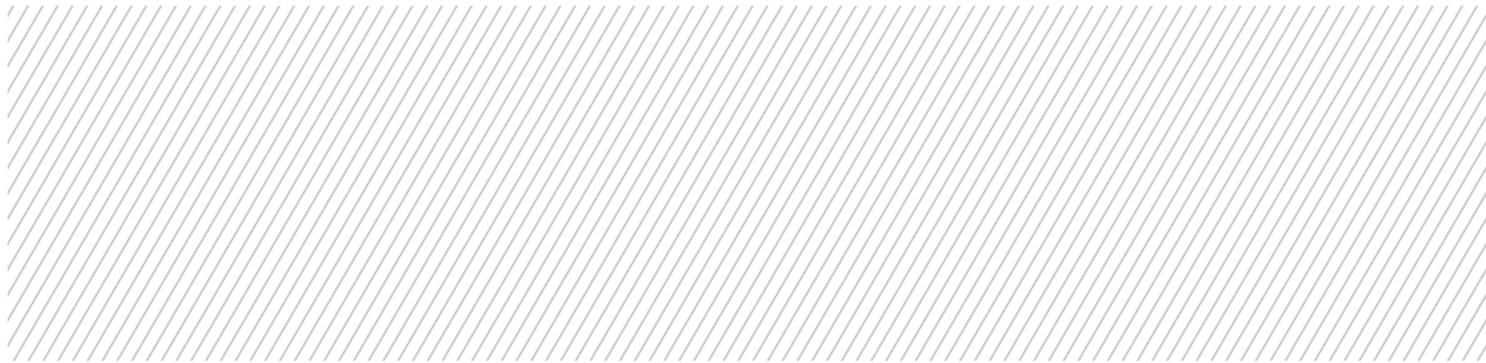


HU

THE DARK SIDE IS IN THE DETAILS

**Climate action in EU Cohesion Policy
funding for Hungary, 2014-2020**





EU funds contribute to the objectives of national energy scenarios only to an extent; the full potential of energy efficiency and renewables is not realised.

While EU funds may contribute to some transformation of the energy system, funding from other sources is likely to continue unsustainable energy production and consumption patterns.

Although energy efficiency remains a national priority, horizontal mainstreaming of climate considerations is insufficient.

Some progressive efforts and planned interventions of EU funds ensure that unsustainable development paths would not prevail entirely.

The Hungarian energy system (Graph 60) is characterised by low per capita energy consumption and a relatively high energy intensity. While forecasts for 2010 to 2020 expect overall energy consumption to increase by around 1.6% annually and electricity consumption by 2.2% annually, in reality domestic energy consumption has decreased by 1.3% per year for the last ten years on average. Alternative energy mix scenarios prepared by both NGOs and a working group at ELTE University for 2050 confirm the renewables potentials identified in the National Energy Strategy and the Hungarian Academy of Sciences, the growing potential of which depends on economic and technical conditions.

The EU's 2020 targets are insufficient to keep emissions below the limit necessary to ensure global warming does not exceed 2°C. Consequently, Hungary's 2020 targets are also unacceptably weak, even allowing for an increase in greenhouse gas emissions. Specifically:

- Greenhouse gas emissions: to increase by not more than 10% (base year 2005) by 2020 (versus the European target of 20%).
- Renewables: 14.65% of total energy consumption (while the EU target is 20% by 2020).
- EE: total energy savings 18% (while the EU target is 20%)

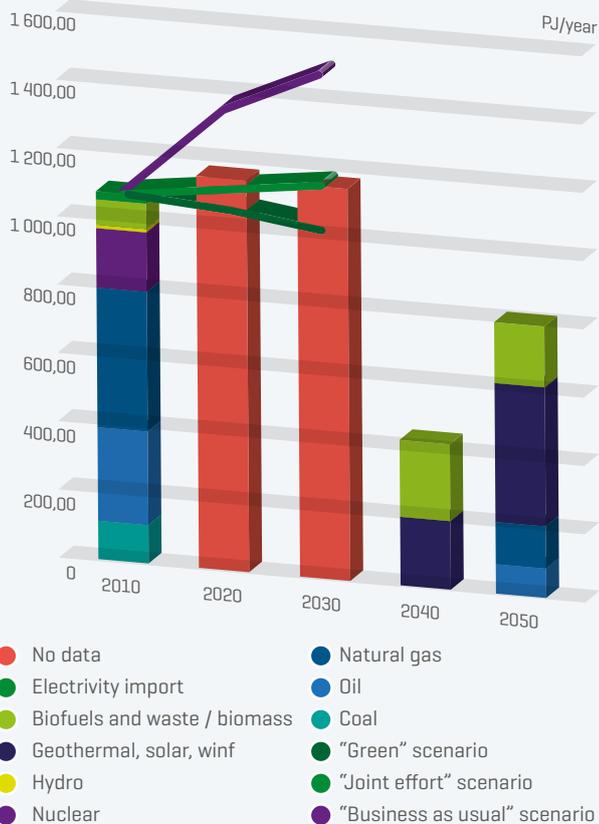
The National Energy Strategy claims to promote the transformation of the energy system with modestly progressive objectives. As evident in the chart below (Graph 60), not even the 'green' scenario utilises the full potential of renewables, and the National Energy Strategy opts for the 'joint effort' scenario. In addition:

- In terms of electricity production, the National Energy Strategy prefers the 'nuclear – coal – green' scenario, the first two elements of which will be financed from sources other than EU funds, but put Hungary's energy system on an unsustainable track for a long time.
- Despite the constant decrease of overall energy consumption, this scenario was recently adjusted with renewed national forecasts, which also curbed the 'green' part of the scenario. Both changes were mainly made to justify the viability of the construction of the Paks-2 nuclear power plant.
- The last aim of the National Energy Strategy, i.e., strengthening the role of the state, is contradictory to the country-specific recommendations of the Commission (gradually abolish regulated energy prices, ensure the independence of the national regulator), and the government has no intention of changing its position on this issue, despite Vice-President Šefčovič's recommendations¹⁶⁹. Consequently, EU funds are a drop in the ocean of 'green energy reform' and will be spent in an economic environment that is in contradiction to Commission requirements.

