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NATIONAL ENERGY AND CLIMATE PLAN ANALYSIS: HUNGARY

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For a transition that sets us on both a smooth and ambitious path to secure the EU's climate and REPowerEU goals, the National Energy and Climate Plans (NECPs) must detail a comprehensive gas consumption reduction strategy, complete with actionable milestones.

To this effect, E3G assesses whether the NECPs support a smooth transition of the gas sector against six benchmarks. Meeting these benchmarks will ensure that the EU and its member states reduce their vulnerability to supply shortages and that infrastructure plans support the European Green Deal.

Assessment of Hungary's NECP: Summary

Hungary plans a decrease of gas use of 16.5% between 2019 and 2030.¹ While important, this still falls short of EU climate and energy security objectives. To align with EU goals, Hungary must up its efforts to reduce gas consumption, focusing on structural measures to reduce demand in the sectors that consume the most gas: households and power generation.² It also needs to provide clear projections for renewable gases.

Hungary should assess the socio-economic impacts of the transition comprehensively; that will help it to ensure equity and address energy poverty concerns, especially taking into account its expected reduction of gas use.

¹ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**

² E3G, July 2022, **EU gas sector: data for decision makers**



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An overview of how Hungary’s draft 2023 NECP performs against the six benchmarks explained in our main briefing note is given in Table 1. The details on each benchmark are set out in the main section of this analysis.

Table 1: Rating Hungary’s draft 2023 NECP against E3G’s six benchmarks – overview.

Benchmark	Key take-away	Rating
1. Aligning national gas consumption with overall EU trajectory.	Hungary aims to reduce its gas import dependence. Its planned decrease of gas gross inland consumption of 16.5% by 2030 does not align with EU-wide goals like the Fit for 55 initiative and REPowerEU; these anticipate a 30% and 50% reduction of gas use, respectively, by 2030 as compared to 2019.	Data only
2a. Assessing the feasibility and scale of gas networks to be decommissioned.	Hungary plans to remove distribution pipelines with a utilisation rate of less than 10% from the public-funded system. It has, however, no assessment of which distribution pipelines would be affected by when, of the scale of the issue nor of the resources required to address it.	Data only
2b. Preparing the gas network for a reduction in fossil gas use.	Despite a decline in gas usage at home and in neighbouring countries, the Hungarian draft NECP still sets out plans to enhance gas infrastructure and diversify the country’s gas supply routes.	No data
3. Planning the phase-out of fossil gas subsidies.	Hungary’s energy subsidies, most extending beyond 2030, include a significant share for fossil fuels (just above 60%), ranking among the highest in the EU. The lack of clear thresholds to determine vulnerable consumer groups, and indirect subsidies make it challenging to assess the latter’s justification or to design policies to phase out such subsidies.	No data
4. Assessing the potential for renewable gas development.	Hungary aims to rely on biogas and hydrogen production to offset the decline in fossil gas usage. The strategy lacks credible evidence on how it will unlock significant volumes to achieve this compensation. Demand projections are also missing.	No data
5. Assessing and addressing the social and economic impact of gas consumption decrease.	A notable gap in the Hungarian NECP is in assessing the socio-economic impacts of the climate and energy transition. Specifically, focus on crucial issues such as income distribution, job creation and energy poverty is limited.	No data
6. Phasing out long-term gas contracts in line with declining fossil gas use and climate targets.	Hungary’s long-term gas contracts with Russia account for 68% of its supply, indicating an intense dependence on a single supplier.	Data only



Detailed assessment against the six benchmarks

1. Aligning national gas consumption with the overall EU trajectory

As stated in point 1.1 of the European Commission’s guidance on NECPs, “the draft updated national plans should reflect this increase of ambition. Member States should fully embed the new and revised energy and climate targets included in the Fit for 55 and the REPowerEU proposals even though the legislative process for adoption is not yet concluded.”

