Background information on Hungary's energy security situation

Scene setter

- **Natural gas and oil are the largest primary energy sources and nuclear power accounts for the greatest share of electricity generation in Hungary.** Oil is used largely in the transport sector and natural gas represents the largest share of energy consumption in the residential and commercial sectors.
- **Fossil fuels such as natural gas (32.8%) and oil (30.7%) play a significant role in Hungary's energy mix, and we count on natural gas as a bridge on the road towards decarbonisation.** Coal represents 7.8% in the mix and its importance is declining. Nuclear energy has a share of 16.6%, biofuels and waste 10.2%, while solar and wind has a 1.7% share in the supply, while the remaining is hydropower (0.2%). Concerning electricity generation from renewable sources, solar power has an ever growing share of 4%, wind is currently at 2.1%, while hydropower is stable at 0.6%. **We continue to rely on nuclear energy (47.8%) as the most important decarbonised source for electricity generation.** The Hungarian renewable electricity portfolio is Solar-heavy (RES-E portfolio: 6.6 GW by 2030; 12 GW by 2040).
- We believe that **nuclear is key to achieve climate neutrality and natural gas will be the bridging fuel** of the energy transition period ahead of us. Without those two fuels we will not be able to reach the Paris commitments.

Natural gas – Dependency on Russian source is 85%

- **In Hungary alone, natural gas accounts for about 34% of total energy supply**. Our annual consumption is about 10 bcm. The most significant sectoral consumer of natural gas is the residential buildings sector (3.7 bcm) followed by industry (2.8 bcm). 85% of the Hungarian demand needs to be secured from import sources. **85% of Hungary's natural gas consumption is covered by Russian gas.**
- Following the 2006 and 2009 Russian-Ukrainian natural gas crises, we implemented **one of the most comprehensive energy security policies in Europe**.
    1. By now, Hungary has **six gas interconnection points all but one (Slovenia) neighbouring countries**.
    2. The construction of the **Krk LNG** terminal in neighbouring Croatia has given Hungary the opportunity to source global LNG cargoes which can be transported to Hungary via the Drávaszerdahely interconnection. And upgrades at the Kiskundorozsma and Csanádpalota interconnections have facilitated flows into Hungary via Serbia and Romania, respectively.
    3. We have expanded our **gas storage capacity**, Hungary now has five commercial and one strategic underground storage facilities, with a total working capacity of about 6 bcm.
- **Nevertheless, <u>the current war between Russia and Ukraine</u> still highlights the vulnerability of Hungary and the CEE region**. Unfortunately, Hungary being a landlocked country means **it has limited options to diversify its natural gas supply on its own. Although the potential supply routes are well diversified, the variety of sources are quite limited.**
- The only real diversification option is the Krk LNG terminal in Croatia but the terminal's capacity is limited, it can only source 2.6 bcm natural gas from LNG annually. Increasing it up to 2.9 bcm – which recently appeared in statements - could only be a symbolic step.
- Hungary had high hopes regarding potential Romanian production to be developed in the Black Sea. However, following numerous postponements, it is still years away and could only provide alternative source in the mid-term and partially replace Russian resources in the region. In May

2022, ExxonMobile sold its 50% right over the Neptun Deep project to the state-owned Romanian company, Romgaz. Therefore, the source contracts of the Hungarian energy company (MVM Ceenergy and MET, respectively) were officially terminated in April - May 2022 by ExxonMobile. At present, **no Hungarian company has the possibility to participate in the Black Sea gas production project,** which is the only source and route diversification option within the region.

- For now, **Hungary has no physical access to the Southern Gas Corridor**. The interconnector between Bulgaria and Greece is still missing, it will only be operational by September 2022. Hungary considers this route as an option to transit Azeri natural gas and potential LNG from the Greek terminal towards Hungary.
- **Besides the war, a second element impacts European gas market**: soaring natural gas prices. European natural gas prices have already reached unprecedented highs since 2021. The invasion of Ukraine has given new impetus for **the rise in gas prices in Europe**, with real concerns about the possible curtailment of gas flows from Russia to Europe.

Oil – Dependency on Russia is 65%

- Hungary's crude oil imports account for 85% of consumption (around 7 million tonnes in 2021), with the remainder mainly covered by domestic production. **Around 65% of imports come from Russia (predominantly via the Druzhba pipeline)**, with the remaining nearly 20% coming by sea (mainly non-Russian crude). The bulk of the remainder (~15%) comes from domestic production.
- The traditional oil transport route is the Friendship (Druzhba) pipeline from Russia through Ukraine. In the event of disruptions to Russian oil imports, the Hungarian refinery at Százhalombatta can be supplied via an alternative supply route (Adriatic pipeline from Croatia).
- It will take several years to reconfigure refinery operations and set up a completely new commercial and logistics system. According to estimates reconfiguration would cost cca. 500 million USD.

Nuclear – Dependency on Russian nuclear fuel is 100%

- Maintaining our nuclear energy capacity is a pillar of Hungary's Energy Strategy and National Energy and Climate Change Plan. To meet the growing demand for reliable, affordable and clean electricity, all low-carbon energy sources, including nuclear energy, must be part of a sustainable energy mix.
- Hungary currently has 4 reactor units (VVER 440-213 type reactors) in operation, which started operating between 1982 and 1987. After some upgrades and improvements, the power output of each reactor block has reached 500 MW. The total capacity of the Paks nuclear power plant is now 2,000 MW, which represents more than 40% of Hungary's electricity production.
- **Hungary is 100% dependent on fuel supply for our nuclear power plant. At present the nuclear fuel by the Russian TVEL company is the only operational option to the Hungarian nuclear power plant.** Currently no alternative on the market.

Conclusion

- **Despite the diversification efforts, in the absence of alternative sources and because of the heritage of the energy infrastructure from the Soviet era, Hungary is heavily dependent on Russian gas, oil and nuclear fuel. In the short- and mid-term only limited alternatives are available.**
- **We cannot change this situation overnight. In order to reduce the reliance on Russian gas, oil and nuclear fuel, Hungary needs time, investments and considerable financial support.**