Global impact of war in Ukraine: Energy crisis

UN GLOBAL CRISIS RESPONSE GROUP ON FOOD, ENERGY AND FINANCE

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Executive summary:
Recent developments

Since the issuance of the second brief by the Global Crisis Response Group (GCRG) on 8 June 2022, the impacts of the ongoing cost-of-living crisis have been felt more deeply and widely across the world.
More people are now forecast to be pushed into food insecurity and extreme poverty by the end of 2022. The most recent operational programming update from the World Food Programme (WFP) estimates that in 2022, 345 million people will be acutely food insecure or at a high risk of food insecurity in 82 countries with a WFP operational presence, implying an increase of 47 million acutely hungry people due to the ripple effects of the war in Ukraine in all its dimensions. Meanwhile, in early July, the United Nations Development Programme estimated that up to 71 million people could have already been pushed into poverty in the three months since the start of the war, with hotspots in the Balkans, Caspian Sea region and sub-Saharan Africa, particularly the Sahel. As citizens in many countries begin to grapple with the cost-of-living crisis, an intensification of social protests and riots has been recorded. According to the Armed Conflict Location and Event Data Project, the number of riots worldwide increased slightly between the first and the second quarters of 2022.

Prices of commodities in global markets are still high but stabilizing. The food price index of the Food and Agriculture Organization of the United Nations (FAO) declined slightly in June 2022 and is down by about 3.3 per cent from its historic high in March. Crude oil prices dipped below the $100 per barrel mark at the beginning of July and have since remained near that level. Agriculture and commodity spot indexes are now close to, and some days below, pre-war levels. Shipping costs have also slowly begun to decrease, especially for bunker and tanker ships that are the most highly correlated with commodities and that have contributed considerably to the increase in consumer prices and import costs across the board.

Falling prices are key to breaking the vicious cost cycle highlighted in GCRG Brief No. 2. The fall in prices might have been influenced by bumper crops in Australia, Canada, the Russian Federation and the United States of America, as well as by optimism following the signing on 15 July 2022 of the agreement between the Russian Federation, Türkiye and Ukraine, under the auspices of the United Nations, to reintegrate grains and sunflower oil from Ukraine into global markets and facilitate unimpeded access to food and fertilizers from the Russian Federation which had been a fundamental recommendation by GCRG.

Recent moves may also signal less uncertainty in commodity trading and transport markets. Lastly, as at 30 June 2022, there were 27 countries with 40 measures restricting food exports; at present, there are 25 countries with around 39 measures affecting over 8 per cent of global trade. In this regard, the situation has ameliorated, yet it could be further improved.

COMMODITY PRICES REMAIN AT A HIGH LEVEL DESPITE RECENT FALLS

The global situation is still causing difficulties in all regions. The high price volatility witnessed since the pandemic, particularly in 2022, suggests that prices remain at high levels and could rise yet again. In addition, although the prices of some commodities have fallen, due to high inflation, the situation has remained tight for billions of people, whose socioeconomic prospects have deteriorated as a result. There are serious concerns about potential stagflation scenarios (low growth and high inflation) in the second half of 2022 and in 2023. In developing countries, exposure to financial shocks is increasing despite falling commodity prices. Energy markets in particular are under
stress, as the heating season approaches in the northern hemisphere.

**Most consumers have not seen commodity price declines translated into lower inflation rates.** Inflation continued to accelerate worldwide in July 2022, with strong correlations with the income levels of countries; even while inflation is breaking multidecade records in advanced economies, developing countries and the least developed countries in particular are experiencing even higher levels of inflation. However, as food and, especially, energy prices are a major component of recent inflation metrics in many economies, it is possible that the metrics in some large economies may stabilize in the near future.

**Food prices have fallen, yet are still high, above pre-pandemic levels, and the fertilizer shortage remains a concern.** Prices were already high at the beginning of January 2022, and increases have been broad based, affecting almost all food categories. It is noteworthy that, since the beginning of 2020, the vegetable oil price index has more than doubled, that of cereals has increased by over 60 per cent and that of sugar by over 50 per cent. In addition, as highlighted in GCRG Brief No. 2, if fertilizer shortages continue, the food access crisis in 2022 will be exacerbated by a food availability crisis in 2023.

**The consequences of the crisis include worsening nutrition and health outcomes that have been building up over the last two years. In 2020, almost 3.1 billion people could not afford a healthy diet, up by 112 million compared with in 2019, due to the impact of the coronavirus disease (COVID-19) pandemic and related measures.** The cost-of-living crisis, and soaring food prices, make it even more challenging for increasing numbers of people to afford a minimally nutritious and healthy diet. Before the outbreak of the war in Ukraine, the number of chronically undernourished people had already grown by about 150 million since 2019, with up to 828 million people in 2021 affected by chronic hunger (long-term or persistent inability to meet food consumption requirements). In connection with such persistent inadequate consumption, there is also a significant and widening gender gap; in 2021, the gender gap in food insecurity was one percentage point higher than in 2020, with 31.9 per cent of women worldwide moderately or severely food insecure, compared with 27.6 per cent of men. Projections are that in 2022, the number of vulnerable women for whom WFP will provide essential prevention and treatment services has increased by almost 50 per cent. In particular, pregnant and nursing women are at a high risk of malnutrition and food insecurity. The United Nations Children’s Fund reports a rapid increase in the number of young children experiencing severe wasting, the most serious form of malnutrition, which has significant implications for life expectancies and well-being. An increased cost of living leads people to find coping strategies, such as purchasing cheaper and less nutritious food, consuming less diverse diets or skipping meals. This has serious long-term implications for people’s health, with social and economic consequences across societies.

