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1.The Russia-Ukraine energy shock: Why geopolitics demands a clean energy shift

From an article by Bruce Douglas, February 12, 2026. Industry Insight from Ethical Corporation Magazine, a part of Thomson Reuters.

When Russia invaded Ukraine in 2022, it exposed a critical weakness at the heart of Europe's energy system. Within weeks gas flows were cut, prices surged and governments were forced into emergency measures to keep the lights on and homes heated.

The shock revealed a hard truth. When energy systems are built on imported fossil fuels and concentrated infrastructure, they inherit geopolitical risk by design. Pipelines, LNG terminals and gas-fired power plants may sit within national borders, but the prices are dictated by global markets shaped by conflict, coercion and supply manipulation.

Dependence on fossil fuels turned a conflict into a continent-wide economic crisis – and the cost was borne by the public and industries, as bills soared and inflation spiked. This is the predictable consequence of tying national prosperity to volatile, weaponised fuels. It exposed that without energy security, there can be no national security, and renewable energy is its foundation.

When missile and drone attacks effectively severed the Red Sea as a global trade artery in 2025, the detour around Africa became an immediate tax on the global economy.

Forcing tankers into a 3,500-mile detour, this burned an extra $1 million in fuel per round trip while maritime insurance premiums tripled for high-risk voyages.

No one has ever gone to war over a wind turbine. An army can seize an oil field and load barrels onto tankers, but it cannot capture the wind. It cannot blockade the sun. It cannot steal a river's current and ship it home.

Just as importantly, renewables enable decentralisation. Instead of a small number of giant facilities that could become single points of failure, countries can build thousands of dispersed generation and storage assets; from offshore wind and utility-scale solar to rooftop systems, batteries and microgrids. An attacker can still do damage, but it is far harder to knock a nation flat when power is distributed and locally supplied.

Clean energy is now the cheapest form of new electricity generation in most places. In 2024, the International Renewable Energy Agency found that 91% of newly commissioned utility-scale renewable capacity produced power cheaper than the cheapest new fossil-fuel alternative. This is part of the reason why investment is flowing. With more than half of its electricity now coming from zero-carbon sources and over 13 GW of grid-scale battery storage, California, the world's fourth largest economy, is reducing exposure to gas price volatility and insulating its economy from federal energy policy swings.

During Russia's continued invasion of Ukraine, decentralised solar and batteries are keeping clinics and critical services online when larger energy assets are hit. South Korea is moving to coal-free manufacturing at a staggering rate to protect its competitiveness from vulnerable energy flows.

A vocal minority will say that renewables simply swap dependence on oil and gas for imported components and critical minerals. They're right that today's solar panels, wind turbines and batteries rely on global supply chains that are, in some segments, highly concentrated. But the nature of this exposure is largely front-loaded. You buy the equipment once, then are free to generate electricity for decades.

Consider renewables, energy storage and grid interconnection as defence infrastructure. Doubling down on them is how countries make themselves safer, more resilient and less vulnerable to coercion.

2. Iran war shatters Trump Administration's case for fossil fuels

From an article by Ron Bousso, a Reuters columnist

LONDON, March 11 (Reuters) - The economic risks of the world's heavy dependence on oil and gas have been laid bare twice in four years - first with Russia's invasion of Ukraine and now with the U.S.-Israeli war on Iran.

The physical shortages that are rapidly developing are heaping pressure on economies worldwide, reviving fears of higher inflation, weaker industrial output and slower growth globally. The pain has been particularly acute in Asia, which relies on the Middle East for nearly 60% of its crude oil imports.

The latest crisis is a reminder that fossil fuels, like renewables, can be unreliable and volatile – and also that securing domestic sources of energy is critical. This, in turn, is altering the debate about the global energy system's two supposedly competing objectives: tackling climate change and ensuring access to cheap, reliable energy.

It turns out the latter may end up helping with the former.

