

Assessment of Hungary's operational programmes

Introduction

From 2021 to 2027, Hungary's allocations under the EU's Cohesion Policy are expected to amount to EUR 22.79 billion:¹

- EUR 22.27 billion from the European Regional Development Fund (ERDF), European Social Fund (ESF) and Cohesion Fund;
- EUR 261.1 million from the Just Transition Fund; and
- EUR 258.8 million from the European Territorial Cooperation budget.

Hungary aims to spend these amounts across eight operational programmes from 2021 to 2027: Digital Renewal, Human Resource Development, Integrated Transport Development, Economic Development and Innovation, Territorial and Settlement Development, Environment and Energy Efficiency, Fisheries, and Implementation.

This briefing assesses the most relevant operational programmes targeting and affecting climate action.

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¹ European Commission, [European Structural and Investment Funds 2021-2027 Cohesion policy EU budget allocations](#), *European Commission*, accessed 31 March 2022.

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Name of the operational programme	Abbreviation	Description	Preliminary assessment of the green contribution	Budget allocation ²	Budget allocation in % of Cohesion funds
Environment and Energy Efficiency OP Plus	KEHOP Plusz	Main source of funding to support Cohesion Policy objective 2 (a greener Europe), including for water management and risk prevention, circular economy, biodiversity conservation, energy efficiency and renewables. Measures under the Just Transition Fund are also included in priority 5.	Only 21.27 per cent of the operational programme will contribute directly to biodiversity conservation, which is just 5.66 per cent from total cohesion funds and insufficient to reach the goal of allocating at least 7.5 per cent of total Multiannual Financial Framework funds towards biodiversity spending by 2024 and 10 per cent by 2026. Measures on energy efficiency and renewables are generally good, but far from the investment needs identified by the national energy and climate plan (NECP). The reduction of energy demand is not prioritised over any other investment. Renewable energy sources other than solar are largely ignored; renewables-based and carbon-free hydrogen do not fall under any defined priority.	EUR 3.66 billion	17 per cent
Territorial and Settlement Development OP Plus	TOP Plusz	Responds to territorial challenges in less-developed regions and Budapest. Focus: Cohesion Policy objective 5 (Europe closer to its citizens). Its design is based on integrated territorial strategies. It includes both hard and soft measures to support economic development, social	The operational programme includes investments in energy efficiency and renewable energy sources in relation to municipal buildings, including spas. However, minimum requirements for energy efficiency improvement are missing, as are indicators on renewable energy source contributions. It provides a good model for Budapest: a one-stop-shop-type energy agency for prosumers.	EUR 4.35 billion	20 per cent

² Magyarország kormánya, Magyarország Partnerségi Megállapodása a 2021-2027 időszakra vonatkozó kohéziós források felhasználásáról A tagállam által az Európai Bizottságnak hivatalosan benyújtott verzió, *Magyarország kormánya*, 74-76, 30 December 2021.

		inclusion, education, healthcare and investments in 'climate-friendly counties'.	<p>However, there is no budget specified. There is some support for the replacement of solid fossil fuels by gas boilers in Budapest, but it is a small, hidden and unacceptable measure.</p> <p>Unfortunately, the designers of this programme have failed to include biodiversity conservation as a tool for local development. The programme includes general goals about supporting the development of green and blue infrastructure. These measures might have indirect positive effects on biodiversity, but the indicators are weak and vague.</p>		
Economic Development and Innovation OP Plus	GINOP Plusz	Support for policy objectives 1 (smart Europe), 4 (a more social and inclusive Europe) and 5 (Europe closer to citizens). Specifically: supporting the growth and competitiveness of small and medium-sized enterprises; research, development and innovation; employment; youth guarantees; higher education and vocational training; and tourism (development of destinations).	<p>Green or climate considerations are not priorities or a driving force of economic development, but rather a side factor. As such, a paradigm shift towards a more sustainable and less consumer-focused society and lifestyle is not an ambition. It contains only one promising research and development project chapter: '022 - Research and innovation processes, technology transfer and cooperation between businesses focusing on low-carbon economy, climate resilience and adaptation'. This has a budget of EUR 17.48 million. Biodiversity is not addressed in this programme at all, despite the need for economic development models and technologies to reduce pressure on and increase the restoration of natural resources.</p>	EUR 5.39 billion	25 per cent

Digital Renewal OP Plus	DIMOP Plusz	<p>Contains four priorities responding to the digital transformation era and the role of the data economy:</p> <ul style="list-style-type: none"> - supporting innovative and smart economic transformation - facilitating the green and hi-tech transition - expanding physical access opportunities - developing citizens' digital competences and digital education ecosystem 	This includes, among other things, the development of intelligent energy systems for 2020 energy communities by 2029. However, this has no earmarked budget.	EUR 1.62 billion	7 per cent
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Climate targets, energy efficiency, carbon-decrease and renewables are frequently mentioned in each operational programme, but only as general goals or slogans. The scope of possible projects and investments is fairly broad and as yet undefined. The programmes contain frequent mentions of solar, biomass and geothermal, but mentions of wind are almost non-existent.

Process

Public participation

The first drafts of the operational programmes were published in October 2020, and the second drafts in March/April 2021. It was possible for anyone to submit comments online, within a defined time frame. Public forums to discuss the content of the operational programmes were not organised. Submitted positions and answers provided by planners were published, but there is no information about how public comments were taken into account.

