Analysis

CLIMATE CHANGE, ENERGY AND ENVIRONMENT

THE EASTMED PIPELINE– ISRAEL TO THE RESCUE FOR EUROPE'S ENERGY TRANSFORMATION?

Paula Tacke
January 2023

Europe is at a critical juncture in its energy transition. The European Union has committed to reducing its greenhouse gas emissions and phasing out its reliance on fossil fuels. This transition presents both challenges and opportunities for the EU and its partners.

This report outlines the current state of Europe's energy sector and discusses the challenges and opportunities that the continent faces as it moves towards a more sustainable energy future.

Special attention in this report is given to the potential and benefits of a cooperation between the EU and Israel on the field of energy transformation.

FRIEDRICH EBERT STIFTUNG

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INTRODUCTION

Europe is at a critical juncture in its energy transition. The European Union has committed to reducing its greenhouse gas emissions and phasing out its reliance on fossil fuels. This transition presents both challenges and opportunities for the EU and its partners. This policy paper will firstly outline the current state of Europe's energy sector and secondly discuss the challenges and opportunities that the continent faces as it moves towards a more sustainable energy future. Special attention will be given to the potential and benefits of a cooperation between the EU and Israel.

At a glance:

- The European Union's energy sector heavily relies on fossil fuels, with coal, natural gas and oil making up the majority of its energy mix. As domestic production only makes up ~42% of its energy supply, the EU remains heavily dependent on energy imports, with Russia, Norway, and Algeria being its main suppliers.
- The EU has committed to reducing greenhouse gas emissions and increasing the share of renewable energy in its energy mix by 2030 through policies such as the 2030 Climate and Energy Framework and the European Green Deal. However, achieving a more sustainable energy future requires modernization of outdated infrastructure and decreased reliance on fossil fuels.
- The EastMed pipeline project aims to transport Israeli natural gas to the European Union and has gained more attention in light of the European Union's energy shortages and desire to reduce its dependence on Russian gas. If completed, the EastMed pipeline would be the first to connect Israel's energy market with that of the EU, despite the EU's existing but underutilized gas import infrastructure. However, the project has faced feasibility issues due to concerns about the amount of exportable gas and the pipeline's geopolitical challenges.
- Israel, with its strong tradition of technological innovation and high potential for new clean energy technologies, has the potential to contribute to the acceleration of the transition to renewable energy in the EU through collaborations in research and development and the sharing of expertise and experience.
- Future cooperation between the EU and other countries remains essential, i.e. in the form of power-electricity connectors operating in a bidirectional manner instead of gas deliveries.
- Connecting the European and Israeli power grids through interconnectors increases the reliability and stability of power supply for both regions and allows efficient sharing of electricity during times of peak demand. It also enables the integration of renewable energy sources, which Israel has a high potential of, and creates opportunities for trade in energy between the two regions, reducing consumer costs.

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The Current State of Europe's Energy Sector

Europe's energy sector is heavily dependent on fossil fuels, with coal, natural gas, and oil accounting for the majority of the region's energy mix. However, Europe has made significant progress in recent years in increasing the share of renewable energy in its energy mix. In 2020, renewable energy sources, such as wind and solar, accounted for over 17% of the continent's total available energy[1].

Despite this progress, Europe still faces significant challenges in transitioning to a more sustainable energy future. The continent's energy infrastructure is largely outdated and in need of modernization, this includes power plants and transmission networks for renewed technology. This transition will require significant investments and will take time to complete.

Additionally, the continued reliance on fossil fuels exposes Europe to price fluctuations and geopolitical risks. The lack of a cohesive energy policy at the European level has hindered the continent's ability to effectively transition to a more sustainable energy future. The European Union has committed itself to this necessary process of change by setting a target of reducing greenhouse gas emissions by at least 40% compared to 1990 levels by 2030 in the 2030 Climate and Energy Framework. It has also set out targets to increase the share of renewable energy and improving energy efficiency in the EU until 2030. The European Union has also adopted other climate and energy related policies including the European Green Deal, setting out a roadmap for achieving climate neutrality by 2050; and the Clean Energy for All Europeans package, a set of measures adopted in 2016 to accelerate the transition to a clean energy system in the EU.