Hungary projects 8.1 billion cubic meters (bcm) of gas gross inland consumption in 2030, a 16.5% decrease compared to 2019, in the scenario “with additional measures” (WAM).³ Despite this important ambition, Hungary’s plans fall short of aligning with EU-wide goals, including the Fit for 55 initiative and REPowerEU, which anticipate a 29% and 52% reduction of gas use, respectively, by 2030 as compared to 2019. Notably, the previous 2019 Hungarian NECP does not outline a specific gas consumption target for 2030, making a direct comparison with the preceding plan impossible.

As of 2022, Hungary remains significantly reliant on gas imports, with an import exposure of 85%. In 2020 it imported 95% of its fossil gas from Russia.⁴ The proposed updated National Energy and Climate Plan (NECP) aims to decrease this figure to 80% by 2030;⁵ it plans to do so by increasing the share of alternative sources, such as geothermal energy, biogas and other renewable gases, including hydrogen and biomethane (see benchmark 4. Realistically assessing the potential for renewable gas development). Hungary also plans to increase domestic fossil gas extraction to 1.8–2 bcm per year by 2030.⁶

Almost half of Hungary’s national gas consumption is residential, with 75% of it used for heating.⁷ It is currently planning to phase-out fossil gas from household gas consumption by 2050.⁸ **At the same time, Hungary envisions deploying three fossil gas-fired power plants with a combined capacity of up to**

³ In the “with existing measures” (WEM) scenario, the NECP projects 9.3 bcm of gas gross inland consumption in 2030, which represents a decrease of 4.1% compared to 2019 (European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**).

⁴ European Commission, June 2023, **2023 Country Report - Hungary - European Commission (europa.eu)**, p.12

⁵ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.52

⁶ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.53.

⁷ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.50

⁸ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.246



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1,500 MW; purportedly this is to meet the rising electricity demand with the shift to increased renewable usage and higher electrification.⁹ Notably, decommissioning the lignite-fired Mátra power plant is contingent on the commissioning a new 500 MW gas turbine power plant at the same location.¹⁰

This anticipated rise in gas consumption for electricity generation raises concerns; it underscores the need to bolster renewable energy sources for power generation and to deploy other sources of flexibility in the energy system, such as batteries and digital solutions.

To align with EU objectives, Hungary must hasten efforts to curb gas consumption through structural demand reduction measures. Improving energy efficiency in residential buildings and shifting to alternative heating technologies could lead to a reduction of gas imports of up to 25% (~2 bcm annually).¹¹ Expanding these measures and extending their reach would help Hungary further decrease its reliance on imports and increase its energy security.

2a. Assessing the feasibility and scale of gas networks to be decommissioned

Although not in the European Commission's guidelines, understanding the future utilisation of the distribution network and its eventual decommissioning is crucial to plan for the expected decrease in gas use.

According to governmental decrees 1772/2018 and 21/2015, Hungary plans to:

- > remove distribution pipelines with a utilisation rate of less than 10% from the public-funded system
- > explore alternative uses of these pipelines
- > offer low carbon heating alternatives.¹²

With the increasing load on the electricity grid, the NECP states that Hungary will have to be prepared for the reduced use of fossil gas infrastructure.¹³ However, there is currently no further strategy to evaluate which distribution pipelines

⁹ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.24

¹⁰ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.31

¹¹ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.50f

¹² European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.91 and 105

¹³ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.29.



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should be phased out, the timeline for such actions, the scale of the issue or the resources required to address it.

Without further details for how relevant decrees are to be implemented, it appears unlikely that Hungary will sufficiently plan for and deliver on gas network decommissioning.

2b. Preparing the gas network for a reduction in fossil gas use

Point 1.2 of the European Commission’s guidance for the NECP, “Increase energy security and affordability, towards a more resilient Energy Union”, specifies that “Member States are also encouraged to reflect progress and planning on the infrastructure projects that are identified as significant to meet the European Green Deal and the REPowerEU objectives.” This is especially important in the context of an expected gas demand reduction, where infrastructure networks will have to adapt and in certain cases downsize to enable an orderly transition.

