

**Initial round of comments from Za Zemiata to the first draft of NECP of Bulgaria published for comment on 15 January 2019**

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**Short note on: Public Participation** – The Bulgarian government has provided a sufficient window for the first round of comment regarding the published NECP draft. The draft was published mid January 2019 and is open for comments till end of April.

But further than that:

- the draft contains no sources of information
- the draft does not provide information and methodologies how figures and targets till 2030 have been derived
- there is no indication how the government will deal with the received comments – we only expect that EC will provide comments by the middle of 2019 and after that a pre-final draft will be released by the government for further public comments. Negative practice in Bulgaria is introduction of serious changes (usually negative) to be introduced the very last moment

We would like to thank the Bulgarian government for sharing the NECP draft with the public at an early stage and allowing enough time for comments and public participation. Short deadlines for public participation are an usual deficiency in the governance process and the fact that government released the draft allowing for over three months for feedback deserve special admiration.

**Major deficiencies that should be tackled:**

The entire document lacks of sources and input data for all the targets. In general, the plan does follow the provided structure in NECP which also facilitates the comments. However, the analyses of the plan would have benefited if the government did make public also the input data, sources, models and methodologies that lead to the derivation of certain targets and numbers.

The NECP of Bulgaria has a simple formula of improvement. The document starts with an overview that admits absence of almost everything that we can call progressive policies. Then in a very declarative way many progressive policies are listed around and after page 70. All of which would be great to happen but are unlikely to materialize without a clear timely plan for implementation. The simple formula of transforming the NECP for good is to change nearly all sections with value “Not applicable” into concrete, applicable measures and policies with relevant achievable targets.



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In the NECP Bulgaria states that the country has a horizon of 60 years of coal reserves at the current rate of use and that the reliance on coal is unlikely to change until 2030. If the country doesn't pledge for a coal phase out in a foreseeable future, the coal industry regions will continue their agony and will hit a dead end without time to reform and adapt, because the decarbonisation path of stubborn member states will have to be a lot steeper after 2030 and will require almost immediate shut-down of all coal power plants and fossil fuel consuming industries and consumption. The Bulgarian government has to take some responsibility and establish a dialogue for a coal phase out in the early 30s of this century. Otherwise the topic is just a problem that we aggravate and leave for the next generation to solve.

Bulgaria seems to be omnivorous when it comes to new fossil fuel infrastructure. Gas pipelines, new oil and gas exploration in the Black sea, LNG terminals, subsidies for households to switch to gas – all of that in Europe that has oversupply of gas. Of all those projects the only meaningful ones are probably the gas inter-connectors with the neighbors. If all those projects materialize they will put Bulgaria and other countries in a lock-in position with gas. All these projects will likely mean increase and not a decrease in the emissions of the country and have to undergo a SEA. We hope that the check that EC will do of the NECP will cover the aspects of a proper SEA. The Bulgarian stretch of Turkish stream is not even mentioned in the plan and just recently the Government decided to spend 3 bn BGN (1.5 bln. EUR) for the rapid construction of the Bulgarian part of a project that may never happen.

All gas projects are a priority in this plan – Bulgaria has to decide what is really important. Also, there is no analyses of to what extend the current gas infrastructure is being used and if it is efficiently used in order to promote too much new gas infrastructure. The gas energy market has negligible space and mention in the text.

The country has stated that it will have more than 5 GW of installed renewable energy capacity in 2020 while the IRENA database shows a little less than 4 GW in 2017. How a 1 GW extra will have been installed is unclear but a cross check should be done whether pump hydro storage have fallen by mistake into this capacity accounting.

The target for renewable energy share is so low that it will require zero effort from the government to achieve. The plan starts with 16% share in 2020 and the country already declares almost 19% share. The increase is only in the field of renewable heat while electricity production from RES stays almost unchanged. It seems impossible that the levels of production will stay there considering the development of technologies and the listed further in the NECP promises for grid upgrades and legislative changes. Such a scenario is possible only if the current barriers remain at place and/or are even increased. As the development of RES for electricity is on halt since 2014 in Bulgaria, if no development will happen by 2030 this means the country will have a decade and a half of dry regime for renewable energy developers. Bulgaria will also have to develop capacity at a later phase and will



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have lost opportunity to be a leader or have an adequate place in this new technological field. We can barely imagine a jump from 17-18% of renewables in the electricity mix to a 100% of renewables in 2050 when all the world has to be carbon neutral.

As for the target for renewable heat – even now more than 40% of the Bulgaria households burn wood to heat. It will be only a matter of reporting in order that the country will present a superficial result as achievement, because Bulgaria is already there if they actually want to report the wood burned for domestic heating.

The target for 2030 has to be risen to at least 40% of the final consumption and at least 30% should be the target in RES for electricity only and this is the very minimum. Still in just two decades after 2030 it will mean that Bulgaria will have to cover another 70% of the electricity consumption with renewables in order to be net zero in 2050 – triple the renewables in just 20 years time. Bulgaria has to state that it will keep open to review the targets at interim points until 2030 and be open to further rise the ambition.