The strategic environmental impact (SEA) process was conducted in parallel with the operational programmes' public consultation process, when online commenting was accepted. Public forums were organised to discuss the SEA report of each operational programme with between 40 and 100 participants at each forum. Due to the lack of public discussion forums for operational programmes themselves, most interventions at the SEA forums dealt with the content of operational programmes rather than the SEA reports themselves. The reports were compiled by external experts and are of high quality.

The SEA consultation process was led by the non-governmental organisation MTVSZ, which was sub-contracted by the entity commissioned by the prime minister's office, and the overall process was more open than what was required by the EU or Member States. The methodology and reports were published and the public could comment on both.

The structure of operational programmes for 2021 to 2027 remains the same as for the previous programming period (with the exception of one new operational programme, OP Implementation). For the monitoring committees, there will be continuity between the previous period and the new period. More than 50 per cent of the partners included are non-governmental. Different groups of stakeholders – like the Handicapped Council, Green NGO Cooperation, local governments, etc. – were asked to delegate members.

Application of the ‘do no significant harm’ principle

The ‘do no significant harm’ principle has hardly been applied or referred to in any of the operational programmes. The Integrated Transport Development Operational Programme notes that: ‘The programme-level requirements of the horizontal principle of ‘do no significant harm’ are implemented through the preparation of a programme-level SEA.’ In the drafts available to date, we have not found any reference to the Commission’s explanatory note on the Application of the “Do No Significant Harm” Principle under Cohesion Policy,³ which clarifies that the SEA assessment supports the application of the ‘do no significant harm principle’ but does not replace the need for the dedicated assessment of each investment category.⁴

Synergies with the recovery plan

The operational programmes refer to some extent to their synergies with the recovery plan and explain the demarcation of activities between operational programmes and the plan. The latest available version of the recovery plan (as approved by the government and submitted to the European Commission on 12 May 2021) contains a table that presents, for each sector, the complementarity of various funding programmes, i.e. what development measures are proposed to be financed from which programme. Obviously, this table has to be updated once the recovery plan has been approved by the European Commission and the operational programmes have been finalised.

Content: do the operational programmes align with the objectives of the European Green Deal?

The 2030 vision of the partnership agreement includes the reduction of greenhouse gas emissions; its scale is not specified, however. Of course, both the partnership agreement and the operational programmes include lengthy descriptions of the main challenges and justifications of the policy actions selected. However, these are largely sector-specific, with varying levels of environmental and climate considerations, but overall, they very much take a non-innovative, business-as-usual approach. The operational programmes are not consistent or equally solid in their approach to Green Deal objectives and challenges. For instance, the operational programmes and initiatives on economic innovation and human resource development take a rather classical approach, whereas the transport operational programme includes some ‘green’ measures (public transport and rail) along with measures that are considered to be green but

³ European Commission, [Commission explanatory note Application of the “Do No Significant Harm” Principle Under Cohesion Policy](#), European Commission, 27 September 2021.

⁴ ‘The above provisions (SEA) support but do not exclude automatically the possibility to define types of actions in the programmes which do not comply with the DNSH principle. Therefore, a dedicated assessment has to be carried out during the programming phase to prevent the inclusion of activities or types of actions in the programmes that could do significant harm.’ European Commission, [Commission explanatory note Application of the “Do No Significant Harm” Principle Under Cohesion Policy](#), 3.

are definitely harmful (like the Danube waterway development), as well as several clearly harmful ones (like road development). Obviously, it is the Environment and Energy Efficiency operational programme (and the Territorial and Settlement Development operational programme to some extent) that assesses environmental and climate challenges most profoundly and takes most efforts to address these. The Environment and Energy Efficiency operational programme also aims to contribute to the development of a circular economy. However, the responses are only partially adequate (e.g. the ‘Circular Economy’ priority is largely about sewage treatment and drinking water supply, including nothing innovative to promote an actual circular economy; see some more examples regarding specific topics below).

The following quote from the partnership agreement demonstrates the government’s approach to climate action quite well: ‘Despite climate interventions, employment in the affected areas will continue to improve, except for a short transitional period.’

Have the climate earmarking requirements been met?

The climate targets are mentioned in the documents in general, without specific reference to the European Green Deal, Fit for 55 or other enhanced commitments.

The partnership agreement declares: ‘Hungary plans to use the largest share of funds under the PO2 policy objective supporting climate objectives, around 28%.’ It is also the partnership agreement that, in chapter 12, indicates the preliminary climate contribution target for the funds as follows: ERDF – 30 per cent; Cohesion Fund – 65 per cent. This is in line with and even exceeds the requirement of the Common Provisions Regulation to allocate at least 30 per cent of the ERDF and 37 per cent of the Cohesion Fund to climate action.

	Climate allocations – billion EUR	Climate in % from total budget	Total allocation to HU
ERDF	4.48	30	
Cohesion	1.68	65	
Recovery	1.03	37	7.2 billion
Total	7.20	24	29.99 billion

If calculated on the basis of the table in chapter 7 of the partnership agreement, this amounts to EUR 4.48 billion from the ERDF and EUR 1.68 billion from Cohesion Fund for climate action. If we add the EUR 1.03 billion from the Recovery and Resilience Facility that the Hungarian recovery plan claims to allocate to climate, we reach a **climate allocation of EUR 7.2 billion for the period from 2021 to 2027.**

According to the Hungarian national energy and climate plan (NECP):

In the analysed period between 2016 and 2040, the additional, fully discounted system cost under the WAM scenario [with additional measures] amounts to HUF 20.4 trillion, equalling an average annual value of HUF

582.9 billion. Discounting is performed for the year 2016, with a 5 per cent long-term discount rate. The model calculates costs in euro, which we converted at a 310 HUF/EUR exchange rate assumed to be constant in the long term.

