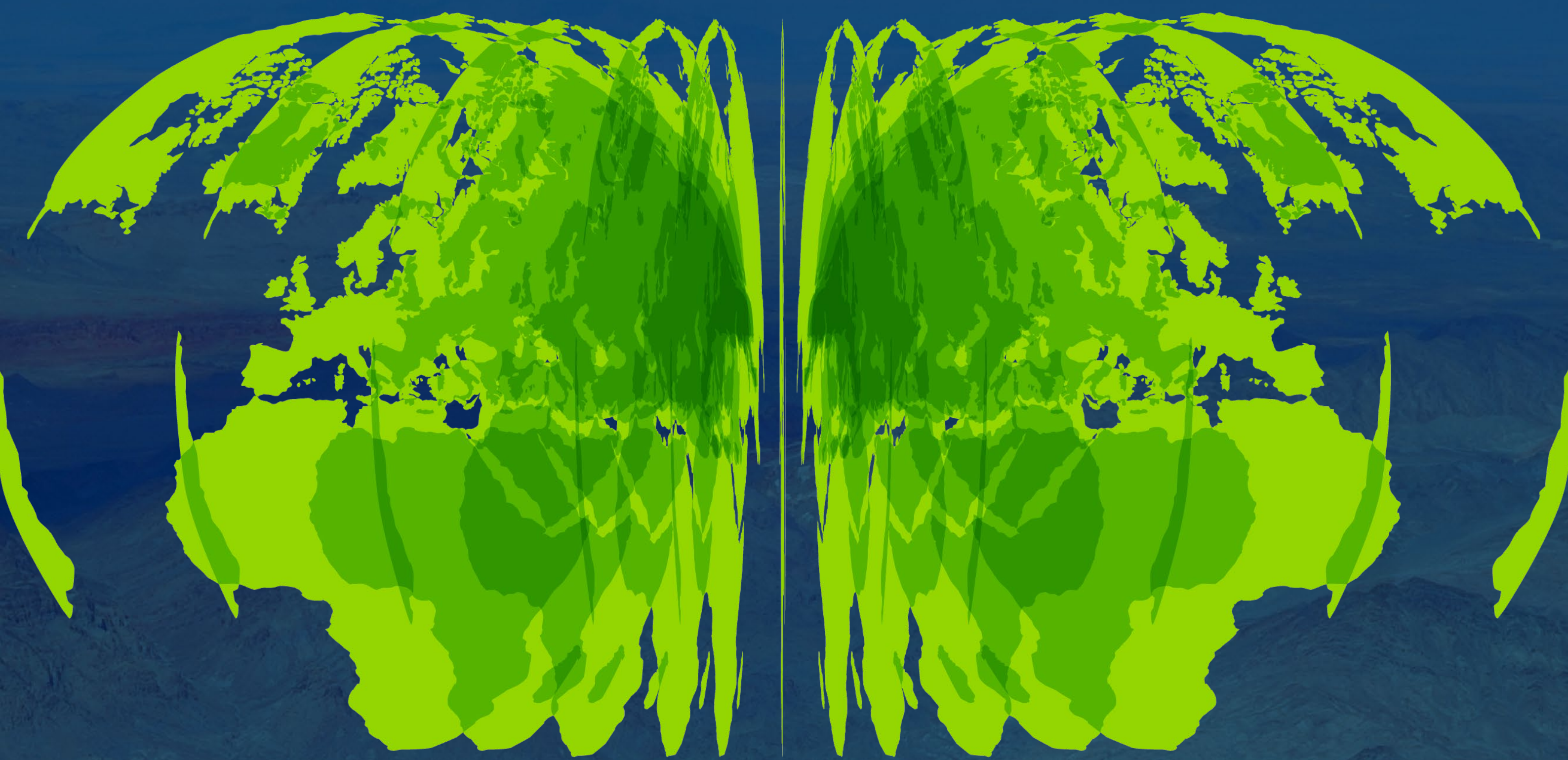
Lessons on Energy Security after the Hormuz Crisis

MAY 2026

How accelerating the Clean Energy Transition builds resilience against future price shocks



Energy Transitions Commission

ETC Briefing Note

The Energy Transitions Commission (ETC) is a global coalition of leaders from across the energy landscape committed to achieving net-zero emissions by mid-century, in line with the Paris climate objective of limiting global warming to well below 2°C and ideally to 1.5°C. ETC's commissioners come from a range of organisations – energy producers, energy intensive industries, technology providers, finance players and environmental NGOs – which operate across developed and developing countries and play different roles in the energy transition. This diversity of viewpoints informs our work: our analyses are developed with a systems perspective through extensive exchanges with experts and practitioners. The ETC is co-chaired by Lord Adair Turner and Jules Kortenhorst who work with the ETC team, led by Faustine Delasalle (Vice-Chair), Ita Kettleborough (Director), and Mike Hemsley (Deputy Director).

Lessons on Energy Security after the Hormuz Crisis: How accelerating the Clean Energy Transition builds resilience against future price shocks was produced by the ETC Secretariat and should not be taken as members agreeing with every finding or recommendation.

The ETC Commissioners agree on the importance of reaching net-zero carbon emissions from the energy and industrial systems by mid-century and share a broad vision of how the transition can be achieved. The fact that this agreement is possible between leaders from companies and organisations with different perspectives on and interests in the energy system should give decision-makers across the world confidence that it is possible simultaneously to grow the global economy and to limit global warming to well below 2°C. Many of the key actions to achieve these goals are clear and can be pursued without delay.

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Introduction

The US–Israeli war with Iran began on 28 February 2026. Beyond the direct severe human suffering, the conflict has had significant energy impacts, closing the Strait of Hormuz to normal tanker traffic and causing direct damage to critical energy export infrastructure across the Gulf region, including oil terminals and LNG facilities that may take years to fully restore. Together, these disruptions have affected the delivery of around 18.4 mb/d of oil flows through Hormuz, equivalent to roughly one-fifth of global oil supply, with immediate offsets reducing the net shortfall to around 11 mb/d.[1] They have also disrupted the delivery of around 110 bcm/y of LNG, equivalent to around 20% of global LNG trade and about 3% of total global gas demand, while affecting around 30% of globally traded fertiliser inputs produced in the region. Brent crude prices rose above $100/bbl, the highest sustained level since 2022, and prices for spot cargoes have traded even higher.

The impacts are being felt across all regions. Europe has seen gas prices rise sharply, while many Asian countries are facing acute shortages of LNG and switching to alternative fuels. Higher oil and diesel prices are feeding through into transport costs and inflation globally, but the effects are felt most acutely in emerging and import-dependent economies, while disruptions to gas and fertiliser markets are increasing risks of higher food prices. The economic shock is real and its distributional consequences — falling hardest on energy-importing developing economies — are severe.

The Energy Transitions Commission's primary focus is on the medium- and long-term strategies required to build zero-carbon economies. This crisis highlights a structural vulnerability in the global energy system: heavy reliance on geographically concentrated fossil fuel supply and critical transit routes. As in the aftermath of Russia's invasion of Ukraine in 2022, our view is that the right response is to accelerate the clean energy transition, not to increase fossil fuel dependence. High and volatile fossil fuel prices make zero-carbon alternatives competitive. But seizing this opportunity requires clear strategic direction, strong policy action, and careful management of near-term trade-offs. Our key messages are summarised on the next two pages. This short briefing then goes through in turn:

1) Understanding the magnitude of the energy market shock, and its regional implications
2) Placing the shock in historical context – and how the suite of clean energy technologies available today provides a unique resilience opportunity
3) How to respond: 'win wins', tricky trade-offs and clear 'do-nots'
4) Conclusion and actions for policymakers.

[1] Bloomberg (2026)

Structural flaws at the heart of the global energy system fail to insulate against future energy shocks

The Strait of Hormuz crisis has exposed a structural flaw at the heart of the global energy system. The right response is to accelerate the clean energy transition, and avoid introducing short-term blanket subsidies or long term fossil lock in that fails to insulate against future shocks.

75% of the world population lives in fossil fuel-importing countries, with repercussions are felt globally

~20%	~20%	1/3	$1-2tn
of global oil supply disrupted ≈20 mb/d	of global LNG trade disrupted ≈110 bcm/yr	of global fertiliser trade disrupted	additional annual energy costs if prices sustained

"The key difference between this crisis and previous crises is the availability of readily deployable alternatives. Accelerating their deployment can reduce oil and gas demand by more than 20% by 2035."

POLICY FRAMEWORK

Win-wins to be accelerated

Fast-track renewables permitting and grid connections.

Strengthen EV phase-out timelines and expand charging infrastructure.

Deploy heat pumps; rebalance electricity vs gas prices.

Tighten appliance and equipment efficiency standards.

Reform power markets to limit fossil fuel price pass-through via long-term contracts.

Difficult "trade-offs" to manage

Target fossil subsidies to vulnerable households only — not leisure travel or general road use.

Short-term coal use: time limited, no new capacity.

New LNG commitments: only with robust methane standards and short contracts.

Preserve carbon pricing credibility — reform EU ETS structure, do not weaken it.

Clear do nots

No blanket fossil subsidies.

No large-scale new upstream oil and gas development nor long-term LNG development.

Do not weaken 2030 or 2050 climate targets.

A menu of options to be prioritised based on national circumstances, exposure, fiscal space and time taken to impact.

6 learnings from the crisis so far

1 — Global chokepoint

Hormuz is the single biggest failure point of the fossil system – 20% of oil and 20% of LNG

This is not just an energy crisis: one-third of globally traded fertilisers and 50% of seaborne sulphur — a critical input to battery supply chains — also transit Hormuz.

Food security, industrial supply chains and battery metals are all exposed: physical fuel shortages are already affecting food production and consumption, mobility and industrial production, particularly in Asia, and will likely spread further.

2 — A shock of historic proportions

Higher volumes but so far lower price impacts mean shock is structurally different to what we've seen before

Immediate cuts of 11 mb/d of oil, constraints on the deliver of 110 bcm/y of gas and shortages across a range of downstream products (incl. LPG) are leading to physical shortages and price disruption.

Unlike original oil crises – this one also affects gas.

Price impacts so far are +30-70% for oil and +100-150% for LNG. Sustained disruption will see further physical loss and high prices.

Timing of crisis, high stock & in transit availability and availability of clean energy alternatives are key mitigating factors.

3 — Structural resilience of clean systems

Clean energy systems are structurally immune to this type of shock

70–90% of clean energy costs are upfront capital not immediate fuel costs – disruptions affect new assets not current consumption.

Resource distribution of clean energy is more even around the world.

75% of the world population lives in fossil fuel-importing countries — increased spending on fossil fuels is opportunity cost of investing in more structurally resilient alternative.

4 — The market is responding by buying clean

The market is already signaling the answer — policy must not contradict it

Chinese solar exports doubled in March 2026. Fifty countries hit all-time solar import records.

EV registrations in the EU rose nearly 50% year-on-year; EV searches in Australia surged 75–80% in a single week.

Heat pump and solar sales hit records in the UK.

The private sector is accelerating. Governments

must amplify not undermine this.

5 — Accelerating the transition

Clean energy deployment can eliminate the need for Hormuz-equivalent volumes and displace 20+% of total global oil and gas demand by 2035

Renewables and batteries are increasingly cost competitive, displacing gas.

Electric vehicles are already displacing oil demand and accelerating exponentially.

Electrification and efficiency actions can accelerate displacement – with policy action.

Green fuels offer long-term alternative.

6 — The cost of inaction

A persistent Hormuz shock costs as much as closing the clean energy investment gap

The world spends ~$4 trn/year on fossil fuels. Recent high prices, if sustained, would add an additional $1–2trn/year on top. This pays more money for the same energy, and provides no lasting resilience against a future shock.

Equally, the annual gap between today's clean energy investment and what net zero requires is $1.5trn/year – providing resilience against future shocks.

1 An historical shock to Global Energy Markets

1.1 Hormuz is the world’s highest-consequence oil chokepoint and a critical LNG provider

The Strait of Hormuz is the world's single most critical energy chokepoint in the global system (Exhibit 1). Under normal conditions, around 18.4 million barrels per day (mb/d) of crude oil and refined products transit the strait, alongside 110 billion cubic meters per year of liquefied natural gas. This is equivalent to roughly one-fifth of global oil supply and one-fifth of global LNG trade, though only around 3% of total global gas supply. Crude oil accounts for around 14 mb/d of these flows, while liquefied petroleum gas (LPG) represents a highly exposed component, with roughly 30% of globally traded volumes passing through the strait. This concentration of flows makes the strait uniquely consequential: no other maritime route combines such scale with such limited alternative routes. [2]

> **While Iran accounts for 3–4% of global crude production, global oil supply fell by ~8%**
>
> March 2026

Since late February 2026, the effective closure of the strait has disrupted oil and LNG flows at an unprecedented scale. While Iran itself accounts for only 3–4% of global crude production, the disruption extends far beyond Iranian exports. Major export infrastructure across the Gulf, including Saudi Arabia’s Ras Tanura oil terminal, Qatar’s LNG facilities, and Kuwaiti and Iraqi export routes, depends on transit through the Strait of Hormuz and is therefore effectively constrained when the strait is closed. In March alone, the IEA estimates global oil supply fell by approximately 8 mb/d – 8% of the world supply. This

[2] IEA (2023), *Oil Market Report*; EIA (24 June 2025), *Today in Energy*; UNCTAD (2026) *Strait of Hormuz disruptions: Implications for global trade and development*

is almost twice the peak supply loss of the 1973 Arab oil embargo or the 1990 Gulf War and appears to be the largest realised oil supply disruption since the 1970s, excluding the COVID demand shock.[3]