Bulgaria has pointed that there are no fossil fuel subsidies and thus no need to phase out. This is not true and the complaints in DG Competition show this in a very detailed reason. Fossil fuel subsidies and institutional privileges for fossil energy industries have to be phased out completely in the next decade.

Many projects on grid inter-connectivity seem to serve mainly Maritsa East Energy Complex – a doomed coal complex that should not benefit from public funds and projects in order to develop new capacity to export electricity.

The NECP does not provide specific diagnostics where the problem with grid and system integration of more renewables lays, which makes it impossible to prescribe and debate on the cure. Bulgaria has to clearly draw the picture of where the problem is and develop a plan how to overcome it. It is good that the country states it will seek to develop the renewable sin a cost effective and competitive way mentioning auctioning and grid upgrades, but there is now specific plan how these will be introduced and by when.

Recycling rates for waste are not mentioned. Dangerous formulations are provided here and there in the parts that mention the waste management and waste to energy. Very often with biological waste that will be burned is used the term municipal waste. Bulgaria may account other municipal waste and RDF as bio-residues fuel which will blur the picture in the next decade. The danger is real as some of the most polluting and violating the rules power-plants in Bulgaria have already declared intention to co-incinerate waste with no refurbishment whatsoever.

EU ETS – Bulgaria is planning to provide free allowances and derogations to plants without any serious

reasoning. Example is now the BREF rules derogations given to plans without a strategy how the system will change in the next years as a trade-off for letting old dirty plants to continue to pollute. Bulgaria has promised too often in the past that something will be done in exchange of derogations. This time such trade-offs should not be allowed unless a clear detailed plan of energy system reforms is detailed and set in motion.

Market mechanisms receive little attention in this document – enabling cost-effective reforms of the energy consumption is crucial.

ESCO initiatives for the integration of renewable energy and energy efficiency have found very limited mention in the document. ESCO are very necessary in the housing sector and should even be enabled through reforms in the ordinance for heating subsidies for households.

The NECP is formally compliant with art 4(a)(2) of the GR 2018/1999 but the figures of the government are inflated by the over-reliance on biomass

Regional cooperation is completely neglected while the regional energy systems and markets should really move to increased integration covering the entire region of South East Europe. The markets and the systems need scale in order to easily accommodate the requirement for more renewables and to have the actual capacity to sustain the new rich mix of energy solutions required for our cleaner energy future.

### **Highlights by elements from the Bulgarian NECP:**

#### **1.1.-iii.**

The 0% of GHG reduction for the country is proving to be a real curse. The lack of target decided at international level a while ago seem to be an absence of incentive for the government to develop ambitious policies or use the chance of a 0% reduction to actually reshuffle and modernize the energy production and consumption in the country as we will try to clarify in detail in our further comments.

The table with the targets also seems to miss reference target to GR 2018/841 where a national target for carbon sinks is stated and it is only fair if the member states would agree to contribute and not count on the fact that there is an overall EU target.

Similar is the situation with the target under EU ETS – the target is overall for EU but is good if countries would engage and set a target they will achieve.

We do consider the renewable energy target as artificially low and we clarify further on with recommendations.

1.2-ii-1) The plans for municipal waste incineration that are reaffirmed also in this part of the NECP is growing into a time bomb for social discontent similar to what happened with the promotion of diesel as a climate solution by the car industry that led to the current Dieselgate scandal and the deadlock of dieselification of Europe. The government is becoming over-reliant on the plans to burn municipal waste. Some of these plans include construction of large incinerators but others are incinerators under cover as number of coal power plants are planning to burn municipal waste with no or little refurbishment. This (similar to what led to Dieselgate) will lead to formal progress because coal will be replaced with waste, waste will burn with less of the currently problematic pollutants – SO<sub>x</sub> and PMs but will lead to new forms of air pollution which may not be adequately controlled and which may have dramatic health effects. This is also a plan to keep old and polluting fossil fuel plants alive under preferential conditions (where the free fuel – waste, is just the top of the list of perverse incentives) while their existence in a system that does not need extra energy and is a replacement market for renewables will block the development of renewables and the modern technologies that provide flexibility for the system.

