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EU external energy engagement in a changing world

{SWD(2022) 152 final}

1. Introduction

The European Union and the world are facing **the existential threat of climate change and a burgeoning energy crisis**. If we do not accelerate the fight against climate change and combat biodiversity loss, the targets agreed in Paris will be out of reach and with that, the possibility to avoid a full-blown climate crisis with devastating consequences for the people and the environment across the globe.

The sixth Intergovernmental Panel on Climate Change report concludes that global greenhouse gas emissions must be reduced by 43% by 2030 to remain on track for meeting the goal of **limiting global warming to 1.5 ºC.** As the energy sector is central to delivering greenhouse gas emission reductions, it will be at the heart of this transition.

At the same time, **Russia has flouted international rules through its unprovoked and unjustified war of aggression against Ukraine**. It has upended energy and food markets, triggering heightened price volatility and energy insecurity, impacting not only its immediate neighbourhood, but the entire world. This requires a response that addresses both the short-term needs and the long-term implications of the EU and its partners. The EU stands in full solidarity with Ukraine and continues to support its energy system.

The green energy transition is the only way to simultaneously ensure sustainable, secure, and affordable energy worldwide. The EU is thus determined to stay the course and engage with partners across the globe to encourage partner countries to enhance their climate ambition and define their pathways to climate neutrality, but also to establish long-term relationships that are mutually beneficial, in particular in the area of energy.

The EU will continue and **step up its engagement around the world through dedicated partnerships**. This can be done by financial support, assistance, technology transfers, and/or enhanced trade relationships.

There is also a European need to embark on this course. Despite the diversification and internal energy security measures taken since the 2009 gas crisis, Europe is still too dependent on a supplier who is willing to use energy as a weapon. To overcome this vulnerability, the European Commission presented on **8 March 2022 a REPowerEU communication**, providing a blueprint to put an **end to the imports of fossil energy from Russia** well before 2030. This requires diversifying the EU energy supply, increasing energy savings and efficiency and accelerating the green energy transition.

All this responds to the challenges of a **fast-changing world and energy landscape**. In the coming years and decades, new opportunities for producing energy will emerge, together with new trade patterns and transport needs. While trade in conventional energy commodities will gradually decline, new commodities such as hydrogen and ammonia will begin to be traded internationally and demand for low emission technologies will grow. New standards and governance arrangements will be required to build more reliable and mutually beneficial partnerships through a rules-based approach.

The European Union must be ready to act in and shape this new, changing environment. There will be new **opportunities for Europe** to build on its green technological leadership, and to promote a more just and sustainable development across the world, but also new challenges for its energy security and the resilience of its supply chains, in particular the critical raw materials, which are key for the energy transition.

Similarly, the crisis is an opportunity for many countries to leap-frog carbon-intensive development and benefit from a greener, more equal economy that provides energy access to millions of people. **In line with SDG 7 the EU will work to ensure a just and inclusive energy transition.** The European Commission and the High Representative will partner and support those embarking on the green transition, facilitating long-term sustainable investment, including through the Global Gateway, which is the European Union's plan and value-based proposition for major investment in infrastructure development around the world.

All these aspects require the EU to update its external energy strategy, more than ten years after the adoption of the previous one, reinforcing its engagement with partners and strengthening its climate and energy diplomacy, in line with the Foreign Affairs Council Conclusions of 25 January 2021.

To achieve this, the EU external energy policy will aim to:

- **strengthen its energy security, resilience and open strategic autonomy by diversifying the EU's energy supply and boosting energy savings and efficiency;**
- **accelerate the global green and just energy transition to ensure sustainable, secure and affordable energy for the EU and the world;**
- **support Ukraine and other countries that are directly or indirectly affected by the Russian aggression;**
- **build long-lasting international partnerships and promote the EU clean energy industries across the globe.**

2. An EU external energy policy for REPowerEU

As set out in the **18 May 2022 REPowerEU plan** published in parallel with this strategy, Europe's energy system will increase its efficiency and move to green energy sources at a faster pace than expected before the start of Russia's aggression against Ukraine. While **the green energy transition is at the heart of the EU's drive for energy independence**, moving away from Russian fossil fuels will require replacing some of them with fossil fuels from other international suppliers, considering that the EU's domestic oil and gas production is much diminished: we import 90% of our gas consumption, 97% of our oil and 70% of our coal needs. As the EU's gas demand will contract at a faster pace than earlier expected and in order to minimise the risk of stranded investments and assets, the EU will favour diversification strategies that encompass both gas and green hydrogen investments.

2.1. Diversifying the EU's gas supply

Today, Russia is Europe's largest gas supplier.[1] **The REPowerEU plan aims to end our dependence on Russian gas as soon as possible.** Most of this gas demand will be substituted with renewables, low carbon energy sources, energy efficiency and savings. The remaining need for natural gas will be covered by diversifying suppliers.

To provide the gas supplies needed over the coming years, **the EU must increase its gas imports from non-Russian sources**: mostly of liquefied natural gas (LNG) (+50 billion cubic meters (bcm)), but also pipeline gas (+10 bcm or more). To this end, the EU has launched the EU Energy Platform – to pool demand, coordinate infrastructure use and negotiate with international partners to facilitate joint gas and hydrogen purchases, as laid out in the REPowerEU Chapeau Communication.

This builds on the work done by the European Commission since last autumn, **reaching out to our main LNG and pipeline gas suppliers**. These efforts have resulted in record monthly LNG deliveries of 12.5 bcm in April 2022 and 42 bcm from January to April 2022. The Platform will integrate ongoing diversification efforts by EU Member States and be open to Ukraine, Moldova and Georgia, as well as the Western Balkans.

To facilitate the diversification efforts, the **European Commission and the US have agreed**[2] to work for the delivery of additional LNG to the EU (at least 15 bcm in 2022 and approximately 50 bcm annually until at least 2030), through US exports but also in cooperation with other international partners. The Commission has also established a dedicated **working group with Canada** to look at possible LNG and hydrogen deliveries in the coming years.[3]

Before this summer, the EU aims to conclude a **trilateral agreement with Egypt and Israel** on supplying Europe with LNG. Japan and Korea have already redirected a number of LNG cargoes to Europe and work continues to use this option in the future. Qatar stands ready to facilitate swaps with Asian countries. In terms of pipeline gas, Norway has already increased its deliveries to Europe and both **Algeria and Azerbaijan** have expressed their willingness to do so as well. The EU will aim to restart the energy dialogue with Algeria and will intensify cooperation with Azerbaijan in the light of the strategic importance of the Southern Gas Corridor. Scaling up the Trans Adriatic Pipeline (TAP) capacity would increase the gas supply to the EU and the Western Balkan countries.