**There are growing fears of a looming economic slowdown that, coupled with high inflation, might imply a return to stagflation at the end of 2022 or in 2023.** Consumer price indices keep climbing, consumer sentiment is deteriorating and leading industrial indicators in many countries suggest a slowdown in production. However, the signals are not altogether clear: unemployment is still falling in some major markets; and UNCTAD model data on gross domestic product show signals of a slowdown but this has yet to gather pace.

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9 Ibid.
10 Ibid.
Stagflation would ultimately accelerate the cost-of-living crisis by reducing household income, straining countries’ fiscal spaces and increasing financial market pressures.

Financial conditions in developing countries are still worsening despite the fall in commodity prices, due to a strengthening United States dollar. Since the beginning of 2022, the currencies of developing economies have depreciated by 5.1 per cent against the dollar; with a depreciation of 2.1 per cent in June. In the same period, the yield of sovereign bonds from these economies increased by 162 basis points; with an increase of 64 basis points in June. As a result, developing country debts and import bills are coming under further pressure. By June 2022, the trade deficit of low-income countries was about 2.5 billion higher than it might have been if the prices of key commodities had stayed at pre-war levels. In addition, in the 62 most vulnerable countries, food import bills have increased by $24.6 billion since the start of the war. The International Monetary Fund now suggests that not only are 60 per cent of low-income countries in debt distress or facing a high risk of debt distress, but so also are 30 per cent of middle-income countries (see figure). Energy prices are still high, above pre-war levels, suggesting further turmoil in energy markets, with significant global implications. The present brief addresses this issue.

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12 UNCTAD calculations, based on data from Refinitiv.
Notes: Calculations are unweighted averages of nominal exchange rate fluctuations of the currencies of 138 developing economies against the dollar between 1 January and 5 July 2022 and include data for common currency areas (e.g. East Caribbean dollar, Central African CFA franc and West African CFA franc).
13 Ibid.
Notes: Calculations are unweighted averages of bond yields issued by 59 developing economies between 1 January and 5 July 2022. Country yield is estimated as the unweighted average yield of bonds per country. Bonds covered are instruments with principals denominated in either dollars or euros with maturities after 1 March 2022. For Eurobond instruments issued under both regulation S and rule 144A, instruments issued under the latter are excluded to avoid duplication.
14 UNCTAD calculations.
16 See https://blogs.imf.org/2022/07/13/facing-a-darkening-economic-outlook-how-the-g20-can-respond/.
GLOBAL ENERGY MARKET AT THE CROSSROADS

The world is in the grip of a major energy crisis, with countries worldwide affected by extremely high and volatile prices, particularly of fossil fuels. This situation has acted as a crucible for recent trends in the energy market. Over the preceding two years, the energy market experienced extreme price volatility, such as during the pandemic, when demand was reduced and supply contracted; the ensuing surge in demand outpaced supply. The war in Ukraine has further disrupted fossil fuel supplies and the overall market, in which the Russian Federation is the leading exporter of natural gas and the second largest exporter of oil.

Rising energy prices may price out many developing countries, with a high level of impact on the most vulnerable citizens, from energy markets. Such a situation is already impacting hard-won gains in the provision of access to energy and the reduction of energy poverty, and progress had already been set back due to the pandemic. This dynamic is compounded by the food and finance crises also experienced in these countries due to the war in Ukraine and the pandemic, which have placed significant social and fiscal pressure on countries. A potential “scramble for fuel”, in which only those countries paying the highest price can gain access, would be devastating for a multilateral system based on trust and proportionality.

Sky-high prices and growing social discontent are putting many Governments under pressure. However, even short-term energy-related decisions can have important long-term consequences. In this context, the best policies will mix urgency and strategy. Without such policies, there is a risk that some countries, especially those without adequate funding, might, under pressure, set a course for high-emission, expensive energy in future.

At this juncture, the international community must jointly take stock of how to manage the crisis in a way that safeguards meeting the target in the Paris Agreement of not exceeding a global rise of 1.5°C above pre-industrial temperatures. Multilateral action is critical, yet each country and region will need to develop a tailored response, in accordance with current human capacity, infrastructure, access to finance and localized challenges.

ENERGY POLICY MEASURES MUST BALANCE THE NEED FOR URGENCY AND LONG-TERM SUSTAINABLE DEVELOPMENT

Measures are divided into short-term, medium-term and long-term policies which, notwithstanding their duration, must be undertaken today in order to be successful.

In the short-term, countries, especially developed countries, must seek to manage energy demand. This may be done through the implementation of new technologies and behavioural changes related to the use of heating, cooling and mobility. Energy efficiency and demand reduction have the additional benefit of being the fastest and most cost-effective and quick-win interventions through which to mitigate energy price impacts in the immediate term. Developing countries will be pressed to ensure the energy they have powers business to sustain the economy and also reaches all citizens, targeting vulnerable populations, to provide solutions for accessing and affording energy. High energy prices on their own add pressure to reduce demand, yet the right policies are needed in order to ensure that such a reduction is controlled, strategic and equitable.
Medium-term and long-term measures in government energy policy and investment must align with the Sustainable Development Goals and the Paris Agreement. The crisis has emphasized the need for energy resilience and a push for renewable energy sources. High fossil fuel prices serve as an opportunity in the renewable energy transition; although renewable energy prices have also significantly increased, the comparative increase in fossil fuel prices renders the renewable energy sources cost competitive. To accelerate this transition, a focus on policies and framework conditions is required, to attract investment to expand clean energy access through on-grid connections and decentralized, off-grid solutions. Addressing potential bottlenecks in the renewable energy supply chain and fairly and sustainably capturing its benefits will also be key. Most importantly, confident, no-regrets leadership is needed to steer the world on a course to meet the 1.5°C target, ensuring a just transition.

