange reserves; Turnover of OTC foreign exchange instruments, by currency; and percentages of outstanding amounts (at current exchange rates, end of period).

**Sources:** IMF; Atlantic Council; BIS, ECB (2026).

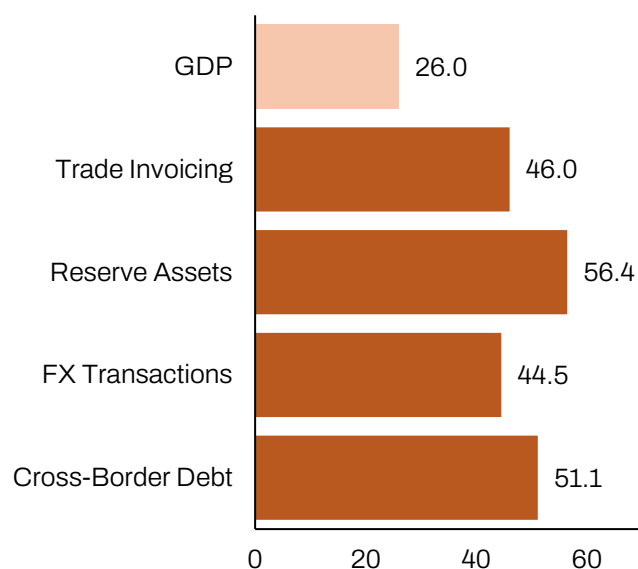
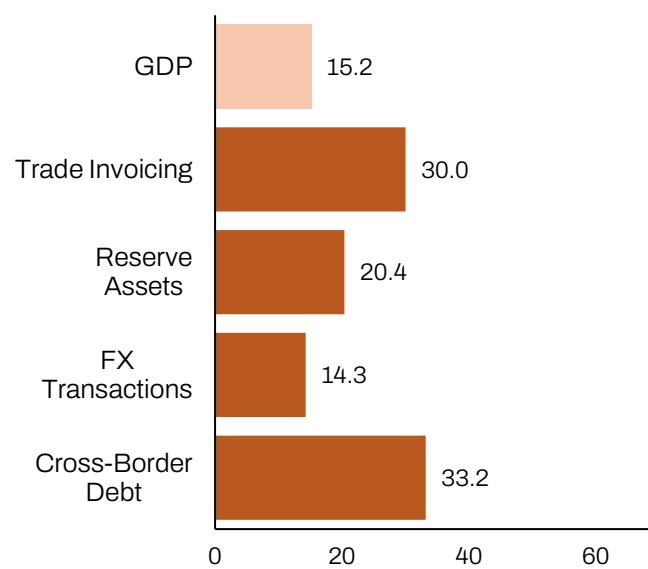
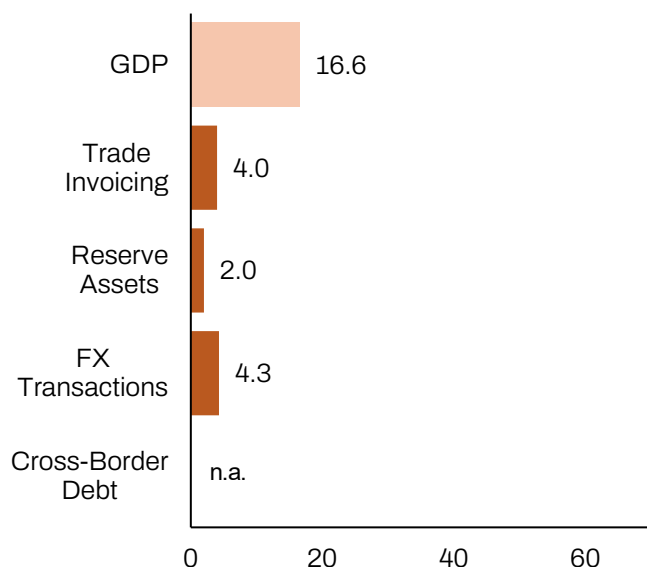
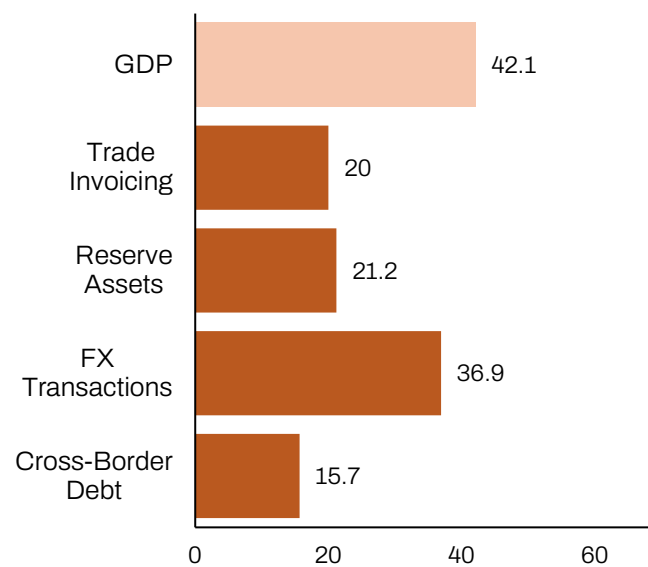
### The data

In Table 1 we measure some of the dimensions of the dollar's privilege comparing U.S. ratios to those of the euro area, China and the Rest of the World.

According to the International Monetary Fund (IMF), in 2025 the United States accounted for 26.0 % of the World Nominal GDP measured in current U.S. dollars. If the dollar had no privilege, the international trade and finance ratios for the U.S. should be roughly the same: about 26 %. But the dollar's share in Global Reserve Assets is 56 %, in Cross-Border Debt is 51 %, in Foreign Exchange Transactions is 45 %, and in Global Export Invoicing it is 46 %. In every one of these four dimensions the U.S.'s shares are substantially larger than the U.S. share in global GDP. (See Table 1 and Panel A of Figure 1).

In the case of the euro area, we find that euro shares of Global Reserves, Export Invoicing, and Cross-Border Debt Securities are also larger than the euro area share in Global GDP, but by a substantially smaller amount than the dollar's shares, and that the euro's share of FX transactions is slightly smaller than the euro area share in Global GDP. (See Table 1 and Panel B of Figure 1). Therefore, the euro also enjoys a privilege in international finance and international trade, albeit substantially less exorbitant than the dollar's privilege.

In every one of these four dimensions the U.S. shares are substantially larger than the U.S. share in global GDP

**Figure 1 - Global share of the U.S., Euro Area, China, and the Rest of the World in 2025****Panel A: United States global shares (%)****Panel B: Euro Area global shares (%)****Panel C: China global shares (%)****Panel D: The Rest of the World global shares (%)**

**Note:** Data on cross-border debt are not available for China.

**Sources:** IMF; Atlantic Council; BIS, ECB (2026).

In stark contrast, column 3 of Table 1 and Panel C of Figure 1 show that China's influence remains below what its economic weight would suggest in every category. Its Global GDP Share is 17 % and the yuan's share of global trade and global finance is about 4 % or less. We find that, instead of enjoying a privilege, the yuan suffers a severe penalty in international finance.

Finally, the last column of Table 1 and Panel D of Figure 1 show that the Rest of the World also has a smaller global role than its share of global GDP would suggest, although the gap is arguably considerably narrower than for China.