Countries in sub-Saharan Africa, and in particular in Western Africa such as Nigeria (already supplying 15% of EU 2021 imports), Senegal, and Angola also offer untapped LNG potential. A full and effective implementation of the Joint Comprehensive Plan of Action would facilitate a dedicated reflection on the potential for Iran to become a reliable gas supplier to Europe.

[1] In 2021, more than 40% of the EU's overall gas consumption came from Russia: this equals around 155 billion cubic metres (bcm) of which 15 bcm is in the form of liquefied natural gas (LNG).
[2] Joint Statement between the European Commission and the United States on European Energy Security
[3] Joint Statement by President von der Leyen and Prime Minister Trudeau

The EU will aim to ensure that additional gas supplies from existing and new gas suppliers are coupled with **targeted actions to tackle methane leaks and to address venting and flaring**, creating additional liquidity on global markets, while ensuring significant climate benefits. To that end, the EU will cooperate with its fossil fuel supply partners to reduce methane emissions. At least **46 bcm of natural gas is lost[4] a year** to venting and flaring in the countries that could be supplying this to the EU. The technology exists to capture most of this methane (the main component of natural gas) in a sustainable and economical way. The EU stands ready to provide technical assistance to partners to set up such **mutually beneficial "You collect/we buy" schemes**.

The EU will also convene partners such as the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD) and the World Bank to create incentives for the rapid collection of wasted fossil gases, including methane, bundling those losses into meaningful products that can be sold to international buyers.

The EU's diversification effort takes place against the backdrop of growing global demand and high prices of LNG. These actions must take into account the interests of global partners.

Considering the medium-term evolution of the energy mix in the EU and in partner countries, the **EU will promote broader energy partnerships**, combining gas cooperation with long-term energy cooperation on hydrogen, renewable gases (including biomethane) and other green energy sources to avoid stranded assets and ensure the green transition.

EU energy policy will also aim to ensure open, flexible, liquid and well-functioning global LNG markets, engaging both with the major producer (US, Australia, Qatar, Nigeria, Egypt etc.) and consumer (China, Japan, Korea) countries. G7, G20, International Energy Agency (IEA) and other international fora provide opportunities for that.

Key actions

- **ensure the rapid operationalisation of the EU Energy Platform and its regional platforms;**
- **fully implement the Joint Statements with the US and Canada;**
- **negotiate political commitments with existing or new gas suppliers to increase gas deliveries to Europe;**
- **set up 'You collect/we buy' natural gas and methane capture and trade schemes.**

2.2. Preparing the EU for renewable hydrogen trade

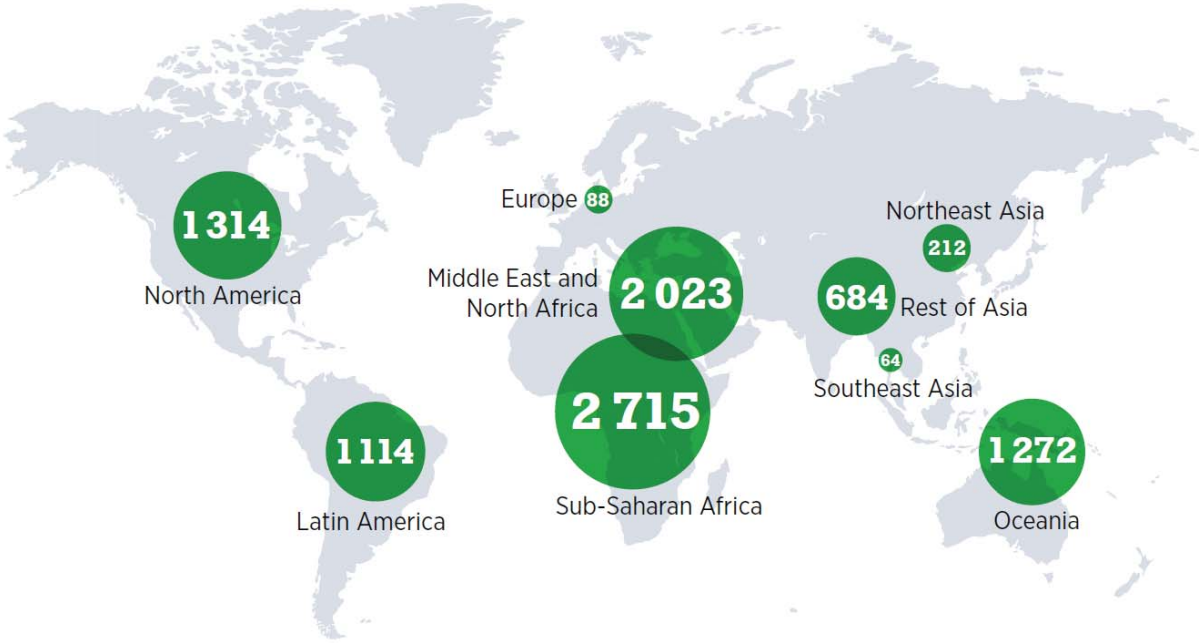
The REPowerEU plan sets out that an additional 15 million tonnes (mt) of renewable hydrogen – on top of the 5.6 mt already planned under the *Fit for 55* initiative – can replace approximately 27 bcm of imported Russian gas by 2030. This includes **10 mt of imported hydrogen**.

The capacity to produce renewable hydrogen is much more evenly distributed across the world than oil and gas reserves given global wind and solar resources. However, this market has yet

[4] 46 bcm/a is the baseline IEA estimate based on best practice assumptions.

to be developed and requires, globally, a significant expansion of renewable production and the availability of water.

In order to facilitate imports of 10 million tonnes of hydrogen into the EU, the European Commission aims to conclude hydrogen partnerships with reliable partner countries to ensure open and undistorted trade and investment relations for renewable and low carbon fuels. It envisages three major hydrogen **import corridors from the North Sea region (Norway and UK), the Southern Mediterranean and Ukraine**, as soon as conditions allow.