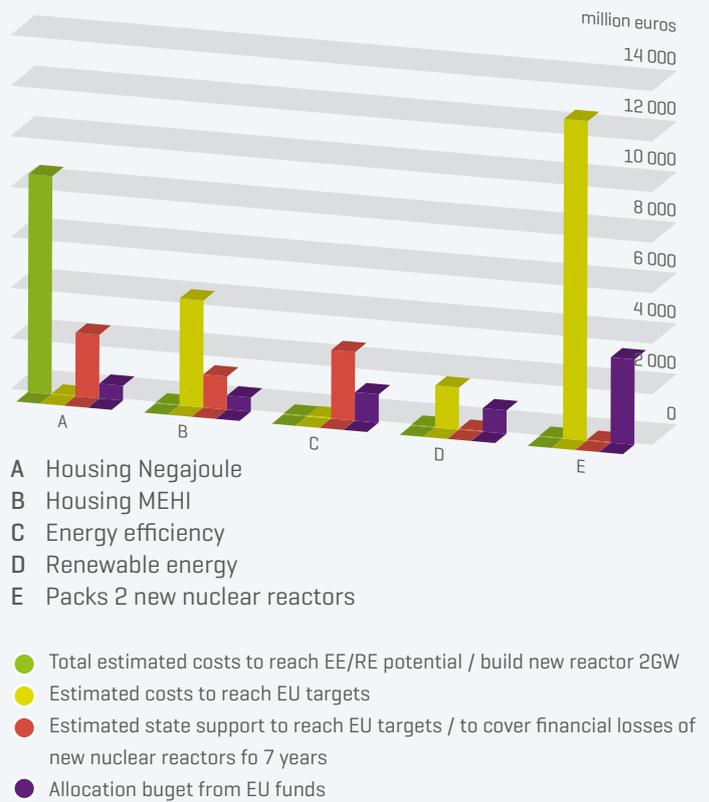
The government's approach to energy transition is also highlighted in the Smart Specialisation Strategy (RIS3): its priority of 'clean and renewable energies', instead of promoting a real energy system transition, maintains unsustainable energy production patterns (fossil fuels and nuclear) with only small upgrades ('window-dressing' such as clean coal technologies, innovative nuclear technologies, energy storage and distribution and the utilisation of 'waste energy'). More forward-facing is the priority 'ICT' which includes 'smart city' in the energy domain.

169 https://ec.europa.eu/commission/2014-2019/sefcovic/announcements/hungary-and-energy-union_en

GRAPH 60: Climate targets, scenarios and the role of EU in Hungary's investment policies



GRAPH 61: Energy financing – needs and allocations



2010: Official Primary Energy Consumption and Energy Mix of Hungary by the International Energy Agency
 2020 and 2030: Scenarios of Primary Energy Needs of Hungary from the National Energy Strategy - 2030
 2040: Scenario of ELTE University 'Erre van előre' Working Group with 60% Less Energy Consumption Produced from 100% renewable
 2050: Scenario of Progressive Energy Revolution (2011) by Greenpeace Hungary with 38% less energy consumption produced over 75% from renewables and without nuclear energy

KICKING OFF THE FINANCING

A - Housing NegaJoule: NegaJoule 2020 is a study by the Hungarian NGO Energy Club. It proposes that the potential energy savings in Hungarian residential buildings is 117 PJ annually. Total support (30%) for seven years would cost about EUR 2 billion.

B - Housing MEHI: This study by the Hungarian Energy Efficiency Institute (MEHI) and its partners (Hazai Hatékonyaság Program, www.hazaihatekonyasag.hu) proposes financing for energy efficiency during the 2014-2020 period at approximately EUR 600 million annually, or EUR 4.2 billion for the period 2014-2020.

C - Energy Efficiency: The estimated need for state support is approximately EUR 2.72 billion in order to reach the EU target (44.6 PJ/year savings during the 2014-2020 period, own calculation based on the National Energy Efficiency Action Plan II). Direct support of energy efficiency is approx.

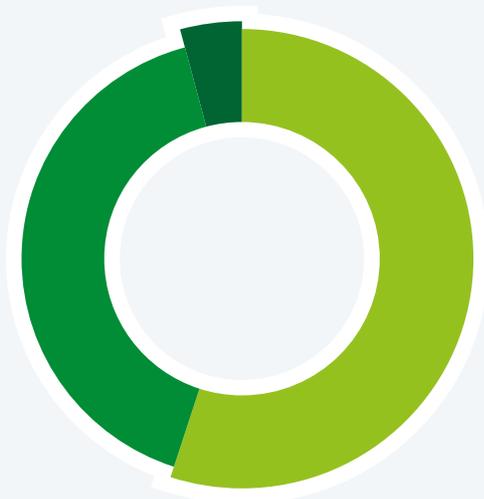
EUR 1.16 billion, according to allocations in the Operational Programmes.

D - Renewable energy: Estimated costs to reach the EU target (14.65% renewables by 2020) are EUR 1.4 billion (own calculation based on data from a background study to the National Renewables Action Plan by the Hungarian Energy Office and Pylon Kft.). Direct support from renewables in ESIF is approximately EUR 876 million according to allocations in the Operational Programmes.

E - Paks 2 new nuclear reactors: The estimated costs of the new 2 gigawatt nuclear reactors at Paks is over EUR 12 billion, and a study by Energy Club states that in the case of the most likely future energy price (25% higher by 2026), the state would cover the financial losses of the state-owned power plants by approx. EUR 3 billion over the first seven years of operation.

Since there was no ex-ante assessment of the Partnership

GRAPH 62: The different types of energy infrastructure investments. Source: our own calculations based on approved Operational Programmes according to categories of intervention



	euro
55% Energy Efficiency	1,159,078,519
41% Renewable Energy Sources	875,953,631
4% Co-generation, district heating	85,948,155
0% Electricity transmission, storage	0
0% Smart Grid	0
0% Gas	0

GRAPH 63: Energy efficiency allocations by type of beneficiary. Source: our own calculations based on approved Operational Programmes according to categories of intervention



	euro
43% EE housing	501,500,629
39% EE public infrastructure	451,249,094
18% EE SMEs	206,328,795
0% EE large enterprises	0

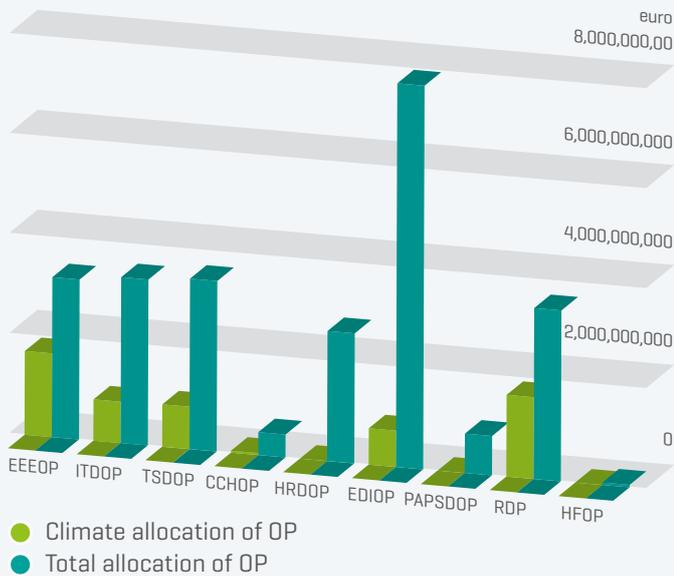
Agreement and the climate allocations are spread among various Operational Programmes, no ex-ante assessment detected whether the financial allocations for the climate objectives would be sufficient. According to official figures in the Partnership Agreement (20.31%), Hungary does meet the EU-level political target of allocating at least 20% of EU spending to the climate action objective.

EU funds should not be expected to be the only source of funding for energy efficiency and renewables investments. It is a question though whether and where public support from other sources will be available for such purposes. Given this and the figures above, the Partnership Agreement's total projected allocations for energy efficiency (EUR 1,159.08 million) is helpful but still insufficient (42.58% of the needs at best), and unfortunately may include the upgrade of fossil fuel plants. Approximately EUR 2,954.17 million is allocated for climate action in other sectors (including low-carbon transport, air quality, nature protection and risk management). The PA-level allocations for direct investments in renewables (EUR 875.9 million, or 62.14% of the needs at best) are also far from sufficient.