In this article we examine whether the euro will soon be able to increase its share of the privileges afforded by the dollar's global reserve currency status.

### **A three to thirty trillion dollar privilege**

Saudi Arabia exports oil, Taiwan exports semiconductors, China exports electric cars, and the United States exports financial assets, partly to pay for its imports of all those things. More specifically, the U.S. exports dollars and T-Bills. The Rest of the World buys these two classes of assets and holds them in the case of the dollars or until maturity in the case of the T-Bills.

In some sense, dollars and T-Bills held by foreigners are liabilities for the U.S. for as long as U.S. residents accept dollars in exchange for their time. Dollars are a liability for U.S. residents, because they can be used to buy goods and services made in the United States. More obviously, T-Bills are a liability for the U.S. Government because they are promises to pay dollars at maturity. The main difference between dollars and T-Bills is that dollars pay no interest and T-Bills almost always do.

Issuing the global reserve currency is a privilege because the issuer can buy foreign goods and services paying for them with pieces of paper —economists call this seigniorage. And it is also a privilege because the government debt of the issuer pays less interest than what it would have to pay if the rest of the world did not want to own and hold dollars. In this section we report the amount of this privilege.

In a forthcoming book, Pedro Videla (2026)<sup>1</sup> reports that the joint benefits from the seigniorage revenues generated by the stock of dollars held by foreigners and the interest rate discount obtained from the additional foreign demand for Treasuries amount to, approximately, \$99 billion. If we capitalize a constant annual benefit of \$99 billion at 3 %, we obtain approximately \$3.3 trillion. This estimate could be a lower bound to the value of the exorbitant privilege.<sup>1</sup>

The dollar's reserve currency status supports a stronger currency and lower U.S. interest rates; reversing these effects could lead to a loss of around \$33 trillion

[Jiang and coauthors \(2026\)](#) come up with a much larger figure.<sup>2</sup> They ask how much a loss of reserve demand for dollar assets would impact both on the real value of the dollar and on U.S. debt interest rates and they find that in the past several decades, the dollar's real exchange rate has appreciated only by about 8.8 % due to the additional demand for dollars created by the dollar's global reserve status. They also find that the steady-state interest rates due to this additional demand for dollars have been lower by about 90 basis points. They conclude that reversing these effects would lead to a wealth loss to the U.S. of about \$33 trillion. This estimate could be an upper bound to the value of the exorbitant privilege.<sup>1</sup>

### **Money as a club**

In the previous section, we concluded that issuing the global reserve currency could be worth some amount between 3.3 and 33 trillion dollars or, even more if we considered

i. Note that the geopolitical benefits of issuing the global reserve currency have not been considered in either of these two calculations.

the geopolitical advantages that accrue to the issuer. Of course, the United States, the euro area, China, and every other country is aware of the sheer size of this privilege, and all of them would like their currencies to become global reserves. So why don't they?

Because every currency is a club whose members are the people who choose to use it and hold it. Membership in the dollar club or in the euro club or in any other currency club is voluntary.<sup>ii</sup> The fees that members have to pay for using the store of value and liquidity services of their club are the inflation rate that erodes the purchasing power of their monetary holdings, and the nominal interest rate that they forgo for not holding other higher return assets instead.

In 1944, the dollar club had a head start because under the Bretton Woods Agreement, it was convertible to gold at \$35 per troy ounce and the reliability of the U.S. economy and the U.S. institutions made this promise credible. Between 1943 and 1971, dollars were as good as gold, and the world learned to use them to invoice international trade and to hold them as stores of value. The 44 signatories of the original agreement had grown to 120 member countries of the International Monetary Fund by 1971. The sheer size of the dollar club turned it into an extremely valuable network. People who did not have a personal interest in holding dollars accepted them in payment for their services because many other people did.

In 1971, when President Nixon suspended dollar convertibility, Saudi Arabia agreed to trade oil for dollars. Soon the other oil producers did the same and this created a large pool of petrodollars that never returned to the United States. Instead, they ended up in banks in London which took them in as deposits and used them to make dollar loans to their customers. The Federal Reserve negotiated dollar to sterling swap lines with the Bank of England and other central banks to provide dollar liquidity in times of need. In 1973, the Society for Worldwide Interbank Financial Telecommunication (SWIFT) was created and in 1977 it sent its first message providing the foundation of the financial infrastructure needed to facilitate cross-border payments. All these innovations have strengthened the dollar club, have reinforced the dollar network and have made it possible for the United States to keep a very large share of the exorbitant privilege of issuing the global reserve currency.

During that period, the United States national debt exploded from \$142 billion in 1943, to \$398 billion in 1971, and to \$40,000 billion in 2026. This explosion in debt has provided a safe, profitable and extremely liquid alternative to holding dollars and has reinforced the global reserve status of the dollar. In contrast, in 2026 the public debt of the euro area countries amounted to \$16,000 billion but spread out over 21 countries with different legal systems and risk premia.

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ii. There are some exceptions to this rule. In most countries taxpayers are forced to pay taxes in the local currency. In many others commercial banks are forced to hold their reserves in the local currencies. Finally, in some countries residents are not allowed to exchange their local currency for foreign currencies.

In 2025, euro area GDP was approximately \$18 trillion, meaning that mutualising debt up to 60% of GDP would create a eurobond market of around \$10.8 trillion, roughly one-quarter the size of the U.S. Treasury market

### A roadmap for the euro

The dollar experience which we have discussed in the previous section gives us the roadmap for the euro, if the euro area countries want to reinforce its role as a global reserve currency. The first steps in this road are to integrate the euro area's financial markets and to create a large pool of eurobonds. This could be done by federalizing the euro area countries' debt up to 60 % of each country's GDP. In 2025 euro area GDP was approximately \$18 trillion and 60 % of that is \$10.8 trillion, which amounts to approximately one-fourth of the size of the pool of U.S. Treasuries. This "Hamilton Moment" would deeply transform the European Union and would substantially increase the value of belonging to the euro club for the international community. <sup>iii</sup> **FI**

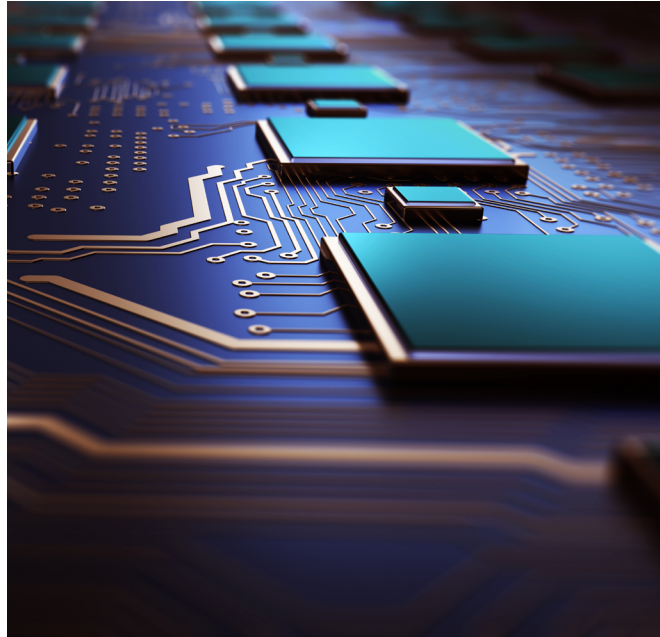
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iii. The Hamilton Moment in U.S. history refers to the manoeuvring in 1790 of Treasury Secretary Alexander Hamilton to convince the U.S. Federal Government to assume all individual state Revolutionary War debts outstanding. This bold move centralized national power and created a unified American financial system.