1.2-ii-3) “Effective use of the own energy resources” - Here it is the first of a few mentions of the plans for Bulgaria to keep reliance on coal for another 60 years until depletion of the exploited coal reserves. Further on in the plan this period is reconfirmed. As it is visible from the stated further on in the plan energy targets by different sources, Bulgaria does not seem to plan closure of old and polluting powerplants by 2030. This is a path that has to be considered for number of reasons:

- EU aims to reach net zero emissions by 2050. To be on the right trajectory, EU has to shut down the coal industry by 2030 and in the remaining two decades then deal only with the harder to phase out oil and gas.
- Bulgaria has old a polluting coal industry – operating these plants is getting increasingly expensive, their refurbishment also. It is unlikely that these old powerplants will pay-back any serious further investments. Investing in new ones is simply not feasible any longer. The requirement of refurbishment under the new BREF rules is also threatening to add a lot on top of that bill.
- Only in 2018 BEH spent over 150 m EUR to buy carbon allowances for its biggest coal plant Maritsa East 2. If this will continue this mean that a lot of funds that could be used for the clean energy development of Bulgaria will actually be diverted and sacrificed in a stubborn attempt to continue the coal industry under business as usual scenario but not to reform it and to phase it out.
- As a pre-conclusion – it might be way cheaper to invest in a new economic future of the people from the region of Stara Zagora, then pouring these massive amounts into an industry with no future



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2.1.2 Bulgaria sets a renewable energy target of only 25% till 2030. And delving deeper into this target as broken down to sub-sectoral targets shows why the state has no ambition to develop the renewable energy sector at national policy level whatsoever. The target is actually so low that it is hard to believe the sector can stay there without policies that will prevent the natural development of renewables stimulated just by the development of the technologies themselves and the parity that the technologies reached in the recent years and continue to improve.

It is not appropriate to say that Natura 2000 is a general barrier for the country to develop wind and solar projects as Natura 2000 does not necessarily prevent such projects if they are considering the protection of the habitats in an adequate way during the design, construction and operation phases of a project. Such projects are not necessary of a magnitude to impose considerable threat to species in such areas – e.g. rooftop PV plants and single standing wind turbines in rural areas. Renewables make most sense when energy is produced and consumed close to the point of production which means that the country should develop further its renewable energy potential close to or in the urbanized areas (which by the way can also be Natura 2000 and that is no obstacle for their implementation). In any case we hope to see that the Bulgarian government would finally cease to lament about Natura 2000 and start to see the network as a chance to develop projects in better harmony with the environment and the wilderness which is more important to preserve nowadays than it has been at any point of Human history before. Also, it is important to mention that there is a lot of remaining potential outside of Natura 2000 areas that represent over 60% of the Bulgarian territory. 60% of a territory of 110 thousand of square kilometers can support with 100% renewable energy a population of just 7 million people in almost any geography of this planet. Not being capable to achieve a more substantial progress towards this goal speaks of extreme lack of vision.

The wrong foot on which Bulgaria stepped with the introduction of feed-in-tariffs that were not designed to adequately follow the pay-back of the investments of the projects and offered too generous incentive for too long for late-comers was purely a Bulgarian political mistake. It cannot be seen as a problem of the renewable energy technology but as legislative and regulatory myopia that it was. The price of the technologies is already competitive enough and the argument of price should no longer be used because it is not valid. If the system for the development of renewables is to use auctioning for new and for replacement capacities we are pretty ready to bet that renewables will already stand a good chance to provide cheap electricity and be competitive to new built conventional capacities with included externalities and given the tenders are open and transparent.

2.1.2-ii – The renewable energy target for electricity is in the range of the statistical mistake. It speaks that Bulgaria will keep the suffocating grip on the development of renewable electricity capacities for another decade. The changes from 2014 that ripped off the benefits for many renewable energy projects retrospectively created a very hostile environment for renewable energy developers in Bulgaria. This led to complete halt in the development of such projects and such long intervals of lack of rhythmic development in a sector led to loss of capacity and know-how. This freezing tendency is



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now lasting for 5 years and the target will continue it for another decade. We strongly suggest that Bulgaria will adopt a 30% renewable electricity target with annual cap so that a rhythmic development can be guaranteed and proper signal can be sent to the market players. This is a little over 1% of annual replacement of conventional capacities that will occur for sure. With improvement of the energy efficiency large portion of this target can be reached just by the decrease of the consumption of energy and not even the construction of new capacities. We strongly recommend that towards this path Bulgaria introduces an auctioning system and keeps adequate incentives for small scale renewables like rooftop PV. The big problem in the climate footprint of Bulgaria remains the sector of electricity production which has the biggest climate contribution and remains as the country burns one of the lowest grade possible lignite. It would be inevitable that a few chimneys will have to stop to smoke by 2030 and the government should admit it and prepare the affected regions for the transition.

The 44% target for renewable heat and cooling is a target that deserves special attention. Even at the moment up 60% of the households are using hard fuel to heat their homes of which research have shown that over 2/3 are using wood as main fuel. Another 40% use electricity while the EU average of 11%. And when your electricity comes from low efficient station that burn inferior quality coal this has dramatic impact over the GHG emissions of this energy system. It is very likely that Bulgaria is already close to the target of 44% if it adequately reports the use of wood for fuel. Many experts in the country persistently speculate that the current renewable energy target is actually met with declaring a portion of this fuel source. This target like the general one and the two sub-targets for electricity and transport have no sources and no methodology is described on how they were derived. Bulgaria is slowly approaching to ban coal use for domestic heating – it is unclear whether this path is considered in the plan. But as this phase out is inevitable due to the air quality urgency in the country and the domestic heating has a small contribution to the climate footprint of the member state we believe that the focus should not fall on the target itself (except where the contribution comes from industry or horticultural use use of renewable heat) but what sort of reforms are done within the use of biomass and other renewables for the heating of homes and use of heat and cooling in other sectors. This target should be backed-up with a plan that would promote modern high efficiency use of renewable energy for heating and cooling – modern biomass and more use of geothermal energy in buildings, industry and horticulture. We should include here the huge potential of solar thermal at least to heat domestic hot water in homes around the country where the current use of electric boilers on a mass scale can be replaced by solar water heaters. There is big potential for that even at the direct disposal of the national and local governments through sport facilities like stadiums around the country that are still not supplied with renewable heat despite the big consumption of hot water and the need for heating.