1. EUROSTAT, 'EUROSTAT Statistics Explained - Energy Statistics - an Overview', Eurostat, 2020.

2.1 EUROPE'S ENERGY SUPPLY

The European Union is the world's third-largest energy consumer, behind China and the United States, according to the International Energy Agency. The majority of the EU's energy supply is imported from other countries. According to Eurostat, Europe's own energy production amounted to only 42% in 2020, with no less than 58% of their energy sources being imported. The Unions own energy production even decreased over the past decades[2] and thereby further escalated the high dependency on imports to cover energy needs.

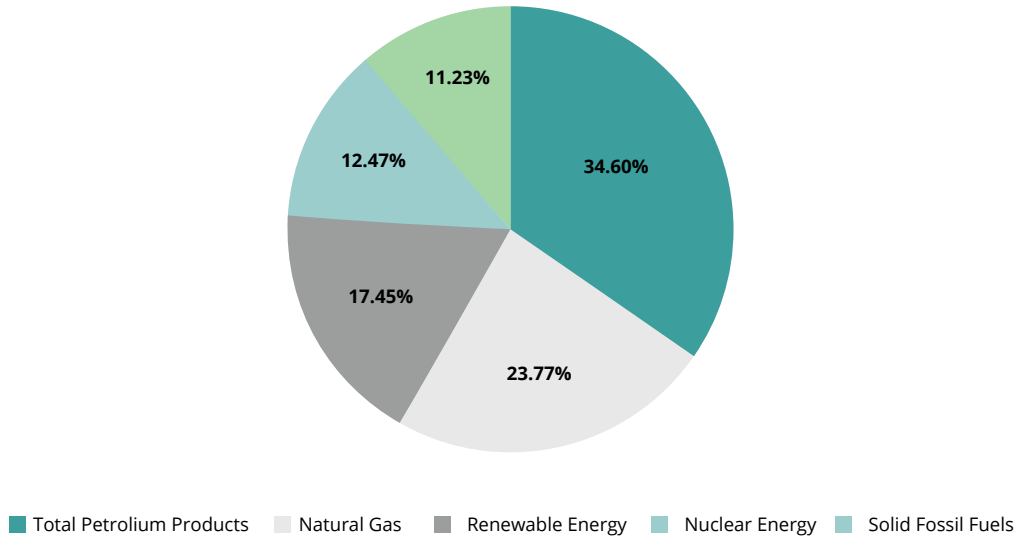
Many European countries import a significant portion of their energy, particularly natural gas and oil, from other regions of the world. As the energy-crisis following the Russian import ban demonstrated, this creates vulnerability to disruptions in the global energy market and has led to calls for increased energy security and independence. To address this issue, many European countries have been busy diversifying their energy sources as well as increasing domestic sources of energy, such as renewable sources.

The EUs general energy mix is made up of fossil fuels, such as coal, oil, and natural gas, as well as renewable energy and nuclear energy. Fossil fuels currently make up the largest share of

2. Eurostat, 'Energy Statistics - an Overview. ISSN 2443-8219', March, 2022, 9–10 <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview>.

Europe's energy supply. While the consumption of fossil fuels in the EU decreased by 18.4% compared to 2019[3]; the share of renewable energy sources increased more than threefold: In 2020 it reached 17.5% (refer to figure 1), compared to 5.3% in 2000[4].

Energy Mix for the EU (2020)



2.2 MAIN SUPPLIERS OF ENERGY PRODUCTS TO THE EUROPEAN UNION

The European Union relies on energy imports to cover 58% of their energy needs (as of 2020). Until the end of 2021, this was mainly constituted for by a large share of Russian imports. The Russian share of all petroleum oil was 29% and 41% of all-natural gas[5]. Russia also supplied more than half of the solid fossil fuels, such as coal at 54%. Russia hence provided a quarter (25.7%) of the European Union's total energy, seeing as petroleum oils, natural gas and solid fossil fuels make up 69.6% of the total energy mix for the EU; 10% through petroleum oil, 9.7% through natural gas and 6% through solid fossil fuels.

Norway, Algeria and Qatar were the main suppliers of natural gas after Russia at 25%, 8%, and 5%. Other main suppliers for crude oil were the United States (9%), Norway (8%), Saudi Arabia (7%) and the United Kingdom (7%)[6].

Additionally, the self-sanctioning by EU businesses or organizations within the EU together with an increasing demand for petroleum products (diesel & fuel) have led to a tightness or shortages of these. This was further aggravated during the summer by incidents in some EU refineries, as well as some logistical challenges related to low water levels on the key waterways for transporting fuel, Rhine and Danube.