Pulse of the global crisis

- **Food prices**: +50% since Jan 2020
- **Crude oil price**: +33% since Jan 2022
- **Shipping prices**: +23% since Jan 2022
- **Emerging markets: sovereign bond spread**: +47% since Jan 2022

Source: Global Crisis Response Group.
Note: Food prices are based on the FAO food price index and shipping prices are based on the Clarksons Research sea index.
Energy-related measures: 
Short-term, medium-term and long-term policies
The crisis is global, yet will impact countries, and people and regions within countries, differently and to different degrees. Some countries will face extreme food and energy insecurity, potentially leading to or exacerbating social discontent. High-income countries will be better protected from such shocks, as Governments have access to greater public funding to implement rescue packages for citizens and businesses. However, the policies they choose must be oriented towards mitigating the crisis, rather than towards short-term protection that might worsen it, such as providing blanket subsidies for fuel or electricity. While advanced economies might be better able to cope, the actions they take will have impacts beyond their borders. As Governments seek additional supply, they must consider how much is truly needed, for how long and where. Developed countries must take action in a way that poses the least burden on developing countries and avoids a potential scramble for fuel. In addition, the biofuels sector serves to highlight the complex interaction between the food and energy dimensions of the crisis. Worldwide, this has led to a range of responses from Governments, as they seek to balance availability, prices, emissions and long-term strategies. As energy demand increases and prices remain elevated following the pandemic, countries must decide whether to incorporate biofuels into energy price mitigation strategies or loosen requirements for biofuels as a response to high grain prices. The crisis has revealed the need for an integrated approach, whereby countries must consider domestic food security and energy security needs when integrating biofuels into long-term energy and global food security discussions.

**POLICY 1:**

**Countries, especially developed countries, must manage energy demand**

Some measures to reduce demand could be taken immediately, such as turning down cooling and heating temperatures and reducing air travel. Others could begin to be ramped up within the next three months, with significant contributions by July 2023, such as retrofitting buildings with improved insulation and/or heat pumps.

1. **Sustainable heating to reduce energy demand.** With heating accounting for 50 per cent of global final energy consumption in 2021, quick wins are available in the building sector.\(^{17}\) Significantly upscaling improved building insulation is both cost effective and straightforward in implementation. In regions in which they are affordable, the implementation of public and concessional financing for the rapid expansion of the use of heat pumps, which are typically 3–4 times as efficient

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\(^{17}\) See https://www.iea.org/fuels-and-technologies/heating.
as fossil fuel boilers, should be made an immediate priority. For significant progress in the short term, production capacities must be significantly expanded, current systems must be retrofitted with digitalized smart controls and immediate investment must be made in installation and maintenance skills.

2. **Sustainable cooling to reduce energy demand.** In 2018, cooling accounted for 17 per cent of energy demand in buildings; this figure is growing rapidly and could triple by 2050. Immediately available tools to reduce energy demand from cooling include the installation of cool roofs (that is, surfaces with a lightened colour to reflect more solar energy in the visible spectrum) and nature-based solutions that do not require energy use. In addition, reducing the set point temperature by 1°C can reduce the energy consumption of an air conditioner by up to 10 per cent. Immediate price support to low-income consumers to accelerate the uptake of efficient fans, refrigerators and air conditioners can lower energy costs and provide a variety of social benefits, as can an economic stimulus for retrofitting in buildings that promotes clean, efficient cooling. Finally, climate-smart, efficient cold chains and the use of new refrigeration technologies can reduce refrigeration costs, reduce food waste and increase incomes for farmers.

3. **Reduced energy use in mobility.** Almost 60 per cent of the global oil supply is consumed by the transport sector. In the short term, demand can be reduced by lowering speed limits for cars and through the use of car-sharing, the increased use of public and rail transport where available and the avoidance of trips, particularly those involving air travel. These may appear as minor behavioural changes, yet analysis by the International Energy Agency has found that, in the short term, through a speed limit reduction for cars and heavy trucks of 10 km/h on highways, around 290 and 140 thousands of barrels of oil use per day, respectively, can be saved. This is not politically unfeasible; during the oil crisis in 1973, many countries introduced lower speed limits, such as the United States, and the use of temporary speed limits, to combat pollution and ensure road safety, is not uncommon. In addition, in the short term, efficient driving measures for freight and goods delivery can save around 320 thousands of barrels of oil use per day, to be effective, such measures must be accompanied by strong public awareness campaigns. Where feasible, telecommuting should also be promoted and encouraged.

While price dynamics on their own may reduce energy demand by consumers, some Governments are also encouraging behavioural changes. In the past two months, for example, Germany and Japan have requested citizens to take energy conservation measures such as lowering cooling and heating temperatures, turning off unnecessary lights and reducing hot water usage.
A 10-point plan to cut oil use

1. Reduce speed limit on highways by at least 10 km/h
2. Car-free Sundays in large cities
3. Work from home up to three days a week where possible
4. Make public transport cheaper; incentivize micromobility, walking and cycling
5. Alternate private car use in large cities
6. Urge car-sharing and practices that decrease fuel use
7. Promote efficient use of freight trucks and goods delivery
8. Prefer high-speed and night trains to airplanes where possible
9. Avoid business travel when alternatives exist
10. Hasten adoption of electric and more efficient vehicles

POLICY 2:

Governments must identify and target vulnerable populations, to provide solutions for accessing and affording energy

In the short term, developing economies will struggle to obtain the energy supply they need. Inevitably, vulnerable populations will be pushed further back with regard to access to energy and clean cooking solutions, losing hard won gains in achieving Sustainable Development Goal 7.