International Renewable Energy Agency (IRENA): Technical potential for producing green hydrogen under USD 1.5/kg by 2050, in EJ

A region with a particularly high potential to generate renewable hydrogen is the southern Mediterranean. To create win-win opportunities for both the region and the EU, the European Commission is working on a Mediterranean Green Hydrogen Partnership between the EU and countries in the southern Mediterranean. This work builds upon the existing new Agenda for the Mediterranean and its Economic and Investment Plan and will start with the EU-Egypt Hydrogen Partnership. This would be the first stepping stone for broader renewable hydrogen cooperation between Europe, Africa and the Gulf, another area of abundant resources for producing hydrogen.

When implemented with local social, economic and environmental needs in mind, cooperation in this field would promote local production and consumption of renewable electricity and renewable hydrogen and the development of green industry value chains in partner countries. The EU's regulatory framework for hydrogen should ensure a level playing field for imported and domestically produced hydrogen.

In Sub-Saharan Africa, South Africa and Namibia are already advancing in developing their renewable hydrogen sector and have attracted the interest of EU industry. Enhanced cooperation on renewable hydrogen is also part of the EU's bilateral engagement with countries

like Egypt and Morocco, where the European Commission has launched work on an EU-Morocco Green Partnership.

Work is also on-going on a **strategic partnership with Ukraine on renewable gases**, including hydrogen and biomethane, with a view to scale it up significantly once the conditions allow.

In our immediate neighbourhood, the EU stands ready to support network development through the reviewed Trans-European Networks for Energy Regulation (TEN-E)[5]. Projects with non-EU countries that contribute significantly to the TEN-E objectives can get the status of Projects of Mutual Interest, a label indicating joint projects in electricity transmission, hydrogen transport and CO2 network and storage facilities that meet exacting EU safety standards. In parallel, investments will be necessary to ensure the shipping capacity and logistics to transport this commodity.

The nascent **global hydrogen market must be based on common rules**, in particular for standards, certification and good regulatory practice, in terms of infrastructure access and trade. The EU regulatory framework for hydrogen is the most advanced worldwide. Based on this experience, the EU should lead efforts for developing a solid framework for a global rules-based and transparent hydrogen market. This process should take into account lessons learned in gas and oil markets so that these new energy goods can flow freely across borders, thereby strengthening our energy security as we transition away from fossil fuels.To kick-start the global renewable hydrogen market, the EU considers the development of a **Global European Hydrogen Facility**, as reflected in the REPowerEU Chapeau Communication.

Key actions:

- **conclude hydrogen partnerships, notably in the EU's neighbourhood and Africa, to facilitate the import of 10 million tonnes of hydrogen by 2030 and the development of local hydrogen markets;**
- **sign a Memorandum of Cooperation on Hydrogen with Japan by the end of 2022;**
- **promote a global rules-based and transparent hydrogen market based on EU's experience;**
- **initiate the first trading hubs for renewable hydrogen in Europe and establishing it as the benchmark for Euro denominated transactions in hydrogen;**
- **establisha Strategic Partnership with Ukraine on renewable gases in 2022;**
- **develop a Global European Hydrogen Facility.**

2.3. Reducing dependency on Russian energy imports other than gas

Shipping 8 million barrels daily, Russia is the world's largest oil exporter. Its invasion of Ukraine has therefore created turmoil and uncertainty on the global oil market, with prices occasionally coming close to the all-time high of USD 150 per barrel.

[5] Trans-European Networks for Energy Regulation

As a result of Russia's invasion of Ukraine, market volatility and tightness is likely to continue and impacts not only the EU, but all oil consumers across the world, especially the most vulnerable. **The EU is working with its international partners to ensure that sufficient oil supplies remain available globally and at affordable prices.** Together with the G7 group of energy ministers, the EU calls for oil-producing countries to look into increasing deliveries to the global market using to the full the available spare capacity.

In this context, the full and effective implementation of the Joint Comprehensive Plan of Action would facilitate the entry of available Iranian oil supplies into the market easing supply pressure and price volatility. The Communication on the Strategic Partnership with the Gulf, published in parallel with this strategy, lays out the EU's approach to strengthening its relationship with the Gulf Cooperation Council countries rich in oil resources.

At the same time, IEA members have unanimously agreed to draw on **emergency stocks** to release 120 million barrels, the largest stock release in IEA history. This has shown the importance of emergency stocks as a shock absorber. While the decisions on the release of stocks are a Member State competence, the experience with the IEA collective process demonstrates the usefulness of the EU taking a coordination role, should additional releases become necessary.

The EU decided to stop all imports of coal from Russia, as part of its fifth sanctions package in April 2022. To cope with the crisis in the short term, this means replacing 44 to 56 million tonnes of coal annually, largely by importing. In the longer term, coal will be phased out in the EU, in most countries by 2030. With the adoption of the **EU embargo on Russian coal**, prices in the EU increased around 15% to EUR 325 per tonne, but major difficulties with the coal supply are not expected with end of April prices returning to pre-embargo level.

Diversification of fuel supplies for nuclear power plants is an important strand of work as some EU Member States are still fully dependent on Russian nuclear fuel. The EU will assist nuclear utilities in expediting the licensing process of alternative fuel for the Russian design VVER reactors[6] and work with international nuclear organisations such as International Atomic Energy Agency (IAEA) and Nuclear Energy Agency (NEA) under the Organisation for Economic Co-operation and Development (OECD) to build up cooperation in the area of security of supply. Work with partners such as Canada is already ongoing.

Key actions:

- **work with G7, G20 and other international fora as well as bilaterally with relevant countries to ensure well supplied and well-functioning oil markets;**
- **continue the dialogue with the Organization of the Petroleum Exporting Countries (OPEC) to ensure stability and affordability on the oil market;**
- **coordinate the EU response to the pressure on oil markets, including potential oil stock releases as part of IEA joint action or EU's reaction to supply disruptions;**