Assuming that costs will remain the same over the years (which they obviously will not), we arrive at an **investment need of EUR 13.16 billion** for the period from 2021 to 2027 (seven years). Comparing this with the allocations from the Cohesion Fund and the Recovery and Resilience Facility, and considering that the NECP, adopted in early 2020, has not yet endorsed more ambitious climate targets (it still only aims for a 40 per cent reduction in greenhouse gas emissions by 2030) and its cost calculations must therefore be considered modest compared to the real needs, the allocations from **European Union funding in Hungary only aim to cover less than half of the investment needs.**

The programmes' allocation represents a missed opportunity in many respects (real incentives for the development of a circular economy, a higher share of funding for energy-efficiency renovation and a larger variety of renewable energy sources, etc.). Furthermore, the operational programmes continue to finance harmful investments to some extent (e.g. road transport).

Regarding transport, more than half of the proposed budget of the Integrated Transport Development OP (EUR 2.52 billion out of EUR 4.1 billion) is supposed to contribute to climate action, whereas 28 per cent of the operational programme's budget (EUR 1.15 billion) would go to climate-destructive investments (road mobility). Unfortunately, although priority 3 is called 'More sustainable and safer road mobility', it is rather more harmful than sustainable. Also, it mentions that the development of EuroVelo bike routes would be eligible, but it does not provide any indicators or allocate any funds for this. It is also remarkable that, both for urban and suburban development, as well as for TEN-T rail development, **Budapest and its agglomeration is scheduled to receive about double the amount of funding** (from the Cohesion Fund) **as the rest of the country** (less-developed regions) from the ERDF. This contradicts the aim of the partnership agreement to reduce territorial disparities and develop an urban network ensuring a polycentric spatial structure. In fact, there seems to be a contradiction among the tasks the partnership agreement aims to tackle: strengthening the role of Budapest and its region as an international economic hub while aiming to reduce territorial disparities and strengthen the population retention capacity of rural areas.

Positive investments – with reservations

Renewable energy sources

Investments in renewables are to be financed in two operational programmes: the Environment and Energy Efficiency Operational Programme Plus (KEHOP Plusz) and the Territorial and Settlement Development Operational Programme Plus (TOP Plusz).

In KEHOP Plusz, measure 2 of priority 4 is called 'Promoting renewable energy in line with Directive (EU) 2018/2001 and the sustainability criteria set out therein'.

The description of the intervention notes that '(i)f biomass is to be promoted, negative impacts must be weighed... and factored into the social costs (transport emissions, land use, soil protection, air pollution)

and efficient, modern, low-emission technologies and combustion equipment must be used.’ This note alone does **not provide sufficient safeguards for the sustainable use of biomass.**

Further, the same measure includes the intervention ‘Securing a renewable base for hydrogen production’, which aims to foster the production of hydrogen from weather-dependent renewable electricity (see below for more detail).

By the end of 2029, the operational programme aims to support the installation of 860 megawatts (MW) of renewable energy capacity, which would produce 73,300 megawatt hours (MWh) of energy (including heat and electricity) annually.

According to the **NECP, renewable energy capacities in electricity production** should reach 7,697 MW, producing 11,289 gigawatt hours (GWh) of electricity annually in 2030. The targets of **KEHOP Plusz make a minor contribution to this.**

In TOP Plusz, as mentioned above, priority 2 (climate-friendly counties) supports improvements in the energy consumption of **local municipalities** (and their institutions), both regarding energy efficiency and **the use of renewable energy.** The indicators linked to the measure do not make it possible to assess the potential contribution of this operational programme to the national renewable energy target.

District heating

District heating is eligible for funding under two measures of KEHOP Plusz: the improvement of the energy efficiency of district heating and the harnessing of renewable energy sources for district heating. Only in the case of new district heating systems and the connection of district heating systems is it made conditional on ‘renewable operation and high heat demand density’, i.e. the upgrading of district heating systems is not necessarily linked with the harnessing of renewable energy sources. The development of fourth-generation district heating systems is not mentioned in KEHOP Plusz, although this could greatly reduce energy demand.⁵ While it is promising that the programme speaks about ‘encouraging the deep renovation of the existing building stock and the integration of renewable energy sources at both individual and community level’, it unfortunately fails to mark this as a clear requirement.

Investments to promote energy efficiency at the level of consumers using the district heating service (e.g. installing cost-sharing and metering equipment, upgrading in-house systems) may also be supported. However, in order to achieve optimal results and significantly reduce greenhouse gas emissions, these should **not be stand-alone investments but rather treated in a package as part of a complex building renovation strategy and investment plan** (of the municipality or the household, etc.).

It is rather forward-looking that, among others, investments to improve energy efficiency and other related investments (e.g. promoting the use of ‘derivative’ renewable energy sources, such as the recovery and use of heat from run-off water and other waste heat for private and non-private purposes like district heating, local heating, local energy communities, heating public buildings, heating foil tents, etc. throughout the district heating system (including at customer premises) are eligible. However, the indicator for results does

⁵ Fourth-generation district heating ensures that heat energy is produced from clean sources, and a significant part of the heat delivered by more efficient district heating systems is lost at the end-user.

not set an objective of improving efficiency, but instead aims to set ‘the length of pipes for newly built or renovated district heating and cooling networks’ to be 100 kilometres by 2029.