Russia, on the other hand, made use of Europe's energy import dependency by strategically limiting gas supply – presumably with the aim of undermining EU solidarity and energy security. Namely it reduced gas flows by Nord Stream 1

3. EUROSTAT.

4. Eurostat, 'EU Energy Mix and Import Dependency - Statistics Explained', Eurostat, March 2022, 2022, 1–12 <https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=EU_energy_mix_and_import_dependency#Energy_mix_and_import_dependency>.

5. EUROPEAN COMMISSION, JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL A Strategic Partnership with the Gulf, 2022.

6. European Union, 'Natural Gas Supply Statistics - Statistics Explained', Eurostatgas, 10, 2020, 8219 <https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Natural_gas_supply_statistics#Consumption_trends>.

to zero. As a result, Europe has been focusing on savings, diversification, and solidarity amongst the states. Latest numbers show that the percentage of Russian shares of imports have dropped to 9%, as of September 2022[7]. This was compensated mainly by increased shares from the United States and Norway, via liquefied natural gas (LNG), which is now the key source of supply and accounts for 32% of total net gas imports.

However, the ongoing war in the Ukraine has further highlighted the vulnerability of dependency upon a single energy supplier. It has resurfaced discussions around energy safety in the public discourse as much as amongst decision makers and experts.

2.3 DIVERSIFICATION OF THE EUROPEAN ENERGY SUPPLY

Part of the discussions around the diversification include building and further establishing new routes for the import of natural gas. One of these is the Southern Gas Corridor, which provides a pipeline structure to transport gas from the Caspian basin to the EU. It stretches across 3,200 kilometers, crosses seven countries, and includes four pipelines that offer various connection options to diverse existing and proposed pipelines. Creating a Mediterranean gas hub in the South of Europe is also often considered as an option to diversify Europe's energy suppliers and routes. The potential here is often connected to Algeria's gas resources, as well as those in the East Mediterranean. Specifically, Israel, Egypt, and Cyprus have larger offshore gas reserves, which emphasize the Mediterranean area as a key source and route for Europe's gas supply. One of the projects to tap into the potential of the region is the CyprusGas2EU LNG terminal. Whilst the import terminal is currently still under construction, to be completed in 2023, and considered a Project of Common Interest (PCI), the export terminal has been cancelled.

Another project is the Cyprus EastMed Pipeline. This pipeline aims to transport natural gas from the Leviathan (Israel) and Aphrodite (Cyprus) gas fields to Europe via Greece and Italy. The project enjoyed strong support from European Commission since this would diversify the European gas supplies, making them less dependent on Russian imports. The EastMed