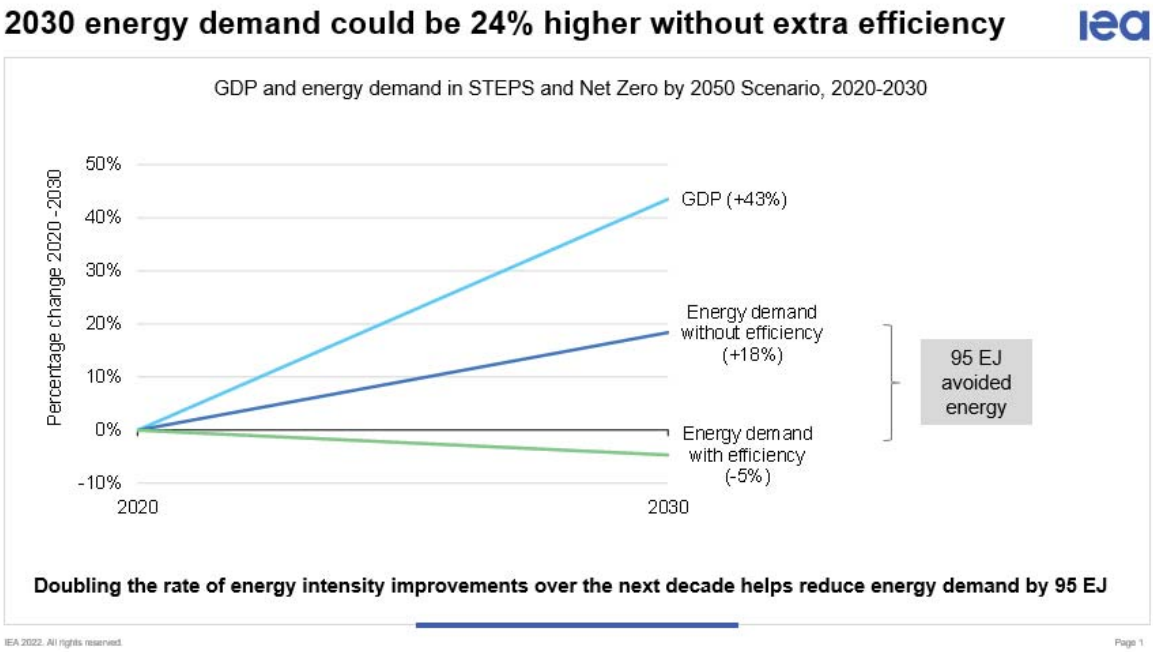
[6] The Russian abbreviation VVER stands for "water-water energetic reactor".

- **accelerate the diversification of fuel supply for nuclear power plants, including in cooperation with EURATOM[7].**

2.4. Prioritising energy savings and efficiency

As the EU moves away from Russian energy supply, it will **prioritise energy savings and efficiency**, aiming to achieve a 5% reduction in oil and gas demand in the short term. This will decrease the price and demand pressure on the global markets. The EU will also work with international partners to **make energy savings and efficiency a global priority.** Together with other developed economies, the EU will in particular focus on reducing energy consumption, among other things building on the IEA Playing My Part campaign.

Energy efficiency has numerous environmental, social and economic benefits. In the IEA's net zero scenario, the global economy grows by 40% by 2030, but uses 7% less primary energy and the solutions for that are already today technically ready, cost-efficient and available for all sectors. The highest saving potentials can be realised in the heating and cooling of public and private buildings. Additional major energy savings can be gained from more efficient processes, the circular economy transition and transport, as well as from more efficient appliances, both in homes (such as heat pumps) and industry.



IEA: Doubling the rate of energy intensity improvements over the next decade helps reduce energy demand by 95 EJ

The EU has developed **regulatory, legislative, standard-setting and labelling experience** that can be a source of inspiration for many countries. The EU will promote these standards and practices internationally, while acknowledging the specific circumstances of its partners.

[7] A new action will be included in the amendment of EURATOM work program 2021-2022 to increase the EU's security of supply through researching alternative fuel sourced from outside of Russia for Russian-designed reactors in the EU and Ukraine.

Mobilising large **capital investments** from both the public and the private sector is also crucial. The EU best practices on energy efficiency financing can be shared and scaled up, in close cooperation with the financial institutions and international partners.

The case of stopping methane leakages shows that energy saving measures can come at negative abatement costs: up to 70% of methane emissions from oil, gas and coal sectors can be stopped using today's technology, and almost half of them at a profit or at no cost[8].

The European Commission has already adopted an **EU Methane Strategy**[9] and a legislative proposal to tackle methane emissions that have a clear international dimension. Internationally, the EU established jointly with the US the **Global Methane Pledge**[10]. Participant countries commit to reducing their collective methane emissions by at least 30% from 2020 levels by 2030. Over 110 countries have already joined this pledge, representing about half of global man-made methane emissions.

- **Key actions:work with partners to make energy efficiency and savings a global priority;**
- **support the global transition to more circular economy to reduce energy consumption;**
- **facilitate the availability of and the access to finance for energy efficiency and saving investments;**
- **implement the Global Methane Pledge (GMP) and the external dimension of the EU methane strategy.**

3. Supporting partners impacted by Russia's invasion of Ukraine

The Russian military aggression in all its dimensions is producing alarming systemic, knock-on effects on the global economy which is already battered by the COVID-19 pandemic and climate change, with particularly dramatic impacts on developing countries.

Recent projections by UNCTAD[11] estimate that the global economy will be a full percentage point of GDP growth lower than expected due to Russia's invasion of Ukraine which is severely disrupting already tight food, energy and financial markets.[12] Commodity prices are reaching record highs: crude oil prices have increased by around 60%, gas and fertilizers have more than doubled, and food prices are 34% higher than this time last year.

Recent United Nations assessments indicate that one third of 1.7 billion people already living in poverty are set to be exposed to disruptions in food, energy and finance systems[13]. As a result,

[8] The IEA estimates "that it is technically possible to avoid around three quarters of today's methane emissions from global oil and gas operations. Even more significantly, around 40% of current methane emissions could be avoided at no net cost".
[9] EU strategy to reduce methane emissions, COM/2020/663
[10] Global Methane Pledge
[11] United Nations Conference on Trade and Development (2022) Trade and Development Report 2021, March update
[12] United Nations - Global impact of war in Ukraine on food, energy and finance systems, April 2022
[13] United Nations - Global Crisis Response Group

many developing countries will lose further economic ground, while their vulnerability is heightened by rising geopolitical tensions and deepening economic uncertainty.

Acknowledging this impact, **the European Union will make use of all existing instruments to continue supporting developing economies**, particularly in Africa and the EU's neighbourhood, to recover from the COVID-19 pandemic and achieve an inclusive and sustainable growth, while building economic resilience that is necessary to address these shocks and the climate change crisis. The EU's efforts to support a global just and green energy transition, outlined in chapter 4, are central to this work. The EU will monitor and address the impact of Russia's aggression on partners through bilateral and multilateral engagement and work towards a united global response.