The fact that the Hungarian government's latest energy investment plans effectively bolster its bilateral relations with Moscow (Russia is providing a loan for the Paks-2 nuclear power plant and also the Gazprom-led South Stream gas pipeline is still on the table) does not address the need to reduce dependency on one external supplier, which at present provides 80% of Hungary's gas and 100% of its nuclear fuel. These plans underline the weakness of the Europe 2020 targets, ensure funding for dirty energy from other sources and undermine the transformation of the energy sector to which EU funds' investments must contribute.

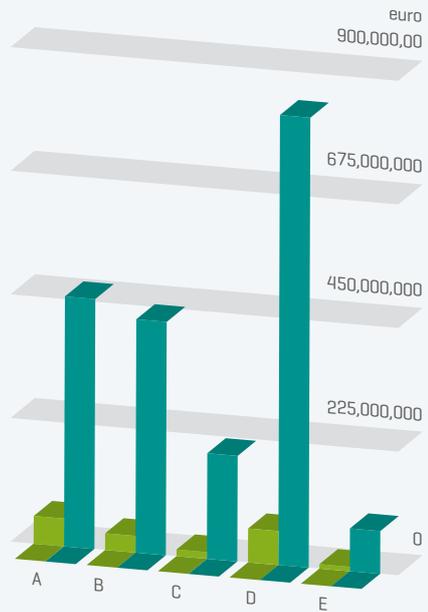
If Hungary is to meet its energy efficiency targets, the government needs to ensure that most of the auction revenues from the Emissions Trading Scheme (ETS) serve targeted investments into energy savings as well as energy efficiency in buildings and in transport. Unfortunately, the ETS allowances modernisation fund mentioned in Vice-President Šefčovič's speech in Budapest runs the risk of being used, for instance, to finance carbon capture and

GRAPH 64: Total climate allocations per Operational Programmes



- CCHOP** Competitive Central Hungary OP
- EDIOP** Economic Development and Innovation OP
- EEEEOP** Environment and Energy Efficiency OP
- EFSI** European Fund for Strategic Investments
- HFOP** Hungarian Fisheries OP
- HRDOP** Human Resource Development OP
- ITDOP** Integrated Transport Development OP
- PAPSODP** Public Administration and Public Service Development OP
- RDP** Rural Development Programme
- TSDOP** Territorial and Settlement Development OP

GRAPH 65: Energy efficiency measures by type of region: EEEOP, EDIOP, TSDOP, CCHOP

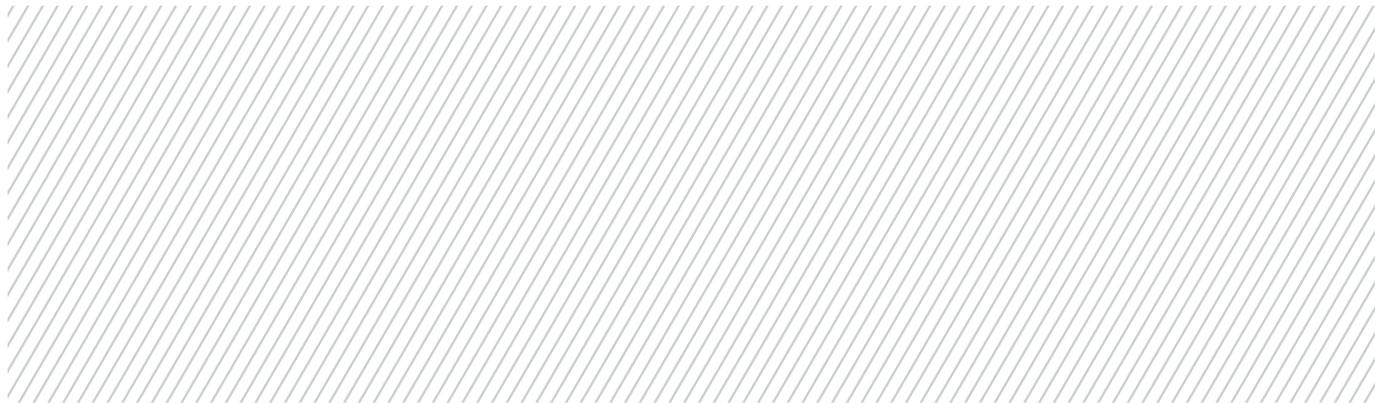


- developed regions [Central HU]
- less developed regions
- A** EE housing
- B** EE public
- C** EE business
- D** energy infrastructure: RES
- E** energy infrastructure: co-generation, district heating

storage facilities which would only deepen the countries fossil fuel dependency and block the transition towards clean energy systems. Government intervention to keep energy prices artificially low through state-controlled prices, 'decrease of overhead costs of households', also discourages investments in energy efficiency.

While the alternative energy scenarios for 2050 quoted above devote a big role to biomass, just like in the Partnership Agreement-level allocations, these should be reconsidered and at least conditioned on sustainability criteria if not phased out entirely, due to the large land and ecological footprint of biomass-based energy production. Unfortunately, solar and 'other renewable sources' (including wind) are generally discouraged due to a generally insecure environment for investments, characterised by limited EU funding for citizen and community renewable energy projects, unfavourable feed-in tariffs and a recently-introduced solar panel tax. The extent to which current allocations address these problems is insufficient.





Experts undertaking the obligatory ex-ante evaluation of the programmes also pointed out a conflict between the limited budget and the high number of planned interventions in several programmes (especially Competitive Central Hungary, Environment and Energy Efficiency and Human Resource Development) and noted that this is likely to result in the fragmentation of resources. This is worrisome, as most funds for climate action are allocated in one of the programmes most affected by the potential fragmentation of funds. This may, in turn, negatively influence the effectiveness of funding allocations for climate action.

Several Operational Programmes are complementary in terms of energy financing (energy efficiency and renewables) for various sectors and beneficiaries. As regards the territorial division of funds for energy financing, approximately ten times more goes to each type of energy-related investment in the less developed regions than in central Hungary, while approximately 30% of the population lives in central Hungary and business activity is concentrated in this region. However, this logic to prioritise energy efficiency in less-developed regions is justified

by the difference in the lower level of development and may in fact contribute to the decrease of centralisation.

It is encouraging to see Vice-President Šefčovič¹⁷⁰ calling for citizens 'to take ownership of the energy transition.' This needs to be achieved by enabling citizens and communities to provide the energy that Hungary needs, and the EU funds should be used in support of this. The Rural Development Programme is the only one that provides some opportunities for local communities to access local resources for energy production [see chapter on biomass].

While the Economic Development and Innovation Operational Programme has the largest budget, it allocates the fifth lowest amount to climate action among the programmes. The priority which it could contribute most to climate action (Priority 4 – energy) has the lowest allocation (2.48%). However, this is amended by Priority 8 (Financial instruments), a fair share of which goes to energy-related investments (energy efficiency and renewables in enterprises and housing).