7. EUROPEAN COMMISSION.

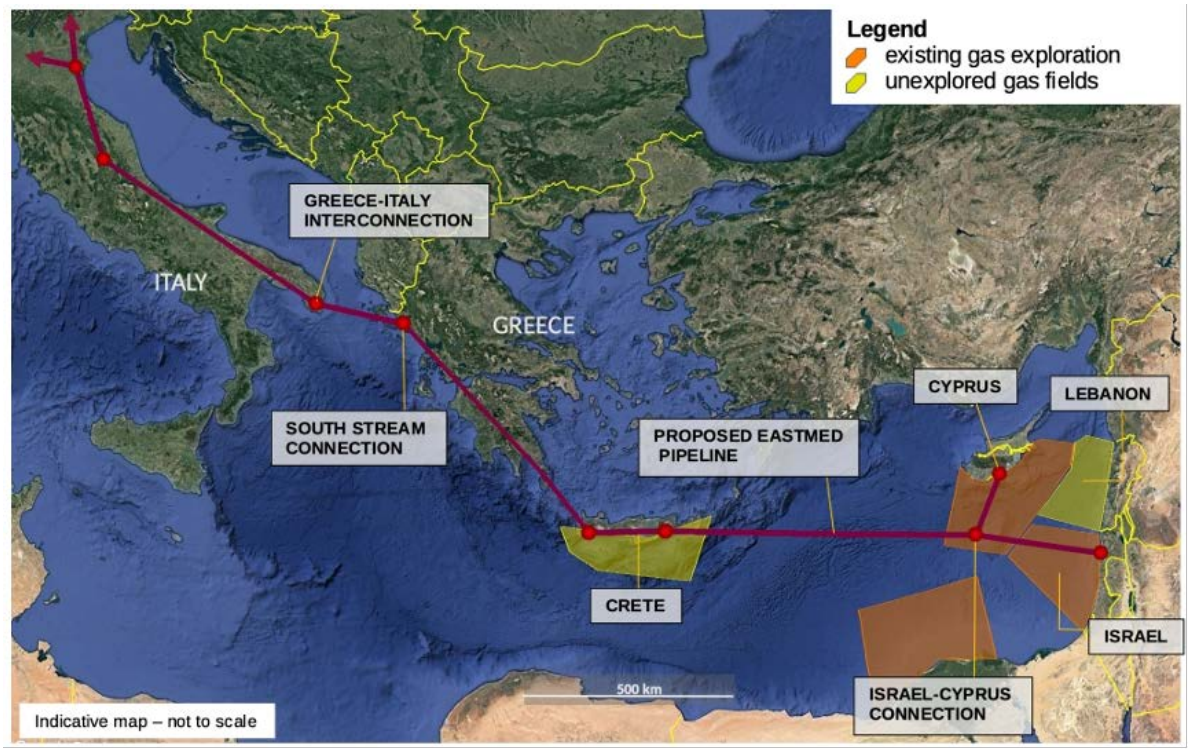


Figure 1: indicative map of the route of the EastMed pipeline.

Pipeline accord was signed by the leaders of Greece, Cyprus, and Israel in 2020 with plans to complete the pipeline by 2025 with estimated costs of 6 billion dollar. However, since the United States withdrew their support for the pipeline in the beginning of 2022 there is currently no construction moving forward.

Similarly, there is also an objective to exploit the potential of liquefied natural gas (LNG) and gas storage facilities to make the EU gas system more diverse and flexible. LNG has the potential to be used as an alternative to marine fuels in shipping as well as diesel for other vehicles. It is therefore often considered as a more environmentally friendly solution that could support the European Union's sustainability objectives in the short- to medium-term. To exploit the full potential of access to a growing international LNG market, the EU must further develop the necessary infrastructure. This includes establishing more liquefied natural gas terminals and gas storage facilities in Europe and connecting the member states to benefit from the access to international LNG markets. For this however, the EU must regulate the internal gas market to compete and gain investments in infrastructure.

The European Union regulates the internal gas market through a combination of laws, regulations, and directives, designed to ensure a functioning and competitive gas market within the EU. These aim to promote the construction and operation of gas infrastructure, such as pipelines and storage, improve connectivity and interoperability, diversify and develop a secure gas supply, including emergency planning and cooperation with non-EU countries, as well as the integration of the internal gas market with other energy markets, i.e., the electricity market, to support the transition to a low-carbon economy. Additionally, the EU has established a number of agencies and bodies that are responsible for overseeing and enforcing the rules governing the internal gas market, including the European Network of Transmission System Operators for Gas (ENTSOG) and the Agency for the Cooperation of Energy Regulators (ACER).

It remains essential to administer and regulate the market behavior and promote competition and transparency by establishing common rules. The EU must facilitate the entry of new market players and the development of new

3
Controversies Surrounding the EastMed Pipeline

business models to promote investments in the infrastructures.

The assessment of the feasibility of the above-mentioned projects varies among observers. This is especially true for the EastMed pipeline project involving Israel. The debates circle around several core issues such as the potential environmental impact, funding and finance, and political and diplomatic challenges.

The gas export potential of the eastern Mediterranean is not clearly defined, and further depends on domestic gas demand. The project assumes the Mediterranean will become a major exporter. However, this is strongly limited by the region's gas potential. Whilst Israel faces continuous investment delays, there are downward revisions of Cypriot gas resources and gas shortages in Egypt. The large-scale Zohr gas field belonging to Egypt is the only player that could revitalize this outlook. However, Egypt has two large LNG facilities, where natural gas is cooled to a liquid state allowing it to be transported by ship. By using LNG terminals, Egypt is able to import and export natural gas from and to other markets without being dependent on a single pipeline; a reason why Egypt is not particularly interested in further pursuing the EastMed pipeline.

