COHERENCE PROBLEMS IN THE HUNGARIAN ENERGY POLICY – AN ANALYSIS OF RELEVANT POLICY PAPERS

A ROAD TO A MORE SUSTAINABLE ENERGY SECTOR THROUGH CLARIFICATION OF CONTRADICTIONS AND DEMOCRATIC ENGAGEMENT

by EMLA, Hungary in cooperation with UfU (DE) and Energiaklub Public Policy Institute (HU)

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Introduction

This project aims at enhancing the internal and external coherence of energy policies and governmental actions in Hungary and forms a pilot phase for further actions promoting an energy policy shift to renewables in Hungary (and later in other European countries as well).

By internal coherence we mean a situation where within one country all the relevant legal and planning materials (starting from the Constitution through the Acts of Parliament to the Government and the Ministerial Decrees, in addition to general and energy related strategies, plans, policies, programs) respond to each other to a satisfactory extent. The higher level rules and plans should be aware of the system beneath them, the lower level rules and plans should consider the frames given to them and stay within these frames while also fill in the frames with rules that correspond to the spirit of the higher level requirements, as well. The rules and plans that relate directly or indirectly to environmental protection – no doubt, energy sector belongs to this category – should have an external consistence, too: they should be aware of the major procedures concerning the Planetary Boundaries and should be prepared either to prevent ecological catastrophes or accommodate to them on shorter and longer run.

Our project started to examine this external and internal coherence of the Hungarian energy plans. We have shortly overviewed the scaring data about global environmental degradation and the loss of natural resources, also the possible social and economic consequences thereof – together called sustainable development requirements. We compared our basic law, the Constitution (2011) with these planetary boundaries (with our knowledge available about the system of imminent catastrophe situations) and did the same in respect to the major national level plans, such as the National Sustainable Development Plan, the National Environmental Programmes and the National Climate Mitigation and Adaptation Strategy and National Climate Program for checking their internal coherence. Thereafter we have collected the most basic sustainable development requirements – both from outside the legal system and from inside of it – and matched to them the 10 most important Hungarian energy policies.

Executive Summary

The first main result of our research was that these basic rules and plans respond pretty well to the long line of sustainable development requirements – but far not to all. This is in itself a major shortcoming, because the system of ecological threats could be understood, handled, accommodated to only with a systemic approach. Moreover, the missing or weaker elements are really painful: there are very few references – and only in some of these major documents – to intergenerational justice, especially to the balanced use of natural resources. The economical use of raw materials that are not renewable is out of the mainstream political discussions of our days, therefore this viewpoint is almost totally missing from the major Hungarian laws and plans. In close relationship with that, with the exception of the climate plans, resilience has very limited attention in our other major documents examined in this study.

As a rule, the external coherence of the Hungarian energy policy documents cannot be more advanced than that of the major legal and sustainable development documents. Their internal coherence, however, are supposed to be much stronger, because of the hierarchical requirements of rule of law, the coherence of the state system and the legal and planning system of our country. But this is not the case at all. The Hungarian energy plans are in strong conflict with the content of the Hungarian major legal and planning documents. Specifically, the idea of green economy, energy efficiency and the growing rate of renewable energy sources are not unequivocally supported by our energy plans. Rather the contrary, the overwhelming plan of tripling our nuclear energy production

(even after phasing out the old blocks of the Paks Nuclear Power Plant) will deprive any developments in the field of renewable energy of all resources. Furthermore, coal mining and coal based energy production reappeared in our energy plans, that fact in itself is conflicting our main climate planning targets. Diversification and decentralisation of the Hungarian energy system remain only a wishful thinking of our major general sustainable development laws and plans in the mirror of the concrete plans of energy policy developments. Also, although the major documents refer to them here and there, the basic principles of environmental protection and sustainable development, such as polluter pays principle, the precautionary principle, the integration principle, the non-regression principle and public participation principle are hardly mentioned in these documents and their spirit is very far from these principles, too.

The analyzed energy plans and programs were:

1. Parliamentary Resolution on making the spreading of alternative and renewable energy sources more effective
2. Parliamentary Resolution on the energy policy for 2008 and 2020
3. Parliamentary Resolution on the National Energy Strategy
4. Government Resolution on updating energy consumption forecasts of the National Energy Strategy
5. National Renewable Energy Action Plan of Hungary
6. Government Resolution on tasks related to the National Renewable Energy Action Plan of Hungary
7. Government Resolution on the 2nd National Energy Efficiency Action Plan of Hungary until 2016 with forecast until 2020
8. 2nd National Energy Efficiency Action Plan of Hungary until 2016 with forecast until 2020
9. Government Resolution on the National Building Energy Strategy / National Building Energy Strategy
10. Transport Energy Efficiency Action Plan

Our results are shortly summarized in the below table to give a rough overview – or rather a color coded impression in a scorecard style – of how well the plans are aware of and responsive to the challenges of sustainable development.

However, even from this first sight appraisal it can be concluded that there is no single plan or program that would fit with or respond to all the challenges of sustainable development and that the majority of the plans – using our indicator system and evaluation methodology – can be called mediocre[1]. In some instances a few aspects are not applicable which increases the likelihood that a plan is evaluated as good, and there are only a few of the plans that are genuinely good at responding to the SD challenges enumerated in Part I of this study.

As regards public participation in the preparation and consultation of the plans, we found that 4 out of 10 were done with no traceable public participation, 3 out of 10 were done with the involvement of mostly highly professional interest organizations or through only a selected number of civil society organizations (via the involvement of the National Environmental Council) and only 3 out of 10 were prepared with extensive public participation. Not surprisingly these are the plans that were scored the highest in the overall evaluation as well.

[1] An important methodology consideration was formulated on the workshop dealing with this study: even if some energy plans seem to be „quite green" it does not mean that they are of high quality in sustainable development terms. Just the opposite: these plans themselves represent separate systems and, as a rule, they worth as much as their weakest elements.

Requirement[2]	Quality of Response by the Respective Plans									
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
a. intra- & intergenerational justice										
b. climate protection (mitigation & adaptation (resilience))										
c. system of ecological crises										
d. preservation of a fair share of resources										
e. safe and healthy environment (see point a.)										
f. equal opportunities for all, decent housing (see point a.)										
g. non-regression principle										
h. polluter pays principle										
i. international cooperation (see point c.)										
j. institutional and financial guarantees of implementation										
k. ecological services concept (see points a. and h.)										
l. sustainable local settlements (see points a., e., and f.)										
m. integration principle (breaking down the SDP into plans and laws)										
n. alternative indicators										
o. environmental risks to be taken into consideration										
p. greening the economy (see point i.)										
q. public participation principle										
r. precautionary principle										
s. energy related goals: i) energy security (decentralisation)										
s. energy related goals: ii) energy efficiency (insulation, life cycle analyses etc.)										
s. energy related goals: iii) raising the rate of renewable sources (diversification)										
s. energy related goals: iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)										

[2] We use a simple color code for expressing our evaluation: green for a good mark, red for a bad mark and grey for Not Applicable (N/A). A detailed analysis can be found in a later part of this paper.