Developing countries will therefore need sustainable responses that prioritize vulnerable households, communities and populations. Some 733 million and 2.4 billion people still lack access to electricity and clean cooking, respectively, across sub-Saharan Africa and South Asia in particular. During the pandemic, these figures worsened, as household budgets constricted and families returned to using less clean technologies, which often affected women and girls the most.

1. **Access.** Short-term solutions should be focused on small, modular and decentralized systems, such as solar-powered systems for household use.

2. **Affordability.** Publicly funded cash transfers and rebate policies should be provided to low-income households for energy solutions; governments should explore the most effective ways to fund these programs, including through windfall taxes on the largest oil and gas companies, whose combined profits on the first quarter of the year were already close to $100bn. Lessons have been learned from similar transfers made during the COVID-19 crisis, involving mobile cash payments that could quickly reach otherwise inaccessible communities. Where possible, such policies should be enacted under longer-term frameworks of social protection investments for sustainable development, as proposed in the Global Accelerator on Jobs and Social Protection for Just Transitions.

3. **Cooking.** Similar cash transfers and support are required with regard to liquefied petroleum gas, concentrated on clean cooking needs. Innovative systems, such as pay-as-you-go net metering and incremental mobile payments, can mitigate the high upfront costs of energy that shut out low-income households.

A vicious cycle of the increasing cost of living and rising poverty and social discontent is unfolding in many countries; tackling rising energy prices is fundamental to breaking this cycle. People’s well-being is the primary concern of all policymaking and, in the current context, implies ensuring access to energy for all, including the most vulnerable. Yet while countries make every effort to bolster supply, they must also consider how to manage energy demand to best prioritize those in need. The implementation of community energy programmes for local and productive uses, such as lighting, among small businesses, local agriculture, health facilities and schools, can help. For example, the use of farmland irrigation based on solar photovoltaics rather than diesel power reduces demand for diesel fuel and reduces the costs of production through decreased fuel expenditure, while increasing the sustainability of water use and increasing incomes and agricultural gains.

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The world needs to double down on the use of renewable energy sources to achieve the net zero goal, tackle energy poverty and boost and diversify the global energy mix. Renewable energy production is often the least-cost source with the shortest installation time, with some variation by source and geography. The International Renewable Energy Agency, in a recent report, highlighted that in 2021, over two thirds of newly installed renewable energy power was cheaper than the cheapest fossil fuel alternative in member countries of the Group of 20 (see figure). Renewable energy sources also enable the greatest reduction in exposure to fossil fuel prices, especially in countries with a high level of import dependence.

Cost comparison: Solar photovoltaic versus fossil gas, Europe
(Dollars per kWh)

Source: UNCTAD calculations, based on data from the International Renewable Energy Agency.
Note: Weighted average levelized cost of energy of utility-scale solar photovoltaics compared with fuel and carbon dioxide costs only for fossil gas; values for 2022 are estimates and not forecasts.

Energy access must be addressed, by expanding on-grid connections and developing decentralized, off-grid solutions, although solutions will vary depending on local country contexts and geographies. There is an urgent need to address distribution in on-grid systems, particularly in developing countries. The focus should be on decarbonizing the power system through the use of renewable energy and enabling technologies, battery storage and digitalization. However, in developing economies, centralized energy systems and utilities have faced significant financial constraints. These began before the pandemic, yet shocks and inflationary pressures have contributed to a scenario wherein few entities recover costs, often despite considerable public subsidies. This makes electric utilities high-risk offtakers, driving away capital investment, without which a grid cannot be expanded. Increasingly, investors are turning to decentralized renewable energy sources and commercial entities are relying on captive renewable energy, such as on-site electricity generation at mining sites. Doing so might boost decentralized renewable energy investments, yet hinders growth in the centralized energy market, as the credit quality of the power sector authority continues to worsen.

Decentralized renewable energy is growing increasingly competitive across Africa and South and South-West Asia, where conventional power systems are unable to close the energy gap for poor and vulnerable communities. Technological solutions exist in the form of reliable, smart electrical distribution grids; more and improved energy storage facilities; decentralized grids with multiple energy sources; and regional grid-sharing and interconnectivity and digital solutions. Such technological solutions are available, yet government action is needed to create enabling policy environments to allow for implementation and to drive innovation and de-risk markets to unlock private financing. Related measures include government credit guarantees, either partially or in full; debt instruments; and first-loss reserve funds for equity funds.

POLICY 3:

Governments must identify and address bottlenecks in renewable energy supply to foster clean energy and economic growth and leverage opportunities for a just transition

Renewable energy scale-up depends on a stable policy environment, providing long-term revenue certainty and the transparent granting of permits. National energy plans, or equivalent economy-wide energy planning to achieve decarbonization goals, enable long-term political commitment and policy signalling to the private sector, the public and the world. Deployment, integration and enabling policies must go hand-in-hand with industrial, skilling and labour market policies. Governments can accelerate private sector investment and implementation by sending clear policy signals, through robust and detailed country-level renewable and high-efficiency energy transition plans and policy mandates; binding decarbonization targets; and a clear trajectory for achieving such targets by supporting infrastructure planning and investment, such as with regard to an enabling infrastructure for renewable energy sources (e.g. smart grids and electric vehicle charging stations). Developing countries should be provided with technical and capacity support in developing evidence-based paths to emissions reduction goals, with sectoral plans and investment requirements, including through economic models that gauge positive and negative externalities that a changing energy mix might have on food production costs, especially in terms of fertilizer prices.

