



**Position of Environmental Association "Za Zemiata" and "Greenpeace" - Bulgaria on the second draft update of the National energy and climate plan of the Republic of Bulgaria 2021-2030, dated 21.02.2024**

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*Regarding:* Position on the [second draft updated NECP dated February 21, 2023](#), of the Environmental Association "Za Zemiata" and "Greenpeace" - Bulgaria

## Table of Contents

Summary .....	2
How does the energy modeling should look like? .....	3
Practical suggestions to significantly improve the final NECP .....	4
General comments regarding the plan: .....	5
Energy efficiency targets .....	7
Renewable energy sources (RES) targets .....	7
Use of geothermal energy in comparison with nuclear energy .....	8
Coal phase out .....	9
End of fossil fuel subsidies and planning their phase out .....	9
Fossil gas - trends and benchmarks .....	9
Renewable gas - assessing the potential for development using a science-based approach .....	10
Evaluating and addressing the social and economic impacts of reducing gas consumption .....	11
Phasing out long-term gas contracts in line with declining fossil gas use .....	11
Assessment of the role and scale of gas networks to be decommissioned .....	11
Benchmarking gas usage with E3G methodology .....	12

Renewable energy sources development .....	15
Prosumers & energy communities.....	15
Renewable acceleration areas .....	17
Why the prioritization of artificial reservoirs and pastures for the installation of RES capacities is not a good idea:.....	17
Transport Sector.....	18
Decarbonization of the Transport Sector .....	19
Railway Transport.....	20
Energy efficiency of the Transport Sector.....	21
Energy security and Transport.....	21
Transport poverty.....	22
Suggestions on the Definition on Transport Poverty:.....	22
Recommendations for tackling the transport poverty:.....	23

## Summary

### Identified problems and deficiencies in the second draft of NECP:

- The second draft continues to lack key data for the public and expert discussion from the modeling of additional measures to achieve the targets (WAM), as well as the assumptions and analytical basis behind the current modeling.
- There are missing sectoral targets such as:
  - o An indicative target for innovative renewable energy technologies of at least 5% of newly installed renewable energy capacity (innovative technologies such as heat pumps, geothermal and solar thermal technologies, waste heat and cold technologies, etc.). A separate target promoting the development of heat pump installations would also be welcome, as 48% of Bulgarian households already use electricity for heating.
  - o Specific targets for the percentage or capacity of renewable energy built on land or zones damaged by economic activity.
  - o Specific targets for the number of households to become prosumers and how many energy communities will be created by 2030 - 2050.
  - o A target for the share of renewable energy capacity that should be produced in a decentralized and democratized manner.
  - o A target for the deployment of energy storage technologies.
  - o A target for the implementation of smart metering devices.
  - o An indicative sub-target for the buildings sector by 2030, as well as sub-targets for renovated building types and a target for buildings with the worst energy performance (i.e., what portion of the overall energy savings target will be achieved by renovating 43% of the buildings with the worst energy performance).
  - o Quantitative targets for the number/percentage of vulnerable households covered by building renovation programs.

- An indicative sub-target for the industry sector for 2030.
- Ambitious legally binding targets for heating and cooling for the periods 2021-2025 and 2026-2030.
- A legally binding sub-target for non-biological renewable fuels in the industry by 2030.
- A target for reducing methane emissions - there is a complete lack of recognition of the effect of methane emissions from the oil and gas sector and coal mining, as well as measures to reduce them in accordance with the Global Methane Pledge from the Climate Change Conference in Glasgow in 2021 and the new EU Methane Regulation.

## How does the energy modeling should look like?

Based on studies already done and experience<sup>1</sup> gained so far in relation to the goals established/accepted for the country (undertaken international obligations as a member of the EU, UN, etc.), **the modeling on which the National Integrated** (combining energy and climate goals) **energy development plan (NECP) is based must:**

1. contain scenarios for the development of energy demand by households, individual economic sectors, service sectors and transport, and for each of them, for each year of the planning period, the quantity of the used energy/energy carriers is determined and indicated (total energy consumption and absolute or percentage share of it for each energy);

2. contain or indicate the forecasts (year by year for each technology) for the development of energy conversion technologies (extraction/production, transmission/transportation and consumption/utilization) that are perceived/accepted in the assessments of the demand scenarios from point 1, i.e. it has to be clear the accepted year by year development regarding such indicators as the price of built production capacity, costs of different types of energy, inherent damages to the environment (emissions), inherent entrepreneurial risks, additional benefits/damages (social, etc.) of the relevant technology;

3. **contain a complete assessment of the possible options for satisfying/meeting demand/consumption through a combination of existing and developing competitive energy technologies with a large set** (not less than ten, preferably as more as possible) **of complex** (combining a certain scenario for the development of household demand with certain scenarios for the development of demand of the economic sectors, services, transport and agriculture) **scenarios for the development of demand**, i.e. for each complex demand development scenario to determine (optimal) options for the use and development of energy technologies, through which demand/consumption can be met/secured, and each of these options has to be evaluated (compared) against the others according to multiple criteria: public welfare ( minimum public expenditure), environmental impact (releases/emissions and future generations risks), primary energy saved (energy efficiency), (degree of) national energy dependence,

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<sup>1</sup> D. Stoilov, Methodology for strategic planning of national energy, NION "Az-buki", 2023 <https://azbuki.bg/izdatelstvo-az-buki/monografii-sbornici/metodologiya-za-strategichesko-planirane-na-naczialnata-energy/>

technological state (development) of the nation, etc. **For all options, value/quantity indicators according to the listed criteria should be displayed for each year (single interval) of the planning horizon**, and not indicators only for the initial and final (possibly also some intermediate) states.

**The plan must be based on the described broad modeling, indicating/determining the desired scenarios for the development of demand and the desired variants for meeting/covering them, determined on the basis of the multi-criteria analysis from point 3 above.**

**The plan must identify measures and activities to ensure development according to the selected desired scenario/s and variant/s, must determine the forces, means and resources used, scheduling them in time (by the single planning intervals - years), i.e. has to establish deadlines, as well as determine the executors (responsible agents) of the measures and activities and their responsibilities. In turn, the measures and activities identified in the plan must also be competitively evaluated in quantitative units over time (year by year) according to all the criteria listed in point 3.**

The complete information about the modeling described in points 1-3 should be publicly available, which will ensure verification ability and clarity of the plan. The information set described in Annex I of Regulation (EU) 2018/1999 (Part 2 List of parameters and variables to be reported in Section B of the National Plans) is only for verification purposes of the (EU) Commission, but is not sufficient for a real National Plan.