Intervention 1 under priority 4, measure 2 (renewable energy sources) is about **promoting renewable energy in electricity generation, heating and cooling**. The measure encourages the use of renewable energy (in particular geothermal and biomass) for district heating and cooling. There is **no indication in the text whether or not the upgrading of heating systems would be conditioned on renovation measures**. From the indicators (additional renewable energy generation capacity and total renewable energy produced), it is **not clear** how much of this would be related to heat vs. electricity or what the **share of greenhouse gas reduction / fossil fuel replacement** would be. The use of financial tools is foreseen.

With regard to the modernisation and improved energy efficiency of district heating systems, **we propose giving priority to the deployment of fourth-generation district heating systems**, i.e. **treating the improvements as a package**, by moving the system to renewables (mainly geothermal energy, heat pumps, solar panels and waste heat recovery), combined with the deep insulation and mechanical renovation of the building stock served by the district heating system in order to receive and efficiently use lower-temperature district heating.⁶ Measures under the **Just Transition Fund** (priority 5 of KEHOP Plusz) also advocate for the promotion of the development of renewable energy infrastructure and encouraging environmentally friendly domestic energy production and use; the **content and scale of these is not specified here** but should be provided by the three Territorial Just Transition Plans (annexes to KEHOP Plusz), which should be in line with this.

We recommend **not using biomass in heating systems**, especially district heating. Instead, **geothermal and heat pump solutions should be preferred**.

Energy communities

Energy communities are mentioned in three operational programmes for the following types of investments:

- TOP Plusz: infrastructure development of energy communities with major participation of municipalities
- KEHOP Plusz: infrastructure development of energy communities with minor participation of municipalities
- Digital Renewal Operational Programme Plus (DIMOP Plusz): development of ‘intelligent energy systems’ for energy communities (energy communities are indirectly targeted)

The operational programmes mainly look at energy communities as organisational/management structures of local energy production with the aim to ensure self-consumption. Self-sufficiency based on decentralised energy production is the key driver of support to energy communities of varied and diverse composition; the cooperation of municipalities, energy suppliers, enterprises and citizens is encouraged.

⁶ In Hungary, out of about 4.3 million dwellings, there are about 650,000 connected to district heating and about 150,000 connected to central heating – meaning there are approximately 3.5 million dwellings with individual space (room or flat) heating. In Hungary, which is notoriously rich in thermal water, the installation of **scale-adequate district heating plants based on geothermal energy** could be encouraged in many municipalities.

KEHOP Plusz even mentions the establishment of energy communities for geothermal-based district heating systems among potentially eligible activities. TOP Plusz and KEHOP Plusz refer to relevant EU directives, but **without any exact target numbers** (indicators, amounts dedicated); this needs to be clarified. Types of solutions eligible include a one-stop-shop energy agency; awareness-raising; training; pilot financing; and financing solutions for the development of services, coordination and grant support. The role of the one-stop-shop-style energy agency (as described in priority 4 of TOP Plusz: ‘infrastructure development in Budapest’) is to provide non-financial support to energy communities and prosumers.

DIMOP Plusz indicates the number of energy communities using ‘intelligent energy systems’ that it will support: three by 2024 and 20 by 2029.

To exploit a higher potential of community energy, we recommend the following adjustments to the operational programmes:

- Allow more flexibility regarding the composition of energy communities by reviewing the eligibility **demarcation** between different operational programmes (**focusing on the ownership of the real estate where the investment is located** rather than on the ownership structure of the energy community when determining which operational programme an energy community should apply to for funding).
- **Increase and specifically earmark budget for energy communities, and include specific funding dedicated to awareness-raising, training and advisory services on/for prosumerism and energy communities.**
- **Extend the one-stop-shop energy agency model to less-developed regions of Hungary.**
- Expand the eligibility of activities to other sectors such as energy-efficiency services, e-mobility, energy poverty, etc.

Harmful schemes and projects

Fossil gas and hydrogen

The **Territorial and Settlement Development OP Plus** (TOP Plusz) is the only operational programme where **support for fossil gas is evident**. Priority 4 (infrastructure development in Budapest) contains a vaguely formulated measure (‘services promoting equal opportunities, social urban regeneration and improving the energy-efficient infrastructure of the building stock’) designed to modernise and renovate rented housing owned by the municipality, which includes the installation of new fossil gas equipment. The output and result indicators relate to 250 residential buildings with fossil gas-fired hot water and heating systems replacing solid fossil fuel installations and an estimated greenhouse gas emission reduction of 2,000 tonnes of CO₂ per year from hot water and heating systems converted from solid fossil fuels to natural gas by 2029. Such a measure locks tenants (usually of low economic status) into outdated and climate-destructive infrastructure.

Hydrogen-related schemes and projects are eligible for financial support through KEHOP Plusz, and the Integrated Transport Development Operational Programme Plus, while the Economic Development and Innovation OP Plus (GINOP Plusz) does not include hydrogen or fossil gas interventions.