Part I: Scientific and legal backgrounds for an effective energy policy

1. A short survey of Planetary Boundaries relevant for national energy policies

The best and generally accepted frame of discussion of the interrelationship between energy policies and the scientific results concerning environmental protection is called the concept of sustainable development. This concept emerged first from the 1981 book of Lester R. Brown[3], while in 1987 the World Commission on Environment and Development of the UN (the Brundtland Commission) in its report titled Our Common Future[4] defined the term of sustainable development with the help of the philosophical notion of intergenerational justice:

> *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

Translating the general notion of sustainable development/intergenerational justice into the field of energy policies, we examine the following questions:

a. energy policies that do not cause irreconcilable conflicts between present and future generations (intergenerational justice with intra-generational justice);
b. energy policies that fit well into the holistic approach of the system of imminent global ecological catastrophe situations;
c. energy policies that keep the Earth within the maximum 2 °C limit of global warming;
d. energy policies that consider the resource peaks and strive to leave as much raw materials as possible unexploited for the following generations.

These four questions themselves can be described in a system of concentric circles, where more general ones encompass the more specific ones (see Figure 1).

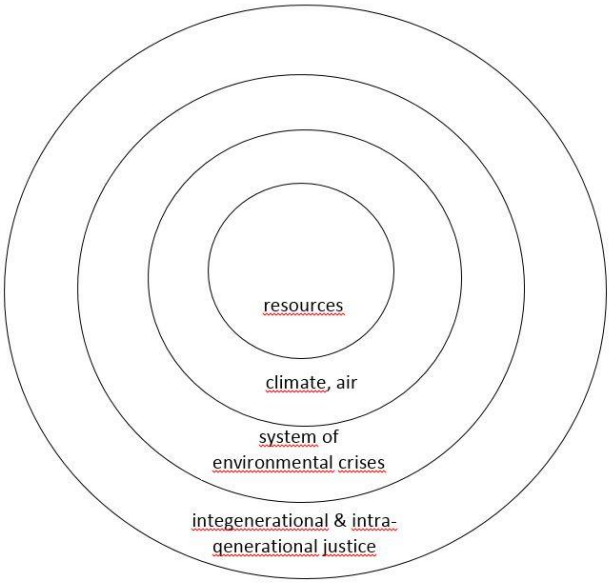


Figure 1: The concentric circles of sustainable development issues
source: EMLA, Hungary

[3] Brown, L. R.: Building a Sustainable Society. W. W. Nothorn and Co., New York, 1981
[4] Brundtland, G. H. et al.: Közös jövőnk. Mezőgazdasági Kiadó, Budapest, 1988

In the following points we follow the same logic: we start with the most general issue regarding a possible harmony between social and environmental justice, then we continue with the system of environmental crises, then arrive at the most typical environmental problems for energy policies and ultimately finish with the issue of economical management of limited resources, considering that many of the resources we use for energy production belong to this latter category for the time being.

Energy policies and intergenerational/intragenerational justice

The concept of sustainable development encourages the preparation of realistic programs that would lead to a livable world for future generations in a way that is acceptable, moreover generally supported by the decision-makers of the present, i.e. the economic and political leaders and their respective "bosses", the consumers and the voters (see Figure 2). Naturally, the rights ensured for the members of present generations shall be ensured to future generations, too. As the Ban Ki-Moon report[5] quoting Article 1 of the Universal Declaration of Human Rights points out very aptly, as long as human rights shall not depend on the location of birth, they cannot depend on the time of birth either. The report establishes the following as a consequence: "(…) it is not immediately obvious on what ethical grounds human beings should be treated differently based on their date of birth, as this has no bearing on their humanity."

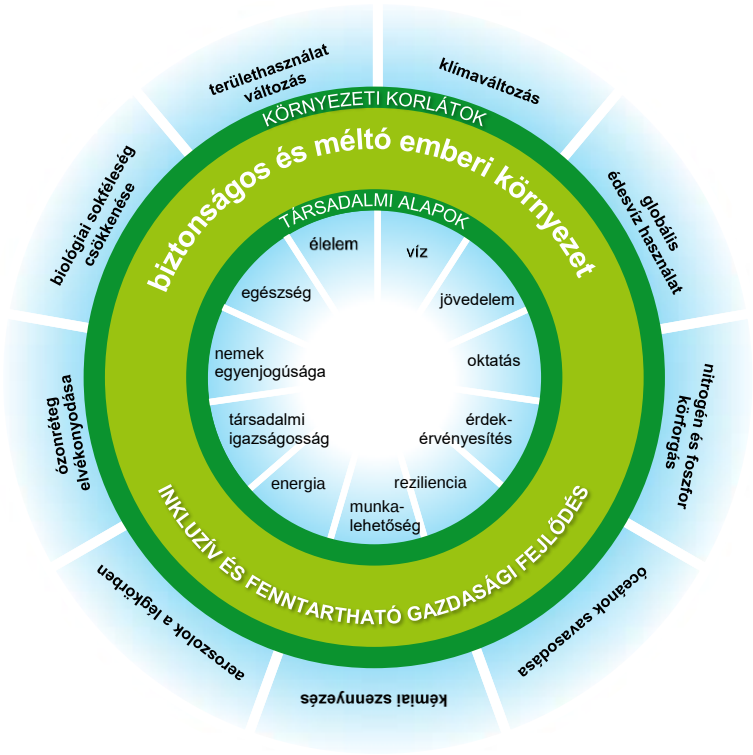


Figure 2: The "doughnut" of environmental limits and societal foundations
source: http://www.kateraworth.com/doughnut/

From the foregoing famous doughnut picture we may select numerous aspects an energy policy should take into consideration in the name of sustainable development and in the spirit of interconnectedness with a series of societal plans and programs of a given country. Energy security, resilience - in its narrower sense (i.e. the ability to accommodate to energy poor situations) - and a high employment level should be supported by national and regional energy policies directly, while

[5] United Nations, General Assembly, sixty-eighth session, agenda item 19, No. A/68/100.

some other segments of the doughnut should be taken into consideration as well when adopting such policies.

The holistic account of ecological problems

No energy policy can achieve its goals in connection with sustainable development that deals only with issues closely related to global warming and energy security of our societies and the one of our offspring. The groundbreaking first report of the Club of Rome highlights the general interplay between resources, industrial activity, population, its upkeep and pollution (see Figure 3).