THE ERA OF ENERGY SHOCKS

In the debate about whether to prioritize cutting fossil fuels or keeping energy cheap, the pendulum swung decisively toward the energy transition after the signing of the 2015 United Nations-backed Paris climate agreement. This triggered a wave of investment in renewable power and a sharp pullback in spending on oil, gas and coal – the main sources of greenhouse gas emissions.

However, Russia's full-scale invasion of Ukraine in 2022 delivered a brutal wake-up call. Europe's heavy reliance on imported Russian gas was exposed as a significant vulnerability when supplies collapsed, sending prices soaring and compounding global inflation just as economies were emerging from the COVID-19 pandemic.

That extreme volatility forced governments from Europe to Asia into rapid action. Some fast-tracked solar and wind projects to insulate their economies from future shocks. But many also ramped up domestic production of gas and coal, and others - notably China and India - embraced an unapologetic "all-of-the-above" approach.

The crisis highlighted a stubborn reality: fossil fuels remain deeply embedded in the global economy. Despite record growth in renewables last year, oil and gas still account for almost 60% of global energy demand, according to the Energy Institute, underscoring how far the world remains from any rapid exit - and how exposed it remains to future shocks.

NO NET ZERO?

The Russia-Ukraine war is not the only force that has reshaped energy geopolitics over the past decade. Another tectonic shift is the rise of the U.S. as the world's top oil and gas producer, powered by the shale revolution.

The Trump administration, alongside a growing chorus of politicians globally, has attacked net-zero ambitions, which refer to the point where greenhouse gas emissions are balanced by the amount removed from the atmosphere. U.S. Energy Secretary Chris Wright slammed net-zero as a "destructive illusion" during an International Energy Agency (IEA) meeting last month, arguing that the shift to renewables imposes unnecessary costs on consumers already strained by inflation.

The price tag attached to building new renewable power systems is certainly daunting. Global investment in renewables would need to climb to about $1.4 trillion per year by

2030, from roughly $624 billion in 2024, to meet emissions-reduction targets, according to the International Renewable Energy Agency (IRENA). The IEA estimates that spending on electricity grids alone must rise by around 50% by 2030 from today's roughly $400 billion a year.

Even if these enormous sums were met, the notion that the world can quickly switch from fossil fuels to renewables is clearly unrealistic. But when viewing the situation through the lens of energy security, it makes a lot of sense for governments to look beyond fossil fuels. Indeed, it appears negligent not to.

Consider that in the past week, a single country has been able to upend the global energy system by blocking one waterway that is a mere 39 kilometers wide at its narrowest point. If that were to persist, it could bring significant segments of the global economy to a veritable standstill. Governments will take notice, especially the most vulnerable economies, and will likely seek to develop more domestic sources of energy, whether they be fossil fuels or renewables.

The push for energy security may thus end up doing what climate policy alone could not: pushing countries to move faster toward a more diversified and resilient energy system.

3. Climate Challenge: A Decade After Paris Agreement

Extracted from an article by Canan Sevgili, Reuters website, February 17, 2026

Feb 16 (Reuters) - Ten years after the Paris Agreement took effect, newly released climate datasets show the world warming at an accelerating pace, with 2025 ranking among the three hottest years ever recorded, and ocean heat and sea levels crossing new thresholds.

Although countries agreed a deal to pledge more funding for poorer countries to adapt to extreme weather at the annual United Nations meeting in Brazil last year, they failed to agree on more explicit plans to phase out fossil fuels and strengthen emissions-cutting plans.

Data from some of the world's leading scientific agencies shows global warming has sped up markedly since the mid-2010s.

EMISSIONS: A WIDENING GAP

The World Meteorological Organization's (WMO) Global Atmosphere Watch network shows concentrations of carbon dioxide, methane and nitrous oxide climbing to record highs, driving the temperature spike observed from 2023 to 2025, scientists say.

Global fossil fuel carbon dioxide emissions are projected to climb to a record 38.1 billion tonnes in 2025, driven by rising coal, oil and gas use despite rapid growth in renewable energy, according to the latest Global Carbon Budget report. The report — produced by an international team of more than 130 scientists — estimates global fossil fuel CO_2 emissions will rise 1.1% next year, pushing atmospheric CO_2 concentrations to roughly 52% above pre-industrial levels.