In KEHOP Plusz, hydrogen is part of two measures:

1. Specific investment priority 2.2 – promoting renewable energy in line with directive (EU) 2018/2001 and the sustainability criteria set out therein. Supported measures here include an increase in renewable energy capacity for electricity generation for the hydrogen electrolysis production, the purchase and installation of electrolyzers for the production of hydrogen and measures intended to spread hydrogen locally (such as hydrogen filling stations and related equipment).
2. Specific investment priority 2.3 – developing smart energy systems, networks and storage outside the Trans-European Energy Network (TEN-E). This aims to increase the flexibility of energy supply caused by the planned scale-up of renewable generation capacity and its intermittency, through the development of smart grids, and increases in storage capacities and demand-side responses. The measure detailing the ‘promotion of the widespread use of hydrogen as an energy carrier and storage’ includes the promotion of the use of carbon capture, storage and recovery technologies (CCSU) for the production of low-carbon hydrogen for ‘cost-effective conversion in a technology-neutral way’, the application of solutions for the storage and transport of hydrogen, taking into account the possibilities offered by fossil gas infrastructure, including the adaptation of existing fossil gas infrastructure to hydrogen reception, and the necessary interventions to spread hydrogen (e.g. hydrogen refilling stations, hydrogen clusters).

Although the documents justify investments in hydrogen as an energy carrier and storage capacity because the technology increases the elasticity and security of the energy supply (through the integration of the electricity and gas sectors) and by greening the energy service system, **none of these measures have indicators or minimum requirements regarding the reduction of greenhouse gas emissions.** They do **not ensure that these investments will replace existing, more polluting energy sources.**

Our main concern in the KEHOP Plusz operational programme is the supported intervention regarding the ‘**promotion of the widespread use of hydrogen as an energy carrier and storage**’, **due to the fact it could potentially support investments in fossil-gas- and nuclear-based hydrogen.** Another concern is the programme’s support for CCSU technologies. Fossil gas-based hydrogen should not be supported by public funds, primarily due to the carbon and methane emissions released in its production and the need to rely on Russian gas imports for its production. Currently, the majority of the hydrogen in the EU is produced by steam reformation of methane in fossil gas, with high carbon dioxide emissions. The latest research shows that even greenhouse gas emissions from the production of hydrogen from methane where the released carbon is captured and stored (sometimes called ‘blue hydrogen’) are quite high, particularly due to the release of fugitive methane.⁷ The domestic extraction of fossil gas in Hungary has been declining for a number of years and covers less than one-fifth of domestic consumption.⁸ Furthermore, Hungary is almost completely dependent on Russia to satisfy its fossil gas imports, which on its own can be seen as a security issue for the country. The head of the Hungarian gas transmission system operator said at the

⁷ Robert W. Howarth, Mark Z. Jacobson, ‘[How green is blue hydrogen?](#)’, *Energy Science & Engineering, Society of Chemical Industry and John Wiley & Sons Ltd* 9, 1676–1687, 2021.

⁸ However, it is no less worrying that the [National Energy and Climate Plan](#) sets as a milestone to energy independence the increased production of natural gas and, under an ideal scenario, expects to increase domestic conventional natural gas production by up to 2.4 billion cubic metres by 2030. [The national oil company MOL is engaged in continuous and successful research for new fossil gas reservoirs.](#)

Budapest Hydrogen Summit in February 2022 that ‘from [a] geopolitical aspect, [blue hydrogen] projects will be harder to implement’ due to the Russian invasion of Ukraine.

Another issue is the lack of an additionality requirement for the electricity-based production of hydrogen. Hungary sources a high share of its electricity from a nuclear power plant. In 2021, 46 per cent of the country’s total electricity generation was derived from this source. Gas- and lignite-fired power plants ranked second and third respectively, with 37 per cent. Solar and wind generation accounts for less than 10 per cent of Hungary’s total electricity generation.⁹ **Without the requirement for a substantial scale-up of renewable-based electricity generation, hydrogen production will cannibalise the deployment of renewables introduced to phase out coal and gas electricity.**

Another concern regarding hydrogen is that **renewables-based hydrogen production is not prioritised** (as it is not in the National Hydrogen Strategy 2030). **Other non-renewable hydrogen production methods**, which are not climate-neutral and are contrary to the principles of sustainability, **are also promoted**. KEHOP Plusz only refers to the National Hydrogen Strategy 2030, **without examining hydrogen demand and production in a broader strategic context that focuses on energy savings, reducing energy demand and meeting the remaining energy demand**. (The National Hydrogen Strategy 2030 itself only refers to the carbon neutrality objective alongside expected technological developments, ignoring the NECP and the National Clean Development Strategy). A number of non-renewable hydrogen production experiments could be launched – not under the operational programmes, but from other sources. One example is Hungarian Gas Storage Ltd.’s Akvamarin project at the Kardoskút gas reservoir, with a total investment of about HUF 2.9 billion (EUR 7.8 million), of which HUF 1.9 billion (EUR 5.1 million) is a joint tender of the Ministry of Innovation and Technology and the National Research, Development and Innovation Office (NKFIH) (under the Green Economy Financing Scheme from the state budget).¹⁰

Concerning **carbon capture and storage technologies**, according to the Intergovernmental Panel on Climate Change (IPCC), their implementation currently faces technological, economic, institutional, ecological-environmental and sociocultural barriers. They are **not mature for use in the power sector** and there is a need to address feasibility and sustainability constraints, especially at large scales.¹¹

The other operational programme that mentions hydrogen is the Integrated Transport Development OP Plus. The **purchase of urban transport vehicles based on alternative propulsion systems (e.g. hydrogen fuel cells) for urban and suburban transport** is eligible for grant support through this operational programme. This **should also be reconsidered**. As explained above, hydrogen production is currently almost completely based on fossil gas with high carbon dioxide emissions. Therefore, public transport would be reliant on fossil gas if hydrogen-based vehicles were to be purchased. Current projections suggest that the use of renewable hydrogen is unlikely to occur at scale before the 2030s and could be full-fledged a decade after the closure of this operational programme. Even for the 2030s, estimates suggest that the future availability of renewables-based hydrogen will be scarce. As such, renewables-based hydrogen should be put towards energy-intensive, hard-to-decarbonise sectors like

⁹ Flora Medve, [Renewable energy production in Hungary in 2020, by source](#), Statista, 27 July 2021.