FINANCIAL INSTRUMENTS

Financial instruments are available to fund energy efficiency and renewables measures in the enterprise and housing sectors, in line with a gap analysis, for individuals and combined with non-refundable support in the form of preferential loans, guarantees and interest rate support. These measures are Priority 8 of the Economic Development and Innovation Programme. Financial instruments are good tools to trigger investments in the field of energy since the investments pay-off in the long run. Regarding the allocation of refundable and non-refundable sources to Thematic Objective 4b (energy efficiency and renewables in enterprises), the Operational Programme notes that these funds are 'insufficient to combat the degraded infrastructure heritage but enough to generate a sufficient number of competitive enterprises.' For Thematic Objective 4c (energy refurbishment of the housing sector), the Economic Development and Innovation Programme allocates refundable sources exclusively; these are meant to match the funds under Priority 5 of the Environment and Energy Programme. "It would be inevitable to provide non-refundable support for energy refurbishments to the housing sector.

170 <http://cor.europa.eu/en/news/Pages/interview-maros-sefcovic.aspx>

Expected complementary financing mostly seems to have positive climate impacts

The European Investment Bank (EIB) is expected to assist with the implementation of projects from the Integrated transport development programme, the Environment and Energy Efficiency Programme and the Connecting Europe Facility through a EUR 1 billion loan, thus also contributing to energy-related developments. Other relevant projects in the EIB project pipeline include urban development (with sustainable urban transport, renewables and energy efficiency), business RDI for the sake of lower energy consumption, and several multi-objective 'global' loans for SMEs, without specific environmental criteria.

The project pipeline accompanying the Juncker investment plan from November 2014 includes several cross-border transmission corridors and interconnections which, even if based on fossil fuels, are necessary to ensure safe energy supply, including the utilisation of renewables and gas stored in reservoirs. The establishment of heat cooperation in southern Budapest seems to be a good example of energy efficiency developments. Several other projects in resources and environment in the field of climate change adaptation also seem to be progressive.

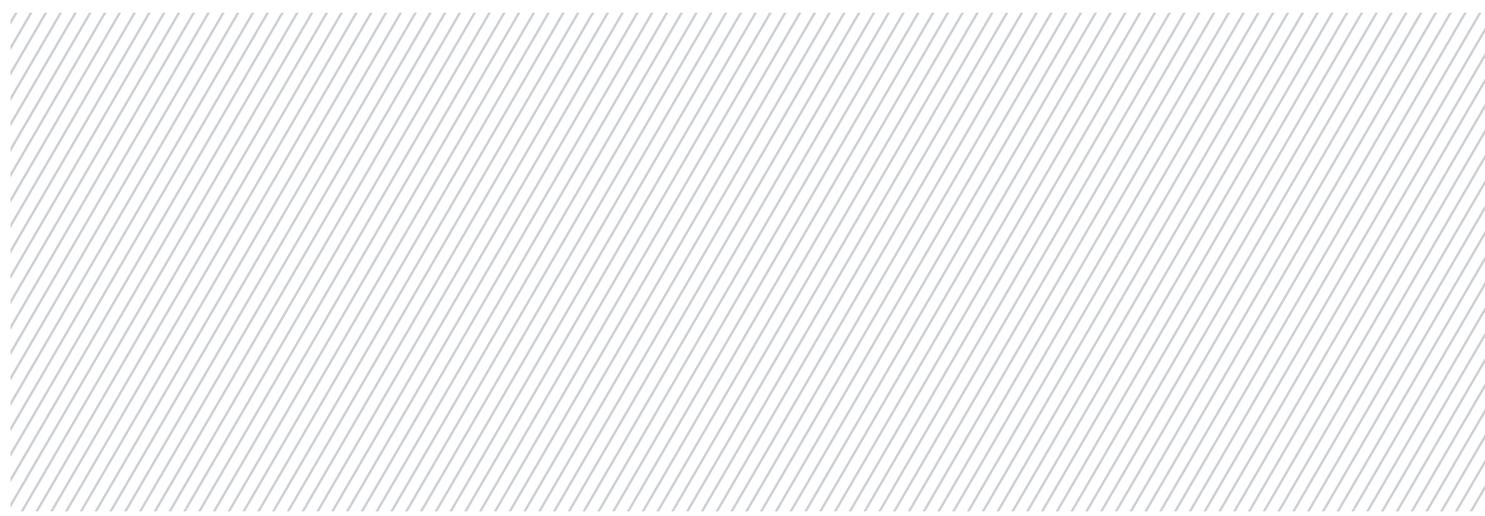
The Horizon 2020 via renewables and energy efficiency innovation, and the European Territorial Cooperation may also be beneficial for climate action, while LIFE specifically includes climate policy projects.

National sources, however, do not add to the climate actions foreseen in EU funds as mentioned above. The construction of a new nuclear power plant and subsidies for existing

utilities prevent budgetary sources from being devoted to matching EU Funds in the efforts of transforming the energy system.

CLEAN ENERGY IN A STRATEGIC CONTEXT

The weakness of the Europe 2020 national targets means that meeting them does not require additional efforts. Still the Partnership Agreement does not even mention 2030 targets and is overwhelmingly focused on competitiveness and growth. Moreover, not even the Europe 2020 climate targets take an overall guiding role in the document. The Strategic Environmental Assessment (SEA) report finds that the Operational Programmes contribute to the Europe 2020 targets sufficiently. The Partnership Agreement recognises the aims, needs, potential and challenges identified by the National Energy Strategy and contributes to most of its objectives, in particular on energy savings. Even if the transformation of the energy system as such is not set as a goal, the Partnership Agreement acknowledges energy efficiency as one of the five national priorities of the National Development Concept. Unfortunately, the Partnership Agreement does not ensure the full coherence of funding priorities with the needs for climate action though, as climate change considerations are not integrated into all thematic objectives and some priorities (for example high-carbon road construction) even undermine climate benefits. The priorities the Partnership Agreement and the Operational Programmes set for renewables are in line with the above assessment of renewables potentials, but utilise them to a lower than sufficient extent.



The Partnership Agreement contributes to the following objectives of the National Energy Strategy:

- a) Energy saving – reducing consumption through energy savings and energy efficiency; reduction of the heat needs of the building stock by 30%.
- b) Renewables and low-carbon energy production: share of renewables within primary energy use to rise [from 7%] above 20% by 2030 and to 14.65% by 2020.
- c) Modernisation of community district heating and individual heat production, increasing the technical quality of service [decentralised, interlinkable district heat island, low-temperature district heating] and the inclusion of RES. Share of RES within heat production to rise from 10% to 25% by 2030.
- d) Increase of EE and decrease of CO₂ intensity of transport: share of electric [road and rail]. Increase the role of rail in freight and passenger transport, modern traction technologies.
- e) Green industry: low-carbon lifecycle technologies, biomass and waste as energy sources and raw materials, organic agriculture, geothermal greenhouses, local utilisation of agricultural waste.
- f) Strengthening the role of the state: governmental/national/state regulation, reliable/stable investment environment, streamlined bureaucracy, EU-level infrastructure platform, high-level education in energy.

Given this list of objectives, the coherence and cross-reference between Thematic Objectives is often missing: for example, while the document recognises the contribution of energy efficiency measures to competitiveness [T03] and research potentials [T01], the description of respective Thematic Objectives TOs 1 and 3 does not mention this potential.