Hungarian gas network plans are not in line with a future reduction in fossil gas use although indicating an expected decline. The draft NECP focuses on enhancing gas infrastructure and diversifying the country’s gas supply routes. Specifically, Hungary intends to bolster the Hungarian-Slovenian gas interconnection and expand the cross-border capacity between itself and Romania; this is to facilitate increased imports of fossil gas from sources such as Azerbaijan, Romania’s Neptun field and liquefied natural gas (LNG) terminals in Turkey and Greece.

Hungary states that it cannot formulate clear projections of how the network needs to expand up to 2040 due to uncertainties in the scenario.¹⁴ Nevertheless, the anticipated 16.5% reduction in gas consumption by 2030 will likely affect its gas network and should be reflected in planning assumptions.

3. Planning the phase-out of fossil gas subsidies

Point 1.1 of the NECP guidance specifies that “the updated plans should reflect the international developments related to the Paris Agreement, in particular the process set out by the Glasgow Climate Pact for raising mitigation ambition. This

¹⁴ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.194



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contains several decisions on energy and climate planning, including [...] the phasing out of fossil fuel subsidies, and the consideration of further actions to reduce non-CO₂ emissions, including methane, by 2030.”

Hungary states that it has “no direct subsidies for fossil fuels” and that “support for specific sectors and social groups is justified in the interest of society as a whole”.¹⁵ **It is difficult to assess whether such subsidies should be phased out, due to a lack of a clear definition of the thresholds for vulnerable households and sectors and the nature of the indirect subsidies in place.**

Hungary’s direct fossil fuel subsidies as share of GDP were just below 0.4% in 2021, which places it above the EU average of 0.35%.¹⁶ **All of Hungary’s energy subsidies either have a planned end date after 2030 or no planned end date at all, according to the latest report on energy subsidies in the EU published in October 2023.**¹⁷ It has one of the highest shares of fossil fuel subsidies in relation to their total energy subsidies within the EU (just above 60%), topped only by Cyprus and Portugal.¹⁸

The lack of clear thresholds to determine vulnerable consumer groups, coupled with unclear indirect subsidies, makes it hard to evaluate their necessity or how they could potentially be phased out. Hungary should establish transparent criteria for identifying vulnerable groups and sectors that require support, be transparent about indirect subsidies and aim to phase out fossil fuel subsidies gradually.

4. Realistically assessing the potential for renewable gas development

The European Commission guidance states that “in their updated NECPs, Member States are encouraged to integrate a component on sustainable biogas and biomethane production and use, assessing the national potentials and defining trajectories to reach those by 2030 and 2050.”

¹⁵ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.227

¹⁶ European Commission, Directorate-General for Energy, Bon-Mardion, J., Casteleyn, M., Queenan, J. et al., 2023, **Study on energy subsidies and other government interventions in the European Union – Final report – 2023 edition**, p.28

¹⁷ European Commission, 2023 Report on Energy Subsidies in the EU, p.15, **EUR-Lex - 52023DC0651 - EN - EUR-Lex (europa.eu)**

¹⁸ 2023 Report on Energy Subsidies in the EU COM(2023) 651 final, p.15, consulted on 26.10.2023



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Hungary's draft NECP includes hydrogen and biomethane/biogas in several graphs, but does not translate this into clear consumption projections of renewable gases. **With this lack of clarity, Hungary fails to sufficiently demonstrate where and how the renewable gases will be able to substitute fossil gas. This is particularly problematic since its targets for renewable gases do not match the magnitude of expected decrease in fossil gas use.**

The Hungarian NECP refers to the National Energy Strategy, which aims to replace at least 1% of Hungary's national gas consumption by 2030 with biogas and biomethane; this amounts to less than 0.1 bcm in final energy consumption in the WAM scenario.¹⁹ Hungary's National Hydrogen Strategy, published in 2021, aims at producing 36 kT of "carbon-free" and 16 kT of low-carbon hydrogen by 2030, with at least 240 MW of electrolysis capacity by then.²⁰