3.1. Repowering Ukraine's energy system and cooperating with close neighbourhood

Since the start of Russia's military aggression, helping Ukraine and other nations directly affected by the war has been a central part of the EU's energy policy. The EU work has focused on ensuring uninterruped energy supplies and nuclear safety in Ukraine. The **emergency electricity grid synchronisation** with Ukraine and Moldova is a major step towards ensuring security of supply. The next political priority is to allow for electrcity trade with the EU based on gradual increases of tradable capacity.

Reverse flows already today allow to bring gas from Slovakia and Hungary to Ukraine. Opening **the EU platform for common purchases** of gas, LNG and hydrogen to Ukraine, Moldova, Georgia and the Western Balkans is as well a clear signal of support. Damaged energy equipment in Ukraine is repaired by chanelling specialised energy equipment from Member States to Ukraine via the EU Civil Protection Mechanism. Items Members States cannot deliver are procured via the Energy Support Fund for Ukraine established by the Energy Community.

To allow for future full integration of Ukraine's energy market, the EU is providing technical support to ensure market reforms. The reforms will also allow for better integration of renewable energy and aligment with the EU's climate ambition. This work is taking place in the **framework of the Association Agrement, and under the EU-Ukraine Strategic Partnership**. The Energy Community and the newly establised Ukraine Energy Task Force play an important role in this work.

Nuclear safety remains a major priority, in particular following Russia's reckless behaviour at the Ukrainian nuclear sites. The EU is fully aligned with the International Atomic Energy Agency's effort to ensure the safety of Ukrainian nuclear facilities at all times. The EU mobilises its European Instrument for International Nuclear Safety Cooperation to address urgent needs and restore nuclear safety to comply with the international legal framework and pursues the long standing support to the Ukrainian regulatory authority. It stands ready to assist in the reconstruction of the necessary nuclear safety capacity.

Looking to the future, the EU has set out its approach to longer-term reconstruction framework in the Ukraine Relief and Reconstruction Communication.[14] The EU will work with Ukraine to prepare the **REPowerUkraine initiative**, to 'rebuild better' the Ukrainian energy system, with the aim to decarbonise Ukraine's energy sector thus ensuring Ukraine's energy independence. The focus should be on energy efficiency, renewables, renewable hydrogen, biomethane and future-proof infrastructure. The EU will support this process both financially and technically.

With the **Western Balkans**, the EU will continue supporting the **region's Green Agenda and energy independence, promoting reforms** that take the region forward on their European path. The Energy Community, with the support from the European Commission, is working to determine the energy and climate targets for 2030. This will send the right investment signals and ensure political commitment to coal phase-out and energy transition in general. Implementation of the key legal acts adopted by the Energy Community in November 2021 will allow for a better integration of renewables, storage and demand side response.

The EU will propose to **fully integrate the Western Balkans into the EU internal electricity market** in order to enable the change to renewable energy production and the decarbonisation of energy supply in South-East Europe. The progressive introduction of carbon pricing could contribute to greater alignment with the EU.

Key actions:

- **support the repair and reconstruction of energy infrastructure in Ukraine;**
- **increase cross-border capacity to enable electricity trading;**
- **facilitate the reverse flow of gas to Ukraine via the Slovak Republic, Hungary and Poland and to Moldova and Ukraine via Romania (Trans Balkan pipeline);**
- **invite Ukraine, Moldova, Georgia and the Western Balkan countries to participate in the EU's voluntary gas purchasing scheme;**
- **accelerate the domestic reforms and energy flagships of the Economic and Investment Plans for the Western Balkans and Eastern Partnership, adjusted to the current situation, to speed up renewables' deployment, ensure a green energy transition and help reduce dependency on Russian gas;**
- **take advantage of the Energy Community framework to encourage ambitious energy and climate targets and market reforms, as well as to boost renewables and energy efficiency;**
- **launch the REPowerUkraine initiative to ensure energy supply and rebuilding the Ukrainian energy sector after the war.**

4. Leading and accelerating the global green and just energy transition

The green energy transition is crucial for limiting global warming to 1.5 degrees, for boosting growth, providing opportunities and improving living conditions across the globe, as well as

[14]Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: Ukraine relief and reconstruction, COM/2022/233.

mitigating price and energy security risks. Following the 1.5 degree scenario would mean **2.3% more GDP growth** until 2030 than with business-as-usual and **85 million new energy-transition related jobs[15].**

The EU is committed to **leading and speeding up the global green transition** and supporting its international partners in the process. This includes working together on renewable energy, energy efficiency and savings, on the circular economy, green growth, natural resource protection, critical raw materials, clean technologies and future-proof infrastructure.

The European Commission and the EU High Representative have launched the **Global Gateway**, a new European strategy to boost smart, clean and secure links in digital, energy and transport sectors and to strengthen health, education and research systems across the world, in line with the UN's 2030 Agenda and the Paris Agreement. The Global Gateway – including a strong push for the green energy transition – will be delivered through a **Team Europe** approach, bringing together the EU and its Member States with their financial and development institutions, including the EIB and the EBRD in order to leverage up to EUR 300 billion of investment in 2021-2027.

The EU supports the global green transition also through its climate finance. 30% of the EU's development aid envelope is channelled into tackling climate change, including in the energy sector. The EU is arguably the largest contributor to the global commitment of the most developed nations to provide annually USD 100 bln for climate finance and will continue to engage other partners to follow suit.

To succeed, the green transition must be just and socially fair. Especially in the context of slow recovery, economic turbulence and the global consequences of Russian aggression against Ukraine, the social aspects of reshaping the energy systems must be central to the transition. This is a priority for the EU and an integral part of our external energy policy. On the one hand, it means reducing the social and economic impact of phasing out fossil fuels (in particular coal) and on the other, offering new opportunities via green technologies (chapter 4.1), while tackling issues like energy access, fossil fuel subsidies, skills development and distributional effects of the transition.

While coal is not the only fossil fuel, it is the most polluting one and responsible for 40% of the world's greenhouse gas emissions. It is therefore at the heart of EU's just transition efforts that focus in particular on the biggest coal-consuming countries.

In follow-up to COP26, the EU, together with its Member States France and Germany as well as its international partners, the US and the UK, is implementing a **just transition partnership with South Africa** with a budget of USD 8.5 billion to accelerate the decarbonisation of the economy with the emphasis on the coal phase-out and minimising the country's social adaptation costs. The EU is exploring the possibility to conclude just transition partnerships with other partners like Vietnam, Indonesia and India.