The Partnership Agreement also includes some extra progressive approaches [like sustainable urban transport, ensuring environmental and social benefits, for example, the increased exposure of the ageing and segregated population to climate change, the need for reconsidered settlement planning, climate change mitigation as a health issue, climatic impacts concentrating in urban areas, social urban rehabilitation]. The problem is that these are not integrated in all the programmes and objectives, for example, energy poverty is not addressed explicitly.

The Partnership Agreement also assesses the lessons learned from earlier funding periods and draws conclusions regarding new directions for intervention [a higher share of financial instruments, emphasis on reforestation and smaller-scale investments in agriculture instead of large-scale bioethanol plants to name a few].

RECOMMENDATIONS FOR THE MID-TERM REVIEW

Recommendations regarding financing needs to promote decarbonisation and decrease the economy's higher-than-EU-average energy and carbon intensity:

- More funds should be allocated to Thematic Objective 4, European Regional Development Funds for Energy Efficiency (Operational Programme Territorial and Settlement Development) and to Thematic Objective 4 Cohesion Funds for Energy Efficiency in the Housing Sector (Operational Programme Environment and Energy Efficiency).
- More funds should be allocated to Thematic Objective 5 Cohesion Funds for Awareness-Raising (Operational Programme Environment and Energy Efficiency) and a stronger emphasis on awareness-raising under Thematic Objective 4 and 6.
- More funds should be allocated to Thematic Objective 6 Cohesion Funds for Nature Protection (Operational Programme Environment and Energy Efficiency).

Recommendations regarding the content of programmes:

- Apply horizontal guiding principles to all investment priorities and interventions to the extent possible. Collect all relevant horizontal criteria and principles in one place for each and every call for proposal once it is published.
- Regarding financing tools, introduce clear selection criteria, instruments and indicators to ensure that only projects serving sustainability receive funding from the European Fund for Strategic Investment and the EIB.

For renewables and energy efficiency:

- Sustainability criteria for renewables investments in any field (urban rehabilitation, community-led local development, social infrastructure and so on): priority for wind, solar and geothermal; biomass conditioned on the protection of ecological services, soil nutrient households and biodiversity.
- Solar panel parks should only be eligible as brownfield investments (for example, on roofs) in order to prevent the use of valuable land or ground for this purpose.
- Sustainability criteria for any investment in energy efficiency: use of environmentally-sound, natural materials, local resources, alternative technologies and nature-friendly solutions to be prioritised.
- Research, Technological Development and Innovation Interventions should specifically aim at the development of resource and energy savings

technologies and prioritise RTDI activities in energy efficiency, renewables and climate adaptation.

- Resource and energy efficient production and life-cycle assessments should be mandatory, project selection criteria on resource efficiency should be introduced.
- For social and health infrastructure investments, environmental awareness, the use of environmentally-friendly materials and renewable energy sources should be required; further, energy efficiency and energy saving (resulting in lower operating costs) should be prioritised.
- Under community-led local development/LEADER, the use of local energy potential should prioritise energy savings (low energy use).
- The acquisition of tools or machines should be conditioned on environmental good performance (material, energy, water saving).

For climate adaptation:

- Urban development should require the enhancement of green areas and explicitly include the enhancement of biodiversity, forestation of urban areas, development of protected areas and ecological services.
- The strengthening of the local economy should be a dominant priority of economic development.
- Include climate and environment-related knowledge in each education activity in the relevant context and prioritise education specifically focused on these fields.
- Introduce climate adaptation criteria for small-scale water management infrastructure.

For transport projects:

- The focus should be on support for better spatial planning and for railway development instead of the current tendency favouring unnecessary highways that are environmentally and socially harmful.
- Best available ecological technologies to ensure permeability and environmentally-sound implementation (e.g. noise protection walls, decrease of air pollution, energy efficiency) should be cross-cutting.
- Mandatory awareness-raising elements (like the reduction of transport needs, car-sharing and ecodriving), planting native tree lines, use of secondary raw materials (inert waste), assessing the possibility for using renewables (for traffic lights or passenger info) should be required.

THE ENFORCEMENT OF HORIZONTAL MAINSTREAMING OF CLIMATE CONSIDERATIONS REMAINS CHALLENGING DUE TO ITS COMPLEXITY

The general approach of requiring the integration of horizontal considerations into the projects instead of having project owners make horizontal commitments for extra scores during project selection is a positive one. However, the overall integration of horizontal aspects is not strong enough, as it is not enforceable and the positive elements of the Partnership Agreements could not be operationalised via the Operational Programmes and project selection criteria sufficiently, while the institutional system has the discretion of selecting applicable horizontal criteria according to the sector's needs.

Horizontal criteria are scattered across the programming documents: the basic principles are listed in the Partnership Agreements, and the Operational Programmes include a chapter on 'horizontal guiding principles' and some horizontal aspects among the 'investment priority-specific principles' on a case-by-case basis. The project selection criteria in the implementation documents may also include horizontal criteria where planners find it relevant. It is therefore hard to keep all of these in mind and take all of them into account both for the project developer and the evaluators.

On a positive note, climate change mitigation and adaptation is one of the horizontal principles set by Hungary. The Partnership Agreement lists a series of principles (including energy and resource efficiency, reduction of resource and energy use and land seal, greenhouse gas emissions reduction, the polluter pays principle, precautionary/prevention principle, life-cycle cost assessment, eco-innovation, preference for environmentally-sound development, protection of natural assets and green public procurement) to be applied across the programmes' implementation, the design of measures and project selection. The horizontal guiding principles for the selection of operations include a similar list reflecting the above principles.

Still, the Partnership Agreement does not manage to establish a kind of 'environmental integration work programme' because it is up to the managing authorities and monitoring committees to decide which of these principles they find 'relevant and proportionate' to introduce as

horizontal requirements or selection criteria for projects in a certain sector. Otherwise, project selection criteria generally include 'sustainability' or 'environmental sustainability' only, without making clear how this relates to the aforementioned detailed principles and aspects listed in the Partnership Agreement and the programmes.

In line with the potential contribution to climate action of territorial cohesion as a horizontal objective, the Partnership Agreement expects decentralised spatial development to recover local economic systems and local employment. However, wherever programmes discuss the territorial dimension, the justification of actions and allocations (not even those of community-led local development) never takes climate considerations into account. The selection criteria for urban community-led local development only includes environmental considerations under 'sustainability' as an option. The Rural Development Programme includes that local LEADER strategies should meet environmental and climate policy aims.

Regarding the enforcement of 'environmental sustainability' across the institutional system, the following measures are foreseen: programme-level monitoring of horizontal objectives: e-administration, accessibility of workplace by sound means of transport, rational car use, atypical employment, energetic refurbishment of ministries, green public procurement, training and project selection. It remains to be seen whether the institutional system has sufficient capacity to ensure and monitor the contribution to climate action. The establishment of a Partnership Agreement Monitoring Committee with the mandate to ensure the coherence of Operational Programmes and the implementation of the horizontal principles, with the involvement of 'the relevant partners', gives grounds for some hope.

One positive sign is that it seems that the Prime Minister, as the office responsible for horizontal integration, will screen the draft call for proposals and require the inclusion of some meaningful elements for the integration of specific environmental aspects. The problem is that this process is not transparent, so it is very hard to measure the results of the process.