The target for transport is quite a business as usual. It relies mostly on the biofuel component in the liquid fuels and to indefinite levels of electric mobility. It also speaks that the country will keep its overdependence on automotive transport instead of trying to revive the railways for freight and

passengers' traffic. Many train stations went through renovation in the recent years – they can accommodate rooftop and on the ground PV systems that can help decrease the energy price for the rail operations;

#### 2.1.2-iii

According to the database of IRENA the installed capacity for renewables in Bulgaria is just around 4 GW for all technologies in 2017. According to the NECP in 2020 Bulgaria has over 5 GW of installed capacity. It is visible that the biggest discrepancy is in the share of hydro whereas by IRENA it is a little over 2 GW and according to NECP it is over 3 GW. As such a jump from 2017 to 2018 is unlikely, neither there is an ongoing big hydro project in process of construction we tend to believe that the hydro pump storage facilities have been accounted here and that should be checked and corrected to prevent double accounting.

Needless to say that the superficial ambition in the increase of wind and PV will be just a wasted potential for another decade and will force the decision makers in half a generation from now to start planning with tripled ambition and with poor know-how as the country is largely killing the chance to develop know-how and its own renewable industry while exercising clear protectionism for dirty energy projects – existing coal, insecure gas corridors and the Belene nuclear plant project.

2.1.2 – iv. and v. It is deeply saddening to see the country has no plans to account for the sustainable origin of the different types of biomass. Neither there are plans for community organised projects, energy cooperatives and prosumers. Production of own energy is slowly emerging as a right to the citizens of EU but Bulgaria does not have a vision for this energy revolution. The lack of targets here means the country will again be late to guarantee the rights of its citizens like it happened with the liberalization of the energy market. We insist that these two points cannot be considered inapplicable. We insist that Bulgaria has to model the curves under iv. And should engage to minimum a few megawatts in community energy of different types as a goal to develop under the introduction of the new policies and rights for its citizens who are willing to produce their own energy. And we ask the Bulgarian government not to find excuses in chicken and egg rhetoric such as lack of interest from the communities – once the infrastructure of proper legislation, low administrative burden, financial instruments and other incentives is there the interest will come soon after.

2.2 ii – We strongly recommend that the policies related to energy efficiency targets in building are combined with policies that tackle the empty housing spaces in Bulgaria. Especially in multifamily building where in some cities large buildings remain semi-empty.

2.2. iii – Here NECP states there are no EE targets for transport and heating. Bulgaria should agree on targets for more fuel-efficient transport efficiency standards where implementation of even the existing legislation is neglected. On the other hand, Bulgarian municipalities already have a program for EE domestic heating – here the government should state that, quantify the planned effect from it

and proudly show there will be results and we are on track to achieve them.

2.3.- I to iii. The plans focus excessively on gas – new explorations in the Black sea shelf, new big gas transport corridors. Bulgaria does not have priority projects in gas – Bulgaria wants all possible gas projects. This has no sound economic sense neither is compatible with the climate targets of Paris and these plans should be a subject of strategic environmental and climate assessment. For the moment it looks rather like Bulgaria should prioritize only interconnections with neighbouring states and the expansion of capacity of the gas storage facilities. Own gas exploitation in the Black sea could be justified only if other projects in gas infrastructure are abandoned as the project can save the footprint of the long gas infrastructure themselves and provide a bit of extra fuel independence in the next decades. If all new gas infrastructure is realized than Bulgaria cannot be on track with the Paris agreement. Gas should be viewed only in the light of short to mid-term transition fuel. Europe has over-capacity of gas transportation infrastructure already anyway. Too much overcapacity will lead to lock-in effect or in the case of future even more stringent climate targets along with the pressing climate urgency gas infrastructure will likely become a stranded asset. The time when gas was an adequate solution and main transition fuel is actually gone – this was 20-30 years ago. Now gas comes as a false solution – too late and too much projects in the pipeline. In the selection of gas projects priority should be given to the ones that really diversify the source and not keep the monopolistic dependency on Gasprom. Also, the life-cycle footprint of gas should be taken into account – e.g. fracking gas has too much methane fugitive emissions and that problem has no solution – this makes it rather a climate non-sense if LNG terminals are constructed to utilize fracking gas. Consumers in Europe who fought against fracking in Europe will also be aware very soon that fracking gas is planned through the back door and this will inevitably lead to opposition.