[15] World Energy Transitions Outlook: 1.5°C Pathway

In line with China's stated ambitions to reduce its dependence on coal and make progress towards its goal to become carbon neutral by 2060, the EU-China Energy Cooperation Platform (ECECP) and the annual high-level EU-China Energy Dialogue focus on carbon markets, energy systems, renewable energy, energy efficiency and business cooperation. The EU has also established labour and social policy dialogues with India, China and Southern neighbourhood within the Union for Mediterranean Regional Platform on Employment and Labour. The EU also provides support for the phase out of coal in the Western Balkans and Ukraine via its 'Coal Regions in Transition' initiative.

Key actions:

- **accelerate the global green energy transition by facilitating sustainable investments and connectivity through Global Gateway;**
- **collaborate on just transition and coal phase-out with the EU partner countries, including in the EU's neighbourhood;**
- **work to ensure the global commitment of** USD **100 bln annually for climate finance and use the EU contribution to support the green, just transition;**
- **implement the joint energy transition partnership with South Africa and explore the scope to forge other global partnerships along this model;**
- **implement the 'Coal Regions in Transition' initiative in Ukraine and Western Balkans;**
- **align and implement global initiatives to end fossil fuel subsidies and engage with countries heavily reliant on coal-fired power to achieve this;**
- **work with IEA, IRENA and ILO to further a just and inclusive transition globally.**

4.1. Promoting renewable technologies and energy efficiency in partner countries

Electricity based on wind and solar is now the cheapest power option in most regions of the world. In a 1.5 degree world, renewables could represent 90% of the global energy production by 2050. Global markets will be worth an estimated EUR 24 trillion for renewable energy and EUR 33 trillion for energy efficiency up to 2050[16]. This represents a major opportunity for the world's economy.

The rise of renewable energy will change the dynamics of the global energy system. While hydrocarbon resources were concentrated in a few countries, every nation has the potential to develop renewables and participate in energy trade. Today, around 80% of the world population lives in countries that are net energy importers. This is set to change.

The EU, which represents 9% of global emissions, has a **strong interest in prompting the uptake of renewable energy and improving energy efficiency across the world**. To accelerate the roll-out of photovoltaics, the European Commission is publishing **a European Solar Strategy**[17] together with the present strategy.

[16] IRENA, Global energy transformation: a roadmap to 2050, 2019
[17] European Solar Strategy, COM/2022/221

The efficient roll-out of renewable energy sources and increasing energy efficiency requires a **wider 'system approach'** that factors in electricity production, transmission and consumption as a whole. Installing renewable energy capacity is most effective where it is integrated into open and flexible regional markets. The EU has been a first mover in creating a large integrated energy market and our experience can help international partners to accelerate their transition.

Many countries in the Western Balkans, Eastern Partnership and Southern Neighbourhood are gradually increasing the use of renewable energy in their region. Countries like India and Morocco have already set themselves ambitious targets for renewables deployment, implemented and further strengthened under the EU-India Clean Energy and Climate Partnership and the EU-Morocco-Green-Partnership. Similar work is ongoing in our partnership with China (including on Emissions Trading Systems based on the EU system).

Fair and reciprocal energy cooperation with Africa is an important priority, both to ensure energy access to 570 million people currently without electricity in sub-Saharan Africa, but also to support investments in sustainable energy systems and renewable hydrogen trade, once local needs are covered. By 2030, the **African Green Energy Initiative** aims to support the deployment of at least 50 GW of renewable electricity, providing at least **100 million people** with electricity access. In order to achieve this goal, leveraging private sector investments will be key.

Under the Global Gateway initiative, the EU will mobilise EUR 2.4 billion in grants for sub-Saharan Africa and EUR 1.08 billion for North Africa to support renewable energy, energy efficiency, the just transition and the greening of local value chains. This will also support the African Union Green Recovery Action Plan which seeks to increase the renewable energy generation capacity by at least an additional 300 GW by 2030.

The acceleration of renewables uptake worldwide also presents **an opportunity to strengthen trade relations**. To develop their home-grown renewables potential, most countries in the world require access to innovative technologies, knowledge and capital and the EU green tech industry is well positioned to be a partner in those efforts. Half of the world's wind power comes from turbines manufactured in Europe. EU companies are leaders in important segments of the photovoltaic, hydrogen and heat pump industries and are catching up with Asia on battery technologies, thanks to the European Battery Alliance.

In order to thrive and to grow further, the green tech industry needs to be able to rely on a stable **regulatory framework, fair competition, sufficient investments, and a fiscal level playing field** – this is equally important and beneficial for the EU and local actors. External energy policy must work hand in hand with the EU industrial and trade policy, ensuring market access for our industry and addressing challenges via the Free Trade Agreements and enforcement action.

Developing **business to business relations** requires constant attention: the business networking events organised under the EU and US Energy Council, most recently on offshore wind, is a

model to be replicated. Across Asia (for example in the Republic of Korea and Taiwan) have been set up to offer new business opportunities to EU green tech companies.

De-risking and credit export instruments are also key to enable entry into new markets. The EU clean tech companies increasingly compete with foreign companies that receive direct financial support from their governments. The Commission will develop **an EU strategy for export credits** benefitting green tech companies to improve the level playing field for the EU businesses in non-EU country markets. The Commission is also seeking to amend OECD rules to provide further incentive for export credit support for climate-friendly technologies.

Key actions:

- **accelerate the roll-out of renewables and energy efficiency across the world, including in Western Balkans, Africa, the Mediterranean and the Indo-Pacific;**
- **implement the mutually beneficial EU-Africa-Green Energy Initiative;**
- **support the green transition in Central Asia through a Regional Team Europe Initiative on environment/energy/water;**
- **increase the roll-out of renewable energy in cities and rural municipalities, for example through the Urban Transition mission of Mission Innovation;**
- **advance clean technologies in the context of the Trade and Technology Council (TTC) with the US;**
- **develop an EU export credit strategy.**

4.2. Cooperating on research and technology

Many of the technologies needed to achieve full decarbonisation of the global economy are not yet mature or competitive with fossil fuel based heat and power. International cooperation is essential to increase the speed of green energy innovation and roll-out, while lowering their cost, in particular for **renewable energy and hydrogen.** Other key research areas for an innovation-driven transition include the development of **smart, cyber secure and flexible power grids, long-duration energy storage, sustainable raw materials, small modular reactors and sustainable fuels for industry and transport**.