¹⁰ NKFIH, *Karbonmentes, többlet villamos energia innovatív technológia által gázenergiává (hidrogén, biometán) történő alakítását célzó fejlesztések megvalósítása (2020-3.1.2-ZFR-KVG), támogatott projektek*, NKFIH, 26 November 2020

¹¹ Intergovernmental Panel on Climate Change, [Climate Change 2022: Impacts, Adaptation, and Vulnerability](#), Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, 2022.

steel, chemicals, long-haul transport, shipping and aviation, while **public transport can be addressed through direct electrification.**

Transport

The Integrated Transport Development Operational Programme Plus notes that investments that are not eligible for EU funds (e.g. airport development) will be carried out from other sources. This indicates that Hungary is using EU funds for essential or high-quality projects, and using national funding to finance those projects which do not meet EU standards.

The development of TEN-T ports on the Danube and the construction of a bridge over the Danube between Paks and Kalocsa have been removed from the recovery plan. However, elements of these projects for the enhanced navigability of the Danube – such as the dredging of the riverbed around ports – emerge in the Integrated Transport Development OP Plusz. These investments are elements of a complex development concept (Rhine-Danube TEN-T Corridor) that could harm biodiversity. Indeed, the SEA stated that:

Dredging of shipping lanes can threaten coastal filtered waters... The Danube navigation water- and land-side infrastructure development in the [operational programme] may pose a threat to species, habitats and landscape character if it is implemented in or adjacent to an area belonging to or affecting an ecological network or a protected and non-protected green infrastructure network element, or if it is implemented as a new greenfield investment.

The development of the Danube as a TEN-T waterway is mainly in the interests of international freight carriers. Along with the development of ports and enclosed road infrastructure to ensure interconnection, it also requires the development of the waterway (including the dredging of the riverbed), which the government aims to finance from the Connecting Europe Facility. Dredging may threaten the potential drinking water base, as well as protected species and species of conservation concern. Increased cargo vessel traffic is likely to have a significant impact on Natura 2000 species.

The main justification for the project is to reduce road freight traffic, but without freight traffic being restricted by legislation at the EU level (which is unlikely), freight transit is expected to rise in Hungary, including on water, without relieving the extremely dense road network at all. There is no guarantee that EU truck traffic would be diverted to waterways, because truck freight transport is in most cases very different from freight shipping in terms of its possibilities and the spectrum of goods it carries. The fact that the Budapest-Belgrade railway line is intended to fulfil essentially the same role as the waterway development (as a parallel infrastructure investment with a similar function) also raises questions about the justification for the project.

The Integrated Transport Development OP Plusz, along with measures to improve transport security and enhance the level of technical and environmental services such as wildlife crossings, also contains some new road construction and road upgrade projects (76 kilometres of non-TEN-T and 22 kilometres of TEN-T roads), including increasing the capacity of roads. The latter, despite mitigatory measures, can generally be considered harmful to the environment and the climate, due to the enhanced fragmentation of habitats and the attraction of excess traffic, which would subsequently increase greenhouse gas emissions. The budget for new road construction or road renovation is EUR 1.04 billion under two intervention codes (087

and 089, not counting 091 and 094 for the digitalisation of road transport and other upgrades).¹² It would be worthwhile to allocate this amount to means of transport that are more environmentally-friendly.

Missing projects and priorities

Energy efficiency

Energy efficiency measures are to be financed mainly by KEHOP Plusz. As the national 2030 energy-efficiency target is not ambitious, neither is KEHOP Plusz. Our energy efficiency target is that the country's final energy consumption in 2030 should not exceed the 2005 level of 785 petajoules (PJ). In 2017, this figure was 775 PJ.

KEHOP Plusz acknowledges that: 'the existing domestic building stock, especially the modernisation of residential buildings, has a high potential for energy efficiency, and that without support, modernisation will not shift towards deep renovation (insulation, replacement of windows and doors, modernisation of cooling-heating and hot water systems).' It also states that 'the renovation of public buildings, buildings of the church and public organisations and buildings of [small and medium-sized enterprises] should also be encouraged' and 'renovation should be at least medium depth'.

KEHOP Plusz aims to support the **renovation of residential buildings** mainly through the **Energy Efficiency Obligation Scheme (EEOS)**. This scheme was launched in 2021, but it is **no substitute for direct EU funding grants** for residential building renovations, even if EEOP plans a combination of reimbursable and non-reimbursable support, as well as financial instruments. KEHOP Plusz also plans to combine EEOS with energy service companies, but mainly in the case of public buildings. Household energy efficiency interventions are mainly planned to be financed via EEOS and – to a smaller extent only, as an 'alternative, outside EEOS' – via direct support for building owners and/or maintainers. The operational programme proposes that all **renovation should be** at least medium depth, which is not the same as aiming for complex, deep renovations (**at least a 60 per cent improvement in energy savings**, which according to Hungarian Energy Efficiency Institute assessments is needed to avoid the impact of lock-in).

The current plans for EEOS do not fully live up to the ambitions of the Renovation Wave, for the reasons outlined below.