The future demand for natural gas in the Eastern Mediterranean is difficult to accurately predict, which raises uncertainties regarding the amount of natural gas that could be exported to the European Union through the EastMed pipeline. This is due to the shifting global energy market, which is increasingly moving towards renewables and raising concerns about the long-term viability of natural gas and the potential for oversupply in the market. Additionally, the economic growth and development of countries in the region could also affect demand for natural gas. For example, if countries in the region transition to cleaner forms of energy or if their economies slow down, this could reduce the demand for natural gas. On the other hand, as countries in the region continue to develop and their populations grow, the need for energy to support economic growth and development is likely to increase. Natural gas is often seen as a cleaner and more efficient source of energy compared to other fossil fuels, which could drive the growth in the demand for natural gas. Egypt's domestic demand alone is expected to increase by 40% which might strongly impact its export potential. These factors have implications for the feasibility and profitability of the EastMed pipeline.

Geopolitically, the EastMed pipeline project faces further issues. One of the main challenges is the fact that the pipeline would cross through a number of different countries, each with their own political and economic interests. This makes it difficult to secure the necessary approvals and permits from all of the relevant governments and regulatory bodies. Furthermore, the ongoing political tensions in the region complicate negotiations and make it difficult to reach consensus on the project.

Turkey has been one of the main opponents of the EastMed pipeline project as the pipeline would pass through the Exclusive Economic Zone (EEZ) of Cyprus, which Turkey does not recognize. Turkey has also claimed that

the pipeline would violate its own rights and interests in the region, and has threatened to take legal action if the project goes ahead. Turkey's opposition to the EastMed pipeline has also been driven by broader political and strategic considerations. Turkey has long been at odds with Cyprus and Greece over a number of issues, including the division of Cyprus and the distribution of natural resources in the eastern Mediterranean.

Nonetheless, the conflict with Russia and the energy shortage in the European Union have given the project a new momentum, with the prospect of limiting Europe's dependence on Russian gas as the main driver. This is the first pipeline that would connect Israel's Energy market to the European one, even though the EU currently has other underutilized gas import infrastructure. Even so, the construction of the pipeline would take a minimum of five years, after securing the necessary investments and contractors, which in itself can be a lengthy process. Additionally, according to expert interviews, geophysicists have raised concerns regarding the terrain in which the pipeline was to be built. This includes the stability of the ground and rock formations along the route of the pipeline, but also the potential for earthquakes and other seismic activity that could damage the pipeline, and the effects of deep-sea drilling and construction on marine ecosystems[8]. All of these could result in both, extra costs, and delays in the construction. Similar projects in the past indicate that the 5-year time plan is very ambitious, meaning that it is unlikely the pipeline is functional before 2028.

3.1 WHY INVEST IN NATURAL GAS?

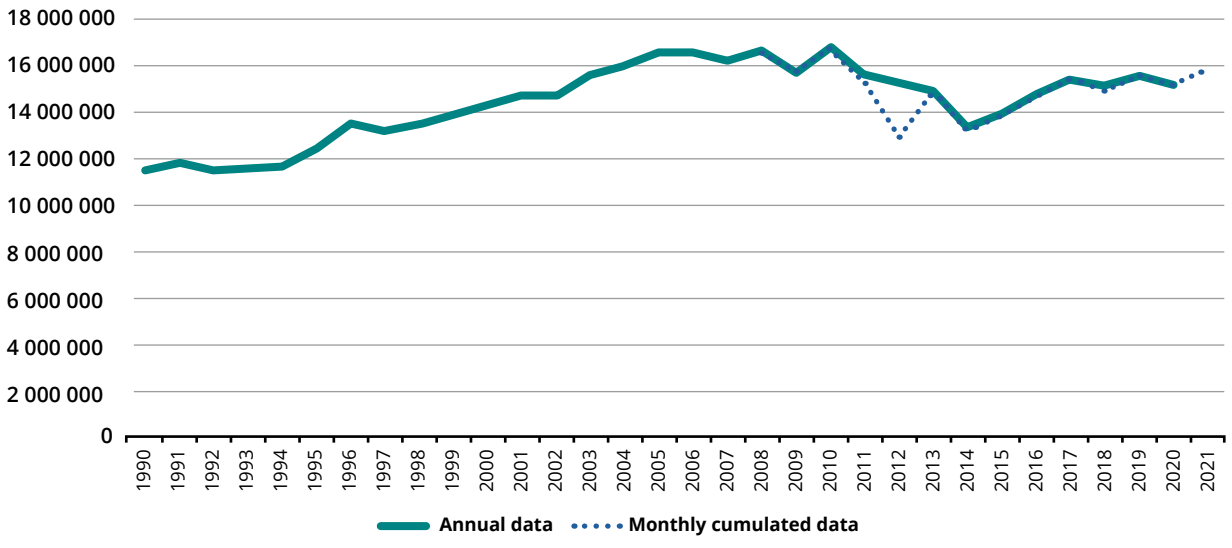
The global energy demand will continue to increase, but renewable energy technology is not yet able to cover the needed supply. Natural gas emits significantly less carbon dioxide compared to coal and diesel[9] and is therefore considered a relatively clean source of energy. It hence serves as a transitional fuel to move away from heavier fuels, emitting nearly 50% less carbon dioxide compared to coal when producing electricity and 33% less