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# TECHNOLOGY AND STRATEGIC INFRASTRUCTURE

## 20 QUANTUM FINANCE: A RACE FOR CONTROL OF QUANTUM COMPUTING

**Manuel AYALA LÓPEZ**  
**Jaime CABOTÁ JIMÉNEZ**  
**Raúl VIÑAS ABADÍA**

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Quantum finance is emerging as a new arena of strategic competition, where access to computing power may matter as much as the technology itself.

## 28 FROM CABLES TO SATELLITES: EUROPE'S BATTLE FOR DIGITAL RESILIENCE

**Raúl VIÑAS ABADÍA**

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Europe's digital resilience depends not only on more infrastructure, but on greater control over the cables, providers and backup systems on which connectivity relies.



Quantum computing will not replace classical financial calculation, it will rather complement it in very specific applications



Access to this technology will be highly concentrated amongst a few players and conditioned by the industrial policies of the major geopolitical blocs



The standardization and opacity of models, coupled with a direct threat to banking cryptography, will require a regulatory and infrastructure response that cannot wait for the technology to mature

## QUANTUM FINANCE: A RACE FOR CONTROL OF QUANTUM COMPUTING

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The competitive advantage of quantum computing will depend not only on technological progress, but also on who has access to it and their ability to harness its potential

The future of quantum computing in banking and financial markets will be determined less by technological development than by the conditions governing access to computing capacity. Quantum computing will be incorporated into financial calculations in specific applications (derivatives valuation, portfolio optimization, payment settlement), but access to this technology will be highly concentrated amongst a small number of players with sufficient resources to conduct experiments over many years. This concentration (rather than the technology itself) will determine who benefits from the market advantages and who bears the risks: standardization of models, opacity and a direct threat to banking cryptography. In the coming years, a "quantum moment" that revolutionizes technology is not expected, but rather gradual advances in post-quantum infrastructure and regulation. The decisive factor lies in which organizations start preparing to manage its distribution and associated risks.

### **Concentrate before transforming**

Logic suggests that a revolutionary technology replaces existing processes. In the short to medium term, however, quantum computing will operate in symbiosis with traditional procedures, wherever highly complex problems need to be solved.

The leap to quantum technology currently faces a physical limit. Quantum computers are extremely sensitive to their environment, which causes a loss of information

known as decoherence; the resulting errors accumulate to the point of limiting the size of the problems that can be reliably solved.

Access to this technology is not expected to be uniform due to the significant entry barriers it presents. High hardware costs and a shortage of specialized talent capable of combining financial and computational expertise will concentrate the advantage in the hands of a small number of players, many of whom are major technology firms and financial institutions with sufficient resources to experiment without an immediate return. It is this disparity in access rather than the pace at which *hardware* advances that will determine which players capture the market advantages and which are exposed to its risks.

It could be argued that worrying today about the allocation of a capacity that does not yet exist is getting ahead of ourselves. This may be true for modelling, but not for cryptography, where what is encrypted today is already at risk, nor for dependence on suppliers, which develops over years of experimentation.

### **What quantum computing brings to finance**

The potential of quantum computing lies in analyzing a very large number of alternatives and finding the most efficient combinations amongst them, such as valuing complex derivatives more quickly, or optimizing portfolios with a number of constraints that is currently unmanageable.

In a paper published in 2022, researchers from the Bank of Canada, in collaboration with D-Wave, applied a hybrid quantum annealing algorithm to thirty days' worth of non-urgent payments within the Canadian system. [By reordering the payments into batches of seventy, the average daily liquidity saving was 240 million Canadian dollars, out of a daily allocation by the system of between 15 and 20 billion, and exceeded 1 billion on some days in the sample.](#)<sup>1</sup> The cost of this improvement was an average delay of 90 seconds in settlement, attributable almost entirely to the time required to aggregate each batch, as the algorithm took five seconds to solve the problem.

Extrapolated to the sector, this could translate into a more efficient allocation of capital and liquidity and near real-time risk measurement. The implementation will consist, at least initially, of hybrid systems, but the underlying significance is considerable, because problems that currently must be simplified due to a lack of computational capacity would be able to accommodate an unprecedented number of variables.

In the markets, the advantage lies in methods rather than power. In a traditional Monte Carlo simulation, halving the margin of error requires, approximately, quadrupling the number of simulations needed. Under ideal conditions, some quantum algorithms could achieve the same improvement by merely doubling the number of queries to the quantum system, thanks to a technique known as quantum amplitude estimation. Quantum computing would thus enable the analysis of more

scenarios using the same resources, or the attainment of a more precise estimate within the same timeframe.

The experiment announced by HSBC and IBM in September 2025 achieved this advantage through a different approach. [Rather than speeding up a calculation, the team used quantum circuits to transform the input data and feed it into conventional statistical models, to estimate the probability that a corporate bond quote would ultimately result in an executed trade.<sup>2</sup> Using real data from the European corporate fixed-income market, predictive accuracy improved by up to 34 per cent compared with the traditional techniques the bank uses as a benchmark.<sup>3</sup>](#)

That advantage, however, has an expiry date. In competitive markets, any predictive improvement is eroded as soon as several participants gain access to a similar technique, as prices adjust and the margin disappears. The real difference lies in converting that early access into proprietary models and processes that are difficult to replicate before the advantage is diluted.

### **Providers, banks and states: Who controls quantum capacity**

Three players take part in the quantum race: technology providers, which control the infrastructure; financial institutions, which accumulate applied knowledge; and states, which set the rules for the technology.

Providers such as IBM, Google and D-Wave dominate both the hardware and the development environments upon which the first financial algorithms are built. Due to cost and specialization, most organizations will not build their own quantum computers, just as they do not develop their own AI models. They will access them via the cloud or collaboration agreements, which reduces the initial investment but transfers control of a strategic resource to a handful of suppliers capable of influencing the market and setting the pace for the sector. JPMorgan's case illustrates this. [Despite having one of the most advanced quantum teams in banking, it has had to rely on Quantinuum's computers and take a stake in the company, leading funding rounds of \\$300 million in 2024 and nearly \\$600 million in 2025, to secure a position in the supplier it depends on.<sup>4</sup>](#)