NOTWITHSTANDING A FEW EXCEPTIONS, THE INTEGRATION OF CLIMATE CONSIDERATIONS INTO PROGRAMMES IS WEAK

Sidelining the need for horizontal mainstreaming, ex-ante experts approved the planners' commitment to devoting the majority (about 60%) of EU funds for economic development, even if they criticised the subordination of energy efficiency, environmental and social objectives in other instances. The Strategic Environmental Assessment notes that, without EU funding, unsustainable development paths will prevail in the long run. While the general emphasis on energy efficiency and renewables in the Operational Programmes is fine, the problem lies with the allocations to these objectives and to other climate action, as well as the lack or low-levels of mainstreaming of climate considerations into non-climate-focused interventions (like education, employment, business development and social infrastructure). Unfortunately, energy use and savings potentials are predominantly discussed in the context of economic competitiveness. Regarding the Environment and Energy Efficiency Operational Programme, the most positive impacts are expected in the field of climate change i.e., natural impacts on humans and natural resources. However, since the content of the Environment and Energy Efficiency Operational Programme is largely determined by tasks arising from non-compliance with EU legislation, the programme leaves some environmental problems unaddressed.

Within the Economic Development and Innovation Operational Programme, energy is the only priority that reflects relevant climate policy targets. Unfortunately, project selection criteria listed in the implementation documents are poor or even lack 'sustainability'. There are some specific criteria (but few and poor) for the priorities, with the most relevant link to environmental and climate issues. Due to a biased interpretation of sustainability, environmental protection considerations are ignored or subordinated to economic and financial ones.

Project selection criteria of the Territorial and Settlement Development Operational Programme require that 'the planned development should increase greenhouse gas emissions to the smallest possible extent or rather decrease them possibly.' A climate-friendly transformation of the economy would require much stricter criteria but, unfortunately, this formulation is also in line with the weak national Europe 2020 targets. Since some measures or interventions will be implemented through county or municipal-level selection processes, these geographical entities also use specific selection criteria. Only six of nineteen counties and eight of twenty-two cities with municipal rights selected some environment or sustainability-related criterion (resilience or sustainability, protection of the environment and landscape, contribution to a low-carbon economy).

MISSED OPPORTUNITIES

- **The programmes do not allocate any funds to intelligent energy distribution systems.**
- **The potential for linking investments in other sectors with the low-carbon economy is missing, i.e., no funds were allocated to intervention fields 3 (productive investment in large enterprises), 65 (RTDI), 70 (large enterprises), 71 (services of enterprises contributing to the low-carbon economy).**
- **Some other environmental measures aimed at reducing or avoiding greenhouse gas emissions (including treatment and storage of methane gas and composting) (intervention field 23) also lack allocations.**
- **Air quality problems (PM10), pharmaceutical residues and others are not addressed by any programme.**
- **The use of climate adaptation potential in education and social integration programmes (awareness-raising) is not promoted explicitly.**

a) Energy efficiency

Eligible actions	Criteria
<ul style="list-style-type: none"> • Buildings (housing stock, building stock of local governments, business infrastructure, railway stations, social infrastructure). • Electricity-related refurbishments in homesteads or farmsteads. • Social urban rehabilitation (including housing blocks and public spaces) • Productive tools, machinery (production processes). • Energy quality assessments. • Modernisation of lighting. • Modernisation of boiler rooms, exchange of heaters. 	<ul style="list-style-type: none"> • Partnership Agreement proposal for all programmes: investments should be prioritised if they decrease greenhouse gases or pollutant emissions measurably, contribute to climate change adaptation, enhance resilience and adaptation and/or are implemented with low energy use. • Energy efficiency projects of local governments should be based on the internal, autonomous utilisation of regional energy potential, with special regard to renewables. • Refurbishment should be based on energy assessments, certified or carried out with certified technologies. • Higher or the highest possible savings on energy or fossils or greenhouse gas emissions at unit cost are prioritised or required (depending on the investment priority). • In the case of renovating buildings, complex renovation has priority. • Small-scale infrastructure development in agriculture should contribute to energy efficiency.

A non-favourable direction is that the government plans to change the Environment and Energy Efficiency OP and reallocate funding from energy efficiency in public housing to energy efficiency in governmental buildings. This direction jeopardises the fulfilment of the National Energy Efficiency Action Plan and can have negative social impacts.

b) Fossil fuels

Even though the modernisation of boiler rooms, heaters and cogeneration facilities (Operational Economic Development and Innovation and Territorial and Settlement Development Programmes) may represent a hidden subsidy to fossils and thus be harmful to the environment, the description of the action in Territorial and Settlement Development at least specifies the aim of the priority by 'supporting any initiative aiming at changing energy sources and thereby decreasing the dependence of local governments on fossil energy sources.'

c) Biomass

Unfortunately, the Partnership Agreement fails to recognise the ecologically-harmful impacts of extracting nutrients from the soil and the wide-scale use of biomass for energy production (like in district heating). This may be supported under several programmes (Environment and Energy Efficiency, Competitive Central Hungary, Rural Development Programme). In the Territorial and Settlement Development Operational Programme, the burning of biomass has been reformulated, but the allocations still suggest the promotion of biomass incineration. The criterion in Competitive Central Hungary for these projects to preserve natural assets looks good at first sight but, in essence, is not stringent enough to fully ensure sustainability of biomass. The Rural Development Programme promotes the use of biomass as an energy source in several ways through several interventions and aims to limit the consequent environmental pressure through several criteria (on quantities and species used, see Annex), with limited capacity to ensure the ecological sustainability of the

Eligible actions

- In the case of energy-related investments of enterprises, renewables are eligible in and of themselves, without investments in energy efficiency, i.e., may not contribute to the decrease of energy use.
- The specific fields in which RTDI is supported include: sustainable environment and clean and renewable energy.
- Production of machinery producing energy from renewable.
- The fact that among locally-available renewables, solar panel parks are also eligible raises concerns in relation to surface cover.

Criteria

- The use of renewables is to be considered in the case of all new construction.
- Although renewables investments are not linked to mandatory energy modernisation, only buildings with low heat-transmission [heat loss] levels [the same level as for any new construction] are eligible.
- 'Energy Efficiency and Renewables in SMEs and Housing' [Competitive Central Hungary Programme] prioritises SME production units using local resources and serving local needs, renewables-based co-generation of heat and electricity, as well as investments combining energy efficiency and the use of renewables.
- For the gardening sector [RDP]: the amount of renewables produced and marketed should not exceed the annual total energy need of the farm.

action, though. The best measures are: 'local, small-scale biomass-based community infrastructure development cannot increase the use of wood; the planting of fast-growing 'energy woods' is not eligible'. The Environment and Energy Efficiency Programme declares that biomass energy production will be funded only if it meets sustainability criteria.