1. EEOS aims to channel energy efficiency investments on a market basis to those areas with the highest energy use and energy efficiency potential and the shortest payback period. Deep renovations of households do not fit this bill, and even with extra encouragement¹³ within EEOS,

¹² According to Annex I of [REGULATION \(EU\) 2021/1060 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 June 2021 laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy](#) (CPR), Official Journal of the European Union, 24 June 2021.

¹³ 'The proportion of reimbursable (R) and non-reimbursable (non-R) aid to obligated parties, typically large (energy) companies, will be differentiated according to the final beneficiary, in order to ensure that obligated parties also carry out deep renovation of buildings with longer payback periods, higher investment and liquidity needs, and that they are not able to pass on the burden of energy savings to consumers. In addition to the EEOS, the ESCO scheme can be used, where the investment can be carried out either indirectly, with the support of the ESCO company carrying out the investment, or directly, with the support of the building owner/operator, with a high aid non-R intensity (e.g. deep renovation of central government buildings).'

these will remain a challenge. Also, artificially fixed household energy prices further elongate the payback period, especially for deep renovations.

2. The volume of planned household renovation is much smaller than the required 100,000 households per year renovation rate, the rate specified by the Renovation Wave. Planned indicators show that only 27,000 households are on track to be renovated through this operational programme by 2029, with the support of EUR 187.14 billion (intervention field 042). For public buildings to be renovated, the indicator is only 1 million square metres by 2029.

In the framework of the Territorial Just Transition Plans (for three Hungarian counties), action 5 of the KEHOP Plusz, 215 households will be renovated by 2024 and 3,518 flats by 2029, with funding worth EUR 49 million. It is hoped that the finalised plans and calls for proposals will specify the selection process for beneficiaries, i.e. the precise targeting, depth and conditions of the renovations. The **fulfilment of the enabling condition regarding energy-efficiency** (Adopting a strategic policy framework for supporting the renovation of residential and non-residential buildings for energy efficiency)¹⁴ **is hampered** by the fact that the deadline for the application of **the near-zero building rate requirement has been postponed** by government decree.

Energy efficiency will also be financed by TOP Plusz in the case of upgrading municipal buildings. The text of the operational programme **does not specify any minimum standard for renovation**, nor does it stipulate that investments in renewables would be conditioned on renovation improving the energy performance of the building in question. It only mentions the target group: all in less-developed regions, mostly municipalities and their institutions and maintainers, and state-owned institutions, NGOs, enterprises and churches. Actions include energy renovations, preparing sustainable energy and climate action plans (SECAPs) or implementing energy-efficiency investments promised in SECAPs and related soft measures to raise awareness. **The targets** have been significantly improved compared to the September 2021 draft, but they would **need to be increased further along the lines of the greater climate ambition required**.

Diversified funding schemes are necessary to enhance energy efficiency in residential buildings and possibly also to switch to renewable energy sources. Low-income households need a multi-year, non-refundable support scheme (95 per cent funding intensity) encouraging deep renovation (with bonus points). Average/middle income households need a multi-year, refundable loan/grant scheme (30 to 40 per cent intensity) focusing on deep energy renovations, setting a minimum renovation level depending on the base energy performance level of the flat/house and adding bonus points. The aim is to avoid lock-in and ensure that the affected residential buildings at the end have proper heat insulation, switch to clean heating system and have refurbished windows and doors. A before-after energy audit has to be carried out by a dedicated chamber/network of energy experts, whose capacity building and the audit itself should be covered by EU and state funds.

¹⁴ Magyarország Kormánya, Környezeti és Energiahatékonysági Operatív Program Plusz, KEHOP Plusz 1.0, 2021-2027, tervezet, *Magyarország Kormánya*, 152, 30 September 2021

Biodiversity

From the Multiannual Financial Framework, 7.5 per cent should be dedicated to biodiversity conservation by 2024 and 10 per cent by 2026. In Hungarian operational programmes, currently only 5.66 per cent of resources aim to conserve biodiversity, and this allocation belongs to only one programme (KEHOP Plusz). These programmes, though more ambitious regarding climate adaptation and mitigation than before, ignore the use of biodiversity conservation as a tool to reach economic and climate goals, and also lack ambition and synergy with other trends and processes.

The KEHOP Plusz priority focusing on ‘environmental protection and nature conservation’ is the richest in actions that aim to halt the loss of biodiversity. It includes one type of action¹⁵ that can directly improve and four types that can indirectly improve the conservation status of species and habitats. These actions can support the EU’s biodiversity goals, restoring habitats and green infrastructure and protecting species. Biodiversity conservation is still a tiny, isolated element among the giant projects that aim to boost economic growth. Instead of improving grey infrastructure and delivering end-of-pipe solutions. All the programmes (not just KEHOP Plusz) should rely more on ecosystem-based approaches to improve the wellbeing of society. Programmes should be inclusive of grassroots initiatives that have already tried and tested ecosystem-based solutions and need resources to scale them up. It is problematic that risks associated with the use of ecosystem services, particularly tourism, are not addressed at all. KEHOP Plusz intends to develop infrastructure for visitors of protected areas, which will result in increased and easier access to these areas.

It would be useful to be able to implement awareness-raising programmes on certain biodiversity, waste prevention, climate and energy-awareness topics independently from other projects. This should be available to NGOs, as they have the expertise and networks to conduct such programmes.