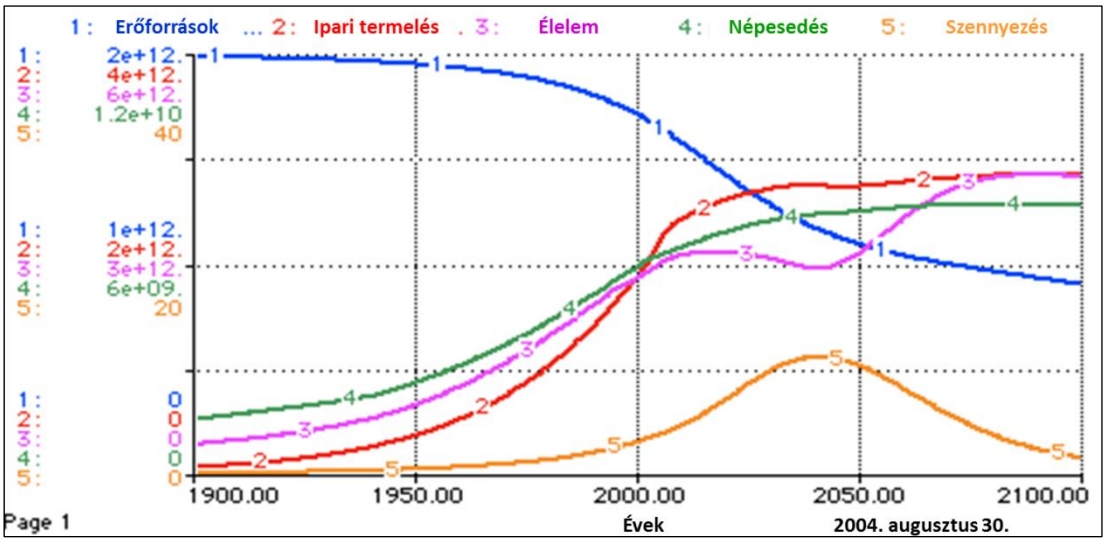


Figure 3: Sustainable Development – a global scenario

source: Meadows et al.: Limits to Growth – 30 years later

The decline in the accessibility of resources is inevitable in the coming years, while extensive industrial output and even food production will face serious limitations. Pollution may be regulated by administrative tools and their significant results are to be experienced within decades hopefully, while the last factor Donella Meadows and her co-authors dealt with, i.e. the population factor is mostly adapting itself to the changes in other major factors. All these factors have their direct or indirect consequences on energy policies both nationally and regionally.

We must be aware that the environmental factors themselves forming part of this broad picture drawn by the Club of Rome form an own system, too. Researchers closely affiliated to Donella and Denis Meadows have gathered in the Balaton Group (BG) and a couple of BG members with the leadership of the Swedish Karolinska University have issued a very influential article about this phenomenon in 2009. Their famous “spider web” picture (see Figure 4) presents this system of the endangered ecological sub-systems.

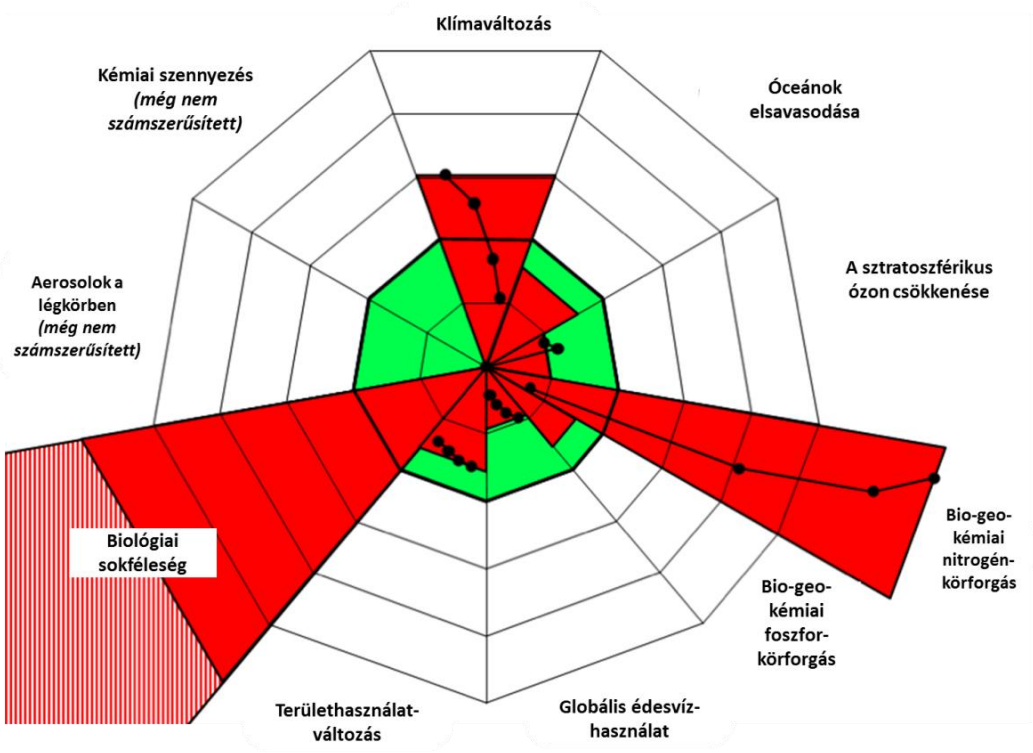


Figure 4: Planetary Boundaries

source: Rockström, J. et al.: A safe operating space for humanity

Naturally, energy policies should pay attention not only to climate change and ocean acidification issues, but also to air pollution and chemical safety matters. Moreover, energy policies have to be influenced indirectly by almost all other environmental fields of the "spider-web" picture. These connections are quite natural in relation to spatial planning and water management but are less obvious in connection with the protection of the remaining arable lands.

Climate change and clean air protection considerations

Because of the growing number of global and regional international legal responsibilities and also due to the increasing ecological awareness of national decision-makers, energy policies should put countries on a development trajectory that promises less and less greenhouse gas emissions in the future years. Realistic goals, proper monitoring and sanctions bolstered with the necessary institutional and budgetary conditions are indispensable elements of such policies.

Since in every known ecological problem (except regarding ozone depletion) the community of nations followed the worst case scenario, we have no reason to think that in an issue so closely related to core economic and political power issues the pattern of development will differ (see Figure 5).