2.3. - iv – Needs to be further elaborated. The plans to keep burning coal here note that this will be done in line with the environmental legislation (LCP BREF). But most Bulgarian powerplans already opt for derogations from the new environmental rules. Plus, the NECP is about climate rather than the other environmental pollution. The plans to burn coal should be compatible with the Paris Agreement. This has to be stated and elaborated here. Again – the cumulative effect of all fossil fuel projects in operation and the ones planned in the pipeline are just too much for a climate sound future of the Bulgarian economy.

**2.4.2.-i-1 Electric grid infrastructure** – Heavy investments in new grids that service predominantly the complex of Maritsa East should be reduced or abandoned. The complex is may not have a long enough future to pay-back such investments. If the activity in Maritsa East is to continue it should be mostly to serve as a base load for the needs of Bulgaria with some of the plants serving as cold reserve and whichever plants remains operational should aim for extra flexibility to ramp up and down. It doesn't make sense to foresee big exports of electricity from this extremely polluting source.

Yadenitsa Hydro Pump Storage Facility is an old project abandoned due to lack of funding back in time.

Despite that the project is gaining priority in the energy plans of the country and Bulgaria needs further battery capacity to curb the peaks in the energy demand it is not clear if the project can go through the current EIA requirements. And EIA has to be conducted properly before the project receives yet another go for full go for a resurrection. The country should rather try to curb its serious demands of energy for heating in the cold winter and work on some behavioral change in the use of electricity by consumers instead of focusing too much on mega projects.

**2.4.2.-i-2&ii – Gas infrastructure** – The planned gas projects for inter-connectors with neighboring networks should be the main priority. Considering the current contracts with Gasprom though it remains unclear how Bulgaria would reach economically sound volumes of the use of the existing gas network. Considering the lowering demand for gas in Europe and the fact that so many pipelines and LNG terminals remains working much below their capacity it is unclear how so many projects that Bulgaria wants to see happening will actually prove beneficial for the state. Also, we do not see the recently approved Turkish Stream stretch. Just at the very end of 2018 Ministry of Energy announced changes in the current energy strategy and introduced funding for new gas infrastructure at the cost of 1.5 bn EUR of public expenses. These funds will be used for the construction of the Bulgarian part of Turkish stream – a gas project that is not fully secured, that does not really diversify the gas supplier but only the rout of gas. On top it is a pipeline that may never be used at high load of the transited gas. This project is either not mentioned at all in the NECP or is somehow concealed in the other projects but this project will have a major climate impact and lock in effect for many countries including Bulgaria.

2.4.3-i Cannot be inapplicable as EU is about to guarantee the rights of consumers to produce their own energy. The state has to ensure non-discriminating and simplifies procedures for the production of energy for own use, net metering, prosumers, energy cooperatives.

2.5-i&ii – Are just declarative mention of key points of the future policies without any concrete plan how to implement and connect with the real economic life. The long term goal is not present yet, but has to include a commitment here by when to have a long term plan for low-carbon economy by 2050.

3.1.1 The current decarbonisation legal framework has only a limited span until 2020. There are few or even fair to say no major strategies that reach beyond next year. This plan together with the new energy strategy and a long term energy vision are likely to set the new horizons.

What is on figure 6 on p. 47? I believe everyone can guess but a little explanation and sources would be appreciated

**Sector Energy** - The document claims there are number of measures that are not expected to lead to decrease in the GHG emissions by 2030 but will facilitate the low carbon transition of Bulgaria in the long term through lower carbon intensity of the production of energy and grid upgrades that will



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minimize the losses during the transportation of energy and paving the way to decentralized energy. What is visible from the following table though is that multiple measures lead to reductions of CO<sub>2</sub>. Again, there is a lack of sources and how the numbers were derived which makes our comments a bit of a fishing exercise in murky waters. What is most striking is that the CO<sub>2</sub> reduction from the use of renewable energy for heating and cooling has a very low GHG reduction while this measure in the renewable energy target of Bulgaria has a very significant portion of achieving the 2030 goal. This can mean a number of things (and maybe more than we can guess based on that document):

- Bulgaria will just gradually report in full the use of fire-wood and claim it achieved something that has been there all the time
- Bulgaria will not restructure the current use of inefficient biomass heating in households
- Bulgaria has not quantified precisely yet the plans to work on energy efficient domestic heating programmes that will lead to the use of less fuel to achieve the same comfort of households and thus lead to extra CO<sub>2</sub> reductions

It is a striking difference between the massive expected emission decrease thanks to the gasification of households and the envisaged reductions from renewables energy sources for heating, cooling and electricity. This means that the government has given priority to gas which is not really favoured by the households and deepens the dependency on energy imports instead of counting more on the local renewable energies.