There are significant obstacles in the renewable energy supply chain that hinder different technologies from meeting the needs of the renewable energy transition, related to both pace and scale. Obstacles are present throughout supply chains, with regard to the minerals and materials required, manufacturing capacity and the skills and processes needed for swift installation. The private sector is already facing challenges due to bottlenecks.

1. Lack of access to critical minerals forms a bottleneck in the scale-up of renewable energy technologies, but this is not insurmountable. The prices of many minerals and metals essential for clean energy technologies have soared due to the combination of rising demand, disrupted supply chains and concerns about tightening supply (see figure). With regard to most minerals and metals vital to the green energy transition, price increases from 2021 to May 2022 exceeded by a wide margin the largest annual increases seen in the 2010s. Prices have recently begun to fall, yet the crunch highlighted the vulnerabilities in the supply chain. The bottleneck is not in resource availability but in the lagging scale-up of mining and processing capacity. With regard to many minerals, known reserves exceed demand; therefore, the focus is on economic and environmentally prudent extraction, recycling and the diversification of supply sources. Market-based instruments and shared strategic

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35 Ibid.
37 Ibid.
stockpiles can lessen the severity of short-term bottlenecks in some countries and regions, yet supply growth and diversification, as well as advancements in the recycling and reuse of critical materials, are the most effective ways to meet long-term demand projections.

2. There is pressure on manufacturing capacity, further limited by the war in Ukraine. The pandemic affected the manufacturing of renewable energy products, but manufactured materials have been further impacted by the war. Record-high energy costs similarly threaten the economic viability of manufacturing production, such as in steel mills. Industry concerns are that the crisis could hinder renewable energy technology production and installation for over one year. This will necessitate the rapid scale-up of capacity for low-carbon steel manufacturing and other vital inputs; the diversification of suppliers; and the increase of local or regional manufacturing capacity, particularly in markets with the greatest long-term potential for demand for onshore and offshore wind power.

3. The crisis provides a critical opportunity to unlock manufacturing capacity in developing countries. At present, most manufacturing of renewable energy technologies and products is in Asia. As the sector expands, there are considerable opportunities for developing economies to capture benefits from supply chain disruptions by boosting manufacturing capacities and capabilities, allowing for the conversion of some locally sourced raw materials into end products for domestic use and export, in particular in countries where the preponderance of critical minerals is sourced yet minimal long-term value is gained. It is in the interest of all countries to diversify the manufacturing value chain, beyond the currently limited number

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**Commodity prices, monthly index**

(100=January 2019)

- Aluminum (Dollars per metric ton)
- Iron ore (Dollars per dry metric ton)
- Copper (Dollars per metric ton)
- Nickel (Dollars per metric ton)
- Lithium carbonate (Yuan per dry metric ton)

of countries, to resource-rich countries globally.\textsuperscript{40} According to the International Energy Agency, “around three quarters of the world’s production capacity for battery cells, around 70 per cent of cathode capacity and 85 per cent of anode capacity, as well as more than half of the global raw material processing of lithium, cobalt and graphite,” are located in a single country.\textsuperscript{41} To address industrial constraints due to the lack of integration into global value chains and of research and development, the international community must accelerate technology transfer measures to developing countries and increase foreign direct investment.\textsuperscript{42} Governments in developing economies should incentivize local manufacturing for equipment and technologies and direct fiscal support to the development of local solutions and supply chains, particularly among entrepreneurs, microenterprises and small and medium-sized enterprises.

4. **Despite national commitments and the urgency of the crisis, renewable energy projects continue to face obstacles in the form of permit requirements and legal challenges.** The physical installation of solar photovoltaic and onshore wind power infrastructure is significantly faster than that of oil and gas infrastructure, yet permit requirements and legal challenges can delay installation for many years. There are many, often sound, reasons for implementation delays, including conducting necessary environmental feasibility assessments and ensuring the engagement of communities. However, by streamlining permit requirements and environmental procedures and/or accelerating timelines, local, state and national governments could unlock many gigawatts worth of projects currently stalled worldwide.\textsuperscript{43}

5. **There is a misalignment in the labour skills required to support the large-scale deployment of renewable energy technologies.** If large-scale upfront investments are mobilized, an ambitious renewable energy transition could create an additional 85 million jobs in renewable energy sources, efficiency and other energy transition-related sectors by 2030, yet the workforce requires training.\textsuperscript{44} Governments can invest in vocational and workforce training and retraining. In developing countries, the focus must be on skill transfer for unskilled workers and training in manufacturing and installation and with a view to creating opportunities for segments of the population most affected, in particular women and youth. Universal social protection measures should also be implemented in tandem with decent job creation opportunities, through an integrated approach, to provide a buffer for workers during this transition, in line with key recommendations made in the Global Accelerator on Jobs and Social Protection for Just Transitions, launched by the Secretary-General and the International Labour Organization (ILO) in September 2021.\textsuperscript{45}

\textsuperscript{41} See https://www.iea.org/reports/securing-clean-energy-technology-supply-chains.
\textsuperscript{42} See https://www.irena.org/publications/2022/Feb/Towards-a-prosperous-and-sustainable-Africa.
\textsuperscript{43} See https://www.irena.org/publications/2020/Jun/Post-COVID-Recovery.
\textsuperscript{44} See https://www.irena.org/publications/2022/mar/world-energy-transitions-outlook-2022.
There are long-term goals that require urgent action to ensure benefits in future. Governments must carefully consider how to increase the short-term supply of energy and improve energy security, mindful of the long-term implications of decisions. All decisions will be driven by local contexts and needs, with regard to how a country can most quickly and sustainably move away from the use of fossil fuels. Governments must be protective of citizens’ livelihoods and energy security, yet must also chart the smartest long-term course for the world’s economy and security by remaining committed to global agreements on climate-related goals. This will require significant long-term financing through a Sustainable Development Goals stimulus; estimates show that $4 trillion–$6 trillion in annual investments will be required until 2030 on a path compatible with the net zero goal. However, since 2017, annual global energy-related investments have been $2 trillion–$2.5 trillion and in 2020, during the pandemic, fell below $2 trillion.