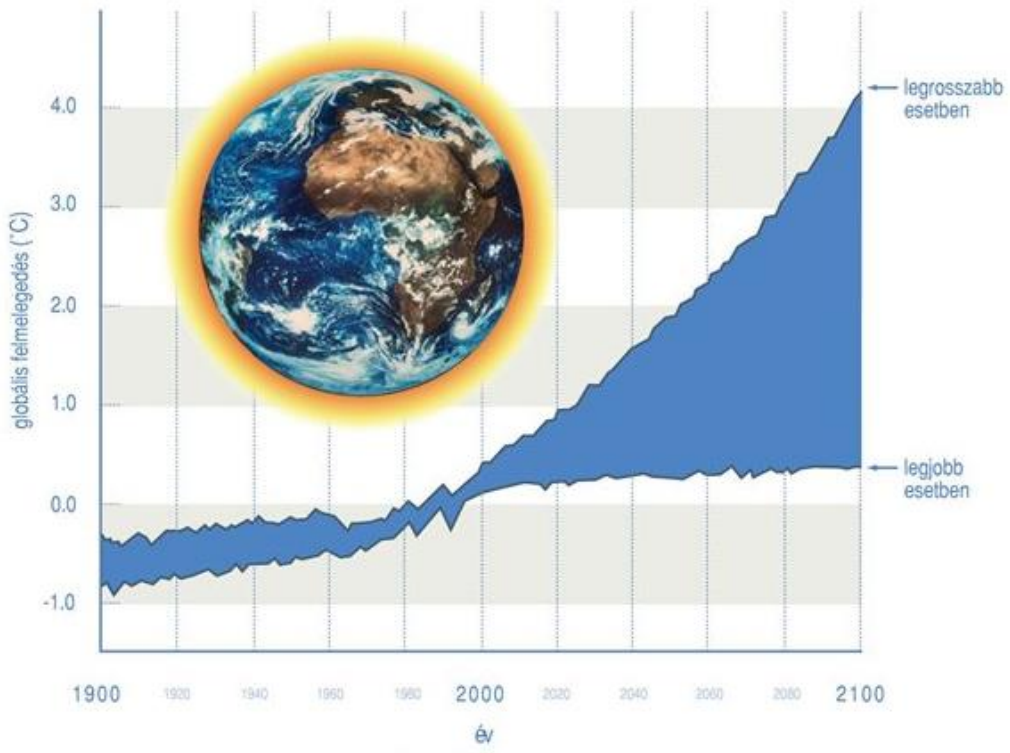


Figure 5: Global warming in the world between 1900 and 2100
source: UN-HABITAT / MTVA Press and Photo Archive / MTI

Resilience programs nowadays occupy a large part of climate related plans, therefore energy policies should align with this fact, too. Even a narrow 2 °C average global warming will naturally mean much lower and much higher temperatures in certain regions, meaning that certain countries will suffer much more from the consequences of global warming than others. Unfortunately, international climate law is very much lagging behind the necessary preparedness to international solidarity and concerted, expedited measures to amend or mitigate these uneven consequences for instance in the case of small island states, major settlements on seashores or regions with dramatically decreasing precipitation. Therefore, certain activities and effective measures on international level should also be a part of national energy policies.

Economical resource management

All oil producing regions have excessed their peak productions (see Figure 6) and the natural gas production usually follows this pattern with a few years of delay[6]. Sustainable development is totally meaningless without considering the needs of the following generations, including already the generation of our own children.

[6] In this paper we do not deal with coal, that indeed has different time patterns while, naturally, coal cannot be a total exception from what happens to the limited resources on Earth.

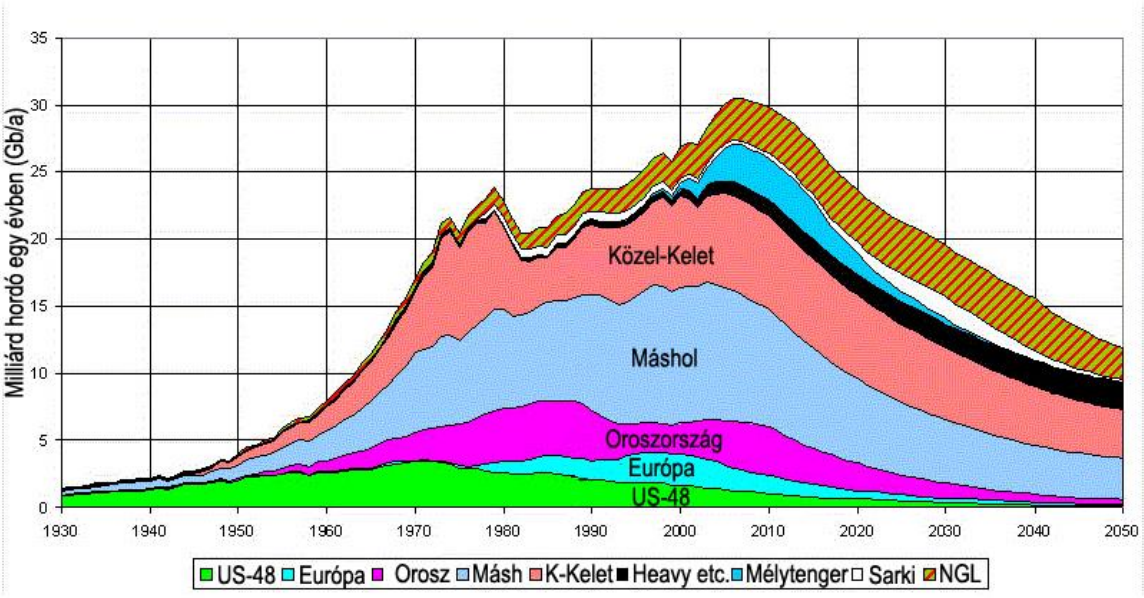


Figure 6: Oil stock of the world, 2004 facts and estimation

source: http://hu.wikipedia.org/wiki/F%C3%A1jl:Olajcsucs_grafikon.jpg

National and regional energy policies should contain specific plans for saving the remained fossil fuel stocks and a definite way of transition to other energy sources.

2. Constitutional values relevant for energy policies

Under this point we evaluate the general principles of Hungarian laws in the mirror of the four basic sustainable development requirements of our age. At the same time we start to collect those values deductible from the Constitution[7] and the major environmental decisions of the Constitutional Court that are related to sustainable development and energy issues.

The relevant provisions of the Hungarian Constitution

The new Hungarian Constitution of 2011, harnessing all the advantages of development of the related fields of social and technical sciences covers well all four major fields of sustainable development we surveyed in the previous chapter. These are the following:

A balance between intergenerational and intra-generational justice

Naturally, like every constitution, the new Hungarian Constitution contains plenty of social and economic rights of the present generations and the institutional guarantees thereof, such as the Constitutional Court, the Attorney General or the Ombudsman. A special expression of this care for the currently living generations is that the State shall strive to ensure decent housing conditions and access to public services for everyone[8]. Naturally, energy security is also covered by this set of services, although there are no further mentions in the text of any energy related issues. Similarly, a general, structural contribution to the intra-generational justice is that the State shall strive to use the latest technical measures and the achievements of science to make its operation efficient, raise the

[7] http://www.kormany.hu/download/e/02/00000/The%20New%20Fundamental%20Law%20of%20Hungary.pdf
[8] Article XXII, Paragraph (2)

standard of public services, improve the transparency of public affairs and promote equal opportunities[9]. There are, however, more sustainable development or environmental protection specific traits of intra-generational justice in the Hungarian Constitution.

A system of protection of the environment from various pollutants and other factors

The Constitution declares that everyone (meaning: this right is ensured not only for citizens, it is considered a general human right) shall have the right to physical and mental health. This shall be effectively promoted by an agriculture free of genetically modified organisms, by ensuring access to healthy food and drinking water, by organizing safety at work and by healthcare provision, by supporting sports and regular physical exercise, as well as by ensuring the protection of the environment[10]. As concerns environmental rights in a narrower sense, the Constitution again guarantees them as general human rights and again underlines that beyond the mere recognition of the right of everyone to a healthy environment the State has an extra responsibility to protect this right effectively. Although the text more or less arbitrarily singles out the polluter pays principle while remains silent about other major principles of environmental protection (such as the precautionary principle) and also highlights some important aspects of waste management (while failing to directly mention other areas of environmental protection), the summary evaluation of the constitutional provisions is positive and shows a certain holistic approach to the protection of the right to environment[11].