d) Renewable energy sources

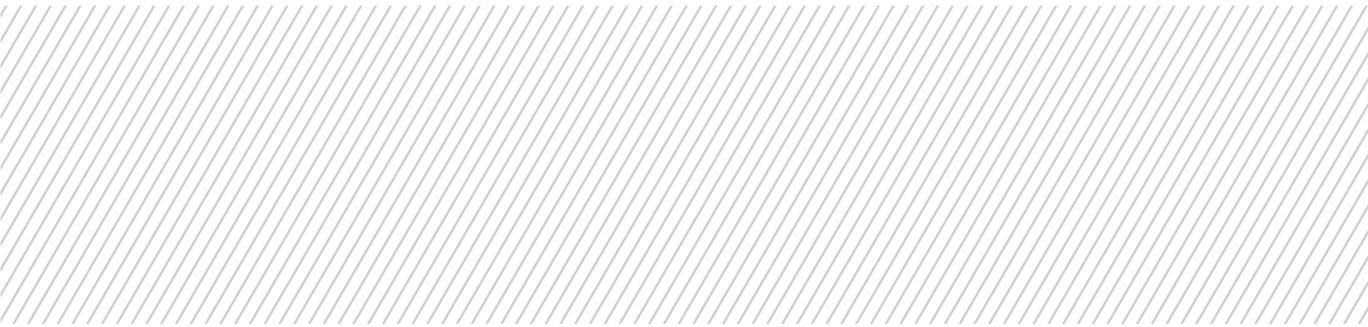
The PA claims the exploitation potential in solar and wind to be strictly linked to technological and market developments.

e) Incineration

Even though the Strategic Environmental Assessments recommend avoiding incineration, especially in areas with high concentrations of dust, three programmes and the RDP support it in various ways. The Territorial and Settlement Development and Economic Development and Innovation programmes support the incineration of waste [RDF thermic utilisation plants]. The Competitive Central Hungary Programme only introduces some emissions standards for biomass combustion. Criteria are not able to prevent projects with adverse impacts on the climate and

the nutrient household of land. The Environment and Energy Efficiency Programme includes a major project for treating Budapest sewage, which may include municipal solid waste co-incineration.

f) Adaptation Eligible actions in TSDOP are: climate-resilient rehabilitation of urban brownfield areas and urban public spaces [reference to slow cities]; increase or qualitative improvement of urban green areas in line with climate adaptability; environmentally conscious development of urban business areas; The development of the regional economic environment to enhance employment sets the increase of rehabilitated land as one of the indicators which has indirect climate relevance. EEEOP allocates significant funding for climate adaptation, mainly for flood prevention. The nature conservation and rural development considerations not treated strongly in planning flood prevention measures, the early participation of environmental authorities and NGOs in planning of flood prevention is not ensured. EEEOP includes some interesting measures for climate adaptation local and regional planning and stakeholder co-operation, which is possible a best practice.



TRANSPORT DEVELOPMENT NOT DECREASING CO₂ INTENSITY

Transport is another sector supported by several programmes; certain branches (like bicycle infrastructure) are covered by programmes other than the Integrated Transport Development programme, but none of the programmes contains solely beneficial development from a climate change perspective.

The programme Integrated Transport Development does not identify climate change needs, but approaches the need for energy efficiency as an externally-imposed necessity, as the sustainable transformation of the transport sector does not seem to be of economic interest to the country until the external costs are not internalised. Therefore, as the SEA report notes, without the contribution of EU funds, clean urban transport development and much of the rail development would not be realised and an even heavier increase in road traffic would take place. However, as noted by the SEA report, the Operational Programme also has a limited scope of flexibility due to the project pipeline and other determinations. It is therefore questionable to what extent the programme addresses the problem of decoupling the energy intensity of transport from GDP growth and whether it will be able to change the balance between transport modes.

Still, priorities of the TEN-T rail and waterways and sustainable urban transport, suburban railways (with possible solutions like smart cities, slow cities, change of buses, bicycle infrastructure, and those in Competitive Central Hungary and Territorial and Settlement Development) claim to serve sustainable development and set climate and environment as explicit aims.

Some investment priorities on the other hand (TEN-T road development and the regional accessibility of TEN-T including bypass roads) as well as the improvement of the accessibility of work places through the renovation or construction of roads (Territorial and Settlement Development), will result

in higher speeds and an increase of traffic, consequently generating an increase in emissions and jeopardising the ability to meet climate objectives. This comes in an environment where the transport sector is the only one where emissions grew between 1990 and 2010, by a whopping 45%. This will certainly not be in line with the Commission's transport sector roadmap which recommends that 'sustainable mobility concepts' lead to a 60% reduction by 2050 in greenhouse emissions across the sector.

Moreover, the enhancement of regional accessibility of TEN-T is problematic for several reasons: a) it limits regional accessibility to roads and b) the general problem of poor accessibility of settlements among each other (and the worsening quality of local roads) has not been addressed neither in the 2007-2013 period nor in the 2014-2020 period. The programme attributes this to the Commission's requirements, which limit the development of local roads to those accessing TEN-T. Therefore, these investments in roads should also be considered international ones.

The development of tourism (Territorial and Settlement Development and Economic Development and Innovation Operational Programmes) aims to increase the access to and profitability of natural and cultural heritage within the carrying capacity of the area. The increase of tourism is very likely to result in a significant increase in induced emissions depending on the means of transport the tourists use to access the region (even if the local access of natural assets is achieved via environmentally-sound means of transport.)

The Integrated Transport Development Programme ignores the impact of transport development on territorial cohesion and areas with natural and demographic disadvantages, thereby contradicting the philosophy behind the notion of 'cohesion fund'. The EU funds do not contribute to the use of

renewables in transport, as this task is said to be tackled by mixing biofuels with regular fuel.

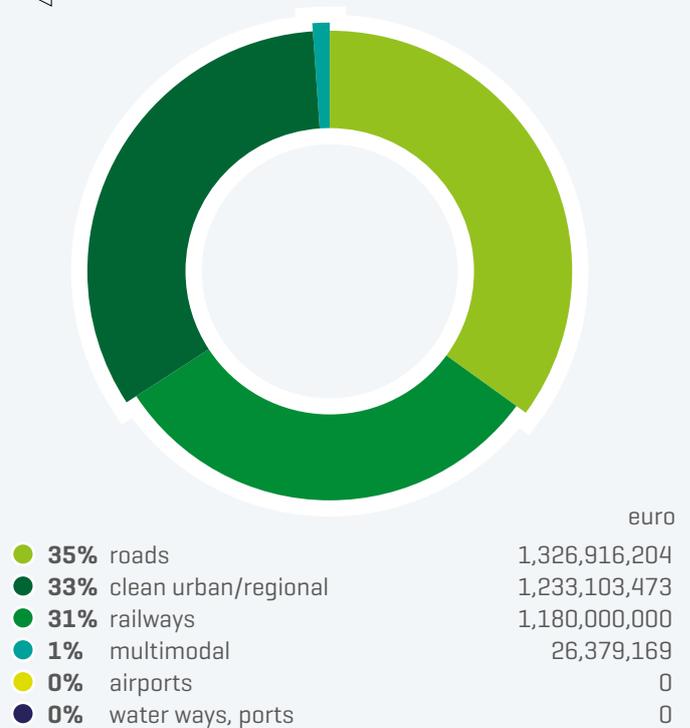
The Connecting Europe Facility project list includes some motorway projects, rail refurbishments and investments in the European Train Control System, a new rail bridge over the Danube and the planning and implementation of TEN-T waterway and ports (mixed impacts; see box).