Also, nowhere in the plans for the development of renewable energy has Bulgaria stated plans to develop its easily available geothermal potential for the provision of heat and electric energy. Bulgaria is very rich on hot springs and easily accessible geothermal energy most of which is just wasted. It is surprising that for the last decades there is so little talk and literally no plans to develop capacity in geothermal and very few of this easily available and constant in its output energy source have been utilized. Bulgaria can follow the brilliant examples of Kenya, Iceland and Hungary in the use of geothermal. Even if the temperature of the easily available springs is not suitable for production of electricity, it is definitely suitable for heating.

Here also in the energy efficiency measures there is no mention of the housing renovation programmes, the energy efficient heating programmes. Also, not on the list and with huge potential are measures for heat recovery that can be implemented at any level – from households (ventilation and sewage waters) to large scale (e.g. municipal sewage systems)

**Emissions from the Industry** – Many of the points listed about the energy sector above are valid here as well. There is no mention of heat recovery. Renewable energy except for the use of waste biomass have found no mention here which means the government does not intend to stimulate the industry to produce and consume their own energy whereas there is potential for that.

**Transport** – There is only listing of potential progressive measures (e.g. rapid development of charging



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network for electric cars) but none of the measures are connected to measurable goals and deadlines.

There is a mention of extra charges per kilometers of run for heavy truck to use the road infrastructure but how this measure will lead to decrease of the use of automotive transportation, to use of more efficient vehicles or how the revenue will be used to fund the low carbon transition of Bulgaria is unclear.

Railway transportation seems to continue to be out of the scope of ambitious national plans for modernization and expansion of the traffic carrier over the railways (both freight and passenger). Rails have no explicit mention in the NECP under the listed measures through the text. They are mentioned in the table with measures and results through activities related to rail road rehabilitation and decrease of energy losses but the results seem rather low and shows that indeed the country will not have a big push in the next decade to revive the railways as a great and low carbon meaning of transportation. We do not exclude also that some measures and results may have simply been missed to list.

Sustainable urban mobility misses to mention at all the bike transportation and conveniences for bikers to change between their bikes and the public transport means as well as options to load their bikes on the public transport vehicles. Correction: there is a mention in the table of measures but with zero targets.

Here private electric mobility has no mention – and all gaps identified above have to be connected with measurable timely targets. Private electric mobility has to be provided with incentives. While import, production and use of automobiles with inefficient, wasteful, old and polluting internal combustion should be phased out, taxed heavily and eventually further banned and penalized.

It is worth mentioning also that the contribution of road construction and rehabilitation – this major and so prioritized area of heavy public spending – is achieving a negligible result in GHG reductions despite the billions that are consumed for those activities.

**Sector Waste** – The sector is recognized as a key sector for emission decrease. The intention to introduce finally pay-per-throw system towards the waste management is very welcome. Capture and utilization of biogas is also important. This is recognized also with the methane emissions from water treatment plants – although we believe it is a mistake there that it is written prevention of CO<sub>2</sub> emissions while we believe it is meant methane emissions.

MBT and RDF. Risk of ignoring environmental aspects. Run into over-reliance of incineration. Not even mentioned in the plan. This will be a new Dieselgate – aiming to save climate and reach waste management goals but just creating a new mess to deal with rather sooner than later.



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### **Agriculture**

**CAP** – The table with targets shows a very low level of ambition. Biogas from the animal farms does not seem to be considered. Not are seen measures related to decrease of the use of artificial fertilizers. We strongly recommend inclusion of measures and policies to stimulate the production of biogas by farms and measure to decrease further the reliance on artificial fertilizers. Emissions from ruminant animals are not targeted and mentioned at all, neither are information and incentives for diet change among the population towards low emission diets.

**Forestry** - Low level of ambition and low targets. Bulgaria does not foresee regional cooperation – this cannot be the case as we only need to mention the Green belt of Europe and the Danubian forests that require management in order to confirm the need of transborder and regional cooperation.

### **3.1.2-Renewable energy**

As a positive statement we can outline the plan that Bulgaria is going to develop a cost-effective approach of further development of the renewable energy is the country. A more relaxed procedure for the production of own energy is promised in the plan. Renewable heat and cooling is prioritised but without a mention in which sector – industry or buildings. We strongly support the planned introduction of auctioning in the field of renewable electricity and the introduction of feed-in-premium. Geothermal is also mentioned here but has no specific targets in the tables previously outlines in the NECP – please, include a target and specify the type of geothermal – heatpumps, or utilisation of hot springs for example. Please, specify the planned policies to make the licensing for small scale renewables for own use more simplified and less time consuming – which is currently the bottleneck and not the FiT. Specify how prosumers and energy cooperatives will be provided with incentives. Specify the ambition to scale up the municipal programmes of efficient domestic heating. There is a mention of annual implementation of new renewable capacities but we are not sure if this means any form of capping to make the development of renewables more predictable and to send adequate signals to the investors.

We do not agree with the statement that RES development is required to slow down until grid operators further develop their networks. There is untapped potential in the urban areas, grid development plans can gradually cover areas during this period that will enable development of renewables in those territories. If planned in a smart way the renewables may not have to slow their development and areas with upgraded grid can be opened for these new capacities.