Since renewable energy and hydrogen will not be able to substitute all fossil fuels in the energy mix, carbon removals will also be needed, in particular in industrial sectors where electrification or hydrogen-based options are not cost-effective. The EU will cooperate with its neighbours and other countries to bring to global markets innovative zero-consumption energy efficiency solutions, as well as technologies such as carbon-capture utilisation and storage (CCUS) .

The EU will continue supporting international cooperation and multilateral initiatives in line with its global approach to research and innovation[18]. The Commission will provide resources for international cooperation from Horizon Europe, the EU's public financing programme for research and innovation. The EU will also reinforce engagement with major international

[18] Communication on the Global Approach to Research and Innovation, COM/2021/252 final

initiatives, like Mission Innovation and the Clean Energy Ministerial, to develop together the green energy solutions of the future.

Key actions:

- **develop CO2 sequestration and storage techniques to market maturity, including in cooperation with Norway;**
- **continue the Long-Term Joint EU-African Union Research and Innovation Partnership on Renewable Energy and extending its scope to renewable hydrogen.**

4.3. Ensuring access to critical raw materials

While the EU is determined to end its dependence on Russian energy, it is equally determined to **avoid new dependencies in the future.** As demand for fossil fuels decreases, increased demand for raw materials, including rare earths and metals could lead to new supply challenges in the course of the energy transition. According to the Critical Raw Materials in Technologies and Sectors foresight study, the demand for critical raw materials needed in the low-carbon energy sector and their costs will increase significantly by 2050. The EU depends in this sector primarily on rare earths, lithium, magnesium, niobium, germanium, borates and scandium, some of which cannot be procured domestically.[19]

To continue advancing on its energy transition, EU companies will need to source these materials in tight commodity markets or substitute them in the longer term through new industrial processes. Potential remedies to minimise the EU's future dependence in this strategic area include further diversifying global supply chains, prioritising energy efficiency measures, incentivising long-term investments in new mining and refining activities inside the EU as well as stepping up circularity efforts to ensure that materials are retained in the economy for as long as possible and that waste is recycled.

The Commission will intensify work on the supply of critical raw materials and prepare a legislative proposal. This initiative will aim to strengthen the European value chain through the identification of mineral resources and of raw materials projects in the European strategic interest, while ensuring a high level of environmental protection.[20]

The EU has already established **Sustainable Raw Material Value Chain Partnerships** with Canada and Ukraine. To diversify its supply chains further, the Commission is working towards establishing additional **mutually beneficial** raw material value chain partnerships in **Africa (e.g. Namibia), Latin America, Western Balkans** and with **Australia,** via trade agreements or Memoranda of Understanding.

At least in the medium term, access to well-diversified supplies from international markets will be key to ensure resilience. EU trade policy plays a key role in this regard, by ensuring open access to supplies and by avoiding market distortions through development and implementation

[19] Critical Raw Materials in Technologies and Sectors foresight, 2020

[20] Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: REPowerEU Plan, COM/2022/230.

of trade agreements. The Energy and Raw Materials Chapters on EU Free Trade Agreements (FTAs) have a central role in this.

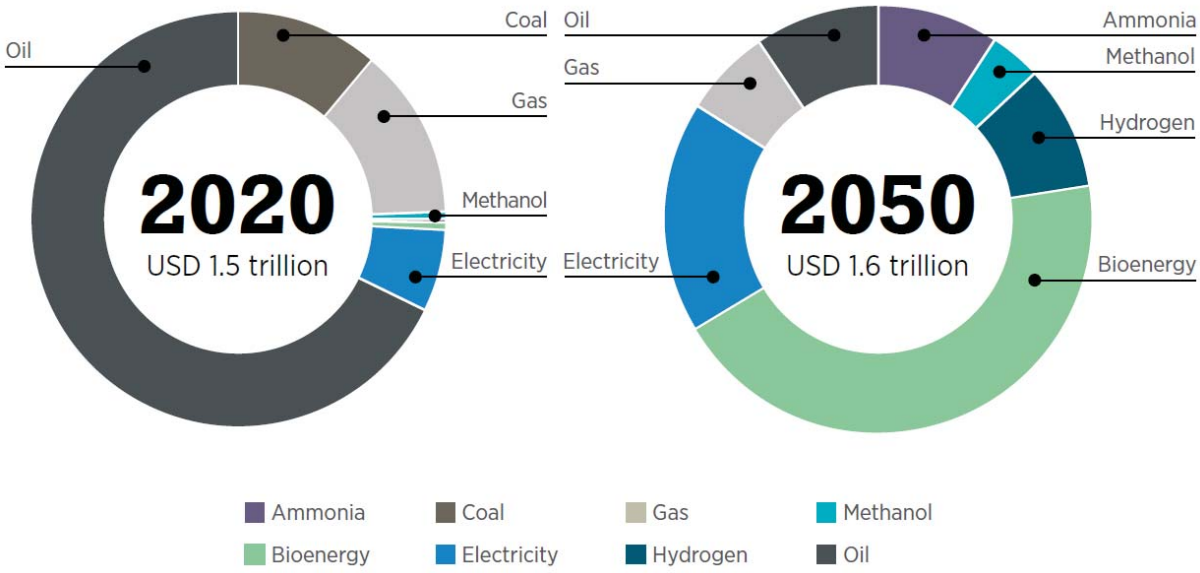
Key actions:

- **establish mutually beneficial raw material value chain partnerships, beyond Ukraine and Canada;**
- **strengthen cooperation on raw materials value chains with Norway under the EU-Norway Green Alliance;**
- **reinforce the use of EU economic and trade policy tools to ensure undistorted access to international markets;**
- **promote global resource efficiency and circularity, notably through product design measures[21];**
- **work with international organisations such as the OECD, the IEA and IRENA on supply chains for critical raw materials used in the energy transition.**

5. Laying the foundations of the new global energy system

5.1. Strengthening established alliances, building new partnerships

The new global energy system does not mean simply replacing fossil fuels with renewables, it will be fundamentally and structurally different from today's. Collaboration and partnerships will be key to how it functions. As the EU strives to make the global green transition a reality, it will reach out, listen to and work with the entire world.



IRENA: Shifts in the value of trade in energy commodities, 2020 to 2050

The **EU will continue to work in tandem with the US**, with whom the priorities are well aligned across the full energy policy spectrum. Through the EU-US Energy Council and in

[21] Overview of EU measures to make sustainable products the norm in the EU

international fora, EU will endeavour to affect positive change on the global energy landscape. The energy relationship with **Canada** has significantly accelerated, building on the existing High-Level Energy Dialogue.