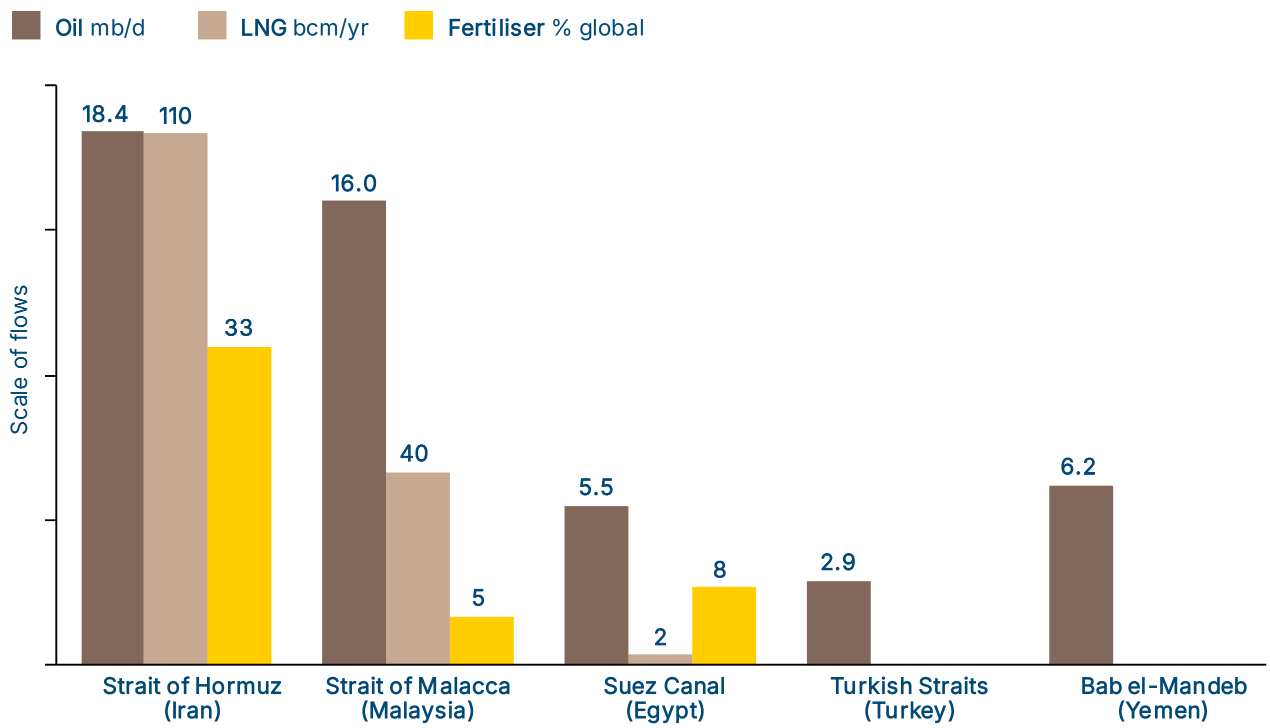
Beyond oil and gas, the Gulf region is a major global supplier of fertiliser inputs, including ammonia and urea. Approximately one-third of globally traded fertilisers, transit the strait, representing a higher concentration than oil and posing a significant supply risk. Disruptions in the Strait are therefore expected to feed through to agricultural input costs, with significant consequences for global food prices. As seen in the aftermath of Russia's 2022 invasion of Ukraine, such second-order effects disproportionately impact lower-income countries, amplifying economic and social vulnerability.[4]

The Strait of Hormuz is also a critical transit route for industrial commodities. Around 50% of global seaborne sulphur passes through the strait, with roughly 20% of global sulphur production located in the Gulf region. Sulphur is a key input to sulphuric acid, which is essential for copper extraction and therefore critical to battery supply chains. The Gulf region also accounts for ~9% of global aluminium production, supplying 20% of EU and US aluminium imports, and ~39% of helium output, much of which is exported through Hormuz. As a result, disruptions to the strait propagate through metals processing, fertilisers and high-tech supply chains as well as energy markets.[5]

Hormuz is the world's most critical energy chokepoint

EXHIBIT 1

Scale of energy and fertiliser flows through major maritime chokepoints.



Notes: Bar heights rescaled for visual comparison; Oil = mb/d; LNG = bcm/year (bars scaled /6 for comparison); Fertiliser = % of global trade (bars scaled /3 for comparison);
Source: IEA Oil Market Report (2026); IEA Today in Energy (2025); UNCTAD (2026); ETC analysis.

[3] IEA (2026), *Oil Market report*
[4] World Bank (2023), *Food Security Update*
[5] S&P Global (2026); Zawya Projects (2026); ICMM (2026)

1.2 Market impacts: now and later

Energy markets responded rapidly to the disruption:

- **Oil prices** increased from around $70/bbl pre-crisis to a range of $90–120/bbl in March, reflecting a sustained increase of roughly $20–50/bbl as markets priced in supply risks (Exhibit 2). However, futures prices (typically quoted from 'front month Brent' contracts) may understate physical tightness: a widening 'Dated Brent' (which captures the price of near-term physical cargoes) premium indicates tighter spot conditions than headline prices suggest. Immediate offsets, including Saudi and UAE diversions, IEA stock releases and sanctioned oil from floating storage, reduced the shortfall to around 11 mb/d. The IEA's estimate of an 8 mb/d fall in March global oil supply reflects the realised monthly supply impact after wider market adjustments, including increased output elsewhere, demand reductions of around 1 mb/d and shipping lags. [6, 7]
    - The full physical impact is still subject to delay: oil shipments from the Gulf to Europe take around four to five weeks, creating a lag between disruption at source and effects in destination markets. [8] Voyage rerouting adds further delays, as does insurance recertification and refining configuration to process different slates of oil.

- **Gas markets experienced comparable disruption**. Around 20% of global LNG trade, equivalent to roughly 110 bcm/y, transits the Strait of Hormuz, including exports from Qatar of around 90 bcm/y. [9] Whilst this is just 3% of global gas supply, LNG cargoes are often the marginal supplier to European and Asian markets, having significant price effects. Spot LNG prices responded rapidly, with Asian benchmark prices (JKM) rising from around $10–12/MMBtu pre-crisis to above $25/MMBtu, while European prices (TTF) also increased sharply, reflecting intensified competition for limited cargoes and reinforcing spikes in gas global price. The gas shock also spilled over into coal markets, as Asian buyers increased coal burn to preserve power system reliability and reduce exposure to LNG prices. Wood Mackenzie estimates that FOB Newcastle 6,000 kcal/kg coal averaged around $126/t in March 2026, up from $114/t in February, with recent trades at around $132/t. [10]
    - LNG disruption is likely to have a long-lasting impact due to damage in export infrastructure. QatarEnergy stated on 20 March 2026 that missile attacks had reduced LNG export capacity by approximately 17%, including two LNG trains at Ras Laffan, equivalent to approximately 12.8 million tonnes per annum of capacity (equivalent to 17.4 bcm/y), which have been taken offline for an estimated three to five years. [11]

2026 missile attacks have reduced LNG export capacity by approximately 17%, including two LNG trains which have been taken offline for an estimated three to five years.

Even still, price impacts so far are somewhat muted:

- Oil inventories and oil at sea was at near record high entering the crisis. Iranian crude and condensate stored on tankers or floating storage vessels reached a record 166 million barrels in the week ending 11 January 2026 according to Kpler. [12]

[6] IEA (2025), *World Energy Outlook*
[7] IEA (2026), *Oil Market Report*; The Guardian (2026), *IMF warns Middle East conflict will lead to higher prices and slower global growth*
[8] UNCTAD (2026).
[9] EIA (24 June 2025), *Today in Energy*
[10] Wood MacKenzie (2026), *Prolonged Middle East supply disruption drives thermal coal demand and price*
[11] QatarEnergy (2026); Reuters (20 March 2026).
[12] Economist (2026), *Global energy markets are on the verge of a disaster*

- The crisis occurred at the end of the European winter, after the peak period for imported gas demand. However, European gas storage facilities still need to be refilled ahead of next winter. This remains a security priority for governments, but rigid refill targets could add to summer LNG demand and price pressure if markets stay tight.

Even when physical flows resume, elevated security risks are likely to sustain higher transport costs, including increased freight rates and war-risk insurance premiums. As ADNOC's Sultan Al-Jaber noted on April 9th, Hormuz transit is now subject to "permission, conditions and political leverage." [13]

Cost pass-through is further reinforced by power market design. In marginal pricing systems, gas-fired generation frequently sets the wholesale electricity price, meaning that gas price shocks are passed through to electricity prices even when most generation comes from lower-cost sources. The effect is even stronger in gas-dependent importers such as Singapore, where imported natural gas accounts for around 95% of electricity generation. Singapore's Energy Market Authority has warned that the Middle East conflict will raise electricity and town gas prices, although Q2 2026 tariffs only partially reflect the shock because they are based on fuel costs from January to mid-March, while wholesale power prices in the National Electricity Market have already risen above S$200/MWh. [14]

Price impacts of this crisis have broader economic consequences, including distributional impacts and inflation rise. As the European Central Bank notes, "Europe's energy dependence increasingly complicates the task of maintaining price stability". [15] Higher oil and gas prices feed directly into transport costs, food prices, household and industry energy expenditure, disproportionately affecting lower-income populations. Chapter 2 provides an assessment of the potential economic consequences against historical comparators.

Higher oil and gas prices feed directly into transport costs, food prices, household and industry energy expenditure, disproportionately affecting lower-income populations.

The duration of disruption remains uncertain. The IEA has emphasised that the scale of market impact will depend critically on how quickly safe shipping conditions, insurance coverage and operational confidence can be restored. Even in the event of de-escalation, these factors suggest that a return to normal flows is unlikely to be immediate. [16] There are a range of plausible scenarios including:

- The Strait of Hormuz soon returns to pre-crisis flows – though even in this scenario it can take weeks for resumed physical flows to reach their destination. Damage to LNG infrastructure will also take years to repair. Physical disruption (incl. through e.g cancelled flights, reduced refining output) and price impacts are therefore likely to endure for a period of weeks to months, and for LNG likely longer. Per global commodity trading firm Trafigura, even if the Strait reopened today around 5% of annual global oil output this year will have been lost [17].
- The Strait of Hormuz remains disrupted for a prolonged period – in which case the physical disruptions will become much more apparent and widespread, and scarcity of particular fuels and petrochemical products will likely lead to more significant price rises and enduring disruption to energy and food systems over the next few years. Per Trafigura, sustained disruption could double the volume impact, or more.

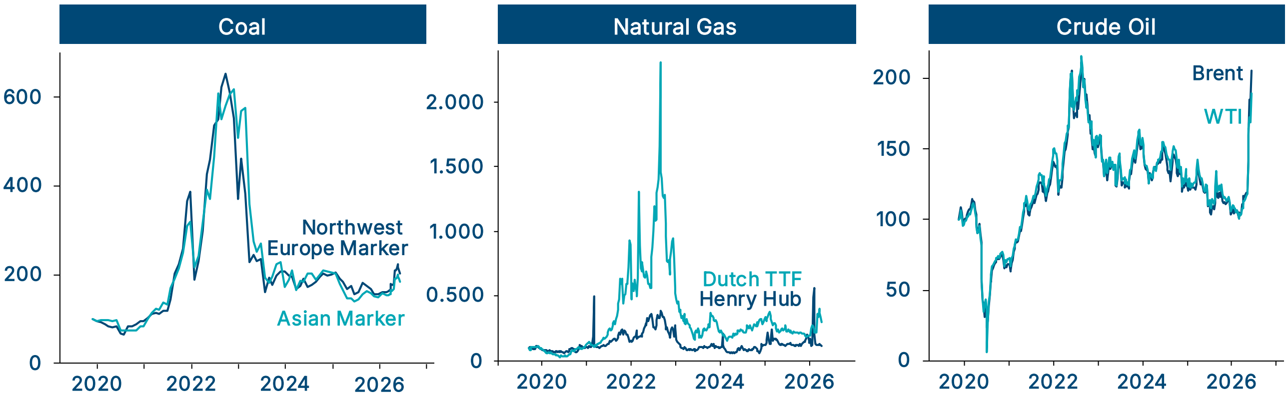
[13] The Guardian (April 2026), *Oil rises and global stocks wobble amid worries over 'fragile' ceasefire deal in Middle East – as it happened*
[14] EMBER (2026), *Overcoming fossil lock-in is pivotal for Asia to buffer against energy shocks;* Energy Market Company, *National Electricity Market of Singapore, Uniform Singapore Energy Price* (USEP) data
[15] ECB (7 April 2026), *Europe's fossil fuel dependence poses risks to price stability*
[16] IEA (2026) *Oil Market Report*
[17] Economist (2026) *Global Energy markets are on the verge of disaster*

Global fuel prices experience significant price shocks due to Hormuz crisis

EXHIBIT 2

Evolution of price markers for coal, natural gas and crude oil from 2019-2026

In index, Sep 2019 = 100 values



Source: Henry Hub Natural Gas Spot Price; EIA (2023), Europe Brent Spot Price FOB; Nasdaq (2023), Dutch TTF Natural Gas Forward Day Ahead; Nasdaq (2023), Coal Marker Prices; EIA (2023), Cushing, OK WTI Spot Price FOB.

1.3 Stocks as a limited buffer

Global spare oil production capacity is highly concentrated, primarily in Saudi Arabia and the United Arab Emirates, which constrains the ability of the market to respond rapidly to large-scale supply disruptions [18]. Emergency fuel stocks offer only short-term buffer and are unevenly distributed. In most case fuels continued to be consumed at high prices, rather than being avoided.

- Alternative export routes from the Gulf region can redirect only part of normal Hormuz volumes. In this crisis, Saudi and UAE crude diversions provided around 4.3 mb/d of immediate route-based offsets, while total offsets including IEA stock releases and floating storage reached around 7.3 mb/d. Both remained far below gross Hormuz oil flows of around 18.4 mb/d. [19] Moreover, regional energy infrastructure itself remains exposed to potential attack, limiting the reliability of these alternative routes under war conditions. [20]
- Emergency oil stocks offer an important but still time-limited buffer. IEA member countries are required to hold oil stocks equivalent to at least 90 days of net imports, and total emergency stocks amount to roughly 1.8 billion barrels. [21] Total oil stocks including in non-IEA member countries stocks are significantly higher – estimated at 8.2 billion barrels in January 2026, the highest since February 2021. On 11 March 2026, IEA member countries agreed to release up to 400 million barrels to the market, the largest coordinated release in history and roughly double the previous 182 million barrel release following Russia's invasion of Ukraine. [22] This is equivalent to around four days of global oil demand at roughly 105 mb/d, or about 20 days of Hormuz-equivalent flows (about 22% of IEA emergency stocks, but only

[18] IEA, *Oil Market Report.*
[19] EIA (16 June 2025), *Today in Energy*
[20] EIA (16 June 2025), *Today in Energy*
[21] Around 1.25 billion barrels of public reserves and about 600 million barrels of industry stocks held under government obligation
[22] IEA (11 March 2026), *IEA confirms Member country contributions to collective action to release oil stocks in response to Middle East disruptions*; The Wall Street Journal (2026), *IEA Will Launch Largest-Ever Oil Release From Global Strategic Reserves*; Reuters (2026), *How much oil do G7 countries hold in emergency reserves?*

around 5% of global total). Overall, while inventories were not low entering the crisis, only a limited share is immediately accessible as government-controlled emergency supply.[23]

- These reserve stocks are unevenly distributed and held in several forms, including commercial inventories in tanks and refineries, strategic reserves held by governments, and smaller volumes in transit or floating storage.
    - Some advanced economies maintain substantial buffers. Japan entered the crisis with around 470 million barrels of oil reserves, equivalent to about 254 days of domestic consumption, and announced an 80-million-barrel release[24], equivalent to about 45 days of demand. The United States Strategic Petroleum Reserve contained approximately 416 million barrels as of early 2026, equivalent to around 125 days of crude import cover[25]. China also holds very large oil inventories, estimated at 1.1-1.4 billion barrels across strategic and commercial stocks, equivalent to over 100 days of import cover[26]
    - By contrast, many emerging and developing economies maintain significantly lower levels of strategic reserves, in some cases covering only a few weeks of consumption. For example, India's strategic reserves cover around 10 days of demand, limiting their ability to absorb sustained disruptions.[27]
    - Overall stock levels do not necessarily reflect the risks associated with specific fuels. For example – whilst aggregate stock levels for are modest for UK and India, they both face acute shortages of jet fuel and LPG respectively[28].