14% renewable target is transport considers a new generation of biofuels but it doesn't say anything specific about the ambition of this new generation of fuels and the sustainability criteria it will be subject to.

3.1.2-i An increase in the percentage of own energy needs covered by renewables required in the new and refurbished building is required here. The current requirement is minimum 15%. The legislation



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has to change and increase the percentage to at least 50% - with option for obligatory purchase of green certificates in case the needs technically cannot be covered by the building.

The use of biomass for the production of energy is subject only to mention that it will follow up the new EU rules. The reality on terrain in Bulgaria deserves a few issues to be flagged out. Biomass is planned for co-firing in large thermal powerplants that are not CHP and together with coal and mixed municipal waste. This means that waste heat will not be utilized and the biomass ash that could otherwise be used as fertilizer will be lost in the hotchpotch of the toxic ash from coal and waste and will have to be land-filled under special regimes. This is not a smart use of biomass. Potentially a go-ahead of the use of biomass in large scale installations could be in CHP plant under the condition that biomass is either the only fuel, is burned in a separate chamber, or is burned together with natural or biogas. Scenarios of wasteful use of biomass co-fired in conventional powerplants should not be accepted under no circumstances. Biomass burned on mass scale if extracted from forestry will lead to increased pressure on the forests. If we use wood for this energy production the climate impact is double at least in the short term – we cut forests that are otherwise a carbon sink and we emit the CO<sub>2</sub> from the burned wood. Biomass use should be tolerated only if used locally, efficiently including in CHP plants.

The part states that the interest to the production of own renewable electricity is low. This has been completely induced by central policies a negative PR towards the renewable energy sources that were long cursed as overly expensive, non-reliable and the government already proved the incentives can be ripped off retrospectively. The barriers are too high to get a grid connection – no one follows if the grid operators give access to new small-scale producers – sometime the grid-operators postpone the licensing indefinitely. The small-scale producers are still subject to inadequately high penalties for small administrative violations. It's a nerve wrecking and very long game to gain licensing. And the government does not have an information policy towards the benefits of renewable energy production. Having listed the constraints, we believe the answers how to solve them are just plain obvious.

We strongly support the idea to assist low income and vulnerable citizens for the development of their own renewable energy sources but we strongly recommend the government to elaborate the path of reforms towards that, to adopt specific targets, including programmes for information, promotion and capacity development with citizens. Unfortunately, we have been witnessing promises for such reforms towards small scale renewables repeatedly since 2007 at least.

We strongly recommend that the implementation of the new policies would become a fact relative soon and not in the eve of 2030. This requires specific deadlines to be set as soon as possible.

11) It is a positive trend that the government has more and more admittance of the importance of efficient affordable and renewable heat. The government has listed good policies but it has to start to

better follow up the implementation of the existing policies.

13) Contains one of three mentions of hydrogen in the document. It is a positive trend that the government is open to the hydrogen technologies that are closer and closer to commercial use. But it is only fair to raise the question that if green certificates have been introduced back in 2011 with an ordinance why it is still impossible to buy renewable electricity on the market (with the exception of Energo-Pro who sell mostly hydro electricity from their own dams)? The small producers are unable to play at the exchange due to number of barriers– that should be tackled.

17) Contains too much blurring between the use of sustainable biofuels and alternative fuels with non-biological origin – terms are dangerously mixed and open the door for false accounting at later phase.

18) to 20) are all good wishful policies but have no concrete plan to achieve – those are on promotion of electric mobility, financial tools to promote sustainable mobility, and energy efficient domestic heating with switch from coal and fire wood to high-efficiency biomass stoves and boilers.

3.1.2-ii Let's avoid calling the current RES target for 2030 ambitious. How Bulgaria will participate in the formed Platform should be elaborated – at least responsible unit should be assigned within SEDA.

3.1.2-iii – Just 33 m EUR are planned to fund through mechanism “Renewable energy, energy efficiency and energy security”. They are supposed to fund a constellation of measures out of which hydro-energy should drop out as this energy source had and will have enough supporting mechanisms. Hydro energy will be a main dispatchable source in the time of rising percentage of renewables and will not need any subsidies of this kind to further develop.

3.1.2-v (Information training and facilitation for the purchase of energy, prosumers) – This part is well elaborated and contains most of the important elements, including something close to a plan for implementation which only need to set the deadlines for the concrete targets. The tricky part is that the central government kicks the ball in the field of the municipalities and doesn't set adequate mechanisms to ensure their capacity when it comes to licensing of renewables and awareness rising.

This is the second time when feed-in-premiums are mentioned but there is not plan when and how they will be introduced as well as the idea to introduce auctions (and potentially annual capping).