8. Douglas G. Honegger and Dharma Wijewickreme, 'Seismic Risk Assessment for Oil and Gas Pipelines', in Handbook of Seismic Risk Analysis and Management of Civil Infrastructure Systems, 2013 <https://doi.org/10.1533/9780857098986.4.682>.

9. (Amerykański Urząd ds. Informacji o Energii - EIA), 'How Much Carbon Dioxide Is Produced When
Different Fuels Are Burned? - U.S. Energy Information Administration (EIA)', EIA, 2022.

Inland demand of natural gas, EU, 1990-2021

(terajoules (Gross Calorific Value))



Source: Eurostat (online data codes: nrg_cb_gasam, nrg_cb_gas)

when providing heat. Using less emission-intensive fuels can bring significant air quality benefits and contribute to emissions savings. The use of natural gas has limitations and challenges though: natural gas is still a fossil fuel, and its combustion still generates greenhouse gas emissions, which contribute to climate change.

Additionally, the extraction and transport of natural gas can have negative environmental impacts, such as air and water pollution. It remains clear that this is not a long-term solution[10], especially regarding the European Union's main climate policy, set in the European Green Deal.

10. Frank Calabria, 'The Role of Gas in Transforming Energy', The APPEA Journal, 59.3 (2019) <https://doi.org/10.1071/aj18300>.

4

The European Green Deal and Implication

The European Green Deal is a comprehensive plan to make the European Union's economy more sustainable and climate-friendly. It was announced by the European Commission in December 2019 and launched in December 2020. The ultimate goal of the European Green Deal is to make the EU climate-neutral by 2050, implementing the Paris Agreement. It includes a number of initiatives and measures designed to reduce greenhouse gas emissions, aid the transitioning to renewable energy, to improve air and water quality and protect biodiversity. This plan involves reaching emissions reductions of at least 55% by 2030 compared to 1990 levels and acts as a framework for actions from all member states. The finalized master plan against greenhouse gas emissions is presented in the "Fit for 55" package where the previously agreed 40% reduction goal for 2030 was replaced with a more ambitious one of 55%. The European Green Deal is binding on all EU member states, which are required to implement the measures and policies set out in the Green Deal as part of their national laws and policies.

Two of the key objectives of this package are firstly to reduce fossil fuels, including coal, oil, and natural gas, and secondly to expand the use of renewable energy sources, including solar, wind and hydropower.

One of the main implications of the European Green Deal is that it will require significant investments in clean technologies and infrastructure to ensure an accelerated transition. This will require not only significant financial resources, but also the development of new policies and regulations to support the transition to a green economy.

The European gas market regulation, which focuses on natural gas and LNG, also needs to be updated to instead focus on facilitating the integration of renewable and low-carbon gases. The role of gas in the energy mix beyond 2030 becomes increasingly smaller as decarbonization efforts intensify. Instead, hydrogen is receiving renewed and rapidly growing attention, as it has various applications and does not emit CO2.

The chemical element hydrogen is seen as a potentially important source of clean energy in the future. Hydrogen can be used in fuel cells to generate electricity or burned to produce heat. Its main advantage is that it only produces water as a by-product when burned, making it clean and non-polluting. It can be produced from a variety of sources, including natural gas, and can be used as a fuel for vehicles, power plants, and other applications. While the use of hydrogen is still in its early stages, it has the potential to play a significant role in the transition to a green economy. The EU aims to deploy hydrogen on a large scale in the next few years to achieve carbon neutrality by 2050, increasing the share of hydrogen in Europe's energy mix from >2% to 13-14%[11]. The EU has made hydrogen a key priority and intends on repurposing the existing gas pipelines. This is often used as a way of

11. EU Monitor, A Hydrogen Strategy for a Climate-Neutral Europe, Communication From the Commission To the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2020, LIII <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vla6qbjzcok1>.

futureproofing the EastMed pipeline and to justify its new construction.