Some advanced economies maintain substantial buffers. By contrast, many emerging and developing economies maintain significantly lower levels of strategic reserves, in some cases covering only a few weeks of consumption.

- Aggregate oil cover can conceal product-specific vulnerabilities: strategic reserves and the IEA release are heavily crude and gasoil, while the acute exposures in this crisis are in jet fuel, diesel and LPG. The UK's exposure to jet fuel and India's exposure to LPG illustrate that countries can appear well protected in total stock terms while still facing acute shortages in specific fuels. Similarly, regional refining capacity is often configured to receive specific fuel grades to turn into specific fuel slates.

Large shocks to global flows may therefore have disproportionate effects as they trickle through regional supply chains. On the demand side, consumption of oil and gas is relatively insensitive to price changes in the short term, meaning that adjustment occurs primarily through higher prices rather than rapid reductions in consumption[29].

[23] IEA (2026), *Oil Market Report*
[24] The Guardian (2026), *Japan to begin biggest-ever oil release from national reserves as Middle East energy crisis bites*
[25] U.S. Department of Energy (2026); Government of Japan (2026)
[26] Data on oil reserves is not officially reported by China. Financial Times (2026), *Iran war tests Xi Jinping's plan to build China's stockpiles*
[27] The Economic Times (2026), India's strategic oil reserves 64% full, may last about 5 days
[28] https://powerofpower.substack.com/p/the-strait-is-open-the-system-says
[29] IEA (2025), *World Energy Outlook*

1.4 Impacts and responses by region

Regionally specific impacts depend on import dependence, buffer stocks, fertiliser exposure, foreign exchange reserves and power market design. But the crisis is not affecting all consumers equally. It is failing hierarchically: price-sensitive emerging-market households and small businesses are hit first through LPG, diesel and power affordability; industry is hit next through gas curtailment, input shortages and competitiveness losses; and advanced economies are more insulated, but not fully protected – for example product-specific gaps are already evident in jet fuel, diesel or LPG.

The crisis is not affecting all consumers equally.

Effects will reverberate over the coming months through food prices and supply chains.

Impacts are currently most severe in Asia, where fuel shortages and price increases are already limiting transport, industrial production, immediate food availability and fertiliser application. These effects will reverberate over the coming months through food prices and supply chains. Similar pressures are emerging, to varying degrees, in other regions. Exhibit 3 provides a snapshot of some of the immediate consequences of the crisis. Governments are responding through a mix of short-term relief, demand-side measures and structural adjustments.

The crisis is also amplifying food and water security risks. The United Nations warns that around 45 million more people could face food insecurity by June if the conflict persists, as shortages of fertilisers, fuel and agricultural inputs spread through food systems. The conflict has also exposed the vulnerability of water infrastructure in the Middle East, the world's most water-stressed region, where around 83% of the population is already exposed to extremely high water stress and several countries depend heavily on desalination.[30]

[30] WRI (2026), *Amid the Iran Conflict, Resilience Must Be the Top Priority*; WRI (2026), *Iran War Could Worsen Middle East's Water Woes*

Human impacts of the crisis

EXHIBIT 3

Selected examples

Asia

Dependence on Hormuz is highly concentrated in Asia. Around 84% of crude oil and over 80% of LNG transiting the Strait of Hormuz is destined for Asian markets, reinforcing the region's disproportionate vulnerability to disruption.[31] Sri Lanka, Pakistan, Bangladesh, India and the Philippines are all experiencing physical product shortages.

In South and Southeast Asia, where large shares of households rely on LPG for cooking and diesel for transport and agriculture, price increases quickly erode purchasing power and disrupt access to essential services – restaurants and canteens have closed, or shortened operating hours/menu offers; industrial facilities are rationing production based on availability of specific input fuels. In Pakistan, Sri Lanka and parts of India, previous energy price spikes have led to fuel shortages, rolling power outages and increased fiscal pressure from attempts to stabilise prices, and similar dynamics are already emerging – Pakistan is limiting shop and restaurant working hours; Sri Lanka has implemented a 4-day working week. At the same time, disruptions to fertiliser supply are feeding through into higher agricultural input costs, reinforcing risks to food affordability and security – reports suggest some farmers are going without fertiliser altogether, which will in turn reduce available food for consumption.[32]

As a response, Asia has been at the forefront of demand reduction measures, alongside some increase in coal use to maintain system stability in the short term:

- Japan has suggested a relaxation in office formal workwear, so workers can stay comfortable while offices reduce cooling demand, and has encouraged increased coal burn, partially offset by a joint increase in nuclear generation, and
- The Republic of Korea delayed the phase-out of coal-fired power plants.[33]
- In China, the government has temporarily capped domestic gasoline and diesel price increases, allowing only part of the market rise to pass through to consumer.[34]
- Indonesia and Sri Lanka have introduced fuel purchase caps for private cars to limit the volume of fuel that can be bought within a set period.

In Pakistan, the Philippines, Bangladesh and Thailand, governments are promoting a shift to remote work and reduced working hours to curb energy demand. Pakistan has closed schools for two weeks; Bangladesh has shut universities and asked households and businesses to reduce unnecessary lighting; and Thailand has encouraged remote work and reduced energy use across offices and public services, including air conditioning.[35]

Countries are also responding by promoting clean energy. As a response to the current crisis, Indonesia scaled electrification of cooking and transport alongside plans for up to 100 GW of solar capacity, and the Philippines is deploying 250 MW of solar and 450 MWh of battery storage to strengthen energy resilience. The Republic of Korea has announced plans to almost triple operational renewable capacity from 37 GW to 100 GW by 2030, while India is accelerating clearances for wind power plants and battery energy storage systems amid gas supply disruptions. Pakistan has seen a surge in solar power over the past few years, insulating it from the worst effects of fossil fuel prices, having experienced these acutely in 2022.

[31] EMBER (2026), *Overcoming fossil lock-in is pivotal for Asia to buffer against energy shocks*
[32] IRENA (2026), *From energy crisis to energy security*
[33] The Korea Times (2026), *Korea delays shutdown of coal-powered plants amid energy crisis; Philippine Information Agency* (2026), *250 MW Solar, 450 MWh Battery Storage Boosts Power Supply, Strengthens Energy Independence; Cabinet Secretariat of the Republic of Indonesia* (2026)
[34] Reuters (2026), *Brazil proposes new plan for diesel subsidies as prices jump; The Guardian (2026), Australians may not see cheaper fuel for weeks despite Labor's excise cuts*; Reuters (2026), *China curbs domestic fuel price hike again to soften impact of surging oil prices*
[35] IEA (2026); Fortune (2026) *Asia rolls out four-day weeks and work-from-home as emergency measures to solve a fuel crisis caused by Iran war*

Europe

Europe's direct dependence on oil flows through the Strait of Hormuz is relatively limited, but since significant reductions in Russian pipeline gas from 2022 onwards it is highly exposed to LNG. For both these fuels, Europe's exposure is felt through globally integrated markets, with particularly high gas prices also feeding through to power prices, where gas sets the marginal power price for all generators in many markets, amplifying the overall economic effect. [36] The fiscal and macroeconomic exposure is already material: European Commission President Ursula von der Leyen warned in late April that the Iran war and Hormuz disruption were costing the EU almost €500 million per day, while also raising pump prices and concerns about jet fuel availability.

While there has been pressure for higher government intervention, early interventions in 16 of the 27 EU states so far appear more targeted than the broad-based fiscal support deployed after Russia's invasion of Ukraine, which reached close to 1% of GDP in the euro area. [37] However, more recent evidence suggests that energy tax cuts and price support are spreading, with European governments accounting for a large share of the global increase in energy tax reductions. Bruegel, a Brussels-based economics think tank, estimates that European governments have committed around €10 billion in fiscal measures so far, with nearly four-fifths poorly targeted, including blanket tax cuts. The aim of support should therefore be to limit immediate pass-through to consumers while preserving incentives for demand reduction and electrification. Germany reduced fuel taxes alongside an €8 billion clean energy package. Spain and Portugal have introduced measures to speed up renewables, grid access, self-consumption and energy communities, while France has doubled electrification support. [38]

Rest of the World

In other regions, impacts vary depending on exposure to imports and refining systems. Australia illustrates a paradox of energy abundance without energy security: despite being a major exporter, it imports most transport fuels through Asian refining chains now under stress. In Latin America, diesel price increases are affecting supply chains, while in Africa oil-exporting economies benefit from elevated prices but net importers face balance-of-payments distress and worsening energy access. Disrupted fossil fertiliser supply chains are also compounding food security risks across Sub-Saharan Africa.

Governments are responding with a mix of short-term relief and structural measures. Renewables are increasingly viewed as a structural security response rather than a long-term aspiration.

Governments are responding with a mix of short-term relief and structural measures. Australia has introduced fuel excise cuts, while prior renewables investment is helping dampen wholesale electricity prices. Brazil introduced diesel subsidies to stabilise supply chains while opening consultations on a plan projecting 107 GW of solar by 2035; [39] Argentina has increased ethanol blending into petrol [40]; Chile approved over $1 billion for three renewable energy projects in April 2026. Egypt has responded decisively, signing PPAs for 5,620 MW of solar, wind and battery storage in March 2026, and Türkiye reaffirmed a target of 120 GW of solar and wind by 2035, signalling that renewables are increasingly viewed as a structural security response rather than a long-term aspiration.

36 IEA (2024), *Gas Market Report*
37 The Economist (2026), *Global energy markets are on the verge of a disaster*
38 Financial Times (2026) *Energy tax cuts spread to 39 economies as fuel prices jump*
39 Baker McKenzie (2026), *Brazil: Changes to Oil and Gas Taxation*
40 Economist (2026) *The crisis in oil markets will get bigger before it goes away*

United States

The United States, on the other hand, is now largely self-sufficient in oil and gas due to expanded domestic production. However, oil and gas are globally traded commodities, with prices determined in international markets. As a result, US consumers remain exposed to global price movements even when supply is domestically sourced.[41] The US has also supported the refining and fuel system through a Strategic Petroleum Reserve crude exchange, emergency fuel waivers issued by the Environmental Protection Agency (EPA), and Defence Production Act authority covering petroleum production, refining, and logistics capacity.[42]

Exhibit 4 summarises oil and gas import dependence, dependence on Hormuz-linked flows, immediate crisis impacts and policy responses across selected economies.

Asia is the most exposed region to Hormuz disruption

EXHIBIT 4

Oil and gas import dependence by selected region[43]

Exposure: Lower · Moderate · High · Very high

	Oil imported %	LNG imported %	Imports via Hormuz % oil	LNG via Hormuz % LNG	Strategic reserves days	Immediate impact	Responses so far
Japan	100%	95%	77%	10-15%	208	• High exposure to oil and LNG prices • Power system pressure	• Increased coal use • Higher nuclear output • Demand reduction measures
Republic of Korea	100%	95%	62%	20%	200	• LNG shortages • Rising power costs	• Increased coal utilisation • 2030 renewables target increased
China	70%	40%	40%	20%	100	• Higher import costs • Industrial pressure	• Increased coal production • Fuel price caps • No transparent stock release
India	90%	50%	40%	30%	10	• LPG, propane, NG shortages affect industry & food services • Fertiliser cost increases	• Accelerated wind and battery storage clearances • Prioritisation of fuel
Europe	95%	40-50%	6-8%	5-10%	90	• High gas and power prices • Industrial competitiveness pressure	• Targeted support • Fuel tax cuts • Electrification measures
Australia	85-90%	0%	Only indirect exposure via Asian refining		49	• Transport fuel supply vulnerability	• Fuel excise cuts • Renewables dampening power prices
Brazil	10-25%	<5%	Low direct exposure		45	• Diesel price pressure • Supply chain impacts	• Diesel subsidies • Solar expansion plans
USA	Net self-sufficient		No direct import dependence		125	• Higher gasoline and diesel prices despite domestic supply	• Refining support: SPR crude exchange, DPA for petroleum refining, EPA fuel waivers.

[41] IEA (2025), *World Energy Outlook*
[42] US Department of Energy (2026), *Energy Department Initiates Strategic Petroleum Reserve Emergency Exchange to Stabilize Global Oil Supply*
[43] IEA (2025), *World Energy Outlook*; IEA (2025), *Gas Market Report*; EMBER (2026), *Overcoming fossil lock-in is pivotal for Asia to buffer against energy shocks*; ETC analysis (2026)

2 The strategic opportunity: Building energy security and resilience

Accelerating clean energy deployment is therefore not only a climate imperative, but also an economic and strategic response to fossil fuel volatility. It reduces exposure to imported fuel markets, lowers system costs over time, and strengthens resilience to geopolitical disruption.

2.1 Economic impact: scale, historical comparisons and structural change

Fatih Birol, Executive Director of IEA, has described the current energy crisis as the biggest ever. This reflects the fact that, as Exhibit 5 shows, the volume of supply disruption via the Strait of Hormuz is larger than in previous crises. [44] However, the impact on oil prices has so far been far less dramatic than during the 1973–74 Arab oil embargo, and less severe than the impact of the Russian invasion of Ukraine on gas prices in Europe. As a result, recent indicators of macroeconomic impact have been less severe than many commentators anticipated. [45, 46]

- While the 1973–74 crisis led to dramatic short-term effects on growth, with US real falling by around 2.2% in 1974, and a sustained period of stagflation in several developed countries throughout the 1970s, latest International Monetary Fund (IMF) projections suggest far more limited but still material macroeconomic effects. The IMF now projects global growth at 3.1% in 2026, down from 3.3% in its January forecast, while global headline inflation is projected to rise to 4.4%, up from 3.8%. The

[44] IEA (2026), *Oil Market Report*; IMF (various reports); World Bank (Commodity Markets Outlook / historical datasheets); IEA (historical analysis / datasets); ETC analysis (2026); Reuters (2026), *Biggest global oil supply disruptions in history*

[45] EMBER (2026), *The New Twin Oil Shock*

[46] Financial Times (2026), *Will the Iran war derail the energy transition?*

impacts are expected to be concentrated in energy-importing and lower-income economies, where higher import bills and weaker fiscal buffers increase vulnerability.[47]

- And while major global equity indices fell by over 40% in real terms between 1973 and 1974, most equity indices are currently at or near all-time highs. This includes Japan, despite its status as a major energy importer, although some declines have been observed in other energy-importing economies such as the Republic of Korea and India.

The current more limited macroeconomic and equity market impacts may not reflect the full picture, with delayed effects still to come. Continued uncertainty over the prospects for a permanent ceasefire creates significant uncertainty about the duration of supply constraints. At the same time, structural changes have altered how supply shocks transmit through the global economy:

- Compared with 1973–74, global energy productivity, i.e. GDP per unit of energy input, increased significantly. In addition, The United States has moved from being a major oil importer in the 1970s, with net imports of around 6–7 mb/d, to a net exporter of both oil and gas. At the same time, OPEC's share of global oil production has declined since the 1970s, reducing its ability to drive extreme price increases through moderate supply constraints.