Checking (verification) of the modeling can be done by using a lot of models for energy development (even freely available), which are capable for scenario modeling of demand/consumption and for evaluations according to the criteria listed in point 3.

Of course, the plan must be structured and meet all the formal requirements of Regulation (EU) 2018/1999. But the really applicable (functional) national plan should be much more detailed, **formulating and foreseeing the implementation of national interests and goals**, which is not a mandatory condition set by the European Commission, and we must take care of it ourselves, while not contracting, but contributing to the European goals.

## Practical suggestions to significantly improve the final NECP

**Decarbonisation of the heating sector** – The final NECP update must be more ambitious in its decarbonisation efforts of Bulgaria's heating sector. This can be achieved through (1) integrating renewables in district heating, in spite of operating on fossil gas or coal; (2) recognising the potential of energy communities for heating and cooling, currently neglected; (3) setting targets for heat pump installations (48% of Bulgarian households already use electricity for heating) and (4) reconsidering the role of biomass in heating – via improving efficiency in its use and via policies that gradually phase it down to a back-up role.

In parallel, Bulgaria should move away from the “gas as a transition fuel” narrative. For instance, Sofia’s district heating system – currently the biggest gas “consumer” in Bulgaria – should substitute fossil gas with renewables. As the district heating system is property of the municipality and the State, a political decision can transform it.

**Increase ambition for buildings** – The level of ambition of the draft NECP update for energy efficiency is largely insufficient, as only 20% of the building stock will be renovated by 2050. Ambition must be ramped up, and a new commitment should be introduced to develop a housing policy that tackles the issue of empty dwellings, which currently affects 39% of all homes in Bulgaria.

**Increase ambition for renewables** - the final NECP should set concretely defined targets of renewable energy deployment in artificial built-up areas, while engaging in early stage public participation in the determination of the Renewables Acceleration Areas (RAAs) for both wind and solar technologies. Goals on smart meters deployment are needed, as well as targets about the number of households to become prosumers, how many energy communities would be established or how much of the RES capacity should be produced in such a democratic and decentralised approach by 2030-2040-2050. The final NECP should introduce a commitment to 100% RES electricity in the railway network of Bulgaria by 2030 or earlier, and use the railway terrains and infrastructure for the integration of utility scale renewables capacity.

**Accelerate the decarbonisation of the transport sector** - There is no evidence that priority investments in roads (improved new and rehabilitated roads) reduces emissions, while a clear programme for the replacement of the long-distance intercity, regional and municipal public buses with zero-emission ones would have significant results.

NECP needs a clear goal for the reduction of international transit freight traffic with accelerated construction of border and internal multimodal terminals. The fight against transport poverty should start with description and measures for identification of the factors and vulnerable groups, followed by more detailed and focused measures on municipality level. Targeted, regional-specific indicators and metrics by geographical and urbanization types – city, small town, rural and mountainous regions should be developed, surveyed and used as a basis at the elaboration of the National transport scheme and municipal transport schemes.

**Include the Net Zero Government Initiative** - The final NECP update should include the Net Zero Government Initiative - of which Bulgaria is now a member – which commits public administration operations to move towards net-zero emissions. As Bulgaria is expected to present an implementation plan in 2024, its main features and impacts should be included in the NECP, to ensure consistency across the plans.

## General comments regarding the plan:

The second version of the updated NECP is also published without annexes - missing the key Annex - the table of trajectories of GHG emissions changes to 2030 and beyond.

Only one scenario is presented - with available measures (WEM) but not additional ones (WAM). It remains unclear when we can expect this once again crucial scenario.

The Net Zero Government Initiative (NZGI) commitment is yet to be mentioned, although our country is due to develop a plan to align government activities towards net zero emissions this year.

In the NECP there is no mention of:

- net zero emissions and how to achieve them; net zero technologies, processes, industries are only vaguely mentioned;
- Industrial decarbonisation;
- “Save Gas For Safe Winter” (despite the EC's explicit requirement to consider the initiative - we assume, however, that with the low gas consumption in our country, there is not such a serious threat);
- RED III - third amendment of the Renewable Energy Directive;
- ETS2 (despite the mention of the Social Climate Fund);

**REPowerEU** is mentioned mainly within the context of diversification of gas supplies. Not enough is said about the need to accelerate the development of RES and EE and to reduce the use of gas and fossil fuels in general. The proposal to set up an Energy Poverty Observatory with RePowerEU funds is a spark of hope, which should also be implemented as a priority.

**EED / Energy Efficiency Directive** - there are 2 mentions, mostly in the context of building renovation. There is nothing specific on how Bulgaria is achieving the steps set for energy savings and RES, nothing on the heating and cooling sector plans that are required to be developed by municipalities. On the upside, the target for RES in the heating and cooling sector mentions the targets and yearly milestones set by the directive. The setting of targets for the deployment of smart meters should not be forgotten.

**Overall, the impression is that NECP lacks a sufficiently systematic overview of the current Green Pact directive package and the resulting objectives and responsibilities.**

**The EPBD / Energy Performance of Buildings Directive** is the only one of the revised directives mentioned with specific targets. However, the fact that subsidies for fossil fuel heating installations are required to be discontinued from 2025 is omitted as well as the overall plan for complete decarbonisation of the heating and cooling sector by 2040. Also omitted is the requirement that draft so-called Building Renovation Plans under the Directive be submitted as part of the NECP update process or by the end of December 2025 at the latest. The Directive also draws attention to the need for sub-targets by renovated building type and a target for the worst performing buildings (i.e. what proportion of the overall energy savings target will be achieved by renovating the 43% of worst performing buildings). There also needs to be a **target for reducing energy poverty** (through housing renovation) and more specificity on the baseline and starting situation at national level. In terms of the implementation of the so-called 'one-stop-shop', targets or at least performance indicators should also be set for the energy poor and those living in buildings with poor energy performance. Separately, building renovation programmes should also focus on the energy poor by setting quantitative targets in the NECP for the number/percentage of vulnerable households targeted. It would also be good practice to

target renovation support through preferential financial instruments to the most vulnerable groups who cannot cover the deductible themselves (in no case however should the 100% renovation grant be reinstated).