In addition, the deployment of such investment has, to date, been concentrated in a limited number of countries; in 2021, 84 per cent of nearly $1 trillion of global investment in energy transition technologies was deployed in China, India, Japan and the United States and in Europe. The pandemic served to further widen this gap, as advanced economies deployed recovery packages with renewable energy targets and, in other countries, the number of people without access to energy increased, such as in the Democratic Republic of the Congo, the Niger, Nigeria and Pakistan. At present, some countries are in urgent need of a financial stimulus to manage the short-term energy crisis, which will require innovative and immediate support from both public and private sources.

**POLICY 4:**

**Governments must combat energy waste**

**Policymakers and producers should prioritize reducing natural gas flaring and methane leaks along the energy supply chain.** Combating energy waste, by ending non-emergency flaring, reducing leaks and using only current infrastructure, would be a quicker reaction to the current crisis than scaling up new exploration and production, while also remaining faithful to achieving short-term and long-term climate-related goals. Much of the wasted gas worldwide should be accessible, as over half is flared within 20 km of existing pipelines. The International Energy Agency and the World Bank have set out paths to ending most flaring and leaking by 2030.

**At current energy prices, combating flaring and leaks would be cost effective, earning $90 billion in gas revenue across all regions.** However, given energy price volatility, such increased revenue cannot be guaranteed as the necessary infrastructure is still in development. In addition, profitably capturing waste is difficult for smaller-scale operations, which represent 40 per cent of global flaring, given the opportunity cost of committing human capital and physical infrastructure to solving this issue.

**Governments can incentivize producers, especially smaller operations, to use flared gas and methane productively.** For example, some Governments tax flared gas or leaked methane, to persuade producers to use this waste instead; another option is to cap the energy output of producers when they exceed a set amount of flaring or leaks. Major importer markets have also contributed, by requiring higher anti-flaring and anti-leaking standards among source countries and producers. However, such measures may restrict energy output or make it more expensive at a time when more supply is needed. Many Governments have combated flaring and leaks using positive economic incentives to reward producers for efficiency. In some countries in which the Government owns the underlying rights to fossil fuels on its territory and receives royalty payments from producers, energy authorities have granted royalty waivers for gas that would otherwise be flared or leaked, so that producers earn more for reducing waste. Others have permitted the cost of anti-flaring and anti-leaking equipment to be deducted from profits, thereby allowing producers to incur lower tax bills. Beyond producer-level incentives, countries can develop energy grids to create local markets for recovered gas to be sold closer to production sites rather than flared.

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55 Ibid.
Efficient gas use has economic, energy security and emission reduction benefits

In 2021, 140 billion cubic metres of natural gas was flared and 125 billion cubic metres was vented and leaked as a part of oil and gas production.

Reducing flaring and leakage could net $90 billion in gas revenue across all regions.

The International Energy Agency estimates that 210 billion cubic metres of natural gas could be brought to market if non-emergency flaring was eliminated, significantly reducing the energy deficit.

Source: Global Crisis Response Group, based on data from the International Energy Agency.
**The international community must help countries improve efficiency.** Multilateral development banks can help mobilize private sector financing for flaring and leakage mitigation efforts. Leveraging wasted resources would considerably increase the available gas supply while reducing the risk of financial exposure in already debt-constrained countries.

**Without action now, the world will not be prepared for the needs of tomorrow.** The international community must exit the crisis in a way that creates an enabling environment for technology and policies with regard to efficiency; emerging technologies; and a circular economy.

**Policy 5:**

**Governments must strategize and regulate now, for the policy environment of tomorrow**

Several emerging energy technologies, such as green hydrogen and derivatives, may be ready for commercial-scale deployment in coming years and will need more robust and diversified supply chains. There is a historic opportunity at present to pursue such policies and invest in ambitious structural measures that can boost the economy, create jobs and chart a course towards achieving energy security and just transition–related goals in both developed and developing economies. For example, among regions, Africa has some of the greatest potential to produce hydrogen from low-cost renewable electricity sources, largely solar power, but also wind power, in arid and semi-arid areas, especially in the Horn of Africa, Northern Africa and Southern Africa. Accelerated deployment requires a strategic and ambitious policy framework, including the setting of norms and standards for trade and support for end-use products, such as green steel, to facilitate deployment across borders. Policymakers should identify and focus on technology applications that provide the most immediate advantages and enable economies of scale, such as the use of green hydrogen in industrial applications. Finally, policymakers should decouple the industrial sector from the use of fossil fuel. Green hydrogen is key, especially in the sectors most reliant on fossil fuels, such as cement and steelmaking and, in this regard, existing pipelines can be used.