Despite few positive examples (see Annex) there are generally few and insufficient criteria introduced for transport projects.

Financing transport

The Integrated Transport Development Operational Programme claims to contribute to the climate objective in 25% of its allocations. This is the third highest contribution among the programmes, but far from enough since it fails to go even beyond the Europe 2020 climate targets, with road transport enjoying 35% of transport infrastructure allocations. On the positive side, the allocation of 33% of transport funding to clean urban transport is worth mentioning. The lack of allocations on waterway infrastructure and airport development is only explained by the fact that related projects are expected to be covered from the Connecting Europe Facility and other sources (Danube – see box; Budapest airport rail connection – CEF).

GRAPH 66: Share of transport modes in total transport funding in Hungary. Source: our own calculations based on approved Operational Programmes according to categories of intervention



IMPROVING NAVIGABILITY OF THE DANUBE

The Danube is a TEN-T corridor which is considered to be climate-friendly, however, there are problems with it. The Integrated Transport Development Programme includes soft measures (like signposting, IT, smart traffic systems) with minimal or no harmful environmental impacts. However, the improvement of navigability of the Danube will also be a major project under the Connecting Europe Facility (the specific content of which is unclear: 'this should be prepared by taking flood management, nature protection, water management and navigation aspects into account') and may be implemented even if only mitigating harmful impacts.

Herein lies the conflict. Hungary opposes infrastructure development that interferes with ecosystems like dams, but the Commission and the European Danube Commission push the improvement of the navigability of the Danube through all means and hope to raise other funds for this. It is questionable how more than fifty bottlenecks can be removed from the Hungarian section to ensure year-round navigability, at a width of 120-180 metres and a depth of 2.5 metres, without considerably harming the ecosystem.

ANNEXES

Annex I – Good examples

Transport

Investment priority-specific selection principles for projects on the local accessibility of TEN-T prioritise the enhancement of capacity for existing roads over new construction and require existing or planned public bus services on the road.

For emissions reduction, there is an indicator for sustainable urban transport and suburban rail projects.

For linear infrastructure mandatory: native trees, protection of ecosystem services, minimising impact on waters, implementation through low-distance transport, low material and energy use, use of areas of lower ecological value, use of reused materials and so on.

Business infrastructure development within the Economic Development and Innovation Operational Programme claims to prefer 'brownfield investments well accessible with low traffic needs and means of public transport'.

Biomass (RDP)

- No more than 50% of the input materials for biogas can represent grain and plants containing starch and sugar.
- If agricultural biomass is primarily used for the production of electricity, at least 25% of the produced heat surplus has to be used within the same/own farm.
- Only heaters with at least 70% efficiency can be used for non-combined biomass-based heat generation.
- In the gardening sector, the production of liquid bio-fuel is not supported.
- Local, small-scale, biomass-based, community infrastructure development cannot increase the use of wood.
- Local, innovative, high efficiency use of forestry or agricultural waste mainly for heating or cogeneration is eligible under the renovation of villages.
- In the case of investments in forestry technologies and the processing, mobilisation and marketing of forestry products, and alleviating barriers on the use of local forestry biomass as a renewable source of energy for biofarming purposes is eligible.
- The planting of fast-growing 'energy woods' is not eligible.

Annex II – Complementary financing

For energy projects

EIB

The EIB is expected to assist with the implementation of the 2014-2020 programmes with a EUR 1 billion loan, the first tranche of which was signed with the government in June 2015 and which can be used within three years. The loan supports two programmes (Integrated Transport Development and Environment and Energy Efficiency), as well as projects under the Connecting Europe Facility, thus also contributing (potentially) to energy efficiency developments.

The EIB project pipeline includes:

- Miskolc urban development, which will finance investments defined in the Integrated Urban Development Strategy of the city and will provide financing to schemes, mainly of small and medium size, in the following fields: urban renewal and regeneration, sustainable urban transport, renewable energy and energy efficiency, environmental protection and climate change action, SME support and RDI, knowledge economy and social infrastructure investments at EUR 25 million (total costs of EUR 200 million). The project has been under appraisal since June 2015, and it is not clear if this project is a part of any programme.
- Several multi-objective loans for SMEs via intermediary commercial banks without specific environmental criteria.
- RDI at Electrolux to support research into improved performance, user-friendliness, lower energy consumption and lower use of resources (such as water) for a range of household goods at EUR 200 million (of EUR 400 million). Signed on 11 May 2015.

The preliminary project pipeline for the European Fund for Strategic Investments (EFSI) includes:

- In the field of energy, several cross-border transmission corridors or interconnections, even if based on fossil fuels. These are necessary to ensure safe energy supplies, including the utilisation of renewables and gas stored in gas reservoirs.
- The establishment of heat cooperation Csepel-Kispest-Kelenföld (south Budapest) seems to be progressive and a good example of energy efficiency.
- Several other projects on resources and environment in the field of climate change adaptation seem to be progressive.

Other programmes:

- The EU Strategy for the Danube Region (EUSDR) includes explicit and implicit climate considerations. Three of its priorities (sustainable energy, water quality, environmental risks) are coordinated by Hungary. In order to ensure coordination among development initiatives and funding sources, the EUSDR state secretary participated in programme planning and an EUSDR cross-ministry working group is also operational. The Danube Transnational Cooperation Programme, adopted by the Commission on 20th August, 2015, will support transnational cooperation projects in line with the priorities of the EUSDR and will be financed from ERDF and IPA [i.e., Hungarian programmes contribute to it rather than the other way around].
- Horizon 2020 is potentially beneficial regarding renewables and energy efficiency innovation.
- LIFE specifically includes climate policy projects, but nothing specific is mentioned about these. European Territorial Cooperation could also contribute to reaching the (climate-related) aims of the Partnership Agreements.



For transport projects

EIB

The EIB project pipeline includes:

- Several rail and road projects which were part of the Transport Operational Programme 2007–2013.
 - Road network modernisation at EUR 500 million [of EUR 1 billion]. Under appraisal as of 30th July, 2015, this represents additional funding for unsustainable road transport.
 - Road 62 at EUR 19 million [of EUR 71 million]. Under appraisal since 11th May, 2015. Even though it is a road project, its necessity is well-justified because it decreases the centralisation of Hungary and eases the east-west permeability of the country.
 - Modernisation at GySEV railways, EUR 40 million of EUR 100 million. Approved July 2014.
 - Budapest – Esztergom railway reconstruction at EUR 28 million of EUR 185 million. Under appraisal since March 2013, though the investment has already been carried out.
 - Záhony rail infrastructure, approved March 2013.
 - Budapest urban transport including different investment schemes in the city of Budapest within its Integrated Urban Development Strategy, mainly in the field of public transport and on the road network at EUR 350 million [of EUR 1.100 billion]. Approved in September 2015, it is not clear if this project is a part of any OP.
-

The project pipeline for the EFSI includes:

- Several proposed transport projects included in the Integrated Transport Development programme and others are also in line with the programme's aims and priorities. The project that seems most problematic is 'main road between Pápa and M1 bypassing settlements and upgrading [2x1]' as this again attracts resources from the region without serving the accessibility of settlements among each other
- 