**Social climate fund** - 4 mentions but only as a European policy, without guidelines and plans on how it will fit into the national context, beyond the prospective maintenance of the future Energy Poverty Observatory.

The 2020 EU strategy on energy system integration and the resulting approach are also not mentioned. The aim of the strategy is to build better links between the different energy sectors in the EU (electricity, gas, buildings, transport, industry) to help them reduce carbon emissions.

A positive development from the second version of NECP (albeit mandatory) is that there is now **a target for reducing emissions in Bulgaria outside the Emissions Trading Scheme (ETS)**. According to the Effort Sharing Regulation, Bulgaria has to limit its GHG emissions for non ETS sectors by -10% compared to 2005 emissions.

**We see only 5% fossil fuels in the electricity sector by 2035, which would be a significant achievement and puts Bulgaria on track to even set a net zero emissions target for electricity in 2035.**

At the same time, there is no Plan B for the development of the energy sector in case of failure to implement the new NPP units on time. It is mandatory to envisage one - based on even more accelerated development of renewable energy sources and modelling of an energy system without baseload capacity.

## Energy efficiency targets

There needs to be an increase in the building renovation ambition - The level of ambition in the NECP's second draft for energy efficiency is largely insufficient - it envisages that **only 19.8% of the building stock will be renovated by 2050**. And the broad goal is to achieve a highly energy efficient and decarbonised national building stock and to transform existing buildings into zero emission buildings by 2050, including milestones for 2030 and 2040. The ambition needs to be raised, and a new commitment to develop a housing policy that addresses the issue of empty homes, which currently affects 39% of all homes in Bulgaria, needs to be adopted.

## Renewable energy sources (RES) targets

**Achieving an overall renewables share of 34.1% follows a strange trajectory** - a huge spike from 2024 to 2025 and a very smooth upswing by 2030. Additional political ambition and goal-setting is needed to realistically meet the needs for transformation, rather than simply being pro-forma quickly and easily surpassed.

→ **42.2% renewable energy share in the electricity sector** - With the current uptake of renewables, this goal seems easily achievable and with the potential to be met and exceeded. We think that it can be scaled up with real political ambition. Bulgaria can and should work in

parallel and under scenarios of an energy system based on RES and without base capacities, and develop its plans in parallel, rather than betting everything on the almost impossible nuclear option?

→ **45.5% share of renewable energy in heating and cooling;** - Small increase compared to the previous target, which is an area where economically meaningful progress can be made; heating in Bulgaria is well electrified, but it remains important to develop towards a further increase and use of electricity from renewable sources. The use of solid biomass needs to develop towards clear restructuring, efficiency and clean burning, which in the long term goes hand in hand with political ambition and tools to reduce the use of biomass and use it only as a back-up form of heating in case of technical challenges in the deepest winters and in isolated rural areas. The plan does not even describe in detail the programmes available for replacing inefficient heating and introducing energy efficiency measures in buildings, and there is no strategic vision to ensure the continuous development and scaling up of these programmes.

→ **15.2% share of renewable energy in the transport sector.** (But at some stage the market target becomes 29%! - "This share will be adjusted and increased, with the mandatory minimum target for the renewable energy share of final energy consumption in transport planned to reach 29% in 2030.") - plans on how to achieve this increased target through specific policies and targets remain unclear; **we suggest at least a commitment to 100% renewable electricity in rail by 2030** (or earlier) as a contribution to this target, with the use of rail land and infrastructure to integrate utility scale renewable capacity. This target should be extended to all transport providers by 2050 at the latest.

## Use of geothermal energy in comparison with nuclear energy

An adequate up-to-date assessment and estimation of the country's geothermal potential including high temperature potential sources is needed, not just an overview of the hydrothermal resource. We are concerned about the quality of modelling in the part concerning geothermal energy - the data used by E3 Modelling, based only on hydrothermal potential from mineral waters, only partially estimates the real potential of geothermal resources. An in-depth review of the high temperature geothermal potential based on primary geological data is needed, and this type of information can answer whether and how much electricity can be generated.

**Decarbonising the energy system goes hand in hand with the use of a mix of renewable technologies, including a much higher priority role for geothermal energy, alongside the solar and wind energy, hydro.**

The geothermal energy enables the production of electricity, heat but also energy for cooling at the same time. Geothermal is the only renewable energy technology that is nearly equal to the capacity of a nuclear power plant as a baseload (more than 8,000 hours available per year) and can save our country from a lock-in into other costly mega-projects using fossil fuels (gas and uranium). The cost of geothermal power is almost twice as cheap as nuclear power, while the construction time is three times less. NPP is the technology that is the slowest to build and is the only energy solution that has hundreds and possibly thousands of years of potential costs behind it. Photovoltaics and wind power are currently 2 to 4 times cheaper than NPPs, are built



5 to 10 times faster, and cover on average about 30% of energy needs on an annual basis (offshore wind is 40-50% by comparison).

**This is why a mix of RES solutions is needed, depending on local specificities, potential and constrained, focus on the decentralised and democratic energy production from RES, and combined with energy storage measures and achieving the highest levels of energy efficiency in the different sectors.**

## Coal phase out

The plan foresees the phasing out of coal from the electricity mix in the period 2030-2035, which is a clear signal that Bulgaria may commit to an earlier coal phase-out year than 2038. The year in which coal does not contribute to the mix according to the new 10-year network development plan of the ESO is 2032.

## End of fossil fuel subsidies and planning their phase out

Ending fossil gas subsidies, coal subsidies, and having in place a plan to phase them out is essential to meet climate goals. As mentioned in the European Commission Guidelines, updated energy and climate plans should reflect decisions to phase out fossil fuel subsidies.

**At the same time, in its NECP Bulgaria denies that there are subsidies in the energy sector, including for fossil fuels. And just after stating this**, a few lines below on page 258 it presents **the Scheme for Support of Electricity Produced from High Efficiency Combined Generation (from Fossil Gas)** as well as the 2016 Renewable Energy Feed-in Tariff Scheme approved by the EC. While another chapter talks about the end date and what kind of limited support will be given to RES, there are no such phase out plans for the fossil gas cogeneration, on the contrary, there is talk of increasing the deployment of the technology.