Researchers warn there is only room for about 170 billion more tonnes of CO_2 — equivalent to roughly four years of emissions at current rates - if the world wants to cap global warming at 1.5° Celsius above the pre-industrial average.

Emissions are projected to increase in China, India, the United States and the European Union,

TEMPERATURES: A DECADE OF ACCELERATION

NASA's Goddard Institute for Space Studies (GISS) said the Earth's surface in 2025 was 1.19°C above the 1951–1980 average, effectively tying with 2023 as one of the warmest years ever measured.

The WMO's consolidated dataset places 2025 at 1.44°C above pre-industrial levels, ranking it among the top-three warmest years over the 176 years of recorded temperatures. [nasa.gov] [wmo.int] [berkeleyearth.org]

ARCTIC: RAPID COLLAPSE OF SEA ICE

The U.S. National Oceanic and Atmospheric Administration's (NOAA) 2025 Arctic Report Card confirmed that October 2024–September 2025 was the warmest period since 1900, and the region continues to warm more than twice as fast as the global average.

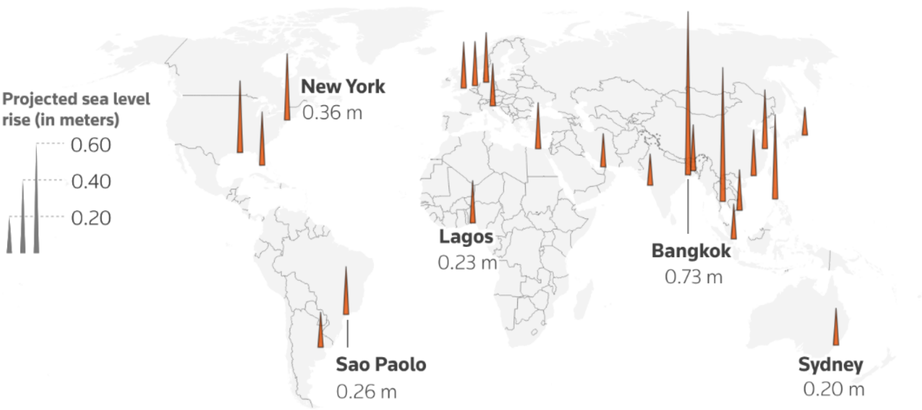
Sea-ice extent reached the lowest winter maximum ever recorded in March 2025, at about 14.47 million square kilometers, according to the U.S. National Ice Center.

OCEANS: HEAT AND RISING SEAS

The oceans absorbed record amounts of heat in 2025, setting a new global high for upper-ocean heat content, according to NOAA and Berkeley Earth.

Global cities with millions of people at risk from sea level rise

Projected rise in sea levels by 2050 under a moderate carbon emissions scenario, in meters



Note: Projections based on the IPCC's SSP2-4.5 scenario (moderate emissions pathway).

Source: IPCC AR6 Sea Level Projections (Garner et al., 2021) via NASA Sea Level Projection Tool

Vera Dvorakova, Canan Sevgili and Prinz Magtulis | REUTERS, Feb. 16, 2026

The map shows some of the world's most exposed cities to sea level rise.

Sea levels, measured by tide gauges and satellites, continue to rise. The Intergovernmental Panel on Climate Change projects a 0.20–0.29 meter rise by 2050 relative to 1995–2014.

4. How extreme weather is leaving thousands of homes uninsurable

Extracted from In Focus, Guardian website, 26 February 2026

Accelerating climate risks are already driving up insurance premiums across the US, especially in the fiery west and hurricane-prone south-east. Commercial insurers are pulling out, leaving the state-backed insurers of last resort carrying the can. In Spain and Portugal, both hammered by extraordinary rains since the start of the year, governments have had to provide billions of euros in aid.

The western UK has also been drenched since the new year: the poor souls of one Cornish village have had 50 straight days of rain. This has prompted warnings of the emergence of "mortgage prisoners", people who cannot sell because their homes are too flood-prone to insure, and fears of banks facing rising defaults.