However, hydrogen does not occur naturally and must be produced from other sources, such as natural gas or water. This production process requires energy, and the efficiency and environmental impact of different production methods can vary and can result in greenhouse gas emissions. Hydrogen must therefore become fully decarbonized before being able to contribute to carbon neutrality[12].

Although the transition to low-carbon gases is of paramount importance, ultimately renewable energy and efficiency measures are the most important drivers of the energy sector transition. Accelerating investment in renewables, improving energy efficiency and incentivizing savings is of utmost importance to achieve the goals set in the European Green Deal.

Additionally, the green deal will also have implications for the European Union's relations with other countries, as the EU will need to coordinate and cooperate with other nations in order to achieve its climate goals. For example, the EU will need to work closely with other countries to develop and implement international agreements and policies that support the transition to a green economy. This could include agreements on the reduction of greenhouse gas emissions, the development of clean energy technologies, and the protection of the environment.

Furthermore, the European Green Deal will also have implications for the EU's relations with other countries in terms of trade and investment. As the EU transitions to a green economy, it is likely that there will be changes to the way that goods and services are produced and traded, and this could have implications for the EU's trading partners. For example, the EU may become more dependent on imports of clean technologies and materials, and this could affect the trading relationships with other countries.

12. EU Monitor, LIII.

5

Israel's Potential

As established above, the feasibility of the EastMed pipeline is contested and in a long-term perspective a cooperation in form of gas dependency makes little sense when transitioning to renewable energies. Yet, the cooperation between Israel and the European Union with regards to the energy sector provides other potential, which has received little attention.

The Middle East and North Africa (MENA) region generally benefits from significant renewable energy sources. Especially solar and offshore wind sources have a high potential if exploited properly. Israel has a high level of solar radiation, making it well-suited for the development of solar energy. In addition, Israel's coastal location means that it has good potential for offshore wind energy. In contrast to Germany, where import of energy will always be relevant, MENA countries' excess energy could therefore be exported and offers potential economic opportunities[13].

Israel could assist Europe by providing a source of clean energy. For example, the country could export some of the renewable energy that it generates to European countries, helping them to reduce their reliance on fossil fuels. Due to its comparatively small surface area, visibility studies would need to be conducted, to understand if Israel could produce excess renewable energy. Nonetheless, it has the potential to cover its own energy needs by implementing further renewable energy sources.

Whilst the EU intends on becoming autonomous by increasing the share of renewables, future cooperation will remain essential. This should not come in the form of gas deliveries but powerelectricity connectors operating in a bidirectional manner, allowing each region to either export or import electricity based on demand.

The lack of means to transport and store electricity means that connecting power grids to ensure a safe supply is essential. In a future where renewable energy is the main source in the region, powerelectricity connectors will become increasingly important. The main benefit is increased reliability and stability of the power supply. This is particularly important for Israel, as its energy safety is closely linked to its water security, since the highly sophisticated desalination process requires high amounts of energy.

One of the projects focusing on connecting power grids is the EuroAsia Interconnector, which aims to link the electricity systems of Israel, Cyprus, Greece, and Europe through a submarine cable – connecting Asia with Europe. Building sophisticated power grids could help overcome part of the storage issue around electricity. By connecting multiple grids, countries can share electricity and ensure there is always a backup source of power available in cases of outages and other disruptions. Furthermore, connecting power grids can also help to promote the use of renewable energy. By allowing countries to share clean energy, it can help to increase the overall share of renewable energy in the power mix and reduce the reliance on fossil fuels. Connecting to the

13. EUROPEAN COMMISSION.

European power grid therefore will be beneficial to both, Israel and the EU, establishing new kinds of partnerships. Simultaneously, connection the regions power grids creates opportunities for trade in electricity between the two regions and could help in lowering consumer costs.