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Enhanced action on energy efficiency has been limited by weak policies and the lack of enforcement. To achieve the net zero goal, the global economy must be one third more energy efficient by 2030 compared with the level in 2020 and, in achieving this goal, can deliver an additional 10 million jobs compared with current policies. Implementing new energy performance standards according to the best available technologies or increasing the stringency of existing standards can drive the adoption of the best available technology and reduce energy demand, to future-proof against additional shocks. Approximately two thirds of countries do not have mandatory building-efficiency codes and in key markets, where ownership rates are rapidly increasing, policies remain lacking with regard to appliances, industrial equipment and vehicles. Minimum energy performance standards for lighting, cooling or refrigeration are implemented in over 80 countries. However, almost all of these are in advanced economies, while 80 per cent of the projected increase in global residential floor area up to 2050 will take place in emerging markets and developing economies. Fuel economy standards and blending requirements can promote the use of fuels that produce less dangerous end products or fuels that require fewer environmental inputs in their production, and can be coupled with tax incentives for lighter and more efficient vehicles. Policy development and investment planning must begin now to create modal shifts in public transport and transit-oriented urban development.

A circular approach to materials is needed. The pressure on resource extraction in supply chains, emissions impacts and the impacts of mining on nearby communities, could be significantly reduced through circular economy solutions that reduce the aggregate consumption of materials. Governments can regulate for more durable products, rewarding material efficiency. Recycling can relieve pressure on commodity supplies and the energy required to extract them.

**POLICY 6:**

Public, private and multilateral finance for the green energy transition must be scaled up

The green energy transition requires a restructuring of public, private and multilateral finance to generate the required investments. Of the $4 trillion–$6 trillion per year of investment required for the green energy transition in the present decade, the public sector will need to invest at least one third. This will place a burden on Governments currently in recovery from recessions induced by the pandemic. Two thirds of financing for the renewable energy transition will need

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62 Ibid.
to come from the private sector, for which Governments must provide an enabling environment in order to scale up such finance.\textsuperscript{64}

**Multilateral development banks should accelerate the deployment of funds committed to the green energy transition.** The International Energy Agency has noted that renewable energy investments in developing countries must increase by a factor of at least four to meet the target in the Paris Agreement of not exceeding a global rise of 1.5°C above pre-industrial temperatures and by a factor of about seven to meet the net zero goal, implying a funding gap of $450 billion and $850 billion, respectively, in emerging markets and developing countries.\textsuperscript{65} Since 2020, multilateral development banks have committed at least $25 billion to energy-related projects, of which $13.15 billion has been committed to supporting clean energy.\textsuperscript{66} This is a welcome increase from previous levels, yet represents less than 3 per cent of the funding gap in meeting the least ambitious climate-related targets. In addition, while funds have been committed, their deployment could be accelerated. Analysis carried out by Sustainable Energy for All shows that $26.6 billion remains undisbursed out of the $42.7 billion committed for 256 different energy programmes by the African Development Bank, the Asian Development Bank and the World Bank. Consideration should also be given to expanding investments in key specialized global funds, such as the Green Climate Fund (GCF).

**Government action is needed to leverage private sector engagement.** As highlighted throughout the present brief, there is considerable opportunity for the private sector to engage, yet Government action is required to enable such engagement, including through blended finance mechanisms to de-risk investments; energy transition plans and targets; and the implementation of market transparency. Large-scale renewable energy projects also require public investment in infrastructure, social protection systems, training and education, production facilities, installation and services, resulting in local job creation and growth. Mechanisms for facilitating partnerships with local private sector stakeholders are a requirement in order to increase private sector interest, investment and local job creation.

**Blended finance must be promoted and expanded and there are multiple ways to do so.** For example, developed countries can use official development aid as a tool to de-risk investment and incentivize private capital flows toward emerging and frontier markets. Emerging markets and developing countries can also raise financing with guarantees from developed countries that will help lower borrowing costs. Finally, multilateral development banks and partners need to improve coordination and refine the focus of blended finance towards energy projects that address the urgent financing needs associated with the energy crisis.

**Efficiency-related finance has been insufficient but can be unlocked through efforts to aggregate projects and de-risk investment.** Investments in data and digitalization can empower customers and service providers with the information they need to lower energy costs.\textsuperscript{67} International partnerships are critical for investment readiness and investment pipeline development in developing countries and must be


\textsuperscript{66} See https://www.energypolicytracker.org/institution_analysis/mdbs/.

supported in the short term by donor Governments and development finance institutions, which should, in the long term, increase awareness, provide technical assistance for best-in-class policy improvement and streamline investment pipelines for larger institutional investors.

**Governments must employ effective carbon pricing.** This can take the form of progressive taxation, such as carbon, green and fuel excise taxes. Public fiscal management restructuring, such as for fossil fuel subsidy reforms, could free up fiscal space to support a just energy transition. Developing countries will need significant support to achieve such transformations.

**Carbon markets are gaining traction as a crucial way of funnelling finance to developing countries for clean energy use and carbon reductions.** Projects are now being implemented that could be supported or made more attractive to investors through active carbon markets. Carbon markets can provide the necessary financing to overcome issues related to the high upfront and capital costs of clean energy projects, especially as carbon permit prices rise in response to high fossil fuel prices. In 2021, higher carbon prices, revenue from new instruments and increased auctioning in emissions trading systems resulted in a record $84 billion in global carbon pricing revenue, an approximately 60 per cent increase over revenue in 2020. For developing countries to share in this growth, the international community must support their readiness to engage in and access high integrity, voluntary carbon markets in order that they may mobilize private sector climate finance towards mitigation action, particularly, for example, with regard to nature-based solutions in countries with tropical forests. Such markets should also strengthen accounting and additionality standards to avoid double counting. There should be a longer-term path towards a common market, based on the United Nations Framework Convention on Climate Change. Advancing along such a path would help regulate the market, preventing it from bottoming out through oversupply. United Nations entities could act as trusted partners, channelling payments from buyers to recipients.