State activity on international fora

One of the most progressive provisions of the new Hungarian Constitution is that it declares an objective to create and maintain peace and security, and to achieve the sustainable development of humanity; for these purposes, Hungary shall strive for cooperation with all the peoples and countries of the world. Unfortunately, there are few practical consequences of this constitutional provision. Maybe one example to mention is that Hungary co-chaired the UN drafting process of the new Sustainable Development Goals.

A fair division of natural resources between present and future generations

Intergenerational justice is an outstanding new feature of the 2011 Hungarian Constitution. Provisions ensuring this concept range from a general declaration in the Preamble through a more specific stipulation among the Basic Provisions to some really specific provisions defending future generations from large financial debts and loss of natural resources. In the Preamble, the Constitution underlines the commitment to promoting and safeguarding our heritage, including all man-made and natural assets of the Carpathian Basin: "we bear responsibility for our descendants; therefore we shall protect the living conditions of future generations by making prudent use of our material, intellectual and natural resources"[12]. More specifically, amongst the basic features of the social and political system of the country, the Constitution stipulates: "natural resources, in particular arable land, forests and the reserves of water, biodiversity, in particular native plant and animal species, as well as cultural assets shall form the common heritage of the nation; it shall be the obligation of the State and everyone to protect and maintain them, and to preserve them for future generations."[13] In the Public Finances

[9] Article XXVI
[10] Article XX, Paragraph (1)-(2)
[11] Article XXI, Paragraph (1)-(3)
[12] Preamble, Recital 8
[13] Article P, Paragraph (1)

section there is a clear limitation on the state debt, namely that the National Assembly may not adopt an Act of Parliament on the state budget in case it would result in a state debt exceeding half of the Gross Domestic Product. As long as state debt exceeds half of the GDP, the National Assembly may only adopt a state budget that provides for a debt reduction in proportion to the GDP. No loans can be taken and no financial commitment may be undertaken during the implementation of the state budget that would allow the state debt to exceed half of the GDP[14]. In addition to that, when the debt exceeds the said limit, the Constitutional Court has an extraordinary right to supervise the financial management of the State, while state finances are otherwise exempt from the jurisdiction of this court.

The Financial Section of the Constitution also pays attention to the national resources the Basic Provisions of the Constitution just listed earlier. According to these the property of the State and of local governments shall be national assets. The management and protection of national assets shall aim at serving the public interest, meeting common needs and preserving natural resources, as well as taking into account the needs of future generations.[15]

Relevant practice of the Constitutional Court

Since its formation in 1990, the Hungarian Constitutional Court had issued more than 100 substantial decisions dealing with environmental matters that makes more than one tenth of the total number of their decisions. These are typically small cases where certain municipalities issued local ordinances in environmental matters that collided with other constitutional values such as the right to free enjoyment of someone's property or the right to run enterprises freely from unnecessary legal restrictions. In one case for instance the Pécs City Council intended to restrict the possibility of issuing building permits for those constructions where the heating systems were not planned according to the latest known energy saving and air protection standards. The Constitutional Court abolished the municipality ordinance primarily on the basis that there is no legal possibility for municipalities to introduce further environmental restrictions in local level regulations in matters that are covered by higher level legal norms[16]. Similarly, in another case a municipality issued a clean air protection ordinance that made district heating mandatory in certain highly polluted sectors of a city. Again, the Court evaluated the environmental restriction anti-constitutional because of excessive constraints on the right of consumers to freely decide on which kind of heating they would purchase, a right that ensues from the free enjoyment of property and freedom of enterprise[17]. On the other hand, the Constitutional Court dismissed an application against a municipality ordinance that enlarged the protection zones of underground water wells, prohibiting certain dangerous activities (in connection with wastes, chemicals and animal husbandry) within these zones. In this case the restriction was acceptable not to pose too much a burden on the relevant economic activities and the interests of land users[18].

Apart from these cases of smaller significance, there are two milestone decisions in the case law of the Constitutional Court where major structural issues of environmental protection and intergenerational justice were decided upon. These decisions provide the backbone of environmental case law of the Constitutional Court.

[14] Article 37, Paragraph (2)-(3)
[15] Article 38, Paragraph (1)
[16] Decision of the Constitutional Court No. 28/2011. (III. 31.) AB
[17] Decision of the Constitutional Court No. 49/2011. (V. 9.) AB, Point 2
[18] Decision of the Constitutional Court No. 115/2009. (XI. 20.) AB

When a piece of legislation broadens the protection of nature and the environment, there are a number of competing basic or constitutional rights that have to be taken into consideration in the decision-making process of the Constitutional Court. Contrary to this, when the question is whether a further deterioration of the environment is to be allowed, a new approach needs to be applied. This approach is to be influenced by the aspects of necessity and proportionality. In such cases the right to environment (including the right of future generations) can only be limited when it is indispensable for implementing other basic constitutional rights and only to an extent necessary for those other rights by all means.

As the Constitutional Court framed it in a decision in 1994:

„The Court establishes that the right to a healthy environment as established in Article 18 of the Constitution [the previously prevailing one] *encompasses the responsibility of the Hungarian Republic not to let the level of protection of nature ensured by existing laws decrease, except when it is inevitable for implementing another basic constitutional right or constitutional value. Even in these cases the extent of decrease of the level of protection cannot be disproportionate compared to the goal established."*[19]

This early decision – in the legal literature frequently called „The Basic Environmental Decision" – highlights the constitutional nature of the right to a healthy environment. Most importantly, the Constitutional Court makes it clear that the right to environment is closely related to right to life, since it is directly or indirectly linked to the protection of natural conditions of life and health. The importance of this right and the very systematic nature of it led the Court to the conclusion that – contrary to other rights – the protection of the right to environment cannot be ensured only by endowing a mere right, or even by endowing a group of rights (such as participatory rights, complaint rights, a right to be compensated in case of an environmental damage). In addition, the State shall undertake an active role in the protection of the right to environment and shall create the institutions and procedures necessary to accomplish this task. The State enjoys freedom to select these institutions and procedures, but this freedom does not extend to let the level of protection of nature and environment decrease. The classic sentences from the 1994 decision – quoted everywhere since then – sound as follows:

„Harm to nature destroys limited goods; in many cases these cannot be repaired. The omission of protection generates irreversible processes. Because of this, in implementing the right to environment, no qualitative and quantitative fluctuations depending on economic and social circumstances can be permitted. These fluctuations can happen in implementing social and cultural rights, where restrictions of services required by the circumstances can later be remedied. Because of these specialties, prevention has a priority amongst the instruments of protection of the right to environment. It is so because subsequent sanctioning of irreversible damages cannot restore the original situation."[20]