And the climate crisis is just getting started. Scientists this week estimated that the number of people exposed to flood risk will rise by 25% on China's Pearl River delta by 2035, even if carbon emissions start to be cut: that region, which includes Hong Kong, is home to 86 million people.

So, an insurance crisis is a crisis for both individuals and society. "Insurance protects the things that people have worked incredibly hard for," Alvey told me. "It provides financial stability in moments of shock that mean that people can carry on with their lives."

At the biggest scale, one top insurer has warned that the climate crisis is on track to destroy capitalism itself, with the vast cost of extreme weather impacts leaving the financial sector unable to operate. "Entire regions are becoming uninsurable," said Günther Thallinger, an Allianz SE board member, last year.

He is far from alone in his concern. The International Association of Insurance Supervisors, a group of regulators from across the globe, said in November: "A reduction in the insurability of assets linked to bank lending could lead to systemic risk and financial instability."

Alvey says there is a risk of a domino effect: insurance fails, banks suffer, investors pull out and the state is left to pick up the pieces – if it can. A telling example came in south Wales earlier this month, when a local authority was forced to spend millions of pounds buying out the residents of 16 terraced homes that could no longer be defended from flooding.

Even if you escape injury from flooding, the trauma of seeing your home inundated with filthy water is profound and long-lasting.

So what can be done? One solution has been pioneered in the UK. The scheme, called Flood Re, is a government and industry partnership that uses a small levy on everyone's premiums to keep them affordable for those in flood risk areas. Without this, those premiums would run to thousands of pounds a year, with the excesses in the tens of thousands. More than 600,000 homes have benefited since Flood Re started in 2016.

Tracey Garrett of the National Flood Forum, says: "It was a real-life life-saver for a lot of people, but we're concerned now because Flood Re will end in 2039 and most mortgages already go way past 2039." The idea was that a combination of new flood defences and better flood protection in houses would mean that insurance for these homes would be affordable by then.

But this isn't happening fast enough. Flood Re's boss said last July that the UK's flood resilience had actually deteriorated, leaving hundreds of thousands of homes at risk of becoming uninsurable in 2039. "We're storing up a massive problem for people in the future," says Garrett. (Building 44,000 new homes in flood risk areas of England from 2022-2024 clearly doesn't help.)

Kelly Ostler-Coyle, Flood Re's director of corporate affairs, says the next five to 10 years are crucial: "We're working hard to help the UK live better with water – building resilience and making sure recovery after floods is quicker and less disruptive."

That includes promoting protection, such as self-closing air bricks to keep water out and putting electrics higher on walls. "Whether it's government, insurers, households, Flood Re, local councils, or water companies, we've all got a role in facing up to the realities of living with water."

We should also not forget that many people in the world have never been able to afford insurance, even as the climate crisis increases the need for it. The Insurance Development Forum's programmes helped provide financial protection to 4 million people in 2025, but there's a very long way to go.

A final thought: insurers are pre-eminent experts in risk – it is their core skill, honed over many decades. So when their warnings that the climate crisis could make cover for ordinary people unaffordable start coming to pass, it really is time to act.

5. The Guardian view on EV charging: China took the right lessons from Britain's past

Editorial: Megawatt fast EV charging reflects a coordinated grid strategy the UK once used. Privatisation and fragmentation now make that infrastructure far harder to build. Sun 8 Mar 2026

The future of electric cars arrived this week in China. The world's biggest car seller, BYD unveiled a new battery giving its latest electric models more than 600 miles of range. Remarkably, the Chinese motor-maker said 250 miles of range could be injected into its new batteries in just five minutes. If true, the last remaining advantages of petrol cars – long range and quick refuelling – are beginning to disappear.

But such technology requires megawatt charging points. A single charger can draw as much power as a small town in Britain. BYD's system relies on chargers delivering around 1.5 megawatts of electricity – more than four times the fastest chargers in the UK. China is moving fast, planning thousands of megawatt charging stations within two years.