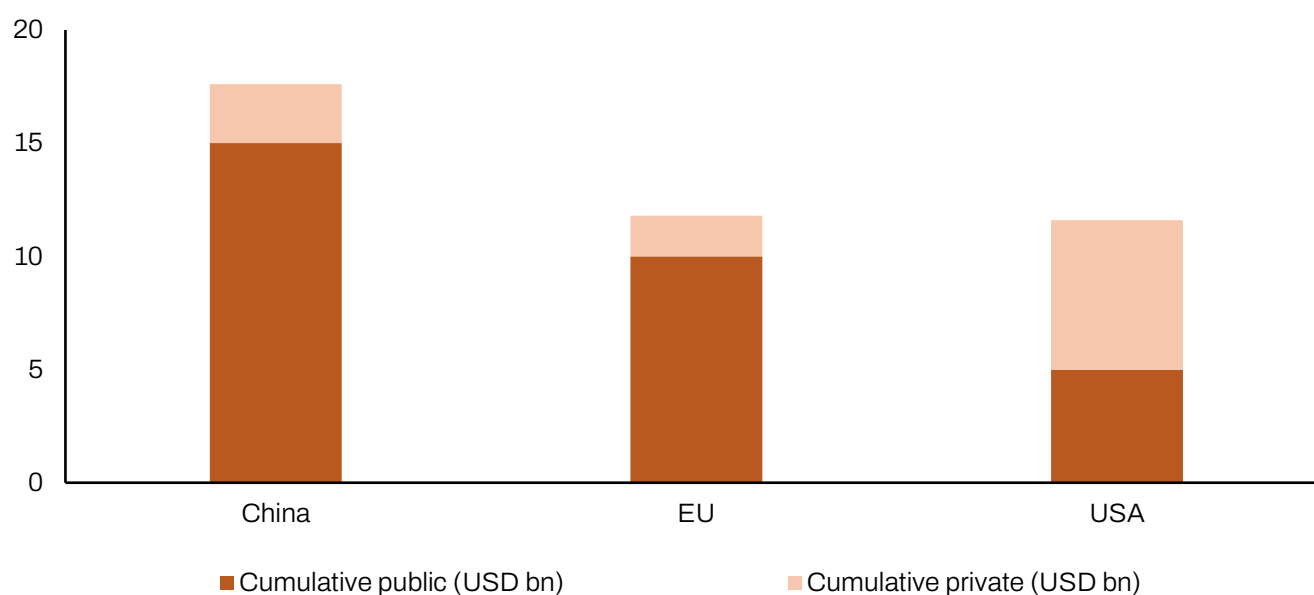
Financial institutions such as JPMorgan, Goldman Sachs and HSBC are already experimenting with this technology. Learning to translate financial problems into quantum models and to integrate them into environments subject to strict risk controls generates a body of knowledge which, regardless of access to hardware, separates early adopters from those who will adopt the technology once it has matured.

States, led by the U.S., China and the EU, have incorporated quantum technology into their industrial policies to attract investment and talent and to develop their own suppliers. That intervention is already shaping the market. Since 2024, the U.S. has required export licenses for quantum computers exceeding certain thresholds for qubit count and error rates, while the EU has applied similar controls since November

Three key actors shape the quantum race: technology providers, which control the infrastructure; financial institutions, which develop expertise in their practical applications; and governments, which establish the regulatory framework

2025. In May 2026, the U.S. government also proposed investing \$2 billion in minority stakes in nine quantum companies, likewise seeking a position in its suppliers. For a European institution accessing a U.S. computer via the cloud, the conditions of access also depend on that export remaining permitted.

**Figure 1 - Public and private investment in quantum computing up to March 2025**



**Source:** [ECIPE, Benchmarking Quantum Technology Performance \(March 2025\)](#).<sup>5</sup> The private investment figures are our own calculation based on the percentages in the report.

### **Systemic risk: Homogenization, opacity and security**

If access to algorithms and infrastructure remains concentrated amongst a few providers, banks and funds could end up using similar tools. If those models interpret a disruption in the same way, different institutions could simultaneously reduce their exposure to certain assets. This simultaneity amplifies the movement that triggered it: coordinated selling pushes prices down, seemingly confirming the signal issued by the models and reinforcing the incentive to continue selling. What begins as a model interpretation ends as a market crash.

The problem is compounded by the fact that every model relies on historical data and assumptions that may cease to be valid during a period of uncertainty. If several institutions use the same tool, an erroneous estimate can spread through the market and affect numerous institutions simultaneously. This is why validating these models will be even more important than with classical ones.

And that validation will not be easy. Quantum algorithms return probabilistic results that are not reproduced identically by two successive runs, and their internal behavior does not allow for a step-by-step inspection equivalent to that of a classical calculation. This complicates both internal auditing and supervisory review in a sector where every relevant decision must be capable of being explained and reconstructed, and where the levels of traceability required of a quantum model have not yet been defined.

The most pressing risk, however, concerns information security: a sufficiently powerful quantum computer could undermine some of the public-key cryptography used for key exchange, user authentication and the verification of digital certificates and signatures

The risks above depend on institutions adopting quantum algorithms. Security, by contrast, affects them even if they never use them, and it is the most immediate. A sufficiently advanced quantum computer could compromise some of the public-key cryptography used to exchange keys, authenticate users and validate digital certificates and signatures. In August 2024, the U.S. National Institute of Standards and Technology (NIST) approved the first three post-quantum cryptography standards, designed to gradually replace the algorithms that currently protect key exchange and digital signatures. Migration cannot wait until a computer capable of carrying out such attacks exists, not least because information encrypted today may be stored for decryption in the future, a strategy known as *harvest now, decrypt later*. The pace of this migration will depend on the timetables set by regulators in each country, which links this risk to the state-led race described earlier.

In all cases, the systemic risk stems not only from an individual failure, but also from reliance on the same tools and the spread of vulnerabilities across a closely interconnected financial system.

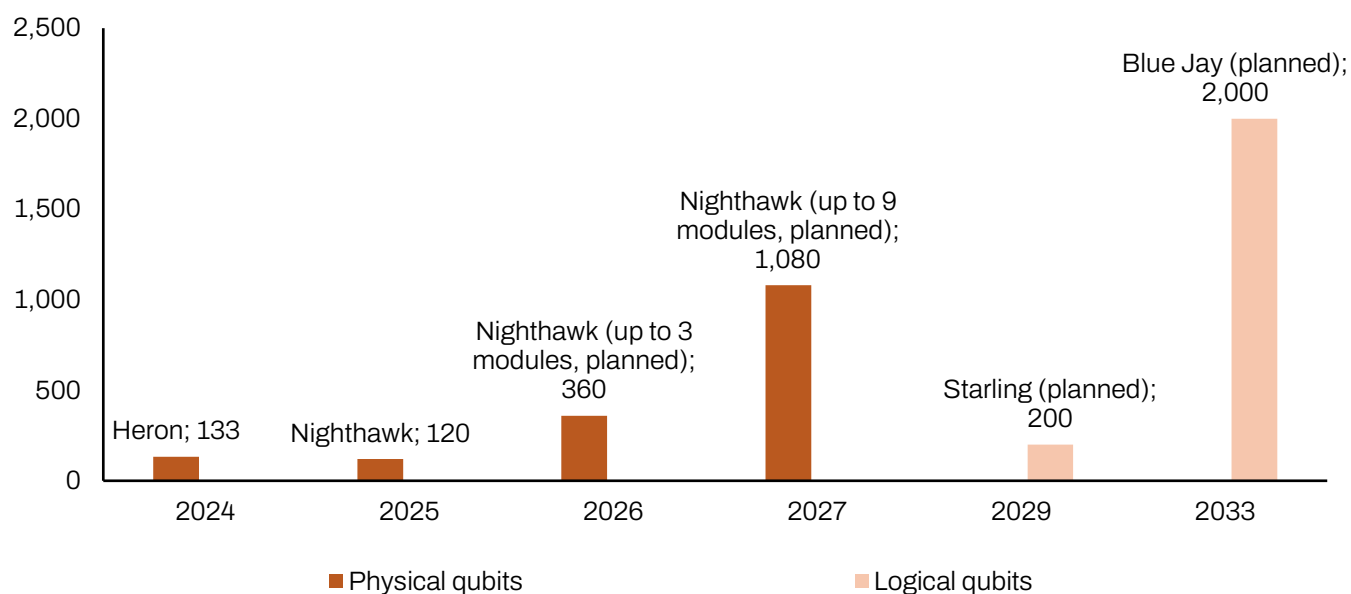
### What to expect in the coming decade

[In the field of cryptography, the European Union has set the end of 2030 as the deadline for migrating critical financial systems to post-quantum standards, with a full transition expected by 2035.](#)<sup>6</sup> The United States has gone further: an executive order issued in June 2026 brought forward the deadline for the establishment of keys in high-value federal systems from 2035 to 2030, and that for digital signatures to 2031, extending the requirement to its contractors.