The other, new major environmental decision of the Constitutional Court seemingly has the ambition to become the second in the row of basic environmental decisions. It enlists the history of modern environmental protection starting from the 1970 US Earth Day, the first report of the Club of Rome, the chain of UN Earth Summits between 1972 and 2012 and dwells on the concept of sustainable development. Thus, the second basic decision encompasses the notion of intergenerational justice that is also mentioned in the text directly. It reinforces the non-regression principle spelled out by the first basic decision of 1994 and emphasizes the issue of competing constitutional rights. Also the second basic decision points out that preventive and immediate professional measures represent a

[19] Decision of the Constitutional Court No. 28/1994. (V. 20.) AB, Point 1
[20] ibid. Both translations are unofficial, made by EMLA.

higher level of guarantee of the right to environment and the rights of future generations than retroactive, responsive measures including sanctions. The decision reads as follows:

"*Nature protection and economic considerations are necessarily competing ones, because nature protection by the State presupposes a certain level of self constraints. This cannot be expected from an organization of economic approach and profit interests. Neglecting, however, the viewpoints of nature protection will on a long run result in negative externalia and social expenses that are contrary to Article P and Article XXI of the Constitution establishing the responsibilities towards future generations and the protection of the right to a healthy environment.*"[21]

Evaluation of the constitutional rules and practice of Hungary in the mirror of sustainable development

We can conclude here that the Hungarian Constitution takes into consideration certain elements from the concept of sustainable development, but not all. Intergenerational justice is fairly represented in the text of our Constitution, while on the second and third levels, the system of environmental hazards we have to cope with is not fully presented. While land, forests, water and biodiversity are mentioned, air and most importantly climate is left out from the text. In addition to that, it would have been preferable to put these elements into the context of the Planetary Boundaries concept, i.e. to note on a Constitutional level that these elements are not serving us automatically anymore, they are endangered, therefore the normal level of protection is not enough, special efforts are needed in order to restore them and also in order to enhance the resilience of our society in case of the imminent ecological emergency situations and their social and economic consequences.

As concerns the practice of the Constitutional Court we see some contradictions between the Court's basic environmental decisions of 1994 and of 2015 and its decisions in the smaller "everyday" environmental cases. On the first level of the sustainable development system we described above, i.e. in the matter of intergenerational and intra-generational justice, the practice of the Constitutional Court is very much elaborated. However, this approach is not transposed to the smaller cases, where the right to property and the freedom of enterprise seem to prevail over the environmental rights, rights that are basic for the protection of right to life as the Constitutional Court itself had acknowledged.

Further viewpoints for the evaluation of energy plans

Since the Constitution and the Constitutional Court have reinforced the basic elements of sustainable development, they will have to be taken into consideration in the energy plans and programs on that basis, too. Rights of future generations, careful handling of natural resources therefore shall determine the basic content of the sectoral plans, including energy ones. Our analysis above suggests that from a constitutional legal angle the energy plans will have to respond well also to the non-regression principle (shall not decrease the level of environmental protection already achieved) and on individual level they shall contribute to the health, safety and decent housing of all the citizens.

3. National Sustainable Development Plan

After having looked at the scientific and constitutional components of the concept of sustainable development, we continue our research with analyzing the major general environmental/sustainable development strategies, plans, programs and policies of Hungary.

[21] Decision of the Constitutional Court No. 16/2015. (VI. 5.) AB, Point 4

We begin with the National Sustainable Development Framework Plan then continue with the National Environmental Programme and finally the climate relevant plans of the country.

The content of the NSDP

The National Sustainable Development Framework Plan was accepted by a Resolution of the Hungarian Parliament in March 2013 after a really long and widespread social and professional debate.[22] The Preamble of the Resolution refers to the relevant provisions of the new Constitution on sustainable development, on the protection of options for future generations, including the long term, responsible management of our natural resources. The Preamble also refers to the global challenges discovered by scientific results and forecasts that endanger the living conditions of future generations. It even declares the necessity of a proper evaluation and management of the effects of present decisions on future generations a major challenge ahead of the democratic political institutions at the beginning of the 21st century. The Preamble also refers to the need of international and national cooperation between stakeholders: individuals, communities, economic and governmental organizations in order to form a sustainable society. Finally, the Preamble applies a weak form of definition for sustainable development, saying that the national resources, namely the human, social, natural and economic resources shall be preserved and developed in a balanced, coherent way through the cooperation of all concerned policies.

The Resolution of the Parliament in its first substantive paragraph reinforces the aim of the present study: ensuring coherence throughout the whole legal system:

„the basic principles and strategic goals of the Framework Plan serving the long range successful sustaining of the Hungarian Nation shall prevail in all legislative work, including the adoption of the state budget, the specialized policies and programs".[23]

Also in the substantive part, the Frameworks Plan calls the Government to form a body from the state secretaries responsible for the coordination of governmental decision-making concerning sustainable development in order to implement the Framework Plan and also to develop a sustainable development indicator system ensuring its regular monitoring and measuring, as well as its evaluation and supervision[24].

Finally, the Framework Plan calls the Government – enlisting the possible resources – to support sustainable development pilot projects, especially sustainable local settlement models.

It is quite promising that the Government issued a Governmental Decision, in which it shortly dispatched the tasks ensuing from the Framework Plan. The task of developing alternative indicators was allocated to the Central Statistical Office, while the development and experimenting with sustainable settlement models was assigned to a line of ministers with the leadership of the minister heading the Prime Minister's Office[25]. However, the Decision is silent about the compound body formed by state secretaries and also forgets about the integration of the Framework Plan into governmental legislative work.

[22] Parliamentary Resolution No. 18/2013. (III. 28.) on the National Sustainable Development Framework Strategy
[23] Ibid, Point 2
[24] Ibid, Point 3-4
[25] 2037/2013. (XII. 30.) Korm. határozat. While in the case of tasks allocated to the Central Statistical Office we see some practical implementation, the case of governmental support to sustainable local communities seems to be halted for the time being.

The Parliamentary Resolution on the National Sustainable Development Framework Plan has a more detailed Annex, where the basic considerations behind the short Resolution are given. The Annex frequently uses the intergenerational justice language, in some places in combination with intra-generational justice:

"Problem solving on the account of future generations takes different forms, such as exhausting and polluting the environmental resources, having high state debts, having a demographic deficit in relation to the aging of society or favoring a too long range infrastructural planning that leads to technical inertia (close off). Problems within one given generation are represented first of all by reinforcing the differences in access to environmental resources ensuring fair living conditions."[26]

According to the Annex to the Framework Plan the global challenges are ahead of us: the population of the world is four times larger than 100 years ago, moreover, people live much longer than in the past; consumption of fossil fuels is 14 times bigger, while the world economy has grown 27 times larger than 100 years ago. While deep poverty is pushed back in the last four decades, the social differences and differences between certain countries and regions have grown significantly. The crude oil peak is behind us, the production will be decreasing between 1-7% annually, while the demand is growing enormously. The UN Millennium Assessment has proven that out of a selected 24 typical ecological services 15 have suffered significant harms in the last half century. The OECD warns that the major factor of this is the change of land use, the growing proportion of arable lands, deforestation, erosion due to recent agro-technology and occupation of land by settlements and infrastructure.