- Conversely, the development of large-scale global LNG trade since the 1970s has increased vulnerability to short-term variations in LNG availability and prices, particularly in several Asian countries.

- In Europe, the impact of higher gas prices, while still significant, is likely to be lower than after the Russian invasion of Ukraine, reflecting reduced gas consumption and accelerated renewable deployment in the power sector since 2022.

[47] IMF (2026), *World Economic Outlook*

Whatever the differences, the current crisis will still have significant macroeconomic and social effects, particularly for low-income groups in energy-importing economies. The experience of volatility in fossil fuel prices, combined with uncertainty about the duration of the crisis, increases incentives to move away from reliance on fossil fuels.

This incentive was also evident after the 1973–74 and 1979 oil crises, which drove:

- Widespread development of nuclear power in several countries, most notably France and Japan.
- Significant medium-term improvements in the efficiency of internal combustion vehicles, driven by higher fuel prices and regulation in many countries, including CAFE standards in the United States.

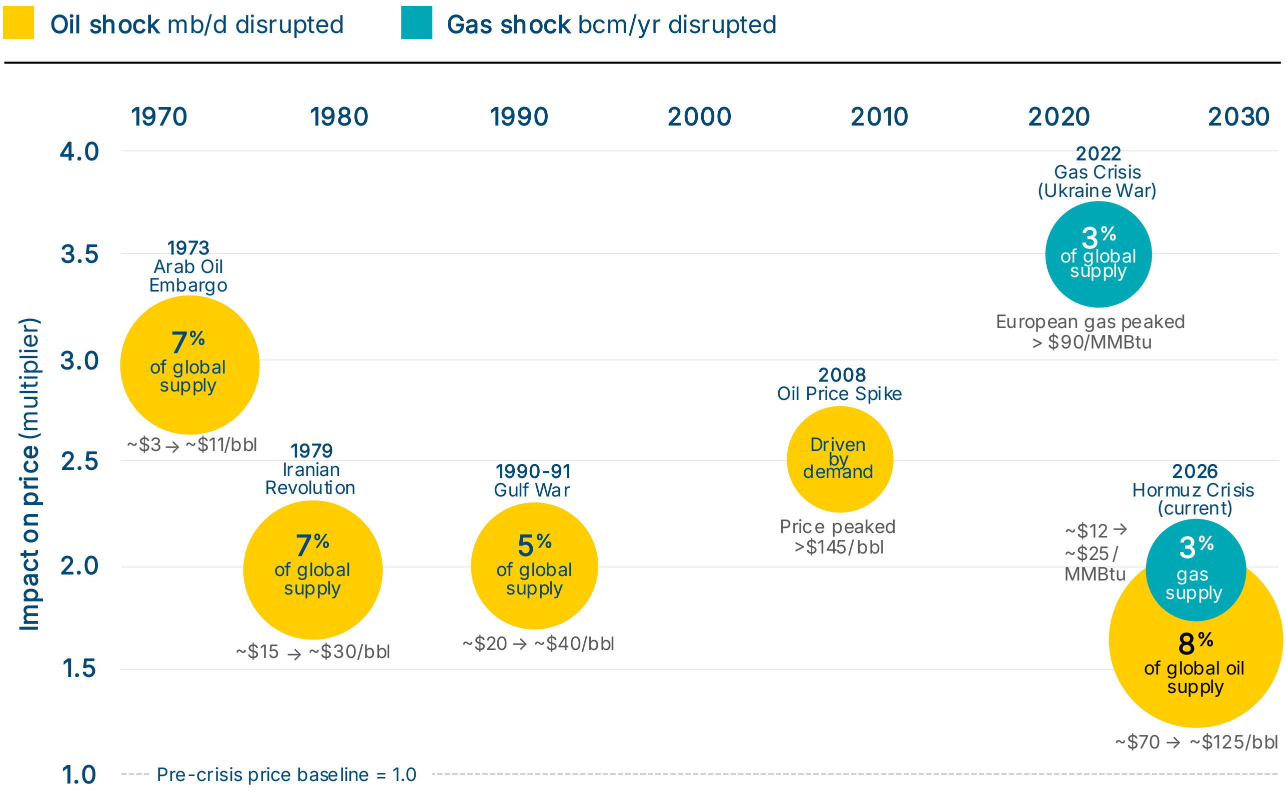
But this incentive effect is now much stronger than in previous fossil fuel crises, because this is the first major energy shock in which scalable, cost-competitive clean alternatives are available across the main sources of fossil fuel demand. Solar and wind power, batteries, electric vehicles, heat pumps, demand-side flexibility and grid-enhancing technologies have all seen major cost reductions and can be deployed far more rapidly than the nuclear power stations or vehicle efficiency improvements that followed the 1973–74 crisis (Exhibit 6 summarises deployment timelines across major clean energy technologies). This aligns with the energy think tank, EMBER, own's analysis of the current crisis, which highlights that clean technologies are now large enough to form part of the strategic response to fossil fuel shocks, not only a long-term climate solution. The current crisis therefore creates a stronger opportunity: countries can respond not only by managing disrupted fossil supply, but by accelerating technologies that structurally reduce exposure to oil and gas markets.

The incentive effect is now much stronger than in previous fossil fuel crises, because this is the first major energy shock in which scalable, cost-competitive clean alternatives are available across the main sources of fossil fuel demand.

Continued cost reductions over the past five years make it possible for the response to the current crisis to be even stronger, particularly in Asian economies heavily dependent on energy flows through the Strait of Hormuz. Greatly reduced costs of clean energy alternatives now make it economic to accelerate the shift away from fossil fuels in response to the current crisis. That shift would not only reduce exposure to immediate price shocks but also build more resilient and secure energy systems.

Global impact of current and past energy shocks

EXHIBIT 5



Estimated economic impact

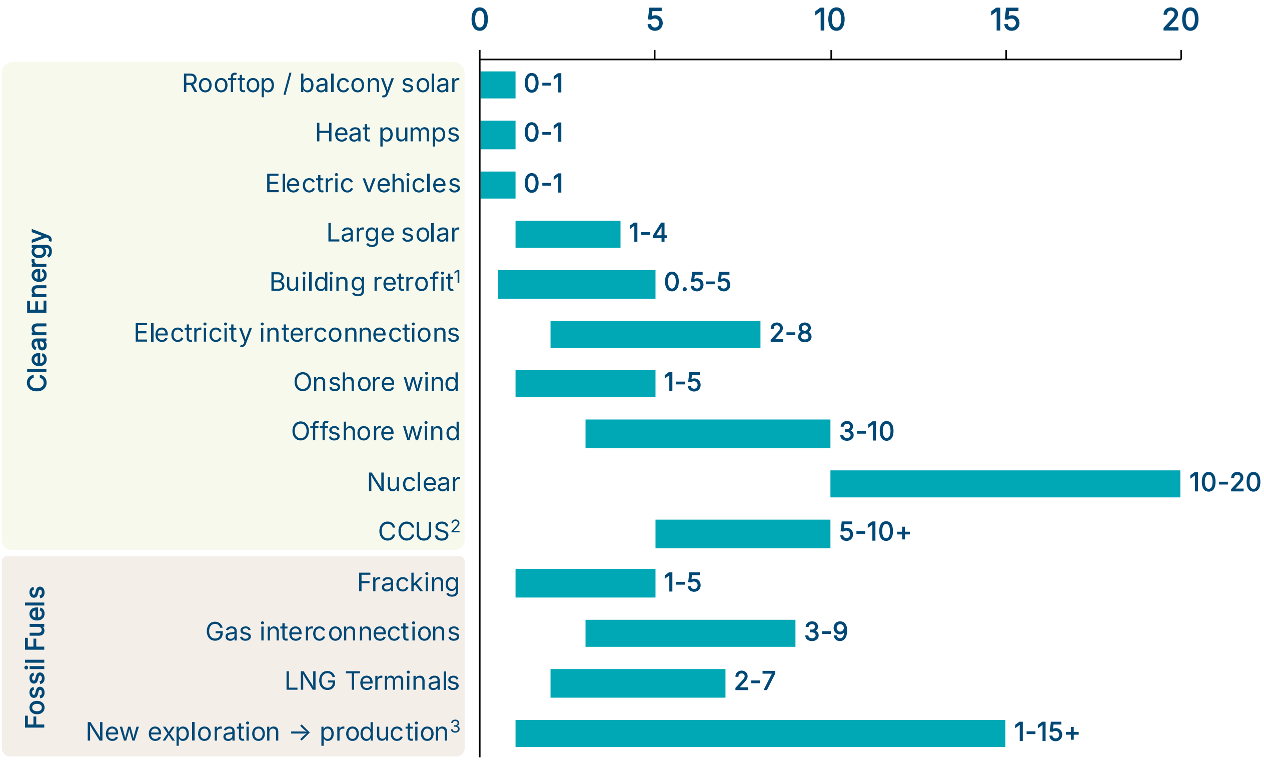
1973–74	Arab Oil Embargo	Global recession; inflation >10% in OECD; US GDP -2.5%
1979	Iranian Revolution	Contributed to early 1980s stagflation; inflation >13% in US
1990–91	Gulf War	Short-lived GDP slowdown; limited global effect
2008	Oil Price Spike	Global GDP slowdown preceding financial crisis; emerging markets hit by energy inflation
2022	*Gas Crisis (Ukraine war)*	~€230 billion annual cost in Europe (~1–2% of GDP); industrial slowdowns
2026	Hormuz Crisis *(current)*	If elevated prices are sustained: ~$1.1 trillion/year loss from oil; ~$500–800bn/year from LNG impacts (excluding power sector passthrough to other generators);

Notes: 2022 Ukraine crisis shown as gas equivalent (bcm) scaled to mb/d for visual comparison
Source: Adapted from IEA Oil Market Report (2026); ETC Analysis, IMF World Economic Outlook (2026); ETA historical data

Clean alternatives can be at scale years before new fossil fields produce a single barrel

EXHIBIT 6

Estimated deployment timeframes for different energy solutions
Years



Notes: 1 Efficiency gains through retrofit varies heavily, with certain actions such as insulations being relatively quick.
2 Deployment timelines only. Total CCUS timelines can be longer because many technologies are not yet fully commercial and require further maturation before large-scale roll-out.
3 Deployment timeframes vary by country and location. Timeframes can also vary depending on if plans are already in place.
Sources: SYSTEMIQ analysis for the ETC based on EIA, OTI, North Sea Link, Global Energy Monitor, Qualenergia, Iso Energy, IRENA, EA, CCC, Eurelectric, FT.

2.2 The inherently greater resilience of clean energy systems

Fossil fuel systems are structurally vulnerable because they depend on continuous flows of extracted, traded and transported commodities. Supply is geographically concentrated and relies on a small number of critical transit routes, meaning that relatively localised disruptions can rapidly propagate into global economic shocks. The current system also has limited short-term flexibility: stocks provide only a temporary buffer, are unevenly distributed, and do not remove exposure to higher prices. Empirical analysis suggests that an approximate 1.7% decline in oil demand is associated with a 1% reduction in global GDP, highlighting the strong feedback loop between energy costs, consumption and economic activity. Higher fossil fuel prices reduce disposable income and investment, while slower growth reinforces demand destruction. [48]

[48] Thunder Said Energy (2026), *Oil price elasticity of demand: how high can oil go?*

Clean energy systems are more resilient because they change the physical and economic structure of energy supply. Fossil fuel systems depend on continuous flows of imported commodities, noting that 75% of the world population live in countries that are net fossil fuels importers.[49] Clean energy systems, by contrast, depend primarily on one-off installed capital assets such as solar panels, wind turbines, batteries and grids, and, once installed, these assets continue delivering energy for years or decades. They are also dependent on natural resources that are more evenly geographically distributed, more productive technology and more modular and decentralised systems. Several characteristics highlight the resilience of clean energy systems over fossil fuel systems (Exhibit 7):

Clean energy systems depend primarily on capital assets that once installed, continue delivering energy for years or decades

- **Abundance and distributed nature of renewables eliminate single points of failure:** Distributed wind, solar, storage, and smart grids are deployable at scale in all countries and inherently more resilient than centralised fossil fuel extraction, processing and transport infrastructure, which is vulnerable to conflict, sabotage or extreme weather.

- **Lower price volatility through capital-intensive structures:** In clean energy systems, 70–90% of costs are upfront capital[50], meaning price shocks affect only the 4–10% of capacity requiring annual replacement or expansion — not the whole system.[51, 52] Even during acute disruptions like a Hormuz crisis, renewable project cost increases were typically limited to 20–30%.

- **Wider economic and health benefits:** Clean energy investments can reduce long-term energy costs, deliver local infrastructure and jobs, reduce fossil fuel imports and avoid carbon emissions. They also reduce air pollution, lowering the incidence of pollution-related illness and associated public health expenditure. By contrast, higher fossil fuel prices provide the same commodity at a higher cost, with limited additional benefit.[53]

- **Electrified systems deliver more economic output per unit of energy:** Renewables avoid the 40–70% thermal losses of fossil combustion, and heat pumps deliver 3–4 units of heat per unit of electricity versus less than one for gas boilers. EV's are threefold more efficient than internal combustion engine cars. This higher energy productivity reduces overall exposure to supply disruptions without compromising living standards.

- **New mineral and material dependencies are fundamentally different from fossil fuel exposure:** Critical mineral supply chains are abundant but mineral processing, and to a lesser extent extraction, is highly geographically concentrated. Supply-chain concentration is therefore a real energy security concern: China's share of global solar PV manufacturing capacity exceeds 80% across all manufacturing stages, and the country also dominates several battery material processing steps. In some parts of the clean technology value chain, this concentration can exceed historical fossil fuel concentration risks. However, minerals and materials are embedded in long-lived assets and recyclable — not continuously consumed. Therefore, although immediate availability risks affect deployment timelines for new assets, they do not disrupt immediate energy availability, and can be managed through diversification, restoring of production, substitution and stockpiling over time — including through recycling.[54]

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[49] EMBER (2025), *Energy Security in an Insecure World*
[50] IEA (2024), *World Energy Outlook*; IRENA (2023), *Renewable Power Generation Costs; Rafal Wyszomierski et al.* (2025), *The Cost-Effectiveness of Renewable Energy Sources in the European Union's Ecological Economic Framework*
[51] ETC (2025), *Global trade in the energy transition*
[52] SYSTEMIQ & University of Oxford (2026), *The Resilience Nexus: How Europe's security, competitiveness and climate goals are interlinked*
[53] WHO (2024), *Ambient air pollution*
[54] ETC (2023), *Material and resource requirements for the energy transition; ETC (2025), Global trade in the energy transition: Principles for clean energy supply chains & carbon pricing*

- **The transition changes how shocks propagate through energy systems:** Fossil systems transmit disruptions immediately via prices and constrained supply; electrified systems absorb them gradually, concentrating impacts on future investment rather than current consumption — making the transition a resilience gain, not just an emissions reduction.