Further proof that authorities are neglecting biodiversity is its negligible mention in the GINOP Plusz programme – the biggest programme reviewed – which is dedicated to helping companies to increase their productivity, grow their revenue and exports, and find new foreign markets. Meanwhile, the programme fails to introduce any biodiversity proofing whatsoever. Considering that economic development and the overuse of our natural resources are among the main drivers of biodiversity loss, failing to integrate biodiversity proofing into this programme is hugely problematic. It also shows that biodiversity mainstreaming has not reached this field yet. This harmful approach of ignoring biodiversity mainstreaming is not new in Hungary. The *OECD environmental performance review of Hungary*¹⁶ published in 2018 highlighted the ‘lack of integration of biodiversity considerations into most sectoral policies’. It also stated that ‘the [biodiversity] strategy has insufficient influence over other ministries beyond the Ministry of Agriculture.’ The OECD recommended in vain ‘restricting infrastructure expansion to reduce fragmentation of habitats’ and ‘ensur[ing] sufficient financial resources for effective implementation’.

¹⁵ Types of actions No 2.: Creating ecological and infrastructural conditions for the conservation and management of Natura 2000 sites and green infrastructure

¹⁶ OECD, [OECD Environmental Performance Reviews: Hungary 2018](#), OECD Environmental Performance Reviews, OECD Publishing, Paris, 2018.

Conclusion and recommendations

Using **biodiversity conservation** as a tool to reach climate goals should be a **major focus** of the programmes. Biodiversity targets and measures need to be **scaled up**; biodiversity conservation needs more financial resources and needs to be meaningfully integrated into economic and local development projects.¹⁷ Programmes and projects need to be **biodiversity-proofed**.¹⁸

The case of the TEN-T Danube corridor shows that it is not only important to assess the environmental impact of specific measures in an operational programme or the recovery plan (or assess them against the ‘do no significant harm’ principle); **investments have to be looked at in their full context and complexity**. There’s no net benefit of a specific project doing little harm to the environment if other projects financed from the Connecting Europe Facility or other sources, contributing to the same development concept, cause massive environmental harm.) Also, several investments (e.g. port development on the Danube) would not make sense unless they were supplemented by several other investments financed from the Connecting Europe Facility or other sources. Therefore, these investments should be phased out as a package from all funding programmes for the reasons outlined in the section on harmful projects.

It is not the integration of the power and gas sectors, but **the interoperability and integration of the power and heat sectors** (power-to-heat, heat-to-power) that **we recommend**. This would be less dependent on fossil gas systems and would also better integrate district heating, thermal energy communities, etc. into the grid. **The aim should not be to ‘save’ fossil gas infrastructure**, which would require newer (**as yet unproven**) technologies – in this case **hydrogen technologies** – to play a key role in the energy transition, which is not a ‘technology neutral’ approach and is not likely to be a silver bullet. **Low-emission hydrogen production using carbon capture and storage would still allow the production of fossil hydrogen from fossil sources**, which runs counter to the goals of climate neutrality and reducing fossil dependence. It is questionable **who would pay for the high costs of converting the existing gas infrastructure** and building new hydrogen infrastructure to serve it (filling stations, hydrogen storage, etc.), and **how and whether alternatives have been examined from a cost-effectiveness/economics, socio-environmental and climate neutrality/energy transition perspective**.

Support for the installation of **fossil gas boilers in TOP Plusz should be removed** from the operational programme and replaced by support for housing renovation and climate-friendly means of heat and hot water supply (e.g. heat pumps, solar, etc.) for the same properties.

Also, **energy efficiency and renewable energy** projects have to be assessed in context. As the assessment above shows, Hungary needs to **massively increase, restructure and diversify funding** for these items in order to proceed steadily to its goal of climate neutrality by 2050. Funding schemes should be **adapted to the needs and means of various social groups and types of buildings**, while also taking into account the returns the investment could yield. Regarding **community energy**, a bottom-up approach has to be supported, where the operational programmes (and the RRF) ensure that the supported renewable energy

¹⁷ For examples, see: CEE Bankwatch Network, [When Nature Shows the Way: supporting biodiversity for Europe’s green recovery](#), CEE Bankwatch Network, 2021.

¹⁸ We recommend using the biodiversity proofing methodology developed by the Institute for European Environmental Policy. This methodology has been endorsed by the European Commission. It includes guidelines and checklists for the entire policy cycle. The document lists potential adverse impacts on biodiversity from cohesion policy supported developments, and possible intervention measures to avoid, reduce and compensate for them.

communities are community-based and beneficiaries are provided with proper help to plan, implement and develop/maintain their community energy project, for the benefit of the community. To this end, funding schemes should allow more flexibility by using the **ownership of the location of the investment (i.e. the production or storage facility) as a rule for demarcation** between operational programmes, instead of the composition of the energy community applying for funding. Funding for ‘soft’ measure components should target **awareness-raising, training and advice on prosumerism and energy communities**. The **one-stop-shop energy agency model** should be extended to less-developed regions of Hungary.

Awareness-raising on climate and energy consciousness, waste prevention, biodiversity, etc. **should also be supported as individual projects, independently** from investment projects. We note that both specific intervention priority 2.2. and 2.3. of KEHOP Plusz include ‘support for organisations providing services that contribute to the low-carbon economy and climate resilience, including awareness-raising activities’, at a total amount of EUR 113.63 million.¹⁹ With regard to these budget lines, diverse activities, such as **non-governmental and civil society organisations’ awareness-raising activities on carbon neutrality, climate resilience and energy awareness, should also be supported independently in the framework of an open call for proposals**.



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¹⁹ Intervention type 046, according to Annex I of [REGULATION \(EU\) 2021/1060 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 June 2021 laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy](#) (CPR), Official Journal of the European Union, 24 June 2021.