## Fossil gas - trends and benchmarks

There continues to be a lack of a target to reduce methane emissions, and more strikingly, there is a lack of even recognition of the effect of methane emissions from the oil and gas sector and coal mining, and measures to reduce them in line with the Global Methane Agreement from The 2021 Glasgow Climate Change Conference. In this regard, on May 27 2024, the Council of the EU finally adopted the EU Regulation on limiting methane emissions. This decision concludes the legislative process of the dossier, which will now be published in the Official Journal of the EU, thus officially entering into force. According to the Regulation, new rules and measures will apply in the EU oil and gas and coal sectors for monitoring, reporting and verification of methane emissions (so-called MRV rules), measures to reduce methane emissions through Leak Detection and Remediation (LDAR) and Ban of Routine Venting and Flaring (BRVF) practices.

Preparing the gas grid to reduce fossil gas use is not yet a reality.

It is clear from the graphs resulting from the NEPC modelling that some decline in fossil gas use is expected (between  $\frac{1}{4}$  to  $\frac{1}{3}$ ) by 2030. The absence of Annex 3 makes it impossible to determine exactly what decline is projected.

At the same time, the plan foresees new gas infrastructure such as:

"Dedeagach/Alexandroupolis LNG terminal - operation from March 2024 (5.5 bcm); Expansion of the technical transmission capacity from Greece to Bulgaria in IP Kulata-Sidirokastro from 1 to 3 bcm - The latter project is more of an expansion of Greece's export capacity through Bulgaria as it is currently 4 bcm compared to 20 bcm of Turk/Balkan Stream;"

These projects in themselves will not necessarily result in increased gas consumption in Bulgaria and the region, because they mainly diversify the sources of supply, but the capacities envisaged also indicate that no significant decline is expected in the medium term. Bulgaria is on track to complete interconnection projects that are under development, as well as to expand capacity from Greece (almost doubling) to allow more gas to be transported to neighbouring markets from Greece. The long-term capacity contract at BOTAS' terminal in Turkey remains a major concern as to whether and how this LNG capacity will be used. **A significant omission is that the contract with BOTAS is not mentioned in the plan.** The new Alexandroupolis LNG terminal, although not yet operational, which was expected in March 2024, will add to regional gas volumes. If the supply through TurkStream does not decrease or stop for some reason, this is likely to result in increased gas use in the region or stranded assets.

## Renewable gas - assessing the potential for development using a science-based approach

Member states are expected to report their estimated imports and exports of renewable fuels of non-biological origin (RFNBO) in their NECPs. Describing how much renewable gas such as **biomethane** or renewable-based hydrogen (**green hydrogen**) they intend to produce and consume by 2030 will provide clarity on the implications of renewable gas development on existing and planned infrastructure.

The plan provides surprising clarity and details with regards to hydrogen, transmission grid connectivity, production and applications. The word **'hydrogen' is mentioned as many as 158 times in the NECP.** Many of the actions and projects envisaged are linked to Greece's plans for hydrogen development, i.e. considered in the context of the regional strategy and connectivity.

"Planning new gas infrastructure as 'future-ready' (hydrogen fit) will not lead to a carbon lock-in effect. At the same time, there is growing demand and supply in countries in the region for significant quantities of natural gas from reliable sources, which will ensure a high level of security and sustainability of supply in the long term."

As we did not understand exactly what is meant by "carbon lock-in effect" on page 37, we also consulted the English version of the NECP, which talks about "carbon lock-in effect". For us, a more correct translation would be along the lines of "reinforcing long-term dependence on sources with a carbon-heavy footprint".

Bulgaria is too confident in betting on long-term fossil gas usage, and the plan argues that by making the infrastructure hydrogen-ready, there will not be a lock-in. This is not backed up by clear arguments and a pathway for a planned phase-out of fossil gas dependence.

## Evaluating and addressing the social and economic impacts of reducing gas consumption

Just transition and energy poverty are not addressed in the context of fossil gas use and fossil gas phase-out, despite the fact that there are people employed in this industry, in industries using fossil gas for various production needs, and that there are hundreds of thousands of household gas consumers and heat networks using gas. The plans do not even mention current programmes and measures and instead interpret them in terms of new competitive green jobs, which is far from the truth.

### Phasing out long-term gas contracts in line with declining fossil gas use

Member States should list existing long-term gas contracts and their end date to ensure that they are in line with the declining use of fossil gas implied by EU climate targets. Member States should also develop a plan for the complete elimination of long-term gas contracts under the Hydrogen and decarbonised gas market package

We would once again like to stress that there is no mention of the long-term LNG capacity booked with Turkey's BOTAS through which Bulgaria commits to more than 1.85 bcm of annual capacity. Only the previous gas contract with Gazprom, terminated by Russia in 2022 by suspending gas supplies, is mentioned.

### Assessment of the role and scale of gas networks to be decommissioned

There is no significant reason to assume that future renewable gas volumes will be at the same level as current gas consumption, particularly at the distribution level, which means that some parts of these networks may need to be decommissioned. Conducting feasibility studies to assess the economic, technical and environmental aspects of decommissioning gas networks will be crucial. At the same time, NECP only mentions energy efficiency improvements in the context of fossil gas use.

Despite the modelling which shows a reduction in gas consumption, the narrative in the updated NECP is presented in a way that is completely incompatible with achieving levels of greenhouse gas reductions in line with the Paris Agreement and Green Pact targets, and in particular the following text on page 250<sup>2</sup> should be dropped:

“Given the trends to promote decarbonisation and the use of low carbon fuels, natural gas has the potential for significant and sustainable growth in industry, energy and domestic

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<sup>2</sup> The text refers to page 250 in the Bulgarian text, which corresponds to page 221 in the English text, [published](#) on the European Commission's website.

consumption. It also recognises its role as a transitional fuel in the decarbonisation process and the drive towards a low-carbon economy. Achieving higher levels of consumption and thus enabling it to be met is an essential process of creating a sustainable environment conducive to the development of industry and the economy. In addition to supporting the economy, increased consumption, in line with the expansion of the gas network, in new regions is directly linked to the development of the regions concerned – in business and social terms. Providing access to a sustainable and environmentally friendly energy source such as natural gas makes it possible to gasify new settlements, increase the competitiveness of economic actors and consequently reduce emissions of greenhouse gases and harmful substances by replacing traditionally used solid and liquid fuels.”