Israel is also a leader in the development of innovative clean energy technologies. The country has a strong tradition of technological innovation, and has a number of companies and research institutions that are working on advanced renewable energy technologies. As a high-tech nation with high potential for new innovations, ranking third in the Global Startup Ecosystem Index14, it could become one of the leaders in developing improved renewable energy technologies, and especially improving energy efficiency. By sharing its technological expertise and experience in the development of clean energy technologies, Israel can contribute to an acceleration of transition to renewable energy. EU-Israeli research and development cooperation can further this additionally.

Overall, it appears that Israel has a significant potential for the development of renewable energy, and is taking steps to capitalize on this. Whether or not it will play a significant role in Europe's energy transition will depend on its own energy policies and the broader political and economic context in Europe. The EU has already made significant progress in its energy transition, but there is still much work to be done. In order to fully complete the transition, the EU will need to provide strong political leadership, support innovation and investment in renewable energy, and work closely with its member states and non-EU countries to develop a comprehensive and coordinated approach to the energy transition.

6

Suggestions moving forward

To achieve a sustainable energy future and carbon neutrality, it is important to approach climate change adaptations and mitigations with a fresh mindset and embrace new innovations. The European Union can play a key role in this transition by developing a cohesive energy policy, investing in the modernization and upgrading of energy infrastructure, and encouraging the development of domestic sources of energy, including renewables. Funding and finance solutions, such as private-sector investment and public-private partnerships, will also be crucial in supporting this transition and need to be facilitated and supported by the EU, rather than complicated.

In terms of international collaborations, the focus should shift from gas dependencies to connecting power grids, building regional interconnectivity, like through the Euro-Asia Interconnector, which can benefit both parties by providing a more stable and reliable energy supply. Both, the EU and Israel, should share knowledge and expertise on renewable energy technologies and best practices for transitioning to a more sustainable energy future, as well as collaborate on research and development of new renewable energy technologies. Joint projects and initiatives to support the deployment of renewable energy sources could also be considered. The EU should also consider promoting trade and investment in the energy sector to support the development and deployment of renewable energy technologies, and sharing data and information on energy markets, demand, and supply to better understand the opportunities and challenges facing both the EU and its partners. Collaborating on energy policy development and implementation can also support the transition to a more sustainable energy future.

7

Glossary

- **Coal:**

  A solid fossil fuel, it is a major source of electricity and is also used in steel production

- **Fossil fuels:**

  Contains three main types of fossil fuels, namely coal, oil, and natural gas. These energy sources are used for a wide range of purposes, including electricity generation, transportation, and heating.

- **Marine fuels:**

  Fuels that are used to power ships, such as bunker fuel and marine diesel oil.

- **Natural gas:**

  A fossil fuel that is made up of a mixture of gases, including methane and other hydrocarbons. It is used for heating, cooking, and generating electricity.

- **Nuclear energy:**

  A type of energy that is produced by splitting atoms in a process called nuclear fission. Nuclear power plants generate electricity by using heat from nuclear reactions to produce steam, which then drives turbine generators.

- **Oil:**

  A liquid fossil fuel, used for transportation, heating, and generating electricity.

- **Petroleum:**

  A broader term that refers to a group of liquid hydrocarbons that are found in the earth's crust. Some examples of petroleum products include gasoline, diesel fuel, and heating oil.

- **Power grid:**

  A network of generators, transmission lines and distribution lines that transmit and distribute electricity. They are typically interconnected to allow the sharing of electricity across regions or countries and ensuring that the power is reliably and consistently delivered.

- **Renewable energy:**

  Energy that comes from natural sources that are replenished on a human timescale, such as wind, sun, water, and geothermal heat. Examples of renewable energy sources include wind power, solar power, hydropower, and geothermal energy.

- **Solid fossil fuels:**

  A type of fossil fuel that is in solid form at room temperature. Examples of solid fossil fuels include coal and peat.

ABOUT THE AUTHORS

Paula Tacke holds a Bachelor's degree in Environmental Geosciences and has gained first professional experience in environmental policy issues during an internship at the Friedrich- Ebert-Stiftung, Israel.

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Israel has a significant potential for the development of renewable energy, and is taking steps to capitalize on this. Whether or not it will play a significant role in Europe's energy transition will depend on its own energy policies and the broader political and economic context in Europe. The EU has already made significant progress in its energy transition, but there is still much work to be done. In order to fully complete the transition, the EU will need to provide strong political leadership, support innovation and investment in renewable energy, and work closely with its member states and non-EU countries to develop a comprehensive and coordinated approach to the energy transition.

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