2.3 Fossil fuel costs versus clean tech investments

The world currently spends around $4 trillion per year on fossil fuels.[55] If recent price increases are sustained, elevated prices could imply additional gross -fuel expenditure on the order of $1–2 trillion globally this year, before accounting for power market effects and wider spillovers. These figures are gross expenditure estimates, not GDP-loss estimates: they depend on how long prices stay elevated, partly reflect transfers from consumers to producers, and fall most heavily on net-importing economies. They are significant and largely reflect paying more for the same fossil fuel commodities[56]:

If recent price increases are sustained, elevated prices could imply additional gross -fuel expenditure on the order of $1–2 trillion globally this year

- A sustained oil price premium of $20-30 per barrel for a six-month period, applied to global oil consumption of approximately 105 mb/d, would add roughly $0.4-0.6 trillion in gross oil expenditure. If sustained for a full year, this would rise to around $0.8-1.1 trillion.
- A $10/MMBtu increase applied only to globally traded LNG, around 550-600 bcm/y, would add roughly $200 billion over a full year. If the same price increase feeds through to wider LNG-linked gas consumption in Europe and Asia, around 1,500 to 1,600 bcm, the gross expenditure exposure could rise to roughly $500-800 billion, with larger effects where gas sets marginal power prices.

Together, this would imply a gross expenditure exposure of around $1–2 trillion, equivalent to roughly 1–1.5% of global GDP, on top of recent annual energy costs of around $4trn/year (Exhibit 7) and representing a significant opportunity cost for money that could be better spent elsewhere.

By contrast, ETC analysis estimates that investments of around $3.5trn/year between now and 2050 are required to achieve a Net Zero energy system globally (current clean energy investment is already around $2trn/year)[57]. This figure isn't a net cost, but investments in useful production assets that provide energy at similar or lower cost than that of fossil fuels (e.g. renewables in the power system, electric vehicles in road transport). Total additional payments for fossil fuels this year, if sustained at prices in recent months, are therefore of comparable magnitude to the investment gap required for a transition to Net Zero (Exhibit 7).

In some sectors – particularly hard-to-electrify sectors like steel, cement, aviation or shipping – decarbonisation is likely to add some cost in aggregate (though it would remain low at the consumer level). ETC's 2020 estimates, which are being revised this year, suggested that the net additional cost of achieving a net zero energy system is likely be around 0.5% of global GDP by 2050. Actions to invest in clean energy, that reduces fossil fuel dependence are not additional costs, but investments that reduce future exposure to future fossil fuel volatility.

Recent analysis by the UK Climate Change Committee broadens this comparison, concluding that the benefits of the transition are likely to outweigh the costs by more than two to one, reflecting avoided climate damages, efficiency gains and reduced exposure to fossil fuel price volatility.[58]

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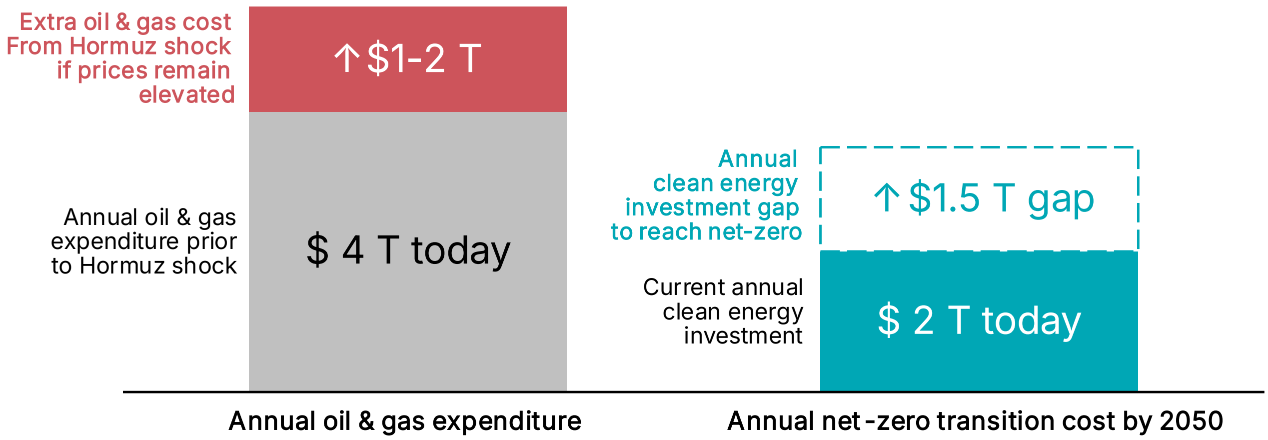
[55] Sunita Hydrocolloinds Inc. (2025) *How the Oil and Gas Industry Works: A Complete 2025 Guide;* IEA (2023), *World Energy Investment 2023*
[56] These costs should not be interpreted as a direct GDP loss: part reflects a transfer from consumers to producers, the scale depends on how long price increases persist, and the burden falls most heavily on net-importing economies.
[57] ETC (2023) *Financing the Transition*. IEA (2025) *World Energy Investment*.
[58] CCC (2025), *The Seventh Carbon Budget*

Closing the clean investment gap can hedge against future fossil fuel shock

EXHIBIT 7

Estimated annual cost: 2026 Hormuz crisis if persisted for 1 year vs net-zero transition investment

$ trillion per year



Payments to oil and gas producers and suppliers
- Spent for extraction, infrastructure, supply chains
- Fuel costs recur every year

Investment in renewables, grids and clean infrastructure
- Builds clean energy infrastructure
- Paid once, low ongoing operating costs

Source: ETC (2023), *Financing the Transition*; IEA (2025), *World Energy Investment*

A single fossil fuel price shock can impose significant costs; a Net Zero transition comes with some cost outweighed by associated benefits

EXHIBIT 8

Comparison of the characteristics of fossil fuel and clean energy systems.

	Fossil Fuel Systems	Clean Energy Systems
Costs	• **The world spends ~$4trn on oil and gas each year** • **This could increase by $1-2trn this year** if price increases of +$30/bbl and $10/MMBtu are sustained, equivalent, **~1-1.5% of GDP**	• **The clean energy transition requires $3.5trn/year of investment** to create power & transport systems that are the same cost or cheaper than fossil fueled ones • Total additional cost of Net Zero **0-1% of global GDP** (~$1 ton/year) to 2050
Resource distribution	• **Concentrated resource supply** increases energy security risks	• **Distributed asset base** increases national energy security
Expense structure	• **No additional productive assets created:** same energy service, but with higher cost	• Costs shift from fuel to **upfront capital**. • **Creates** assets that lower future system costs and create jobs in system installation
Environmental impact	• **Creates emissions**, air pollution and other environmental damage	• **Low or no emissions**, cleaner air, limited environmental damage
Energy Productivity	• **Limited efficiency gain** through demand reduction	• Renewables, grids, EVs, heat pumps are **at least 2-3x more efficient** at delivering useful energy
Supply chain	• **Commodity dependence:** continuous fuel purchases for combustion or products means mostly ‘single use’ = immediate price exposure	• **Resources not continuously consumed. Refining of critical material inputs highly concentrated,** however long-lived assets can be recycled;
Shock absorption	• **Limited reserve** supply of oil and gas makes price rises immediately with supply risks	• **Gradual absorption** with shocks affecting future deployment not current energy supply

Source: SYSTEMIQ & University of Oxford (2026), The Resilience Nexus: How Europe’s security, competitiveness and climate goals are interlinked; ETC (2025), Global trade in the energy transition; ETC (2023), Financing the Transition

How to respond: Win-wins, difficult trade-offs and clear do nots

Faced with the latest fossil fuel supply crisis, governments, policymakers and businesses are facing many urgent demands, from ensuring physical availability of key fuels – or prioritising limited availability if needed – to supporting vulnerable consumers and citizens, and wider food and industrial supply chains. At the same time economic pressures, such as inflation or currency inflation exacerbate the immediate impact of the crisis and in some cases limit the set of possible responses.

This chapter identifies key policies that can shift towards more resilient and secure clean energy systems. Overall this requires three types of response: "win-win" actions that strengthen resilience while supporting affordability and decarbonisation; difficult trade-offs that may be justified temporarily but must be carefully managed; and clear "do nots" that would deepen long-term fossil fuel dependence (Exhibit 9).

3.1 'Win-wins'

Five policies stand out as clear "win-wins", reducing exposure to fossil fuel volatility while strengthening energy security and affordability:

1. Accelerating renewable electricity deployment
2. Electrifying road transport
3. Electrifying heating and cooking
4. Developing green fuels and fertilisers
5. Improving energy efficiency across all sectors of the economy

Private sector responses to higher and more volatile fuel prices are already driving developments along some of these dimensions. Public policy can reinforce that momentum, with the size and speed of potential impact varying by category. Accelerated adoption of EVs and rooftop solar is already responding to private incentives, and could be boosted by public policy. Progress to develop alternative fuels and green fertilisers and to improve energy efficiency will take longer. It is important moreover to recognise that governments vary in their capacity to respond quickly, given other pressing policy concerns, and will need to prioritise actions based on specific national circumstances.

But a combination of immediate and more gradual policy responses, covering across all 5 categories over time, could significantly increase resilience over the medium term. By 2035 it would be possible to displace 20% of global oil and over 30% of global gas demand – an amount surpassing all exports via the Strait of Hormuz (Exhibit 11).

Exhibit 9 summarises the overall response framework, distinguishing between clear win-wins, difficult short-term trade-offs, and responses that should be avoided because they risk locking in long-term fossil fuel dependence.

Post-Hormuz: maximising resilience and reducing economic impacts of fossil fuel disruption through sustained clean energy deployment

EXHIBIT 9

Responding to fossil fuel disruption: win-wins, difficult trade-offs and clear do-nots.

Win – wins

- **Accelerating renewable electricity deployment**
  Cuts gas exposure, strengthens power system resilience
- **Electrifying road transport**
  Cuts oil demand and import dependence
- **Electrifying heating and cooking**
  Reduces gas and LPG exposure, improves household affordability
- **Developing green fuels and fertilisers**
  Reduces exposure in food systems, aviation and shipping
- **Improving energy efficiency across all sectors**
  Cuts demand quickly, lowers bills and reduces system stress

Policies to unlock

- Fast-track permitting and grid connections
- Scale renewables and storage via auctions and long-term contracts
- Expand EV charging, heat pump and electric cooking support – incl. making electrification the most cost -effective option
- Strengthen efficiency standards and green fuel mandates

Difficult trade-offs

- **Targeted fossil subsidies**
  > Focus on protecting vulnerable consumers
- **Temporary coal use**
  > Support short-term system stability only
- **Tightly constrained LNG expansion**
  > Some near-term supply diversity
- **Managed use of existing oil and gas assets**
  > May slow decline in net-importing countries
- **Carbon pricing flexibility**
  > Maintain foundations, but manage competitiveness pressures
- **Cost of capital pressures**
  >Higher rates can slow renewables, requiring policies to reduce financing costs

Risks to manage

- Temporary measures becoming structural
- Weaker clean pricing and investment signals
- Higher cumulative emissions
- Long -lived fossil infrastructure lock -in

Clear do nots

- **Use blanket subsidies**
  Weakens efficiency and electrification incentives
- **Delay coal phase-out**
  Turns emergency measures into long-term dependence
- **Lock in long-lived fossil infrastructure**
  Locks-in future exposure to volatility and stranded asset risks due to overcapacity + time to scale means limited impact on current crisis
- **Weaken carbon pricing for heavy industry decarbonisation**
  Risk of losing ETS and CBAM credibility
- **Weaken climate targets**
  Undermines credibility and investment signals

System impact

- Prolonged fossil dependence
- Higher exposure to future shocks
- Higher fiscal and emissions costs

A menu of options to be prioritised based on national circumstances, exposure, fiscal space and time taken to impact.

Renewable electricity at utility scale and decentralised: displacing gas in the power sector

Renewable electricity is the most powerful lever to reduce exposure to fossil fuel price volatility in the power sector. Trends in cost and deployment already point to rapid expansion, with early signs of further acceleration in response to rising gas prices.

Current trends:

Falling costs of renewables and batteries, with battery costs declining particularly rapidly since 2022, mean renewables are increasingly cost-competitive with fossil fuel generation. Global renewable capacity is expected to expand by around 4,600 GW by 2030, nearly doubling current levels, with solar PV accounting for roughly 80% of this growth. Recent growth in decentralised solar PV has also been significant, including in markets such as Pakistan.

Global renewable capacity is expected to double current levels, with solar PV accounting for roughly 80% of this growth

This expansion translates directly into reduced gas demand. Global solar additions alone are expected to generate approximately 630 TWh of electricity in 2026, equivalent to the entirety of Qatar's gas exports. [59]

Rapid acceleration in renewable deployment is possible because installation timescales are short, particularly for solar and battery solutions, and because there is enough global manufacturing capacity already to service significant expansion (in some cases potential to meet 2x annual demand). Global capacity increases in solar PV manufacturing, led by China, have driven module prices to historically low levels, creating an opportunity to scale deployment rapidly at reduced cost.

Spain and Italy illustrate the resilience value of renewable buildout. In 2024, renewables supplied 57% of Spanish electricity generation, while fossil fuels supplied only 23% of power. Italy remained more exposed, with fossil fuels supplying 51% of electricity and wind and solar supplying 22%. As noted in section 1.2, gas often has an exaggerated role in setting marginal electricity prices for all users in electricity markets. Lower Spanish day-ahead electricity prices – which averaged around €63/MWh in 2024 compared to around €109/MWh in Italy - demonstrate the ability of renewables to delink power prices from international fossil fuel markets. [60] Batteries, demand response, grids and other flexibility can deepen this resilience effect. [61]

Progress already stimulated:

Even before additional policy reinforcement, private sector action is already driving an acceleration in solar and battery storage deployment. Chinese solar PV exports in March were double February levels and 49% above the previous monthly record, while battery storage exports increased 44% month-on-month (although at least some of this volume may be orders brought forward ahead of changes to China's VAT rebate treatment for clean technology exports). Fifty countries recorded all-time high solar PV imports, with dramatic increases in countries particularly exposed to Hormuz-related fuel supply restrictions, including India (+141% year-on-year), Ethiopia (+391%) and Kenya (+207%). [62]

In the Philippines, the public pension fund GSIS has launched loans up to $8,300, for members to install residential solar systems, after some households saw energy bills double in the last month. Separately,

[59] Thunder Said Energy (2026), *Global LNG: the worst supply disruption in history?* At typical gas plant efficiencies of around 40–60%, this implies that new solar capacity in a single year could displace on the order of 100–120 bcm of natural gas demand, equivalent to roughly 15–20% of global LNG trade or the annual output of a major exporter such as Qatar.
[60] EMBER (2025) *Power sector overview: Italy, Spain*; Red electrica (2025) *Renewable electricity generation*
[61] Financial Times (2026) *Spain is a role model in weathering Iranian oil shocks*
[62] EMBER (2026)

Thailand is considering revising its net metering standards to encourage additional household PV uptake[63], and the UK has committed to solar PV and heat pumps in all new homes.