Plans to increase domestic gas consumers are misguided and inconsistent with meeting the climate targets, which should be strengthened by the current NECP update, and therefore should be dropped again.

## Benchmarking gas usage with E3G methodology

The following benchmarking of the future use of gas in Bulgaria follows the benchmarks of fossil-gas phase out proposed by E3G which we used while screening the projections or lack of such in the draft revised NECP

<https://www.e3g.org/news/gas-in-decline-benchmarking-the-eu-s-national-energy-and-climate-plans/>

### 1. Integrated approach to heating and cooling:

- **Is heating and cooling being approached in an integrated manner with recognition of the requirement to develop (the now mandatory) local sustainable heating and cooling strategies (EED) and is it expected that these plans will be incorporated into a wider national strategy (NECP and/or another specified such strategy)? Is heating being considered from an energy system integration perspective - e.g. what is the relationship with all other energy uses in the country?**

There is no such approach, there are no requirements for heating and cooling decarbonisation plans for local authorities, and no national strategy is planned. Heating and cooling is not being considered or modelled with regards to the role of energy systems integration.

- **Are there renewable energy targets that cover different heating sources, including individual household heating, district heating and industrial applications? Are heating and cooling for the industry also addressed? Is waste heat recovery also the subject of plans and goals? Are transnational projects considered where there is potential?**

Waste heat is mentioned eight times - mainly in the context of new European directives (we assume that the targets are unconditionally accepted).

### 2. Legal obligations of the stakeholders:

- **Are there legal obligations, specifically in terms of the Nearly Zero Energy Buildings (NZEB), and also such stemming from the transposition of relevant EU**

**legislation? Has the legislation been fully transposed? Is there any local legislation that goes beyond the EU required ambition to integrate renewables in buildings?**

Transposition of the new requirements is pending. Bulgaria does not have a history of ambition beyond the EU minimum and often delays, postpones and neglects setting even these minimums.

**3. Accessibility and heat market:**

**- Are district heating networks accessible to independent heat and cooling producers, or energy communities and do operators allow waste heat recovery (e.g. from industry, wastewater, etc.)?**

No, and if there is access, this is most likely an exception.

**4. Tackling energy poverty:**

**- Are there flawed incentives and forms of energy subsidies that are more likely to maintain energy poverty and the use of fossil fuels for heating? Is energy poverty targeted through well-functioning markets while ensuring vulnerable groups are protected through targeted support? Are measures planned, enforced and sufficient?**

There is an old system of energy subsidies that is maintained, which are used for energy poor households to purchase firewood or electricity. In this sense, the benefits target those most in need. There are programmes in place to replace inefficient heating in households in a number of municipalities. However, the approach is not integrated. And there is no functioning heat market in which producers who have a surplus of heat energy can participate, given that there is an available heating network.

**5. From pilot projects to large-scale programmes and replication:**

**- Do existing funding and programmes cover a range of heating solutions, from individual households to district heating, and do they support scaling up from pilot schemes to local or national programmes? Do the programmes address both the development of district heating networks and the transition to renewable energy when it comes to existing networks? Are the programmes designed in a way that prevents stalling and loss of momentum, interest and capacity once the programmes have been put in motion?**

There are only heat replacement programmes in individual households. For the moment there is continuity of the programmes, but there is no guarantee for their long-term implementation. There are no programmes targeting district heating networks.

**- Are there examples of successful pilot schemes, district heating initiatives, low temperature heating systems, retrofits, hybrid solutions and community based schemes? Is there a sensible approach to multiplying successful projects?**

None. Energy communities in terms of heating and cooling are marked as irrelevant in NECP.

**- Is there a view of leadership by example - recognising, for example, the appropriate way in which actors can be pioneers, when do they need support and in return where they can lead the change through financial and business models, implementation plans, know-how and capacity sharing?**

No positive examples of such an approach have been identified.

**- Is there any implementation of pilot financial instruments that would support the decarbonisation of heating?**

There are only grant schemes for the renovation of multifamily residential buildings. Currently there are not even credit lines available with a grant component - citizens have the option of either an 80% grant or to seek a loan. Regarding heating source replacement, OPE (Operational programme Environment) (in municipalities with proven air pollution) and NRRP finance a small number of households through a 100% grant scheme

**6. Efficiency and circularity of heating and cooling with renewable energy sources (RES):**

**- Is there a focus on efficiency and circularity within renewable heating and cooling, such as optimising and reducing biomass use and exploring alternative renewable options and increased electrification of heating and cooling?**

There are only market mechanisms in place.

**7. Phase out of fossil fuel subsidies**

**- Do fossil fuel subsidies get accounted for and is there a commitment to phase them out by a certain year?**

The existence of fossil fuel subsidies is not recognised in NECP

**8. Public support for renewable heating and cooling:**

**- Is renewable heating and cooling fully eligible for public assistance as fossil fuels are/were?**

There are programmes in place to help replacing inefficient heating in households. There are no examples of conversion of district heating services to RES with public funds.

**- Is there a one-stop shop for businesses and individuals looking to invest in decarbonised heating that will help them access finance, managing the financial instruments of new systems and choosing a system?**

No

**- Are there financial instruments universally available for each target group?**

No

**9. Engaging the local economy in value chains:**

**- Are there value chains and production plans that actively engage the local economy, including export strategy considerations?**

There are local producers of certified heating technologies, but it is not known whether they are supported or subject to a specialised or strategic approach and incentives from government, they have access to the usual programs and funding when these are available.

**10. De-prioritisation of the use of fossil gas:**

**- Is gas still a priority in network and market development strategies? If so, is there a sound rationale for such a need and a clear commitment to net zero emissions that requires decarbonisation of gas networks by a certain date?**

NECP still talks about the importance of gas as a transitional fuel and plans to increase domestic gas consumers. There is no rationale and no proposed science-based trajectory for how this approach evolves over time.

#### **11. Phase out of fossil fuel heating technologies:**

**- Is there an end date and set trajectory for the phase out of fossil fuel heating technologies (banning their use) at both local and national levels, including a target year for the end date?**

There is no planned end date or trajectory. The requirement to remove subsidies for new fossil fuel systems from 2025 is not even mentioned.