Britain, by contrast, would struggle to support such a network today. Without upgrades to substations and local networks, the system could not handle the power spikes created by ultra-fast EV charging. This country's electricity responsibilities are split across many bodies and firms. Improvements are slow and difficult, especially compared with China's state-directed grid investment. The Chinese model resembles in some ways Britain's postwar electricity system.

Under the Central Electricity Generating Board (CEGB), as the economic historian Arthur Downing points out, generation, transmission and system operation were integrated within a single organisation that planned the network. Large power stations were linked by a national grid and run as one system, delivering decades of efficiency gains and falling electricity prices.

Electricity abundance in Britain did not emerge because the state withdrew. It emerged because the state created institutions capable of coordinating a complex industry. Britain built its first national electricity grid in seven years. Today some transmission projects take double that just to get planning approval and grid connection. Building the infrastructure for the low-carbon transition requires institutional capacity – not simply deregulation.

Seen by Margaret Thatcher as a relic, the CEGB was broken up and privatised in 1989. Labour warned that prices would rise. They did. The "privatisation premium", according to an analysis by the Common Wealth thinktank, sees almost a quarter of the average household energy bill – roughly £450 – flow today into corporate profits. Other essential services are similarly hit. Nearly 30% of a water bill in the English privatised system goes to shareholder returns and paying debt. By contrast, publicly owned Scottish Water spends 10% of revenue on borrowing costs.

These costs are not primarily the price of pipes, power stations or grids. They reflect financing and ownership. Public utilities borrowed close to the government rate. Private firms must also reward shareholders – raising the cost of capital that lands up in household bills. Over 30 to 40 years, the cost difference adds up to billions.

Privatisation fragmented Britain's electricity system, replacing integrated planning with firms, regulators and markets. Yet infrastructure networks depend on knowledge built over decades by engineers in laboratories and operators. When those institutions disappear, much of that capability disappears with them. Britain now faces a choice: rebuild the capacity to coordinate the grid – or watch technologies like BYD's arrive elsewhere.

6. Scientists use sunlight and gallium to make green hydrogen

From Energy Source & Distribution Magazine, February 11, 2026

An Australian research team has created a process using liquid metals, powered by sunlight, that can produce clean hydrogen from both freshwater and seawater. The method allows researchers to 'harvest' hydrogen molecules from water while also avoiding many of the limits in current hydrogen production methods. It offers a new avenue of exploration for producing green hydrogen as a sustainable energy source.

"We now have a way of extracting sustainable hydrogen, using seawater, which is easily accessible while relying solely on light for green hydrogen production," said lead author and University of Sydney PhD candidate Luis Campos.

Senior researcher Professor Kourosh Kalantar-Zadeh, from the School of Chemical and Biomolecular Engineering, says the study was a stunning showcase of how the natural chemistry of liquid metals can create hydrogen.

His team produced hydrogen with a maximum efficiency of 12.9%, and they are currently working to improve the efficiency for commercialisation. "For the first proof-of-concept, we consider the efficiency of this technology to be highly competitive. For instance, silicon based solar cells started with 6% in the 1950s and did not pass 10% 'tll the 1990s."

At the technology's heart is gallium, a metal with a low melting point, meaning it needs less energy to transition from a solid into a liquid. Professor Kalantar-Zadeh's team has been pushing the chemical and technical boundaries of liquid metals to create new materials for years. Gallium particles' ability to absorb light caught their attention.

The result of this finding was a technology using a circular chemical process: particles of gallium are suspended in either seawater or freshwater and activated under sunlight or artificial light. The gallium reacts with the water to become gallium oxyhydroxide and releases hydrogen.

"After we extract hydrogen, the gallium oxyhydroxide can also be reduced back into gallium and reused for future hydrogen production—which we term a circular process," says Professor Kalantar-Zadeh.

Gallium in liquid state is a fascinating element. At room temperature it looks like solid metal, but when heated to body temperature it transforms into liquid metallic puddles.