Hungary aims to increase its demand for hydrogen, starting with its use in ammonia production, then extending it to other chemical industries, the refining sector and transportation. Hydrogen is anticipated to play a more significant role in the steel and cement sectors primarily after 2030.²¹

Hungary also plans to blend hydrogen with fossil gas by 2030; it proposes blending at a minimum 2% ratio of yearly volume in the short term and to increase that ratio in the medium term. Focusing on blending it with fossil gas is likely inefficient use of hydrogen, given the constrained availability of hydrogen in the medium term and other potential uses, such as decarbonising the steel and cement sectors.²²

The lack of projections for renewable gases leaves Hungary unable to demonstrate how renewables gases will be able to replace fossil gas consumption. This is true especially given the mismatch between renewable gas production targets and expected gas use reductions.

¹⁹ European Commission, September 2023, **Hungary - Draft Updated NECP 2021-2030**, p.92

²⁰ This capacity would give a total of ~0.58 bcm of hydrogen. Hungary foresees the development of renewable gases to supplement intermittent energy production, to reduce the pressure on electricity grids due to decentralised production. Hungary aims to phase out the use of fossil gas by increasingly producing hydrogen from renewables and nuclear power and, to a lesser extent, adopt bio-based hydrogen production methods. It further sees a role for hydrogen and synthetic gases in the distribution grid to reduce the dependence on fossil gas; it also incentivises the use of these gases as "cheap and flexible" energy storage options.

²¹ Hungarian government, May 2021, **Hungarian National Hydrogen Strategy (PDF)**

²² E3G, 2021, **Hydrogen factsheet: Blending**



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5. Assessing and addressing the social and economic impact of gas consumption decrease

Member states are supposed to “strengthen planning within the NECPs to ensure a fair and just transition, mitigating social and employment impacts, tackling labour and skills shortages, reducing energy poverty, and ensuring affordable access to essential services for all.”

The Hungarian NECP mentions the North-HU-Trans project, supported by EU funds. It aims to provide support and education measures for workers in the green economy sectors. Further detail on the precise support measures envisaged was not available, nor was a more precise definition of workers to be supported.

The draft NECP sets the construction of a 500 MW gas fire plant as the precondition to close the Mátras coal fire plant, which is not in line with the ambition to support the regional transition by enabling green economy sectors for both its energy supply and employment.

The Hungarian NECP lacks a sufficient assessment of the socio-economic effects of the gas transition, in contrast to the coal phase-out. Notably, crucial aspects like income distribution, job creation and energy poverty receive limited attention.

Hungary should assess the potential impact of declining network utilisation on consumer bills, particularly for individuals who may be unable to transition away from gas usage. Conducting a thorough review of gas sector employment, including roles like gas boiler installers, and investing in skills for alternative careers would help anticipate the impact of reducing gas use on the job market.

6. Phasing out long-term gas contracts in line with declining fossil gas use and climate targets

Although not in the Commission’s guidelines, a consolidated view of the long-term contracts of the main EU gas consumers would enable a comparison between the EU’s expected gas volumes and its climate commitments.

In 2021 Hungary signed a long-term contract with Russia for fossil gas to be delivered via Serbia and Austria, with up to 4.5 bcm annually for 15 years. In



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August 2022, Hungary signed another deal of up to 2.1 bcm annually with Russia, on top of the existing contracted volume.

The NECP projects gross inland consumption of fossil gas to amount to 6.6 bcm annually by 2035, in the scenario with additional policy measures (WAM). The 4.5 bcm of Russian gas contracted to be imported each year until 2036 therefore represent a 68% share of supply from Russia. This indicates limited diversification efforts and reinforces Hungary's dependency on a single supplier.

It is unlikely that Hungary still obtains the entirety of these contracted volumes of fossil gas via pipelines from Russia; nonetheless, its spending on Russian gas remains the largest within Europe at the end of 2023.²³

²³ Centre for Research on Energy and Clean Air (CREA), December 2023, **November 2023 — Monthly analysis on Russian fossil fuel exports and sanctions**



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About E3G

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