[In terms of hardware, IBM estimates that processors with thousands of qubits and sufficient error correction to run applications currently in the proof-of-concept phase will be available between 2029-2033.](#)<sup>7</sup> If this timetable is met, the key question will not be whether access will continue to be via the cloud, something that is already the case today, but under what conditions. One scenario would open this access to a wide range of organizations on competitive terms; the other would keep commercial exploitation concentrated amongst the same providers that already dominate hardware and cloud services, reserving the best terms for selected clients through closed agreements.

The timeline matters less than the position from which each organization approaches it, and that position depends on decisions that can be taken now. Classifying which information requires long-term protection, assessing the extent to which the organization relies on external suppliers before that reliance becomes structural, or establishing its own criteria for validating any quantum model that is adopted are steps that do not require waiting for the technology to mature.

That is the difference between adopting technology on someone else's terms or doing so on one's own. Quantum computing can improve risk management, but it does not eliminate its institutional dimension. **FI**

**Figure 2 - Evolution of physical qubits in IBM quantum processors / (2024-2033)**

**Source:** IBM Quantum, official roadmap.

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Technological security requires physically independent connections and autonomy in decision-making processes and strategic prioritisation



Satellites can maintain priority communications during a crisis, although their limited capacity means they must be treated as a backup



The physical independence of connections and the ability to maintain critical functions will increasingly influence the insurance, financing and valuation of digital assets

## FROM CABLES TO SATELLITES: EUROPE'S BATTLE FOR DIGITAL RESILIENCE

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**Raúl VIÑAS ABADÍA**

Afi

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Submarine cables carry the vast majority of intercontinental internet traffic, yet the infrastructure itself remains physically exposed and increasingly caught up in geopolitical rivalry. Europe's position is especially fragile: beyond the cables' vulnerability, the continent depends heavily on non-European actors for the capacity, upkeep and satellite backup needed to keep networks running. Resilience therefore requires more than simply increasing the number of connections, as genuine diversity of suppliers, repair capacity and control over the alternatives available during a crisis are also crucial. Satellite links offer a stopgap for critical services during outages, but they lack the throughput and reliability to substitute for fiber at scale. As financial institutions and investors begin factoring physical connectivity into how they price risk and identify critical assets, submarine cable infrastructure is poised to matter as much economically as it already does strategically.

### Introduction

European digital sovereignty rests on vulnerable physical infrastructure and, to a large extent, on foreign providers who supply capacity, maintenance and satellite backup. This combination turns connectivity into a matter of strategic control, because increasing the number of connections does not guarantee operational continuity if Europe lacks the capacity to reroute traffic and restore service during a crisis.

Many applications that European users perceive as global are delivered from data centers located within Europe, even when the provider is American. Major operators replicate data and critical workloads across multiple regions to reduce exposure to physical failures. This redundancy reduces the impact of isolated failures but

The European risk assessment carried out by the European Commission for 2025 estimates that U.S. hyperscalers account for around 90% of capacity between the United States and Europe and forecasts that their influence will continue to grow in other regions

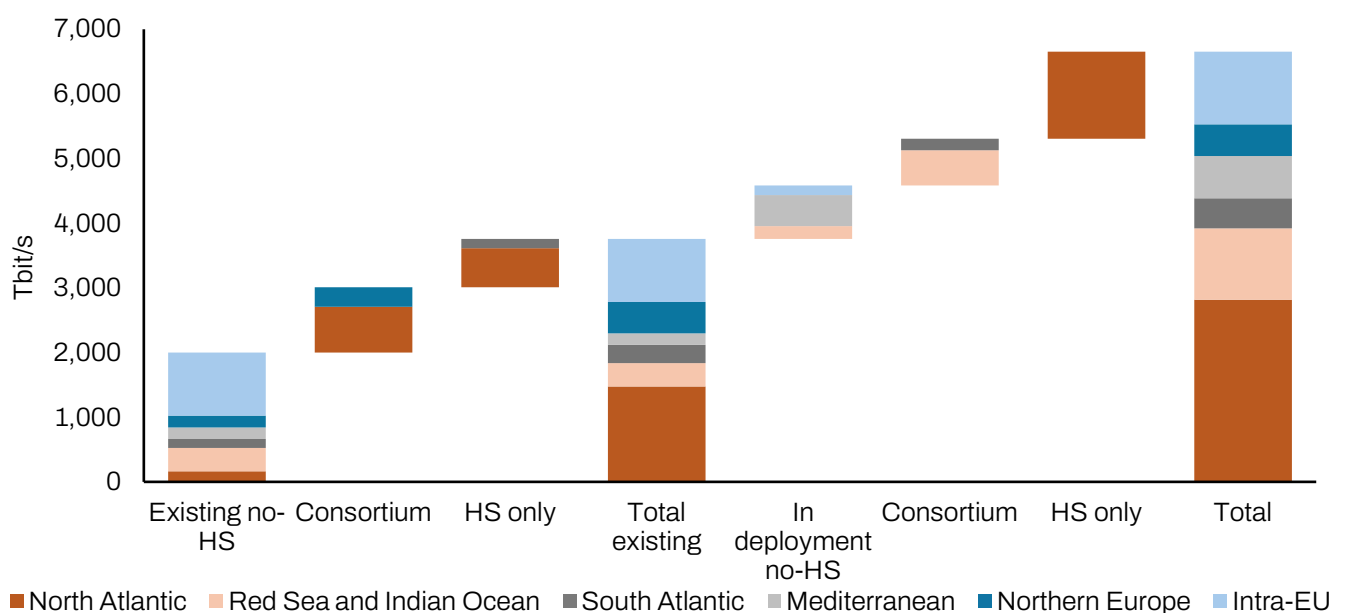
does not eliminate dependence on intercontinental routes or on their operational control. Submarine cables become critical when traffic crosses oceans, including synchronization between data centers, access to copies hosted outside Europe, international financial transactions, cybersecurity, telemetry, inter-cloud traffic and global business communications.

Over 99 % of intercontinental data traffic that crosses oceans travels via submarine cables, which are essential for the expansion of artificial intelligence, digital financial services and cybersecurity. [Their physical exposure brings forth a ‘grey area’ risk, as deliberate damage can be concealed amongst the approximately 200 annual faults in the global network, 80% of which are linked to fishing or anchoring.](#)<sup>1</sup> Incidents in the Baltic Sea in recent years have reinforced the perception that security depends on maintaining the ability to respond when a route ceases to function.