## Renewable energy sources development

The claim on p. 203 that in order to balance the system, the increase of the RES production has to be accompanied by an increase in nuclear capacity between 2030 and 2040 is unreasonable. Not only is there sufficient nuclear capacity in the Bulgarian energy mix that according to plan should last at least until 2045 but new nuclear capacity wouldn't be economically viable in combination with cheap and intermittent RES. One of the main flaws in the plan is the unrealistic expectation of a large increase in electricity consumption, with which they are trying to prove the need for 2 new reactors at the Kozloduy NPP. There is a lack of prioritization of energy efficiency, which has a huge reserve for development and will make new energy mega projects that rely on corruption schemes meaningless. The untapped potential for energy savings in the building sector is mainly in multi-family and single-family residential buildings, as well as in the municipal building stock.

An increase in RES capacity is set, which in 2040 should reach 12.2 GW compared to just over 3 GW now - 15 years is a short period for a 4-fold increase in RES production. Probably, the idea is again to bet on large RES parks. The right decisions are to focus on energy efficiency, decentralization of electricity production and access of households and energy cooperatives to renewable energy sources. This will increase the energy independence of families and will ensure the easing of the long-distance energy transmission network.

## Prosumers & energy communities

Energy communities and self-consumption by individual households are only mentioned in the policy sections of the document with wishy-washy promises of policy changes and incentives that are not concretely defined. **There is no set target** that the document sets **about the number of households** it would like to see **become prosumers** neither about **how many energy communities** or how much of the RES capacity should be produced in such a democratic and decentralised approach **by 2040**. According to the EU's Solar Strategy, the EU will need to install, on average, approximately 45 GW per year. If the NECP does not set a

target how much of the capacity in Bulgaria will come from citizen-led initiatives, there is a risk that all the RES capacity installed continues to be driven solely by the business and not in a planned way because there is no target to aim for and there is no incentive for the authorities to remove barriers or introduce specifically tailored for the citizens incentives.

In order to boost the renewable energy production for individual or group self-consumption and the energy democratisation in general, **the NECP should also include goals on smart meters deployment.** Currently the number one barrier identified in the assessment from the Sustainable Energy Development Agency - SEDA (Renewable Energy Act 18b (4)) is the inability for energy sharing between energy community members and individual consumers of the renewable energy they have produced. This is blocked also by the lack of smart meters and the motivation from the distribution system operators (DSOs) to install such infrastructure elements. This is also crucial for the net and virtual net metering schemes. The technical specifications which should be met by each device must be specified by the regulator so that the development of a modern and smart grid can really begin. Another barrier pointed out in the same report is the uncertainty about who will manage the energy database. Every smart grid requires regular (every 15 minutes to every 1 hour) metering of the energy flows in both directions. This will create enormous amounts of data that needs to be stored, protected, managed and also used to balance the energy system. It should be clear where the funding for the creation of this database will come from and whether it will be common or separate for each DSO.

**In several paragraphs promotion of energy communities and production of own renewable energy is mentioned. However no concrete measures are outlined.** The financial measures mentioned on page 208 do not reveal anything concrete on how exactly people and communities will be supported. Bulgaria is one of the few countries that has not provided financial mechanisms under the various European grant schemes to support the development of energy communities. This is true both for financial means for technical support and for launching pilot projects. As this is a risky investment at this stage, without financial and legal history, banks would be reluctant to offer loans. It is for this reason that government support is crucial to laying the foundations and building the first working practices.

The development of agro-photovoltaic systems is not even mentioned in the plan. These technologies provide the opportunity to preserve the basic agricultural functions of the land, while at the same time enabling farmers to secure their energy costs and expand their sources of income. In this way, they support the penetration of clean energy sources, which modern society is in dire need of. In mid-October 2023, the concept of agro-photovoltaics was introduced in the Agricultural Land Protection Act. However, there is an urgent need to define, at legislative level and not in a by-law, basic criteria for technical and production parameters of these systems, with a special focus on the ancillary nature of the energy production activity, which should be secondary to the continued use of agricultural land for its intended purpose. The rules for control and effective measures and penalties must also be regulated to ensure the rational use of land and avoid abuse. It is absolutely necessary to ensure that at least 70-80% of the agricultural productivity of the land on which agro-photovoltaics are placed is maintained. In addition, the major obstacle to the development of energy cooperatives in the form of agro-photovoltaic systems is the legal restriction that they must be strictly located in urban areas (Renewable Energy Act article 1, point 56 b of the Supplementary Provisions).



## Renewable acceleration areas

**Renewables Acceleration Areas (RAAs) should focus not only on wind energy but also on solar deployment.** Bulgaria needs to meet its climate and energy goals with the help of RAAs, implemented in a clear, inclusive, and comprehensive way. The designated process of mapping should follow credible, science-based methodologies, technology-specific energy modeling, wildlife sensitivity mapping and socio-ecological land use indicators. The process should provide clear and explicit guidelines not only for the business but also for the public participation and local communities. **Early-stage public participation strategy in the determination of the RAAs** - including identification of the required capacity can provide the opportunity to collect valuable data for developers to identify potential difficulties, optimise design, and propose mitigation measures to address residual conflicts. Engaging communities and stakeholders can lead to minimising the risk of lengthy and costly legal objections before national courts, as well as establishing a solid foundation for smoother and community inclusive project development.

**It is also advisable that the NECP sets concretely defined targets of renewable energy deployment in artificial built-up areas** such as roofs of buildings, areas with existing transport infrastructure, parking areas, waste sites, industrial areas, industrial parks quarries, not in artificial water bodies and reservoirs, not in pastures (will explain below why not), but in urbanised areas, degraded land, tailings ponds, landfills and degraded land that cannot be used in agriculture. These targets can be then further developed in the respective plan that needs to be completed by the government in accordance with the Renewable Energy Act. Due to the nature of these areas, it is expected that it will be the most economically and technically viable that PV installations are prioritised in terms of deployment. It is also expected that the necessary reforms are also introduced in order to facilitate this process and especially if there are any existing burdens to develop renewables in these areas.