3.1.2-vi – This part is not OK like it is structured at the moment. It is full of measures related to improved energy efficiency of the district heating (e.g. change of district heating substations in the buildings connected to the district heating systems, change of pipes and insulation of pipes). The part speaks very little about renewables – it focuses only about the use of biomass and the dangerous part is that again it is mixes with industrial and municipal waste in the formulations of what would be

burned for energy, It is a pity that solar thermal never finds a place in the plans for the development of district heating systems. Many district heating could be fully independent from gas during the summer with solar thermal energy investments as they have vast areas of industrial land that remains unused and roof-top installations that work in combinations of energy from the district heating exchangers can also be considered (Ref: [www.staccato-oborishte.eu](http://www.staccato-oborishte.eu) under the 6<sup>th</sup> Framework Programme). It is not impossible to require the buildings that undergo renovation with public funds to include obligatory solar heaters for domestic hot water. ESCO initiatives have not found a mention here as they haven't anywhere else in this document

Solar thermal also could find its unexplored niche in many public buildings as use of hot water for hygiene is high in hospitals and sport facilities like stadiums and swimming pools operated publicly or under concession.

3.1.2-vii – (use of sustainable biomass) – This is one of the most excessive mixtures of mention of biomass and municipal waste in the NECP. This part has to be completely reworked. Municipal waste has to be kicked out. Much more is needed on how the sustainability of biomass will be guaranteed. The part should guarantee that the use of biomass for cofiring in large non-CHP powerplants should be prevented and that domestic heating will have a focus for a switch from primitive biomass towards modern biomass stoves and boilers – wood chips, agricultural residues and pellets. It is good that the quality of burning wood is mentioned here but this issue is supposed to be resolved already as rules are being agreed. So, it is rather a matter what stricter rules will be introduced.

3.1.3-iv – Phase out of fossil fuel subsidies is not foreseen. This is the main and crucial step towards low-carbon economy. This part has to be elaborated, and phase out should be set. If the government really doesn't see a reason why not to find a way out of the fossil fuel subsidies this has to be very well explained. s

**3.2. Energy efficiency** – This part is probably very well explained by ally organizations that work in the area of energy efficiency such as EnEffect. We are not going into full detail on energy efficiency, just some highlights:

- Renovation rates are set at EED minimums despite that the government presents the renovation rates of public buildings as a very ambitious work. The renovations need to aim at a higher energy class and come close to the near zero energy buildings requirements.
- National Renovation programme is mentioned only with its current implementations – there are no stated future plants till 2030.
- ESCOs are described as legal requirement but no hint how they will be promoted and further enabled. Especially with focus for the housing sector. Currently the ESCOs can't find a proper ground



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to exist as the high rate of subsidies for renovations are in unfair competition with ESCOs.

- Somehow in the part focusing on Public buildings serving as an etalon for the renovation there is a copy-paste mention of requirements for tyres. In the same time there is no mention that the rules for Green Public Procurement will be used or even become obligatory. There is no mention what energy class these renovated public buildings will aim to reach.

3.2.1-iii – There is only mention of how the accounting of energy is done at the moment but no further planned policies and reforms (e.g. net metering).

In general, the part on Energy efficiency in NECP focuses more on existing measures that plans for policies that will accelerate the energy efficiency improvements;

3.2.1-iv – Local communities and their involvement is not envisaged again and it should be.

3.2.1-v – this part contains some progressive hints but they have to be further elaborated – e.g. when and how the tariffs will discriminate consumption at low and peak moment of energy use in order to stimulate behavioral changes. In any case this part is contradicting previous indications that smart metering is not applicable and the text is rather wishful that structured as a plan – SMART goals and targets

3.2.1-vii – This part on use of EU funding has to mention the envisaged amount in the next programming period

**3.3- Energy Security** – Another mention of coal forever; Gas infrastructure and exploration in the Black sea; In general, it is a repetition of what is said beforehand in the plan and that we already commented; Turkish stream is delicately missed again like a 1.5 bn EUR project is an insignificant addition on the project list; Point iii. Says nothing specific but a list of expected EU-wide polices;

#### **3.4. Internal energy Market**

Just a repetition of the already mentioned projects whose deficiencies were commented earlier in the text;

Connect Europe Facility is too often mentioned as a source of funding. Connect Europe Facility should cease to invest in fossil fuel projects;

Next-day-market and Intra-day-market introduction are crucial for the development of renewables. But instead of focus how they will be introduced and how they will facilitate the development of market of the renewable energy the point focuses on cooperation with Greece and Romania which is a rather next step after these market approaches are well set in Bulgaria first as there are multiple repeating reports from RES producers that they are being discriminated through these market mechanisms. The stated connection with the 2.4.3 is a bit unclear.



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3.4.3.-v – Vulnerable energy consumers will continue to receive energy aid – there is no plan to phase these subsidies out as they are and replace them with measure to actually draw these poor consumers out of their energy poverty by working on the energy efficiency of their homes and by ensuring energy efficient heating. ESCO options do not find mention here and they should.

### **3.5-Innovations**

All section “Inapplicable” should be elaborated to applicable. The wishful text should be connected with concrete measures, policies, programmes and resources