### European connectivity, external control

U.S. hyperscalers have transformed the submarine infrastructure by funding the deployment of cables that directly connect their data centers and platforms. [The European risk assessment carried out by the European Commission for 2025 estimates that these companies account for around 90% of capacity between the United States and Europe and forecasts that their influence will continue to grow in other regions.](#)<sup>2</sup> This private investment makes it possible to expand capacity quickly and follows a clear operational rationale: hyperscalers connect their own data centers to reduce latency, ensure availability and maintain greater control over their services. Europe’s vulnerability emerges when intercontinental capacity, cloud infrastructure, traffic prioritization and part of its business continuity options depend on a highly concentrated corporate ecosystem dominated by U.S. companies.

**Figure 1 - Submarine cable capacity connected to the EU by region and hyperscaler (HS) participation, 2025**

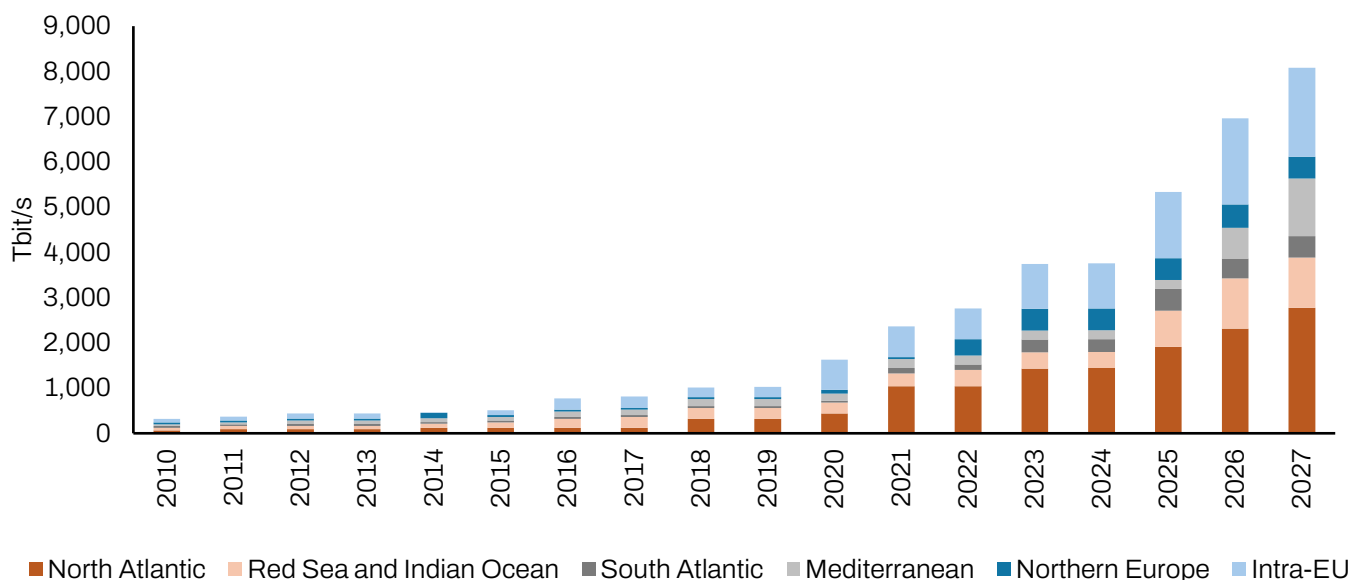


**Sources:** Authors' own elaborations based on European Commission (2025), Security and Resilience of EU Submarine Cable Infrastructures – Mapping, Risk Assessments, Stress Tests.

For Europe, this concentration primarily affects decision-making autonomy and the substitutability of critical capacities during a crisis. In the event of a serious disruption, the EU could find itself reliant on external interests to restore data traffic or to prioritize between incidents according to its operational needs. Consequently, the diversification of the European network should not be assessed by the number of cables, but rather by the concentration of suppliers, maintenance services or geopolitical alignments.

Chinese companies have less direct influence over transatlantic capacity and are less integrated into the European digital ecosystem, but they have gained a significant presence in the manufacturing and deployment of submarine systems and in projects in third countries that are key to the EU. Consequently, the European response is beginning to shift towards industrial policy. [In late 2024, France acquired 80% of Alcatel Submarine Networks, one of the few companies in the world capable of designing, installing and maintaining complete submarine systems, which had already deployed more than 750,000 kilometers of cable.](#)<sup>3</sup> The acquisition does not eliminate Europe's dependence, but it preserves the industrial capacity to design, lay and repair submarine cable systems without relying entirely on external suppliers.

**Figure 2 - Capacity of submarine cables landing in at least one EU Member State (2010-2027)**



Source: Analysys Mason.

### Restoring service before the disruption escalates

[Data from the International Telecommunication Union \(ITU\) shows that the global average time to commence a repair rose from less than 20 days in 2012 to more than 50 in 2024, despite the number of repairs and available vessels remaining relatively stable.](#)<sup>4</sup> Permits and operational restrictions account for a significant part of this deterioration. Differences between regions are considerable. For example, the United Kingdom begins repairs within an average of around eight days because some maritime, environmental and coastal access permits are processed before

an incident occurs. In these cases, delays depend not only on the availability of a repair vessel, but also on whether it can operate legally and quickly at the site of the fault. Greater political attention to this infrastructure should help to extend such procedures and reduce some of the administrative delays, although there will continue to be constraints that are more difficult to address, such as the availability of specialized vessels, sea conditions or the distance to the point of failure.

Europe is in a comparatively favorable position in terms of vessel availability. The Commission's assessment notes that between 2022 and 2024, only around 2–3% of European incidents experienced delays because the required vessel was engaged in another repair. This advantage may be eroded if simultaneous outages increase and demand on a highly specialized fleet also rises. A deliberate campaign could seek precisely such saturation and turn sufficient capacity under normal conditions into a bottleneck.

[The Commission has set aside €347 million in 2026 to strengthen cable security, with funding for strategic projects, monitoring and repair modules deployable from European ports.](#)<sup>5</sup> The first phase prioritizes the Baltic Sea and plans to extend this capacity to the Mediterranean and the Atlantic. This shift in focus is significant because it rightly shifts part of the response from emergency management towards pre-incident preparedness.

Low Earth Orbit (LEO) constellations can maintain essential connectivity during an emergency, but they lack the capacity to handle the volume carried by submarine cables

### **Satellites buy time; fiber carries volume**

Low Earth Orbit (LEO) constellations can maintain essential connectivity during an emergency, but they lack the capacity to handle the volume carried by submarine cables. The aggregate capacity of a satellite network is much lower than that of large fiber-optic systems and, furthermore, must be shared amongst widely dispersed users and territories. Furthermore, although LEO satellites have significantly reduced latency, their performance deteriorates in the face of variations in congestion, coverage and changes in inter-satellite links. Finally, satellites still require ground-based infrastructure to connect traffic to data centers and local networks, meaning they do not eliminate physical points of failure. If several high-capacity cables were to fail simultaneously, the orbital network could sustain priority functions, but it would not be able to absorb the lost traffic.

The economic value of satellite backup will be greatest for those services where a brief disruption could have disproportionate effects. In the financial sector, keeping certain payment systems, critical communications or access to remote infrastructure operational may be sufficient to mitigate part of the impact whilst submarine connectivity is restored. This makes satellite constellations a layer of selective continuity, the importance of which will grow as reliance on digital services increases and tolerance for prolonged disruptions decreases.