Why the prioritization of artificial reservoirs and pastures for the installation of RES capacities is not a good idea:

In Bulgaria, biodiversity with a high conservation value is very often concentrated in these two types of territory. The artificial reservoirs in our country are attractive for feeding and breeding hundreds of species of water-loving and predatory birds, because these territories provide good conditions for this. The unused or still used pastures are the habitats of a number of endangered species of birds, mammals, plants, reptiles and amphibians, included in the Red Book of the Republic of Bulgaria. Such as *Cerx cerx*, *Testudo graeca*, *Testudo hermanni*, *Spermophilus citellus*, *Circus pygargus*, *Circus cyaneus*, *Aquila heliaca*, *Milvus milvus*, *Milvus migrans*, *Falco naumanni*, *Falco vespertinus*, *Clanga pomarina*, *Hieraaetus pennatus*, *Buteo rufinus* and many others.

On the other hand, many of these terrains do not have a protected status, which makes them vulnerable.

The law allows changing the intended use of pastures if they have not been used for grazing for up to 3 years, which is very risky for the biodiversity in them.

The law does not impose almost any restrictions on activities in artificial water bodies for biodiversity protection (unless they are explicitly declared as protected areas).

Thirdly, recently were officially announced the results of the large-scale [study](#) by WWF Bulgaria on the capacity of former industrial sites and damaged lands (such as roofs of buildings, areas with existing transport infrastructure, parking areas, waste sites, industrial areas, industrial parks quarries, urbanised areas, degraded land, tailings ponds, landfills and degraded land that cannot be used in agriculture). According to the results: "Bulgaria currently has the potential for solar energy extraction - about 99 % contribution to the required additional capacities from damaged terrains and 94% of the required additional capacities from urbanized terrains." But the state has not yet prioritized them or noticed its "hidden" value. Which data can automatically exclude pastures and artificial water bodies from the plans for priority areas for solar energy. Things are different with wind energy, for which the condition for efficiency is to have a sufficiently good power of the air currents, but for it the thorough preparation of the EIA should be a must, before the implementation of the projects (not only in protected areas) in order to avoid the destruction of biodiversity.

In Bulgaria, there are 426 species of wild birds (539 species in total for the European continent) which is more than 80% of the whole bird species in Europe, many of which are threatened worldwide, almost half of which inhabit wetlands or pastures (active or abandoned). This ranks our country in second place in terms of species diversity of birds in Europe (after Spain). It is a world treasure that Bulgarians and scientists from the whole world are trying to preserve and protect for the future and also a magnetic sustainable attraction for visits in the country for tourists, scientists and nature lovers from all over the world. Official statistics show that one in five bird species in Europe is threatened with extinction, the main causes of which are human activities.

## Transport Sector

Regarding the transport part, the second draft of NECP, published on the EC website on 21st February, do not differ significantly and repeat the systematic deficiencies of the initial Plan and the first draft from December.

The main issue again is that the current document does not provide the necessary base, measures and plan to be the strategic framework to insure significant improvement and goals achievement of the transport sector by 2030 and 2050. As such it **does not fulfill the basic requirement of Regulation (EU) 2018/1999** to "**meet the objectives and targets of the Energy Union**" and to "**set out national objectives for each of the five dimensions of the Energy Union and corresponding policies and measures to meet those objectives and have an analytical basis**". These gaps also create serious doubts if the stated goals will be achieved or they will stay only on paper as not fulfilled promises.

The fact that the Transport sector is still "**one of the largest GHG emitters, with steady growth, but largely neglected in terms of its impact on climate change**" (p. 24) point out very clearly that neither the different strategic documents pretending to be adapted to the EU policies and goals, neither the large EU and national financing, resulted to an adequate transformation of the transport sector at the last 15 years since Bulgaria became member of EU.

Our statement is that the updated NECP should resolve the mentioned systemic deficiencies in the transport sector and draw a clear path for the modernization and decarbonization in public interest with binding ambitious targets, measures and their financial allocations.

To achieve the above we recommend at least the following changes and improvements of the document:

## Decarbonization of the Transport Sector

At the priority axis for **reducing transport emissions** the **first to be done** is to reject the misleading argument for priority investments in roads because improved new and rehabilitated roads reduce emissions. Bulgaria has been investing heavily in road construction for the last 20 years and there is absolutely no evidence that the emissions have been reduced. Exactly the opposite:

- The improved national road network raised the average and maximum speed which led to engine work above the recognized optimum average speed for minimizing fuel consumption and emissions is typically around **80 km/h as the engine load is higher.**<sup>3</sup>

- **Improved roads attracted more traffic and contributed to a shift towards carbon intensive private forms of transport and cargo.**

- **Even from the perspective of road casualties, the improved roads didn't move Bulgaria from the leading position in accidents fatalities.**<sup>4</sup>

*“Over the past ten years Bulgaria has seen a particularly unfavourable trend in the number of fatalities and serious injuries on motorways, while the EU average has declined. This trend is mostly due to the significant increase in motorways in Bulgaria (almost doubled between 2010 and 2019) and the increase of traffic on motorways.”*

We do not object the fact that modernized roads (especially if done by the EU safety standards) improves the quality of life of the citizens, but it should not be considered as one of the main measures to be financed (especially for decarbonisation purposes), as it is not bringing the best and fastest results for the stated four transport priority axes nor transport system and the modal split.

Assertions as the one on p. 86 *“The measures in the transport sector with direct effect are as follows: Rehabilitation and modernisation of existing road infrastructure to ensure optimal speed and optimum driving modes for motor vehicles”* are not correct, do not have analytical basis and therefore should not be accepted by the EC.

**Second:** There should be a clear programme for the replacement of the long-distance intercity, regional and municipal public buses with zero-emission ones. In the last ten

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<sup>3</sup> [Explaining road transport emissions - A non-technical guide — European Environment Agency \(europa.eu\)](https://europeanenvironment.europa.eu/en/press-releases/2020/04/20200420-explaining-road-transport-emissions-a-non-technical-guide)

<sup>4</sup> [National Road Safety Profile - Bulgaria \(europa.eu\)](https://europeanenvironment.europa.eu/en/press-releases/2020/04/20200420-explaining-road-transport-emissions-a-non-technical-guide)

years, the programs for renewal and emission reduction of the urban buses proved their effectiveness and, as the bus transport at national level is estimated to 8% of the passengers travels, the restructuring aiming for a zero-emission fleet will bring significant benefit as a decarbonisation measure.

Of course, as in the cities, to maximize the effect of the measure, taxes and disincentives should be designed to reduce the carbon intensive vehicles.