Campos said the surface of liquid gallium is very chemically 'non-sticky,' and most materials will not attach to it under normal conditions. But when exposed to light in water, liquid gallium reacts at its surface, gradually oxidising and corroding. This reaction creates clean hydrogen and gallium oxyhydroxide on its surface.

The University of Sydney-led research was published in *Nature Communications*.

Many industries and scientists believe hydrogen is the ideal candidate for a sustainable energy source, contributing significantly to reducing greenhouse gas emissions. 'Green' hydrogen, as its name suggests, is made using renewable sources.

Professor Kalantar-Zadeh said, "There is a global need to commercialise a highly efficient method for producing green hydrogen. Our process is efficient and easy to scale up." The team is now working on increasing the efficiency of the technology, with the next goal being to establish a mid-scale reactor to extract hydrogen.

7.How Europe can turn cement into a quick win for climate

From an article by Donal O'Riain, February 17, 2026. Industry Insight from Ethical Corporation Magazine, a part of Thomson Reuters. Donal O'Riain is the founder of Ecocem, an Irish low carbon cement technology company.

Europe is approaching a decisive moment in climate and industrial policy. The European Commission's Industrial Accelerator Act (IAA) proposal, expected on February 25, aims to create lead markets for low-carbon European industrial products. This provides a unique opportunity to drive innovation, competitiveness and faster industrial decarbonisation.

One of the most emissions-intensive materials in the world, cement accounts for almost 8% of global carbon emissions. On current trajectories, the sector remains aligned with roughly 3 degrees Celsius of warming, highlighting the need for a successful cement decarbonisation strategy in Europe and globally. Yet much of today's policy debate remains anchored in pathways that are either slow to deploy or prohibitively expensive. Continuing with these pathways would be a strategic error at the very moment faster solutions are available.

A growing body of evidence suggests that relying primarily on carbon capture, usage and storage (CCUS) carries significant risk. CCUS has understandably attracted policy attention, given its familiarity to industry and its promise of addressing residual emissions, but capital costs remain extremely high, infrastructure for transport and long-term storage is still incomplete, deployment timelines extend well into the 2030s, and the technology faces social, regulatory and logistical hurdles. According to the consultancy firm CRU Group, cement production costs could triple under a CCUS-first strategy.

These challenges do not eliminate the role of CCUS in the long term, but if Europe is serious about combining industrial competitiveness with climate leadership, policy must focus on solutions that can scale quickly and cost-effectively this decade.

There is a growing range of low-carbon cement formulations already being produced and deployed, reducing emissions at source, using existing plants, established materials and conventional construction practices. The constraint is not innovation, but the policy and regulatory frameworks that determine which solutions can compete, scale and reach the market.

First, cement standards need to shift decisively from prescriptive rules towards performance-based approaches. Today's standards often lock in high-clinker formulations by specifying what materials must be used, rather than what outcomes must be achieved. A framework focused on strength, durability and safety, would give engineers confidence while allowing innovative low-carbon cements to compete fairly with conventional products.

Second, Europe needs a clearer and more harmonised route to market through concrete standards. Even where low-clinker cements are permitted, fragmented national concrete standards slow adoption and raise costs for producers operating across borders.

Third, by embedding carbon requirements into public projects, governments can use procurement rules to create early demand for low-carbon materials, build confidence across the value chain and help proven technologies move into the mainstream.

Finally, directing a greater share of targeted funding towards scalable, low-clinker technologies would deliver earlier climate impact, strengthen European industrial capability and reduce long-term costs.

To reduce the 95% of cement carbon emissions that arise outside Europe, the globalisation of technologies is essential. Technology transfer, especially to the developing world, should be supported by the EU. This is not about choosing between climate and economic success. In fact, Europe should see this as an opportunity to strengthen its industrial competitiveness and export its solutions to fast-growing global markets.

Cement has always been considered a hard-to-abate sector and one of the toughest challenges for global decarbonisation. However, technology has radically changed. The technologies exist, the performance is proven and the economic case is strong. What is needed now is a policy framework that allows these solutions to scale across the continent – and beyond.

Ross Rutherford

ESR Newsletter Editor

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