**The sustainable debt market should be tapped, to finance renewable energy sources, energy access and energy-efficiency technologies.** The International Energy Agency notes that 70 per cent of additional renewable energy investments must occur in emerging economies, in which financing is limited and capital remains more costly than in advanced economies. Sustainable debt markets can play an important role in bridging this funding gap. The value of new sustainable bonds has been increasing in recent years, especially in emerging markets, in which it almost tripled in 2021, growing from $46 billion in 2020 to $130 billion in 2021. Globally, sustainable bond issuance in the first quarter of 2022 was 28 per cent lower than in the first quarter of 2021. However, the trend differs in emerging markets, totalling over $34 billion in the first quarter of 2022, up by 22 per cent from the fourth quarter of 2021 and by 13 per cent from the first quarter of 2021. The green bond market accounts for 52 per cent of the sustainable debt market and totalled $18 billion in the first quarter of 2022, with social and mixed-sustainability bonds.

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68 See [https://www.iif.com/tsvcm](https://www.iif.com/tsvcm).
Development finance disbursements for energy projects must keep pace with commitments

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<th>World Bank</th>
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Source: Global Crisis Response Group, based on data from the International Energy Agency.

Note: All projects included in this analysis, across development banks, are energy access and clean energy projects with disbursement levels as at 31 May 2022.

Advancing energy security and climate action with carbon markets

- Support developing countries with oversight mechanism
- Encourage the use of a common market
- Make voluntary carbon markets more robust
- Ensure results-based carbon financing for sustainable energy
- Promote linking of markets to create a global carbon market
- Strengthen voluntary carbon markets to create demand

Source: Global Crisis Response Group, based on data from the International Energy Agency.
Conclusion and key messages

Disruptions to the global energy market are putting Governments worldwide under enormous pressure. Rising energy prices are accelerating the cost-of-living crisis and sustaining the vicious cycle of constrained household budgets; increasing food and energy poverty; and increasing social unrest. In this context, safeguarding countries’ commitments to the Paris Agreement and the 2030 Agenda for Sustainable Development will require significant efforts from all involved stakeholders. Policies that address the short-term emergency while ensuring countries’ climate-related and other sustainable development commitments must be pursued. Such policies are available to both developed and developing countries, although the mix varies depending on geography, income level and commodity status.
Undertaking the right energy policies should not be a luxury available only to those that can afford them. Global coordinated action is needed to empower countries in making the right decisions. Some developing countries require more funding and fiscal space than is currently available to enact the long-term policies they need. Climate finance in developing countries must be scaled up, through better carbon and sustainable debt markets and increased blended and multilateral finance.

Global solidarity is needed to avoid a scramble for fuel. In a world still struggling with entrenched COVID-19 vaccine inequities, the hoarding of some energy commodities, such as natural gas, must not take place. Energy efficiency is a shared responsibility. Addressing uncertainty will be key in this regard, as increasing risks increase the need for stockpiles, which further constrain supply.

The most vulnerable need targeted support. During a cost-of-living crisis, all shocks hit at once. The families losing access to energy are the same ones likely to skip meals and/or leave school and/or be pushed into debt. Such shocks feed off each other. Energy poverty in the current environment has indirect effects that are no less dire, such as increasing the risk of malnutrition or forcing the closure of a family business.

An integrated, people-centred policy approach is needed, which must include food-related policies. Governments must act now to reduce the likelihood and consequences of households reducing the cost of food purchases by shifting consumption from highly nutritious to less nutritious foods as a way of coping with increased prices. People living in poverty need access to universal social protection, including primary health-care services, which include nutritional support programmes that focus on both the prevention of acute malnutrition and its treatment. Targeted and tailored interventions are needed to support small-scale farmers in weathering the crisis and planting for upcoming seasons with enough fertilizers and other agricultural inputs, while maintaining livelihoods. Improved access to targeted gender-responsive and nutrition-sensitive social protection is needed, particularly for women and children, including through safety nets in the form of cash and, if necessary, nutritious food. The task of successfully reintegrating food production in Ukraine and food and fertilizers from the Russian Federation into global markets despite the war must continue to be pursued.
As with the food crisis, there is no answer to the energy crisis without an answer to the finance crisis in developing countries. The right policy mix needed to face the current emergency without compromising the future requires greater fiscal space and a sounder sovereign debt architecture. Countries therefore need liquidity, in the form of a new emission of special drawing rights at the International Monetary Fund, as well as increased lending capacity through multilateral development banks, among other measures, as proposed in previous GCRG briefs. In the area of debt, reactivation of the Debt Service Suspension Initiative with extended maturities, as well as material advances under the Common Framework for Debt Treatment of the Group of 20, will be key.

Bold solutions require bold leadership and vision. World leaders will have critical opportunities at a number of key events before the end of 2022 in which to take decisive action at the scale required, including the high-level meetings of the General Assembly in September, the Annual Meetings of the International Monetary Fund and the World Bank Group in October and the Group of 20 summit in November. Safeguarding meeting the 1.5°C target requires principled approaches, clear messaging and broad social support. No Government should feel isolated in efforts to achieve this goal. The world is facing a once-in-a-generation crisis that has been building for the last two years, and world leaders and institutions must recognize and rise up to the urgency of the moment. The risks of generations lost and Sustainable Development Goals derailed, as well as waves of unfolding debt crises and social unrest are very real. Dealing with them requires global leadership, vision and action.

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