The **third** important measure for decarbonization should **pay special attention to the international transit freight traffic and the revised NECP should set a clear goal for its reduction.**

The current toll and tax system do not implement adequately the polluter pays principle in order to provoke a substantial shift towards low emissions modes of transport through the territory of Bulgaria and the renewal of the trucks fleet at national level.

Essential element is the deployment of an adequate system of border and internal multimodal terminals. The National Plan for the Development of Combined Transport in the Republic of Bulgaria until 2030 should be implemented in accelerated terms, as the terminals have always been at the EU scope for financing, but the mentioned National plan confirms that the implementation is at initial phase and it is not a top priority of the National transport strategy.

There should be designated several “clean corridors” on the main cargo routes between the borders subject to priority investments and largely communicated to the freight companies and truck drivers – this could be one of the specific measures on the Regional cooperation section of the plan.

**All three elements above have to be clearly described at the NECP with their analytical base, decarbonisation targets and milestones.**

## Railway Transport

“One of the main priorities of national transport policy is the development of rail transport.” (p. 116). The development of rail transport is “one of the main priorities” for the last 15 years and still Bulgaria is not able to provide evidence for the efficiency of the measure and the investments made so far, where the railway has a systematically declining share of the transport of passengers and currently has a 2% share.

**It is high time that the NECP set clear targets on cargo and passengers shift from carbon intensive to rail transport mode in each of the years by 2030, respectively 2050.**

**The final NECP should introduce a commitment to 100% RES electricity in the railway network of Bulgaria by 2030 or earlier, and use the railway terrains and infrastructure for the integration of utility scale renewables capacity.**

## Energy efficiency of the Transport Sector

As the transport sector is still growing, including its energy consumption, the NECP should pay particular attention to the sector and should provide an analytical basis for its final energy consumption and breakdown of the reduction targets for the years until 2030 and beyond.

The existing Component 8 'Sustainable Transport' of the NRRP, Investment C8.I7 'Green mobility – pilot scheme to support sustainable urban mobility' should be expanded to the intercity and regional bus transport which is one of the most energy intensive subsectors.

Again, clear targets and milestones are missing on each of the stated priorities at the transport sector.

This chapter should be significantly strengthened as required by Directive 2023/1791/EU (Recast Energy Efficiency Directive):

*“( 1 While the energy savings potential remains large in all sectors, there is a particular 3) challenge relating to transport, as it is responsible for more than 30 % of final energy consumption.”*

*“(35)To fulfil their obligation, Member States should target the final energy consumption of all public services and installations of public bodies. The obligation can be fulfilled by the reduction of final energy consumption in any area of the public sector, including transport...”*

*Member States should provide planning and annual reporting on the consumption of public bodies in an aggregated form per sector.”*

*“( 3 Member States should promote energy efficient means of mobility, including in their 6) public procurement practices, such as rail, cycling, walking or shared mobility, by renewing and decarbonising fleets, encouraging a modal shift and including those modes in urban mobility planning.”*

## Energy security and Transport

A main measure for this section should be a National programme to equip with RES capacity the state, municipal and private companies providing transport service in a short and medium term. When implemented these main benefits will be available to the transport sector:

- 100% RES energy instead the currently available mix which includes energy from coal, gas and nuclear;
- Independency from import and potential disturbances at the network and the energy market;
- Reduction of the price of the transport service;

- Stimulus for further investment in new EV vehicles.

To accelerate the energy transformation of the Transport sector, the final NECP should introduce a commitment to 100% RES electricity initially in the railway sector of Bulgaria by 2030 or earlier, and use the railway terrains and infrastructure for the integration of utility scale renewables capacity. This target should be enlarged towards all transport sector providers by 2050 at latest.

### Transport poverty

The problem of "transport poverty" is poorly researched and definitions for it could rarely be found either at the European or national level. However, it is becoming increasingly prominent - due to the steady rise in importance of cars as a means of transportation, combined with rising fuel prices. The problem must be considered holistically, identifying the affected social groups of society, as well as seeing the differences due to the territorial principle (eg. limited mobility in rural or mountainous areas).

#### Suggestions on the Definition on Transport Poverty:

According to the European Social Fund, transport poverty is the inability or difficulty of citizens or households to meet the costs of private or public transport, or lack of and limited access to a transport service to ensure their access to basic socio-economic services and activities, taking into account the national and the spatial, territorial context. However, this definition is incomplete to inform adequate management decisions. Also, those citizens whose weekly transport costs put their household below the poverty line should be considered transport poor, where travel times are too long, leading to time poverty and social isolation, and where prevailing travel conditions are dangerous or unhealthy.

Until now, the measures against transport poverty and limited mobility are mostly municipal decisions on the price policy of public transport - most often reductions for pensioners, schoolchildren and students. However, such an approach may lead to a worsening of the parameters, rather than a way out of a state of transport poverty, states a [2023 Za Zemiata's report on transport poverty](#).

Transport and mobility poverty is a major issue for Bulgaria as according to the **combined poverty indicator** (PEPS01N) for 2020 at risk are 2 193 500 citizens or 31,7% of the population. The problem is aggravated by the deficiencies of the national transport system – bad split of the transport modes, mediocre public service leading to dominance of the private cars transportation, oil dependency etc.

On all of the transport poverty factors – **mobility poverty, accessibility poverty, transport affordability and exposure to transport externalities** – there are clear indications and tendencies that Bulgarian citizens, but also the foreign visitors and business, experience different levels of transport deficiencies. Each of these scarcities obviously requires different solutions.

As such, the revised NECP being a strategic tool, cannot ignore or neglect the issue and should include description and, at least, measures for identification of the factors and vulnerable groups.

As the strategic recommendations listed above have the potential to influence and contribute to significant extent to overcome also the transport poverty, more detailed and focused measures should be primarily elaborated on municipality level:

### Recommendations for tackling the transport poverty:

- The development and aggregation of targeted, regional-specific indicators and metrics for tackling the Transport poverty by geographical and urbanization types – city, small town, rural and mountainous regions.
- To conduct a specific detailed survey by regional and municipality level to correctly assess the transport poverty situation and needs.
- The survey results to serve as a basis at the elaboration of the National transport scheme (part of the National Plan for Recovery and Resilience, as for us the scheme should provide clear measures to overcome transport poverty) and, later, at the county and municipal transport schemes.

We remain available to provide additional information and to receive feedback on the position

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