The Annex calls attention that not only natural resources are overused, our social economic systems are overburdened, too. Globalization and international labor division have decreased employment in Hungary, the unemployed should be supported alongside with a decreasing community income and growing expectations that lead to growing debts. On the cultural field the gap in knowledge is deepening, similarly to the inequality in access to labor, healthcare, education and culture – all conditions of a better life. These vanishing social-cultural resources would be needed, however, to counterbalance the loss in natural resources – according to the Annex (in the spirit of the weak version of sustainable development). However, the following sentence closes the arguments:

"Societies shall change their recent values and goals: well-being on one side and establishing the conditions and constraints to be taken into consideration when working on ensuring and extending well-being."

In harmony with this, the Annex compares the 2013 Framework Plan with the Sustainable Development Strategy of 2007 and finds that while the former document focused on the silos of administration where sustainable development was supposed to prevail, the new strategy puts the emphasis on exhibiting the state of national resources, identifies the procedures where we consume on the account of future generations and suggests a system of institutions and procedural steps that measure and sustain these resources.[27]

Finally, the Annex to the Framework Plan gives a detailed list of the proposed measures in its Chapter 7 (Institutions of Sustainability) as follows:

- personification of future generations;

[26] Annex to Parliamentary Resolution No. 18/2013. (III. 28.) Chapter 1 (Introduction)
[27] Annex to the Framework Strategy, Chapter 2 (Global challenges, external conditions of the national sustainable development transition)

- establishing constitutional and other institutional constraints in order to protect the interests of future generations;
- establishing automatic regulatory mechanisms (such as budgetary debt ceilings) for the same purpose;
- social deliberations and the widest possible transparency of the decisions related to sustainable development;
- sustainable development impact assessments with substantial public participation;[28]
- consultative bodies, such as the National Sustainable Development Council, on regional and even on local levels;
- regular monitoring and evaluation of sustainable development with alternative indicators, where several existing indicators of well-being could be used parallel or in combination.

Evaluation of the NSDP

When evaluating the National Sustainable Development Framework Plan in a general sense, we may conclude that it faithfully but creatively encompasses all levels and components of sustainable development therefore it represents a good bridge between nature and social sciences and state level policy making. Perhaps the weakest level in the Framework Plan is the individual one and the elements of environment to be protected. As the Annex of the Framework Plan makes it clear: the new plan had an ambition to avoid the alleged silo-oriented way of thinking of the previous plan, whereas it has great visions about the system of ecological risks, while it tends to overlook a little bit the specific problems in connection with climate and other problems, such as air pollution, desertification and the considerable loss of quantity and quality of arable lands. However, the very strong and practical proposals in the plan concerning environmental/well-being indicators might partly cover the issue of individual analyses of environmental elements and factors.

Systemic thinking, on the other hand, is very strongly represented in the Framework Plan, primarily in connection with the integration principle. Also the interrelationship of the natural and social/economic factors as seen on the "Doughnut" Figure above is well represented in the Framework Plan, or we may even say that it is overrepresented. The concept of weak sustainability, in our view, puts too much stress on the non-environmental factors of sustainable development, therefore in its practical effects it frequently leads to harmful compromises between environmental and social/economic interests. The concept of saving enough raw material resources for future generations receives less emphasis in the Plan, however, the interesting concept of avoiding technical close offs hints that the planners were more than aware of the importance of this aspect of sustainable development.

Also those more detailed factors of sustainable development provided by the constitutional legal sources are well reflected in the Framework Plan. Amongst them, institutionalization (as the case law of the Constitutional Court puts it: exercising the responsibilities of the State in ensuring environmental rights) is very much present in the specific proposal of the Framework Plan to create a body of state secretaries of the interested ministries. The requirements of the Constitution in connection with decent housing and equal opportunities, together with climate resilience is covered indirectly in the plan when it describes the very interesting and pioneering concept of sustainable local communities. Compared to the natural science and economics parts of the Plan and of its annex, legal suggestions are less elaborated. There are, however, references to two outstanding legal institutions: public participation and environmental impact assessment, without giving any details on their use and

[28] The authors of the Annex note that according to Act No. 130 of 2010 on Legislation there is already a legal institution for this purpose – practical not used for the time being.

organic connection with other tools of environmental protection and their role in ensuring intergenerational justice.

4. National Environmental Programme III (2009-2014) and National Environmental Programme IV (2015-2020)

The third Hungarian National Environmental Programme (hereinafter: the NEP III) was adopted by the Hungarian Parliament. The same legislative document calls the Government for implementing the entire program as it is detailed in the Annex to the Resolution[29]. Exactly the same legislative technique is used in the case of the Fourth National Environmental Programme (hereinafter: the NEP IV)[30].

The Preamble of the NEP III refers to the quality of life as determined by the state and change of the environment and the richness of the stocks of natural resources and also – as a new, important element – the development of the risk factors of the environment. The NEP III decision of the Parliament refers back to the constitutional right to healthy environment and also to the concept of intergenerational justice. Finally, its Preamble points out that the irreversible consumption of natural capital became a global problem through the accumulation and synergies of the initial local and regional problems.

The final point of the introductory part of the NEP III deals with the interrelationship of programmes with other plans, policies and programmes. It notes that there are several sector level policies that are in strong connection with the management of natural resources and with the protection of natural values and also with the protection against pollution, such as the Energy Policy Concept (mentioned at the very first place here in NEP III!), the National Forestry Programme, the National Strategy for the Development of Tourism and the Country-wide Programme for Environmental Damage Prevention and Mitigation. Furthermore the National Programme for Improving Drinking Water Quality and the National Programme for Local Wastewater Management are mentioned as specific programs that should follow the main principles of the NEP III. We do not see, however, any proper institutional, legal and procedural guarantees of this statement (e.g. regular monitoring, proper indicator systems, capacity building for civil watchdog activities etc.).

The executive summary of NEP IV reiterates the basic statements of the Preamble of NEP III (this is a general methodology throughout NEP IV), and adds a reference on greening the economy and underlines that environmental requirements shall not entail with additional burden on the economic role players, rather they can lead to more economical solutions and help the Hungarian entrepreneurs use EU financial resources earmarked for environmental purposes. Also the Introduction part of NEP IV highlights the importance of harmonisation with the National Sustainable Development Plan of 2013. Apart from this, several other strategies are mentioned here, such as the National Water Strategy, the National Strategy for Reserving Biodiversity and several national level strategies of waste management and emergency planning. Furthermore, not only these environmental strategies but a couple of other fields were taken into consideration in NEP IV, such as Strategy for the Countryside, National Forest Program and Strategy, National Energy Efficiency Action Plan, National Renewable Energy Action Plan, National Climate Change Strategy and the National Transport Strategy and also the National Concept of Development and Spatial Planning.