Opportunities to accelerate:

- **Support distributed solutions** such as rooftop solar, balcony solar, battery storage and mini-grids through targeted incentives, simplified permitting and financing for households (incl. loans), critical services and weak-grid regions.[64]
- **Expand long-term contracts and auction frameworks** to secure large volumes of renewable capacity, reduce investor risk and lower financing costs.
- **Fast-track permitting and grid connections** by streamlining approvals, standardising assessments and accelerating transmission and distribution build-out.
- **Strengthen system integration** by scaling batteries, demand-side flexibility and grid-enhancing technologies. Batteries and demand response can reduce gas-fired peaking demand and help shift renewable electricity to periods of highest value, while digital optimisation, reconductoring, dynamic line rating, transformer optimisation, vehicle-to-grid and time-of-use tariffs can unlock more capacity from existing grids.
- **Maximise existing low-carbon and dispatchable generation** by extending nuclear plants where safe, maintaining hydro and using sustainable biomass selectively to limit fossil fuel use.

Electric vehicles: displacing oil demand at scale

Road transport is the largest driver of global oil demand, and electrification provides a direct and scalable pathway to reduce dependence. Falling costs and improving performance of electric vehicles are already driving a structural shift, with further acceleration linked to rising fuel prices.

Current trends:

Electrification of road transport provides a direct and scalable pathway to reduce oil dependence. As battery costs have declined by 85-90% since 2010, EVs have reached upfront cost parity with internal combustion vehicles in many markets, while remaining significantly cheaper to operate, creating conditions for further acceleration in adoption.[65] In some markets, this shift is already visible in consumer prices: in the UK, new electric vehicles are now on average cheaper than petrol cars, reflecting manufacturer discounts and policy support.[66] The transition is already underway:

- Global electric vehicle sales exceeded 20 million in 2025, representing a 20% increase from the previous year, with similar growth in leading markets such as China (over 50% of total new sales) and Europe (around 25% of sales), and an acceleration in developing economies.[67]
- Electrification of two- and three-wheelers offers a rapid pathway to reduce oil demand, particularly in Asia where they dominate vehicle fleets.

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[63] CASE (2026) *Energy Security in the Shadow of Geopolitical Conflict: How CASE Countries are Navigating the 2026 Fuel Crisis*
[64] IRENA (2026), *From energy crisis to energy security*
[65] IEA (2024), *Global EV Outlook;* ETC (2025), *The Road Ahead: Electrification, Design and Mobility Choices for Efficient Transport*
[66] Auto Trader (2026)
[67] Benchmark (2026) *Global EV sales reach 20.7 million units in 2025, growing by 20%; Ember (2026) The EV leapfrog – how emerging markets are driving a global EV boom*

- Heavier vehicle segments, including trucks, are likely to electrify more gradually. However, in China, electric truck adoption is already accelerating representing 30% of new sales, driven by declining costs and strong policy support, with heavy-duty vehicles becoming increasingly cost competitive and expected to scale significantly in the coming decades. [68]

IEA projections indicate that electric vehicles could reduce oil demand by around 5 mb/d by 2030 under the Stated Policies Scenario (STEPS), equivalent to approximately 5% of global oil demand. Higher oil prices can further accelerate this impact, with recent analysis suggesting that increased deployment of solar and electric vehicles could displace an additional 2–3 mb/d of oil demand in the near term. [69] This represents roughly one quarter of the oil volumes currently at risk through the Strait of Hormuz. [70] In just 5 years this impact is expected to double, by 2035, around 9–10 mb/d get displaced, or ~10% of global oil demand, equivalent to around half of current Hormuz flows. [71] Electrification of road transport could reduce global oil import spending by more than $600 billion per year, representing one of the largest single levers available to reduce exposure to external energy shocks. [72]

Progress already stimulated:

Evidence across multiple regions shows a sharp increase in electric vehicle demand in response to rising fuel prices. In Asia-Pacific markets, EV-related lending and consumer interest have surged, with EV searches in Australia rising by around 75–80% week-on-week following the onset of the fuel crisis, while in the EU new EV's registration rose by nearly 50% compared with the same period last year. In other examples, Chile has enabled taxi drivers to access preferential credit for purchasing EVs, Cambodia has cut import taxes on EVs, and Laos has lowered excise taxes on EVs [73].

Multiple regions show a sharp increase in electric vehicle demand in response to rising fuel prices.

This acceleration is also visible in realised sales. In the EU, EV uptake increased by around 49% in March following the spike in fuel prices, EV sales rose by about a third in Q1 2026, reaching around 19% of new car sales. In the UK, EV sales reached a record 23% of the new car market in March. Uptake is also accelerating beyond early-adopter markets, with EVs accounting for 56% of new car sales in Singapore in early 2026, 28% in Thailand, 21% in Indonesia, 18% in Turkey and 30% in Uruguay. [74]

Taken together, this reflects a broader shift, as rising fuel costs are beginning to replace "range anxiety" with "pump anxiety", accelerating consumer adoption of electric alternatives and reinforcing the structural transition away from oil. [75]

Opportunities to accelerate:

- Reduce tariffs on imported electric vehicles to make near term purchases of electric vehicles even more cost effective
- Strengthening phase-out timelines for internal combustion engine vehicles – such as the phase down mandates for the 2030s in Europe, or Ethiopia's recent ban on imported fossil fuel vehicles.
- Expanding charging infrastructure,

[68] IEA (2025), *World Energy Outlook*
[69] Thunder Said Energy (2026), *Oil price elasticity of demand: how high can oil go?*
[70] IEA (2023), *Global EV Outlook 2023*; IEA (2023) *World Energy Outlook*
[71] IEA (2024), *Global EV Outlook*
[72] EMBER (2026), *The New Twin Oil Shock*
[73] Carbon Brief (2026) *Iran war analysis: How 60 nations have responded to the global energy crisis*
[74] Financial Times (2026), *EV ownership at 'tipping point' in many parts of the world*
[75] Financial Times (2026), *'Pump anxiety' from soaring fuel prices prompts surge in EV interest;* Reuters (2026), *Fuel crisis powers surge in EV interest in Asia-Pacific region;* Telegraph (2026), *Soaring petrol prices drive record demand for electric cars*; Zecar (2026), *EV Interest Surges Across Australia as Fuel Crisis Bites;* Euronews (2026), *EV sales spike nearly 50% in the EU in March amid Iran war energy fears*

- Reform charging prices and/or taxes, including reducing the VAT gap between home and public EV charging, where UK public charging is typically taxed at 20% while domestic electricity is taxed at 5%.[76]
- Prioritising high-utilisation segments such as commercial fleets and vans, where electrification delivers higher economic returns and faster oil displacement per vehicle.

Additional opportunities exist in developing economies, where policies to restrict imports of used internal combustion vehicles, usually models over 10-15 years, can avoid locking in inefficient, high-emitting assets.[77]

Electrification of heating and cooking: focus on household affordability and industrial competitiveness

Beyond power and transport, buildings and industry represent major sources of fossil fuel demand that can be reduced through electrification, particularly in gas boilers for home heating, and in low- and medium-temperature industrial processes below 200°C, which account for the majority of heat demand in light industry.[78] Immediate private sector responses are less dramatic than for solar PV and EVs; this reflects more complex buying decisions and the need to invest in new application equipment which is currently more expensive than the fossil fuel option. But policy incentives can steadily accelerate the speed of response.

Current trends:

Reducing exposure in these sectors is driven by electrification of heating and cooking.

- Heat pumps can replace gas-based heating systems in buildings and light industry, significantly reducing gas demand while improving efficiency. Following the 2022 energy crisis, heat pump deployment increased sharply across Europe in response to high gas prices and policy support.[79]

- Global cooking is still largely driven by traditional use of biomass (TUOB) in lower-income countries - around 2.3 billion people still cook on open fires or basic stoves, contributing to an estimated 3.7 million premature deaths each year. Liquified Petroleum Gas (LPG) has been promoted as a substitute to traditional use of biomass in cooking, with benefits including particulate reduction, improving health. The lack of availability of LPG witnessed in recent weeks is likely to see a shift back to biomass in cooking in some regions but could also provide an opportunity to switch to electric based cookstoves, which can offer comparable economic.[80]

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[76] In line with household electricity levels. The Guardian (2026), *UK to appeal against tax ruling cutting VAT on public electric car chargers to 5%*
[77] ETC (2025), *The Road Ahead: Electrification, Design and Mobility Choices for Efficient Transport*
[78] ETC (2025), *Achieving Zero-Carbon Buildings*
[79] IEA, (2023) *Energy Efficiency*
[80] ETC (2025), *Achieving Zero-Carbon Buildings*

Progress already stimulated:

In both residential heating and cooking, change is slower than in EVs due to higher upfront costs and longer installation times.

- Greater upfront cost of heat pumps relative to gas boilers, and induction cookers relative to simple stoves
- Longer installation times for heating systems

But there are already signs of increasing consumer interest:

- Early 2026 data suggest that higher fossil fuel prices may already be supporting heat pump demand. Residential heat pump sales rose 34% in Germany and 21% in France in Q1, while average sales across 12 European countries increased by 16.5%, according to the European Heat Pump Association. Sustained uptake will still require policy support, lower upfront costs and better alignment between electricity and gas taxation.[81]
- In the UK, energy firms reported a 42% increase in enquiries related to household energy solutions, including solar PV, insulation and heat pumps. Octopus Energy reported its biggest ever month for clean tech enquiries and sales in March 2026, with solar sales up 54% and heat pump sales up 51%, as households sought to reduce exposure to volatile fossil fuel prices.
- In India, LPG supply concerns have triggered a sharp shift toward electric cooking, with induction cooktop sales reportedly rising by 3x to 30x across online platforms and quick-commerce players running out of stock in several cities.

Opportunities to accelerate:

- **Purchase support and accessible financing for electrification equipment** – many countries currently offer support for heat pump purchase, and in many countries global development support is targeted towards clean cooking.[82] Amplifying these support programmes through increased finance and improved accessibility in the near term can accelerate fuel switching. Targeted grants, low- or zero-interest finance, and other financing mechanisms can spread upfront costs and are repaid over time through lower energy bills.
- **Price parity:**
    - **Rebalancing gas and electricity prices:** electricity often remains too expensive relative to gas, weakening the case for electrification; governments should rebalance gas and electricity prices and expand time-of-use tariffs to ensure cheap electricity reaches consumers and benefit those who use electrification technologies to respond flexibly to demand.
    - **Power market design:** gas often sets the marginal electricity price, even when lower-cost clean power dominates supply;[83] reform should expand long-term contracts such as Contracts for Difference while preserving short-term markets for efficient dispatch.[84]
- **Grid and system readiness:** wider electrification requires stronger grids, storage and smarter system operation; policymakers should accelerate network investment, storage rollout and digital grid optimisation.

[81] Financial Times (2026), *Heat pump sales jump as consumers recoil at high fossil fuel prices*
[82] World Bank (2025)
[83] European Commission (2023), *Proposal for a Reform of the EU Electricity Market Design*
[84] ETC (2023), *Financing the Transition*

Developing fuels and fertilisers

Green fuels and fertilisers are critical for sectors that are difficult to electrify to be able to shift away from fossil fuels, but responses will take longer due to higher costs and infrastructure requirements. For fertilisers, the resilience opportunity is not only to produce them differently, but also to use them more efficiently. In many regions, particularly in Europe, fertilisers are over-applied or poorly targeted, with only around half of applied nitrogen reaching crops. Better timing, nutrient management plans, precision agriculture and crop rotation can therefore reduce exposure to gas-based fertiliser supply chains while also cutting pollution of groundwater, rivers and the atmosphere. The priority should be to use less, use better and produce cleaner.

Current trends:

The Persian Gulf is a major hub for fertiliser production, with around 40 million tonnes per year of output linked to gas-based ammonia production, equivalent to roughly one-fifth of global ammonia supply and a substantial share of internationally traded fertilisers, making food supply chains highly exposed to disruption.[85] Green ammonia, produced using renewable hydrogen, offers a pathway to reduce this exposure. While currently more expensive than conventional production in many regions, with green premiums of around 50–75% expected to 2030, the cost gap is highly sensitive to gas prices. Under typical conditions, green ammonia costs roughly $600–800 per tonne compared to $300–400 per tonne for conventional production, but at gas prices above ~$30/MMBtu (already exceeded $25/MMBtu in Asia), grey ammonia costs can rise to $700–1,000 per tonne, effectively closing the gap or making green production cost competitive. As a result, in high gas price environments, green fertiliser can become economically competitive on a system basis.

Similarly, aviation and shipping remain highly dependent on oil-derived fuels and are therefore directly exposed to the kind of price shock triggered by Hormuz. In aviation, the current crisis has already caused significant operational disruption as well as higher fuel costs: within ten days of the first attacks, 73% of available seat-kilometres to and from the Middle East had been cancelled, with corridors to and from Asia Pacific particularly affected.[86] More broadly, other parts of the world such as Germany, France, and the UK are also in critical positions regarding jet fuel shortage.[87]

Low-emissions fuels such as sustainable aviation fuels (SAF), green ammonia and green methanol offer a pathway to reduce reliance on imported oil and gas in sectors that are difficult to electrify. But they are not near-term resilience solutions at scale. These fuels remain two to four times more expensive than fossil alternatives, current deployment is below 1% of global fuel use in aviation and shipping, and mandates are only beginning to scale.[88] SAF should therefore be seen as a longer-term import-derisking option for aviation, rather than a major shock absorber in the immediate crisis. In the EU and UK, SAF blending requirements start at around 2% in 2025 and rise to roughly 6-10% by 2030, providing an early demand signal but remaining small relative to total fuel use.

Progress already stimulated:

Unlike renewables and EVs, there are limited immediate responses, reflecting long investment cycles and infrastructure constraints. However, higher fossil fuel prices are improving project economics and

[85] Thunder Said Energy (2026), *Global LNG: the worst supply disruption in history?*
[86] IATA (2026), *Global Air Traffic Disruptions in Strategic Middle East Hub*
[87] Analysis (2026) based on IEA, Kpler, Vortexa and national data (DESAC, Eurostat)
[88] ETC (2026) *Fossil Fuel Phase-Down: Trends by Fuel and Policies to Accelerate Implementation*

strengthening the case for investment in green fuel projects – Latin American company Atome recently took a final investment decision on a 260kt/year green fertiliser plant [89].

Opportunities to accelerate:

- **Mandates and international regulation:** Measures such as SAF mandates, and stronger frameworks through the IMO and ICAO, are essential to create bankable demand for low-carbon fuels.
- **Carbon pricing:** Carbon pricing helps improve the economics of sustainable aviation fuel, green ammonia and green methanol, but on its own is unlikely to create sufficient certainty for investment while green premia remain high.
- **Provide First-of-a-kind support:** green fuels projects remain capital-intensive with high upfront costs, so governments and development finance institutions should provide concessional finance, risk-sharing tools and support for first projects.
- **Lead markets as demand signal:** public policy should help create early markets through procurement, blending requirements where relevant, and support for domestic fertiliser industries [90].
- **Resolve infrastructure and power constraints:** scaling green fuel production will require reliable clean electricity, transmission and in some cases hydrogen and CO2 networks.