Both the **Eastern and the Southern Neighbourhood** will continue to be crucial for the EU. The energy relations with Eastern Partnership countries will need to be reinforced and reviewed, while remaining focused on sustainable energy security and the green energy transition, following the commitments at the 6th Eastern Partnership Summit in December 2021. The resilience, energy security and green transition of **Ukraine, Moldova and Western Balkans** are linked to the EU's and therefore a central priority. Cooperation with **Turkey** should continue on decarbonisation, to ensure alignment of the Turkish legal framework with the EU acquis, including through the Turkish Investment Platform.

In the Southern Neighbourhood, a common Mediterranean energy policy should be developed based on the Union for the Mediterranean Ministerial Declaration adopted in June 2021. The EU will support regional cooperation in the Eastern and Southern Mediterranean region on energy transition and to unleash the renewable energy potential. The EU will continue to pursue cooperation on decarbonisation including on methane emissions with all fossil fuel suppliers in the region, such as **Egypt, Israel and Algeria**.

Africa is a key partner for the EU. In addition to the cooperation policy objectives, stronger trade and investment engagement with African countries is expected as they are increasingly becoming fast growing markets for green energy technologies. African countries can also contribute to the EU's energy security, today with oil and LNG supplies, and in future through green hydrogen and renewable fuels as well as raw materials critical to the green energy transition.

The EU will continue to work with partners like **Norway, Japan, Australia, Chile, United Kingdom** and others on energy transition and mutually relevant priorities. The EU is currently negotiating a FTA with **Australia**. As a significant future producer of green hydrogen, strengthening energy links should be a priority. Chile is also expected to become a large producer of green hydrogen in the future, as well as supplying critical raw materials such as lithium.

As part of the **EU-India Clean Energy and Climate Partnership**, the EU will intensify its energy cooperation with India in support of accelerating the local roll-out of renewables and the rapid decarbonisation of its industry. The EU will support joint activities in the areas of offshore wind and solar energy and their integration through smart grids.

The EU is continuing to further work with **China** on de-carbonisation, power market reform and to render the energy system more effective and efficient. Cooperation will focus on emission trading systems, electricity systems, grid-modelling, financing of energy efficiency and business cooperation.

As laid out in the **Joint Communication on the Gulf[22],** the EU will work closely with Gulf countries to promote the green energy transition, including investments in the Southern Neighbourhood. In order to better structure its cooperation with the Gulf, the Commission proposed to hold annual ministerial meetings on the green transition complemented by related private sector initiatives.

Central Asia is a key region rich in resources. Building upon the region's potential in solar, wind and hydroelectric energy, the EU will encourage Central Asia's reforms of the energy sector and transition to a low-carbon economy, as well as cooperation on critical raw materials with countries such as **Kazakhstan**.

5.2. Geopolitics and global energy architecture

Russia's invasion of Ukraine is a stark reminder that the world is marked by major geopolitical and economic power rivalries. If not counterbalanced, relations between major powers could become increasingly confrontational and unilateralist, leading to competing visions and agendas.

The global green energy transition can support the EU in achieving its broader geopolitical objectives to reinforce resilience and open strategic autonomy. The European Commission and the High Representative will promote EU's energy objectives by reinforcing the role of energy diplomacy in the foreign and security policy. This will require strengthening monitoring mechanisms, foresight and assessment of the strategic implications of the global energy transition on partner countries.

Effectively addressing the challenges of the global energy transition requires trust and cooperation within the international community. The EU will step up its multilateral action in support of EU objectives and global commitments based on the principles of rules-based and effective multilateralism set out in the 2021 Joint Communication on strengthening the EU's contribution to rules-based multilateralism[23]. Enhanced partnerships within the UN, G20 and G7, and closer cooperation with International Financing Institutions are necessary.

Multilateral energy organisations and forums such as the IRENA, the IEA, the Energy Community, the International Solar Alliance, the Clean Energy Ministerial and Mission Innovation, the Global Covenant of Mayors for Climate and Energy, all have a key responsibility in promoting the energy transition globally. Some organisations, such as the Energy Charter, are in urgent need of deep modernisation in order to align them with the 2050 goals, and the EU is actively addressing this. If sufficient reform of the Energy Charter Treaty cannot be achieved, the EU will consider withdrawing its membership.

The EU will continue to support a more inclusive representation of emerging and developing economies in international institutions. The EU together with its Member States as part of a

[22] Joint Communication to the European Parliament and the Council on a Strategic Partnership with the Gulf, (JOIN/13/2/2022)
[23] Joint Communication to the European Parliament and the Council on strengthening the EU's contribution to rules-based multilateralism, (JOIN/2021/3 final)

Team Europe approach will increasingly contribute to leadership and inclusive decision shaping through greater participation in governing bodies of relevant organisations. The EU should also weigh up the benefits of upgrading its collective presence to a full membership in the energy fora considered key and strategic for advancing the European Green Deal and this Strategy.

Furthermore, the EU will reinforce cooperation within multilateral and regional organisations and seek closer engagement with the Union for the Mediterranean, the African Union and its agencies, the Latin American Energy Organisation (OLADE) or the Association of South-East Asian Nations (ASEAN) to address common challenges and work together at the international level.

Key actions:

- **regularly monitor the geopolitical impact of the green transition;**
- **initiate a review of the EU's engagement in international energy fora key for the global energy transition;**
- **step up energy diplomacy in the EU and Member States' foreign policy.**

6. Conclusion

This is a critical time for the global energy policy. Climate change, geopolitical shifts, technological developments and increased global energy demand create a challenging and fast-changing environment that require our energy systems and relations to adapt.

Adding to that, **Russia's invasion of Ukraine has far-reaching consequences for the energy security** of not only the EU, but the entire world. Russia's actions have triggered unprecedented price volatility on the energy markets and underlined the need for partnerships based on trust and shared long-term goals.

The green energy transition is the only way to simultaneously ensure sustainable, secure and affordable energy worldwide. To be successful, that transition must be socially just and fair, leaving no-one behind. It means not only phasing out fossil fuels and outdated practices, but phasing in green energy, innovative technology, better markets and circular economy. It requires tackling already now the potential future risks and dependencies.

The transition is an opportunity for the EU and its partners to build together **a new energy system that is more sustainable, more equal and more collaborative**. This communication lays out the EU's strategy to reach that goal.