This new layer of resilience introduces, however, another strategic concentration. If a large proportion of available orbital capacity depends on a few private constellations such as Starlink, technological diversification may still rely on a small

number of operators and jurisdictions. [In fact, SpaceX used the Ukrainian military's reliance on its Starlink connections to disable military operations in accordance with the company's internal criteria in 2022.<sup>6</sup> Europe is seeking to reduce this reliance through IRIS<sup>2i</sup>, a project that has gained momentum in 2026 with the start of its large-scale deployment, but its first services will not be available until the end of the decade.<sup>7</sup>](#)

### From connectivity to financial risk

[DORA<sup>ii</sup> requires banks, insurers and other European financial institutions to identify critical technological dependencies, assess concentrations in third parties and prepare continuity and recovery mechanisms.<sup>8</sup> It is therefore important to bear in mind that a deterioration in connectivity to data centers, payment systems or market infrastructure may necessitate the use of alternative capacity and delay operations. It can also have financial consequences without causing a complete disruption, including slower payments, delays in trade reconciliation, reduced access to market data, difficulties meeting margin calls or problems with cloud-hosted functions. In payment systems, a disruption that causes a backlog of pending orders increases pressure on settlement and intraday liquidity once the service is restored. \[The ECB has also warned that a well-capitalized institution may face serious problems if it loses critical functions during an operational shock.<sup>9</sup>\]\(#\)](#)

The valuation of digital assets will incorporate connectivity risks as technological concentration and geopolitical exposure increase

The risk profile of a data center can vary significantly depending on the physical independence of its connections, pre-arranged access to repair services and the backup capacity available to maintain critical functions. As these differences become more visible, they will also influence insurance costs, financing conditions and investor requirements. An asset that depends on concentrated routes, external providers that are difficult to replace or uncertain repair times will have a different risk profile from one with alternatives secured in advance and greater clarity over its physical points of failure. This development would be consistent with the emphasis that DORA and banking resilience frameworks already place on critical dependencies and continuity during severe disruptions.

Over the next five years, supervisors and insurers will demand more information on the physical routing of connections and the time required to restore them. The change will become apparent when resilience exercises begin to distinguish between genuinely independent routes and links that share vulnerable corridors. Contracts will likely progressively incorporate reserved repair capacity and satellite backup for priority functions. By the middle of the next decade, assets unable to demonstrate these safeguards could face higher premiums and less favorable financing terms. The decisive indicator for Europe will be the speed with which investments in repair modules and IRIS<sup>2</sup> deliver available capacity during a crisis. If infrastructure expands whilst operational control remains centralized, autonomy will advance far less than the capacity figures suggest. **FI**

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## WILLIAM D. MAGWOOD, IV

Director-General of the  
OECD Nuclear Energy  
Agency

William D. Magwood, IV is the Nuclear Energy Agency (NEA) Director-General since 2014. Prior, he served as Commissioner appointed by the U.S. President and confirmed by the Senate to the U.S. Nuclear Regulatory Commission. From 2005 to 2010 he provided independent strategic and policy advice on energy, environmental and technology policy issues. From 1998 to 2005 Mr. Magwood was Director of Nuclear Energy at the U.S. Department of Energy, where he launched several important initiatives including Generation IV International Forum (GIF). He began his career working as a scientist for Westinghouse and Edison Electric Institute. Mr. Magwood holds Bachelor's degrees in Physics and English from Carnegie Mellon University and a Master of Fine Arts from University of Pittsburgh.



## The NEA's vision for the future of Nuclear Energy

Geopolitical instability and surging electricity demand from electrification, AI and industrial growth have repositioned nuclear energy as a strategic asset to handle these structural challenges. Realising this shift depends on extending existing reactor fleets, rebuilding fuel and industrial supply chains, developing a skilled workforce and closing the gap between technological innovation and regulatory deployment speed. Whether this period marks a durable expansion or another missed cycle will hinge on whether countries

commit to sustained, programmatic reactor construction rather than isolated projects.

**How have geopolitics, AI and electrification contributed to the nuclear revival? Is this trend widespread across OECD countries?**

For the nuclear sector, recent years have marked a significant turning point. While countries face different circumstances, geopolitical developments have clearly brought energy security back to the forefront of policy discussions. For

many countries, particularly those dependent on imported fossil fuels, nuclear energy is increasingly viewed as a way to strengthen resilience, reduce exposure to external shocks and provide a stable source of domestically generated electricity.

At the same time, the expansion of data centres, artificial intelligence and digital infrastructure is creating new demand in many OECD countries, while electrification across transport, industry and buildings is adding further pressure on power systems. Beyond the OECD, rising living standards and economic development are also driving substantial growth in electricity demand.

The convergence of these trends is leading more countries to view nuclear energy as a strategic asset capable of delivering reliable, clean electricity while supporting energy security, economic competitiveness and long-term resilience.

**Is the current nuclear revival a structural shift or another temporary cycle?**

I see this as a structural shift rather than a temporary cycle. In the early 2000s, electricity demand was essentially flat in many OECD countries, energy security concerns were less prominent in many countries and environmental objectives were not yet driving investment decisions. Today, governments and industry

are looking for sources of reliable, clean electricity that can support long-term economic growth and resilience. When all of these objectives are considered together, the range of options becomes much narrower, which creates a much stronger and more durable foundation for nuclear energy than we have seen in previous periods.

**Which of these structural forces do you believe will matter most over the next twenty years, and why?**

While artificial intelligence and data centres are attracting considerable attention, I believe electrification and re-industrialisation will most likely be the most significant drivers of electricity demand over the next two decades. Transport, industry and buildings still rely heavily on fossil fuels, and their transition to electricity will require a substantial expansion of power generation. Road transport alone accounts for 45% of global oil demand, and electrifying it at scale will dramatically increase electricity demand. The same is true for energy-intensive industries. Data centres will certainly play an important role, but the scale of economy-wide electrification means it is likely to have the greatest long-term impact on electricity systems and investment needs.

**How important is the existing nuclear fleet to meeting climate and energy security goals?**

In many cases lifetime extensions, refurbishments, uprates and plant

Electrification and re-industrialisation will most likely be the most significant drivers of electricity demand over the next two decades

## Lifetime extensions, refurbishments, uprates and plant restarts are the fastest and most cost-effective means of increasing the supply of reliable, clean electricity

restarts are the fastest and most cost-effective means of increasing the supply of reliable, clean electricity because the infrastructure, workforce and regulatory frameworks are already in place.

As highlighted in the recent NEA report *Nuclear Energy Outlook: Global Installed Capacity to 2050 and Beyond*,<sup>i</sup> long-term operation of the existing nuclear fleet also remains a key factor in meeting global nuclear capacity targets. Many reactors in OECD countries will reach the end of their initial operating licenses before 2040 but there is no technical reason most of these plants can't continue generating energy for many years after this period. Extending operations to 60 years and, increasingly, 80 years could preserve reliable low-carbon capacity, support energy security and avoid the need to replace large volumes of firm generation at short notice. Many governments have recognised this reality and are taking steps to preserve and maximise the value of their existing nuclear assets.