Exhibit 9 summarises the early market response: across exposed countries, demand for solar, batteries, EVs and household electrification has risen sharply since the Hormuz crisis began.

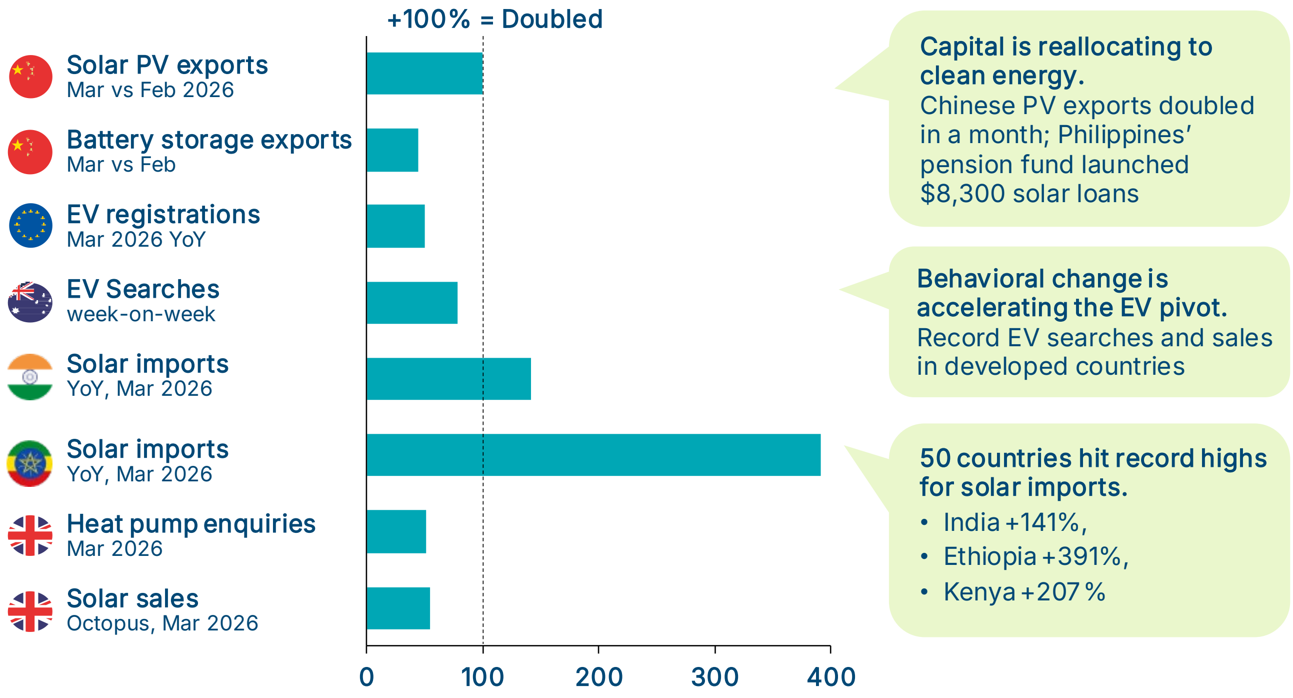
[89] The Financial Times (2026) *Green fertiliser project challenges industry's reliance on natural gas*
[90] See for example Industrial Transition Accelerator (2025) *EU Lead Markets Report*

The crisis is accelerating the transition more effectively than any subsidy program with surging demand for clean technologies in March 2026

EXHIBIT 10

Clean technologies

% change vs comparison period



Notes: YoY = year-on-year. Week-on-week for Australia EV searches. Octopus Energy UK data for heat pumps and solar.
Sources: EMBER (2026); Reuters (2026); Euronews (2026); Zecar (2026); Octopus Energy (March 2026).

Energy productivity across buildings, industry and long-distance transportation

Energy efficiency is often a low-cost lever to reduce exposure to fossil fuel volatility across all sectors. Key actions include building retrofits, smart energy systems, stronger appliance and industrial equipment standards, materials efficiency, higher recycling rates and operational efficiency in trucking, aviation, shipping and freight.

Current trends:

Increasing energy productivity means reducing energy inputs while delivering the same level of energy services. Progress remains too slow: global energy efficiency, measured through primary energy intensity, improved by only around 1% in 2024 and is estimated to improve by 1.8% in 2025, still well below the COP28 goal of around 4% per year by 2030.[91]

[91] IEA (2025), *Energy Efficiency*

- Building retrofits, smart energy systems and appliance and industrial equipment high efficiency standards lower both costs and exposure to fuel price volatility. Strengthening minimum efficiency standards for key equipment such as air conditioners, industrial motors and lighting is particularly effective. In many cases, the cost premium is minimal, while payback periods can be as short as one to two years.[92]
- Increasing recycling rates for steel, aluminium and plastics, reducing single-use materials, and optimising building design to use less cement are also measures of energy productivity as materials usage is streamlined and secondary production leverages lower energy-intensity compared to virgin materials.[93]
- Optimisation of logistics and operations in trucking, aviation and maritime operations can also deliver immediate fuel savings in sectors where immediate alternatives remain limited.

ETC analysis shows that much faster progress is possible and materially reduces the scale of clean energy build-out required. In ETC zero-carbon pathways, final energy demand could fall by around 15% of today's level by 2050 if energy productivity opportunities are fully seized, while limited progress would leave final energy demand around 40% higher than today's and require much faster deployment of clean energy supply.

Progress already stimulated:

Energy efficiency is already appearing in emergency responses because it can reduce demand quickly without requiring large new supply infrastructure and therefore exposure to fuel shortages and high prices. The IEA's policy tracker shows governments introducing or encouraging a mix between structural energy savings such as remote work, limits on air-conditioning temperatures, lower speed limits, public transport promotion and wider energy-saving campaigns, and emergency energy savings such as reduced public lighting, and fuel rationing, which shouldn't be sustained beyond the short term.[94]

Opportunities to accelerate:

- **Strengthen minimal efficiency standards:** strengthen minimum efficiency standards for air conditioners, motors, lighting and industrial equipment.
- **Support appliances scrappage schemes, buildings retrofits,** smart systems and better operational controls through incentives, regulation and information programmes.
- **Increase material circularity:** encourage demand reduction/better design, re-using and recycling through standards and procurement.
- **Operational efficiency in long-distance transport:** push airlines and shipping operators to adopt fuel-saving improvements while cleaner fuels scale.

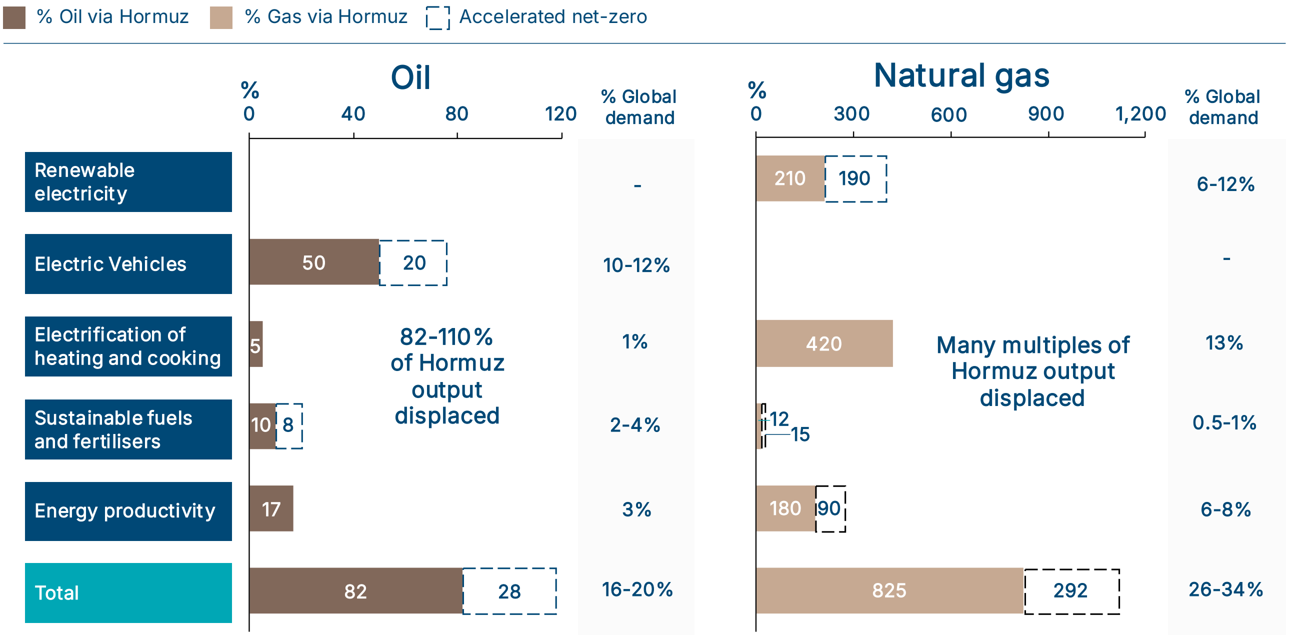
Exhibit 11 quantifies fossil fuel displacement across the main 'win-win' intervention categories by 2035.

[92] IEA (2025), *Energy Efficiency*
[93] ETC (2026), *Harnessing Energy Productivity for Industrial Competitiveness in a Low Carbon World*
[94] IEA (2026), *Energy Crisis Policy Response Tracker*

Win-win interventions can reduce exposure to traded fossil fuels while improving affordability and resilience

EXHIBIT 11

Oil and gas displacement by clean energy in 2035.



Notes: Lower range is based on ETC's ACF and IEA's STEPS scenarios. Higher range is based on ETC's PBS/Unconstrained and IEA's Net-zero scenarios.
Sources: ETC (2025), The Road Ahead: Electrification, Design and Mobility Choices for Efficient Transport; IEA (2025), World Energy Outlook.

3.2 Difficult Trade-Offs & Clear 'Do Nots'

Achieving a clean, secure and affordable energy system over the medium term remains fully compatible with climate objectives. However, the current crisis creates acute short-term pressures that require pragmatic responses. Some trade-offs are unavoidable and must be carefully managed. Other actions risk locking in structural vulnerabilities and should be avoided.

The role of fossil subsidies

In response to the sharp increase in European gas and electricity prices after Russia's invasion of Ukraine, many governments introduced large-scale subsidies to limit the impact on households and, in some cases, industry. The cost of these measures amounted to around €650–700 billion across Europe, while several countries also reduced or delayed increases in transport fuel duties. [95] Overall these subsidies provided short term cost pressure relief to households and businesses, but limited longer-term insulation from future price shocks.

In response to the Hormuz crisis, several countries have again introduced subsidies, tax reductions or price caps, as discussed in Section 1.4. However, the overall scale of response has so far been smaller than during the Russia-Ukraine crisis. This reflects the more limited impact on European gas and electricity prices to

[95] Bruegel (2023), *National fiscal policy responses to the energy crisis*

date, tighter fiscal constraints in many European countries, and the limited fiscal capacity of several Asian economies most exposed to Hormuz-related supply constraints.

Recent evidence suggests that the risk of poorly designed support is already materialising. Energy tax cuts have spread rapidly, with 39 economies lowering energy taxes in response to rising fuel prices, and European governments accounting for a large share of this. Bruegel estimates that European governments have committed around €10 billion in energy-crisis support so far, with nearly four-fifths of measures poorly targeted, including broad tax cuts.[96] Similar risks arise from continued support for fossil fuel production, including tax advantages, public finance and other forms of support for extraction and infrastructure.

The principle should be clear: short-term support may be justified, but it must be targeted, temporary and designed to preserve incentives for efficiency and electrification.

The principle should be clear: short-term support may be justified, but it should be targeted, temporary and designed to preserve incentives for efficiency and electrification. Broad subsidies for fossil fuel consumption risk weakening the price signals that are driving clean energy uptake, while imposing significant fiscal costs. Production subsidies and tax breaks can create similar risks by prolonging fossil fuel dependence. Fiscal support should therefore focus on lower-income households and essential services, not broad-based consumption such as leisure travel or general road fuel use, and governments should avoid using the crisis to justify new or expanded production support for fossil fuels. Where possible, fiscal capacity should be redirected toward investments that reduce exposure to future fossil fuel shocks, including clean infrastructure, electrification and energy efficiency.

Temporary increases in coal burn but not in capacity

A short-term increase in coal generation may be unavoidable in some countries facing acute gas and LNG shortages. Across Asia, countries heavily exposed to LNG imports, including Japan, Republic of Korea, India and Bangladesh, are increasing coal utilisation, lifting operating restrictions on existing plants and curtailing gas use in power and industry. This reflects the fact that spot LNG prices have risen much more sharply than coal prices, with prices in Japan and Republic of Korea doubling from around $12/MMBtu in late January to around $25/MMBtu at its March peak, while Australian thermal coal out of Newcastle rose just 12%.

However, this does not justify new coal capacity or delays to coal phase-out timelines. Existing coal fleets had some utilisation headroom before the crisis, but this varied sharply by country: India was already running thermal plants close to 70% plant load factor in January and February 2026, while China's thermal utilisation was closer to 50%, suggesting greater apparent headroom – although gas plays an overall limited role in both countries power systems.[97] Any new coal capacity would take years to come online, while renewables and storage can be deployed more quickly and are the lowest-cost option, particularly in markets such as India. A temporary increase in utilisation of existing coal plants may help avoid severe disruption, but policy should focus on accelerating renewables, storage and grid flexibility, not extending structural dependence on coal.

[96] Financial Times (2026), *Energy tax cuts spread to 39 economies as fuel prices jump*
[97] CEIC data (2026), *India Electricity: Plant Load Factor: Thermal*

New LNG infrastructure: avoiding lock-in and overcapacity

Europe's response to the 2022 gas crisis combined faster clean energy deployment with expanded LNG imports to replace Russian pipeline gas (alongside widespread demand subsidies). Total European gas consumption fell by 15% between 2021 and 2025, but additional LNG import capacity also played a role in managing the immediate supply shock.

The Hormuz crisis will similarly increase pressure to diversify LNG supply: the closure of the Strait has created physical shortages in several Asian economies and higher prices globally. Even once the Strait reopens, damage to LNG production facilities in Qatar, which accounts for around 20% of global LNG exports, could take several years to repair. Expanded liquefaction and export projects are therefore likely to be proposed in the United States, Australia and other potential supply regions.

But such developments risk creating long-term lock-in to what should only be a transition fuel and could exacerbate already prospective LNG overcapacity. Prior to the crisis, the IEA projected around 345 bcm/y of new LNG export capacity coming online between 2025 and 2030 from projects already under construction, including Golden Pass, Plaquemines, Corpus Christi Stage 3 and Qatar's North Field expansion.[98] If demand slows under stronger clean energy deployment scenarios, additional long-lived LNG investments risk coming online to an oversupplied market.[99]

It is also important to note that replacing Qatari LNG supply with supply from the US is likely to result in higher upstream methane emissions, given evidence that methane leakage rates in some US basins are significantly higher than in low-leakage producers. This risk may be further amplified by recent policy changes under the current US administration that have weakened methane regulations and delayed compliance requirements in the oil and gas sector.[100] Any new commitments to LNG should therefore:

- be accompanied by robust methane emissions standards across the value chain
- use shorter contract durations and faster amortisation where possible
- be systematically assessed against accelerated clean energy alternatives
- avoid triggering major new upstream gas developments that extend fossil fuel dependence beyond transition needs

Without these safeguards, short-term security responses risk locking in long-term vulnerability.

Domestic oil and gas expansion: risk of lock-in and lost climate leadership

The current crisis is likely to renew calls for expanded domestic oil and gas production, particularly in import-dependent regions. In the UK, for instance, there are calls to slow the decline of North Sea oil and gas production. If the alternative is to expand LNG imports from countries with weaker methane leakage controls, such as the US, domestic gas production can in some cases result in lower global emissions.

But any policy shifts should reflect a realistic assessment of their potential impact and remain compatible with long-term commitments to move beyond fossil fuels.

- The contribution of new supply to short-term energy security is limited. Existing fields typically require 2–3 years to increase output, while new exploration can take 5–10 years or more. Net-importing countries may justify targeted measures to manage decline from existing or already

[98] IEA (2026), *Global LNG Capacity Tracker*
[99] IEA (2025), *World Energy Outlook*
[100] IEA (2025), *Global Methane Tracker*

consented fields, especially where this reduces reliance on higher-emissions imports. But this does not justify wholesale expansion of new fields, which would arrive too late to address the current crisis and would not shield consumers from global price volatility. Even in the United States, where shale can respond more quickly than conventional oil production, producers have so far shown limited willingness to materially increase output unless higher prices are sustained, reinforcing the limits of domestic supply as a near-term resilience strategy.[101]

- Expanding upstream investment can divert capital from clean energy, weaken policy credibility, and prolong exposure to volatile markets. It may also delay the structural shift required to reduce dependence on fossil fuels. Long-term current policy outlooks from the IEA, BP and others show oil demand plateauing by the early 2030s and gas demand growing into the 2030s, increasing the risk of oversupply and stranded assets.[102]

- Limiting warming to well below 2°C is incompatible with extracting all known fossil fuel resources. Any national commitment to maximise extraction of domestic fossil resources is therefore inconsistent with global climate objectives.

As several ETC reports have emphasised, the key focus of policy should be reducing fossil fuel demand through accelerated renewable investment and electrification of road transport, residential heating and industrial applications. Supply-side policy should focus only on slowing decline from existing and already consented fields where appropriate, to better match falling supply with falling demand. It should not support new large-scale exploration or long-lived conventional oil and gas production.[103]

The key focus of policy should be reducing fossil fuel demand through accelerated renewable investment and electrification of road transport, residential heating and industrial applications.

[101] Reuters (2026), *US shale firms unlikely to drill at $100 a barrel unless high prices last longer, executives say*
[102] BP (2025), *Energy Outlook*; Shell (2026), *Energy Security Scenarios*
[103] ETC (2026), *An Electrified and Resilient Future Beyond Fossil Fuels*; ETC (2026), *Fossil Fuel Phase down - trends and policies*; ETC (2023), *Fossil Fuels in Transition*

Maintaining carbon pricing momentum

Carbon pricing plays a crucial role in driving decarbonisation of hard-to-electrify sectors, including heavy industry, shipping and aviation[104]. It can also support power sector decarbonisation, particularly where it encourages a shift away from coal generation.

The EU ETS is central to Europe's decarbonisation strategy. Its planned development combines a tightening emissions cap, a gradual phase-out of free allowances for heavy industry, and the introduction of the Carbon Border Adjustment Mechanism to maintain a level playing field with imports from countries without comparable carbon pricing. CBAM is already encouraging other major economies, including China and India, to introduce or extend carbon pricing systems.

Over the last year, concerns about European industrial competitiveness have led to calls from some corners for changes to the EU ETS. These include proposals for a less ambitious emissions reduction pathway[105], a delay in the phase-out of free allowances[106] or the removal of EU ETS carbon pricing from the electricity sector.[107] These arguments have intensified in the face of the Hormuz crisis and the resulting increase in gas prices.

These concerns are legitimate. In the power sector, a reduced carbon price for gas-fired electricity could slightly reduce the marginal electricity price and support electrification, since EU wholesale electricity markets are based on marginal pricing. However, any reforms must maintain the broad structure and coverage of the EU ETS, and the commitment to a strong emissions reduction target. The EU ETS remains central to the EU's 2030 climate framework, with the 2023 revision tightening the cap to reduce covered emissions by 62% by 2030 compared with 2005 levels.

Reforms should therefore focus on changes compatible with these commitments. These could include:

- Introducing mechanisms to cap the EU ETS carbon price during periods of exceptional fossil fuel price increases, combined with a price floor when fossil fuel prices fall to low levels. The existing Market Stability Reserve already provides a precedent and framework for managing allowance supply to improve market stability.

- Reinforcing CBAM through extension to a wider set of imports and the introduction of an export rebate. CBAM is designed to maintain a level playing field as free allowances are phased out and carbon costs rise for EU industry.

Interest rates and the cost of capital: policies to limit the effect

The cost of capital is already a major constraint on clean energy deployment in emerging and developing economies — and rising rates matter more as the energy system shifts from fossil fuels to clean technologies. Where fossil fuel costs are driven by ongoing fuel purchases, clean energy costs are dominated by upfront capital, making financing conditions central to the speed and affordability of the transition. Solar, wind, batteries, grids, heat pumps and EVs are increasingly cost-competitive on a technology basis, but high borrowing costs can prevent that advantage from being realised.

The challenge is sharpest in countries with higher sovereign risk, weaker currencies and less developed financial markets. Many emerging economies have excellent renewable resources and fast-growing demand yet face capital costs several times higher than in advanced economies — enough to make clean power more expensive than fossil alternatives even where underlying technology costs are low. ETC has

[104] ETC (2025), *Global Trade in the Energy Transition*
[105] S&P Global (2025), *EU carbon prices tumble as major states add to ETS reform calls*
[106] Rinnovabili (2026), *Free emission allowances debated in EU ETS review*
[107] Euronies (2026), *Commission resists overhaul of carbon pricing while pushing for tax cuts on energy*

highlighted this issue across multiple reports, pointing to the need for better contract design, concessional finance, guarantees, multilateral development bank (MDB) reform and stronger mechanisms to mobilise private capital internationally.[108]

One likely impact of the current crisis is a rise in inflation relative to recent expectations. The IMF assesses that this effect will be moderate in its reference scenario, with global inflation rising from 4.1% in 2025 to 4.4% in 2026.[109] But under a more extreme scenario in which energy market disruption extends into next year, global headline inflation could reach 5.4% in 2026 and just above 6% in 2027.

Higher inflation will reduce the scope for central banks to implement previously anticipated interest rate reductions and could result in increases in some countries. So far, rate increases have been concentrated in the Philippines and Pakistan - both developing countries with heightened exposure to imported energy inflation. In major developed economies, central banks and markets are signalling a delay in interest rate cuts rather than immediate rate rises.

Higher interest rates, and therefore a higher cost of capital, increase the cost of renewable electricity projects relative to fossil fuel generation. This reflects the cost structure of renewable projects, which involve large upfront capital investment followed by close to zero marginal operating costs. The constraint is even sharper in emerging and developing economies, where access to affordable capital was already a major barrier to clean energy deployment and may become harder if the crisis raises inflation, weakens currencies or increases perceived sovereign risk. As an example, between 2020 and 2024, interest rates rose by around 4 percentage points in several countries, — a key factor in costs increasing from around $70-80/MWh to around $120/MWh[110].

It is currently unlikely that the Hormuz crisis will produce interest rate rises of equivalent size, and possible that rate cuts in major developed economies will resume after a delay. But the cost of capital remains a crucial determinant of the feasible pace of the energy transition in both developed and developing countries. Continued focus on policies that reduce the cost of capital for renewable energy projects therefore remains important. These include:

- Careful design of power market contract structures to reduce revenue risks and required private rates of return
- Mobilisation of international capital, including through multilateral development banks, to enable lower-income developing economies to seize the opportunity created by falling clean technology costs, particularly solar and storage batteries

[108] ETC (2023), *Financing the Transition;* ETC (2020), *Making Mission Possible*
[109] IMF (2026), *World Economic Outlook*
[110] See ETC (2024) *Overcoming turbulence in the offshore wind sector*

4 Conclusion: A Crisis That Reinforces the Case for Transition

The 2026 Iran crisis is not an isolated event, but a clear manifestation of a structural vulnerability in the global energy system. Heavy reliance on geographically concentrated fossil fuel supply and critical transit routes exposes economies to large, sudden and recurrent disruptions, which transmit rapidly through prices, trade and inflation. The scale of the current shock, affecting around 20 mb/d of oil and 20% of LNG, may increase fossil energy costs by around 20% this year, if high prices are sustained.

Where possible, reducing demand in the short term can insulate against the crisis. Recent analysis by the IEA highlights a set of immediate actions, including reduced speed limits, increased use of public transport, remote working and more efficient freight operations, which can collectively deliver meaningful reductions in demand within weeks. Such measures can by no means fully offset supply disruptions but can play an important role in reducing costs and preserving fuels for essential uses.[111]

Previous crises offer a stark warning: short-term subsidies towards fossil fuel production or use offer a sticking plaster, not a long-term solution. During the 2022 crisis, government support measures in advanced economies reached substantial levels, in some cases exceeding 1% of GDP.[112] Broad-based energy subsidies and price caps can provide short-term relief but risk weakening incentives for efficiency, delaying fuel switching and imposing significant fiscal costs. Any short-term support

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[111] IEA (2026), *Sheltering From Oil Shocks;* ETC (2025), *Demand side flexibility – unleashing untapped potential for clean power*
[112] IMF (2023), *Fiscal Monitor, 2023*

should be highly targeted towards those most in need and avoid distorting price signals that favour fossil fuels over clean energy.

At its core, the issue is not simply the cost of energy, but the volatility and external exposure embedded in fossil fuel systems. These systems depend on continuous flows of traded commodities and extended supply chains that are inherently vulnerable to disruption. This vulnerability is not only economic but also operational: modern energy systems and fuel logistics are increasingly targeted in conflict, and reliance on long and exposed supply lines can constrain both industrial activity and the functioning of critical infrastructure. By contrast, clean energy systems shift towards distributed domestic resources, electrification and long-lived capital assets, significantly reducing exposure to price shocks and supply interruptions.

The key difference between this fossil fuel crisis, and previous crises, is the availability of readily deployable alternatives, from wind and solar power that avoid gas use in power and the battery and grid technologies that help them into electricity systems, to electric vehicles that avoid oil use in transportation. Accelerating the deployment of these technologies can reduce global oil demand by 20% and gas demand by more than 30% by 2035, insulating economies from the next shock.

Accelerating the deployment of alternative technologies can reduce global oil demand by 20% and gas demand by more than 30% by 2035, insulating economies from the next shock.

Low-carbon alternatives to fossil fertilisers, and heavy transportation fuels will take longer to scale. It is important that policy acts now to continue to support the commercialisation and scale up of these technologies over time.

The ETC's recommended actions for policymakers, on the next page, provides a menu of policy response options, including both some which can be implemented rapidly and others which will take longer to enact. Specific national circumstances will dictate the balance of short vs. medium-term actions that can be adopted.

ETC Recommended Actions for Policymakers

Win-win policies implementable over a variety of time periods

Immediate response: weeks to months:

- Reduce demand quickly through proven emergency measures, including public transport promotion, remote working where feasible, efficient freight operations, lower speed limits and energy saving campaigns.
- Protect vulnerable households and essential services through targeted, temporary support, while avoiding broad subsidies that encourage higher fossil fuel consumption.
- Preserve fuels for essential uses, particularly where shortages affect food supply chains, public services, freight, cooking fuels or critical industrial inputs.
- Remove import tariffs, where applied, on clean energy technologies like solar panels and electric vehicles.

Fast structural substitution: 1-3 years:

- Remove permitting, planning and grid connection bottlenecks for renewable energy projects, alongside accelerated grid investment, proactive spatial planning and near-term measures to unlock grid capacity, including dynamic line rating, system flexibility and vehicle-to-grid integration.
- Strengthen renewable energy auction and procurement frameworks to accelerate deployment and reduce financial risk.
- Reform power market arrangements to reduce the pass-through of volatile fossil fuel prices into electricity bills, including expanded use of long-term contracts such as CfDs.
- Accelerate electrification of road transport: strengthen ICE phase-out timelines, expand charging infrastructure, and prioritise high-utilisation segments such as commercial fleets and two- and three-wheelers.
- Accelerate electrification of heating and cooking through heat pump deployment, targeted support for electric cooking, rebalancing electricity and gas price signals, and financing mechanisms that reduce upfront costs for households and small businesses.
- Strengthen energy productivity through tighter efficiency standards for appliances, motors, lighting and industrial equipment, alongside retrofits, smart systems, recycling and better material use.

Long-term resilience to 2030 and beyond:

- Scale green fuels and fertilisers through mandates, procurement, first-of-a-kind project support, concessional finance and infrastructure planning, while recognising that these are longer-term import derisking solutions rather than near-term shock absorbers at scale.

- Maintain credible carbon pricing and CBAM signals to support clean industrial investment, prevent carbon leakage and strengthen the long-term business case for low-carbon technologies.
- Reduce barriers to clean technology deployment, including tariffs and non-tariff barriers where they slow uptake, while diversifying clean technology and critical mineral supply chains.
- Reduce the cost of capital for clean energy, especially in emerging economies, through better contract design, guarantees, concessional finance and MDB mobilisation.

Trade-offs to manage carefully

- Design any fossil fuel subsidies, tax reductions or price caps with clear limits, sunset clauses and preserved incentives for efficiency and electrification.
- Keep carbon pricing credible and allow only limited flexibility without weakening long-term signals.
- Accept short-term increases in coal utilisation only as strictly time-limited emergency measures, without delaying phase-out timelines or adding new capacity.
- Ensure any new LNG commitments are tightly constrained, with methane standards, shorter contract durations, and clear assessment against clean alternatives.

Clear do nots

- Impose blanket subsidies that lead to high fiscal costs and distort price incentives for clean energy.
- Set new or expanded fossil fuel production subsidies, tax breaks or public finance under the banner of energy security.
- Expand large-scale new upstream oil and gas; prioritise existing assets while recognising limited short-term impact and long-term lock-in risks.
- Weaken financial regulation, carbon pricing or climate policy commitments under the cover of energy security.
- Weaken targets in response to the crisis. Maintain and reinforce 2030 and 2050 climate commitments.

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