### Are expectations for small modular reactors (SMRs) realistic?

Small modular reactors (SMRs) offer opportunities to expand

the role of nuclear energy in markets, industrial applications and geographies where large-scale conventional reactors may not be the best fit. The latest NEA<sup>ii</sup> analysis shows that large-scale reactors are expected to remain the dominant source of new nuclear capacity through at least 2040, while many SMR developers focus on demonstrating and commercialising their first projects. Beyond that, the success of SMRs will depend on the industry's ability to move beyond traditional construction models and take advantage of serial production, advanced manufacturing and modular assembly techniques. If that can be achieved, SMRs could become an important complement to large-scale nuclear power in the decades ahead.

### Could global supply chains meet demand if nuclear deployment accelerated worldwide?

Delivering higher deployment scenarios will depend on overcoming challenges related to supply-chain and workforce capacity. In many OECD countries, limited new build over the past 25 years has weakened industrial capabilities and project-delivery experience.

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- i. OECD NUCLEAR ENERGY AGENCY. (2026). *Nuclear Energy Outlook: Global Installed Capacity to 2050 and Beyond*. August 2026. NEA. [https://www.oecd-neo.org/jcms/pl\\_119893/nuclear-energy-outlook-global-installed-capacity-to-2050-and-beyond](https://www.oecd-neo.org/jcms/pl_119893/nuclear-energy-outlook-global-installed-capacity-to-2050-and-beyond)
  - ii. OECD NUCLEAR ENERGY AGENCY. (2026). *Nuclear Energy Outlook: Global Installed Capacity to 2050 and Beyond*. August 2026. NEA. [https://www.oecd-neo.org/jcms/pl\\_119893/nuclear-energy-outlook-global-installed-capacity-to-2050-and-beyond](https://www.oecd-neo.org/jcms/pl_119893/nuclear-energy-outlook-global-installed-capacity-to-2050-and-beyond)

Meeting this challenge will require close co-operation among countries, stronger industrial partnerships and a shift from project-by-project approaches to programme-based deployment. Developing the skilled workforce needed to design, build, operate and regulate nuclear facilities will also be a longer-term effort. This includes not only engineers and scientists, but specialised trades such as welders, construction professionals and technicians.

It is important to be realistic about rebuilding these capabilities. Many countries will face challenges in ensuring they have the industrial and human capacity needed to support new nuclear build, and the sooner they begin addressing these issues, the better.

**Are new financing structures beginning to emerge that could accelerate deployment?**

We are seeing promising signs of innovation in nuclear finance that can help accelerate the deployment of new nuclear capacity. Sizewell C in the United Kingdom is being funded using the regulated asset base model, which lowers the cost of capital and reduces the burden on government balance sheets. Increasing funding from the private sector and positive signals from development banks also indicate a shift away from the traditional government support model. Overall, these developments will provide

tangible benefits to risk-sharing and economic competitiveness, and fewer projects will lean on the traditional infrastructure project finance model going forward.

**If you had to identify one decision that would secure nuclear energy's future, what would it be?**

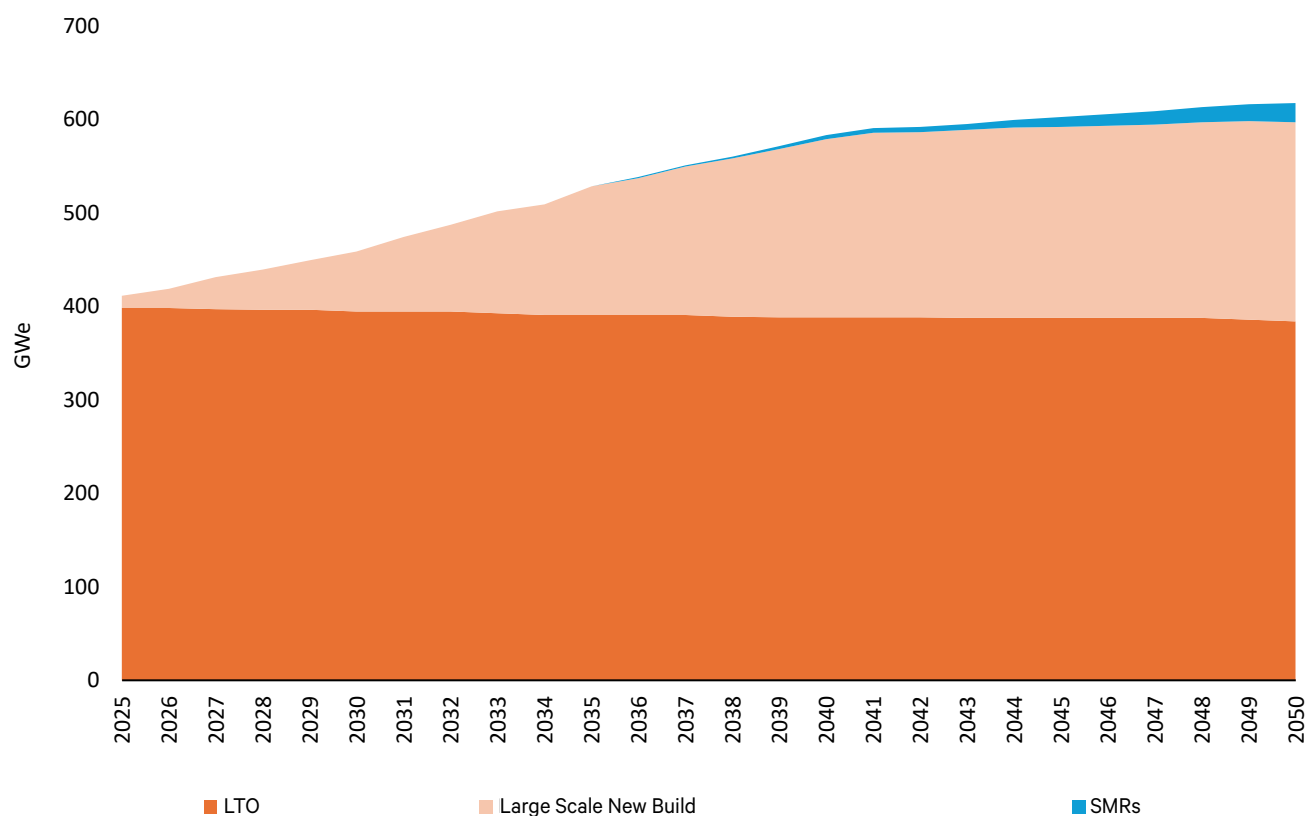
I do not believe in providing forecasts. History always surprises us, and the energy sector has a way of humbling those who make confident predictions. But from today's perspective, historians may look back on this period and ask whether countries moved beyond ambition and built the capabilities needed to deliver.

Above all, that means committing to sustained, programmatic construction rather than treating each project as a one-off endeavour. History shows that when countries build reactors in series, costs decline, timelines improve and expertise accumulates. That was the experience of the United States in the 1970s, Europe in the 1980s, Japan in the 1990s, and more recently China and Korea.

Success will also depend on whether countries invest in the workforce, strengthen supply chains and create the industrial capacity required for long-term deployment. If governments and industry address those challenges, I believe historians will see this period as the beginning of a durable nuclear expansion. **FI**

When countries build reactors in series, costs decline, timelines improve and expertise accumulates

Figure 1 - Global current trends scenario, 2026 / GWe



**Note:** The chart shows projected global nuclear capacity expected to be operational in each year, including existing capacity under long-term operation (LTO) and new capacity from large-scale reactors and small modular reactors (SMRs). GWe denotes gigawatts of electrical capacity.

**Source:** NEA.



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