[29] Parliamentary Resolution No. 96/2009. (XII. 9.) on the National Environmental Programme for the period 2009-2014

[30] Parliamentary Resolution No. 27/2015. (VI. 17.) on the National Environmental Programme for the period 2015-2020

As concerns the substantial issues, the third NEP aims to pose the country on a sustainable development trajectory, first of all through the clarification of the interrelationships between environment, society and economy and developing concerted, systematic measures for environmental protection. The planned measures of NEP III are based on cooperation of several territories, social and economic sectors of the country in the spirit of decentralisation and subsidiarity. The first couple of chapters of NEP III are of explanatory nature, they aim to highlight the minimal background information to make their suggestions better understood in the second half of the Programme.

Also in the substantive parts the authors of the NEP III provide their views on systemic approach:

„The overall responsibility of the environmental protection section of the government is to support the socio-economic development of the country by performing its tasks on a high professional level and at the same time by standing up against ruining social and environmental values. This can be ensured only by a systemic approach and considering the environmental viewpoints in all walks of life. To achieve this, we need to develop a targeted, effective and at the same time user-friendly horizontal system of institutions and tools ranging from research and development, planning, regulation, controlling, support, awareness raising, monitoring and feed-back as a full circle."

The issue of international cooperation is well developed in the NEP III in connection with the general strategy for foreign relations in EU integration, Euro-Atlantic cooperation, sub-regional and neighborhood policies of the country. The topics highlighted under this chapter are:

- nature protection cooperation in the biogeographical regions where Hungary is concerned;
- water management cooperation in the river basins where Hungary is concerned;
- environmental professional connections with the countries of the West Balkans, the Eastern Partnership, the Visegrad countries, the Danube valley countries, the USA, Japan, Russia (within the framework of bilateral environmental agreements under preparation), countries in the Caucasus region and China (in the field of water management)
- participation in UN global environmental cooperation programmes
- participation in the environmental programmes of the OECD
- environmental donor programmes.

The public participation section of the NEP III refers to the Aarhus Convention and establishes that its principles were applied even before the Convention entered into force in Hungary because the very liberal Freedom of Information Act has been applied since 1992. Also public participation rules of the 1995 Environmental Protection Act and the Legal Unity Decision of the Supreme Court of 2004 were there to defend public participation rights otherwise eroded in practice. The NEP III is really positive about public participation, acknowledges its importance for raising environmental awareness and proper implementation of environmental laws and regulations. The NEP III points out that while environmental authorities usually apply public participation rules, other authorities dealing with environmentally significant cases quite frequently fail to follow them. The NEP III calls for a narrow interpretation of legal limitations on public participation, especially concerning business secret and a user-friendly practice with a broad interpretation of legal standing and separation of accessible and confidential parts of data. Also, active information dissemination via Internet is desirable according to the NEP III. In order to reach a higher level of public participation the NEP III suggests regular trainings and manuals for the officials who are in regular contact with the members of the public, as well as it suggests wider fee waiver practices and a quicker access to justice.

On the substantive side the NEP IV refers back to NEP III in many aspects and stresses the importance of the general principles of environmental protection, such as the principles of proper use of the environment, namely the precautionary, prevention and remediation principles, the principles that refer to responsibility (polluter pays) and transparency (principles of information and publicity). The

holistic, problem oriented approach requires the use of the integration principle, while from the same angle, the principle of partnership and subsidiarity play an important role. General principles of good governance, such as fair and equitable procedures within and amongst generations are also mentioned. However, the principle of public participation is missing from the long list.

The status of sustainable development according to the NEP III and NEP IV

In the Introductory part of the NEP the Hungarian lifestyle and consumption pattern are described in terms of three typical features. Two out of them are closely related to the energy sector. The personal car ownership is continuously growing, and while it was 243 per 1000 persons in 2000, by 2008 this number grew to 304. The second group of examples is household devices that consume electricity, especially by the stand-by function of these tools of entertainment and information technology. The number of Internet users tripled within four years between 2003 and 2007 (from 660.000 to 1.800.000). While this is socially positive, the energy consumption of computerization is really significant, since servers consume 18% more energy in every year in the last period. Another factor in energy consumption is that Hungarian buildings have no or very little heat insulation, therefore their heating and cooling entails tremendous energy losses. For the sake of giving a full picture, we mention that the third factor that exemplifies very well the growing presence of consumer society is the expansion of shopping malls (see Figure 7).

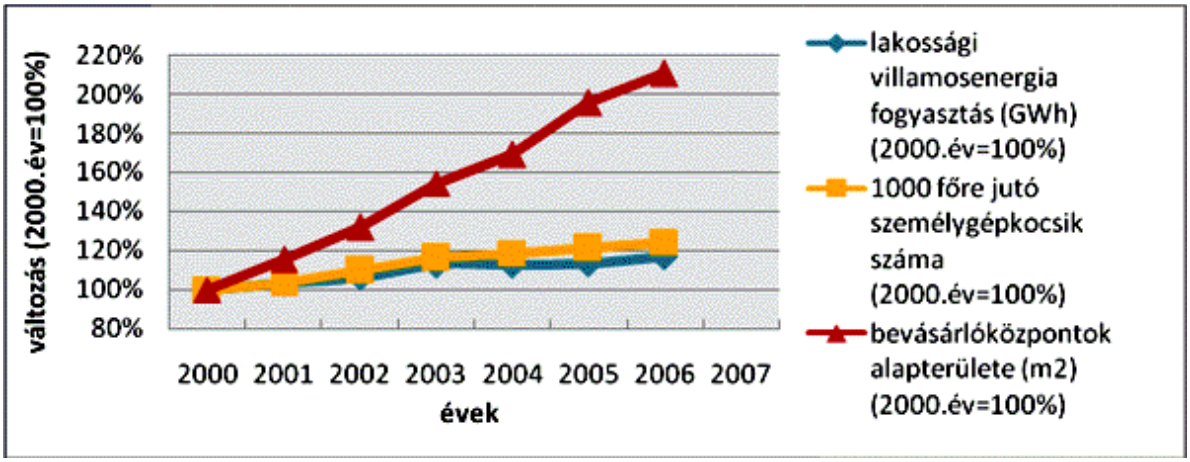


Figure 7: Consumption spiral: trends in building shopping malls, number of cars and electricity consumption

source: Central Statistical Office of Hungary

The growing consumption level goes hand in hand with the polarization of the Hungarian society, especially with impoverishment. This latter raises a series of sustainable development problems, such as people in poor neighborhoods and block flat districts are unable to connect to energy or water saving programs, while in the countryside poor people might commit environmental crimes, such as illegal waste handling ("incinerating") or tree felling and otherwise damaging the ecosystems.

Direct and indirect state subsidies (e.g. earmarked budgetary funds, tax reliefs) can have different environmental effects. Between 2003 and 2008 the subsidies for renewable energy production and consumption and those for combined energy generation resulted in saving in the use of primary energy sources (natural gas) and in the decrease of CO_2 emissions. However, the effectiveness of these subsidies is not known exactly. There are very few indicators and detailed research programs available, and even if they exist, political decision-makers and the general public are not aware of them.

A further environmental economic problem is the unrealistic pricing of natural resources, especially in the field of energy subsidies, low mining concession fees, water usage fee programs, subsidies for infrastructure developments, tax reliefs for energy sources and agricultural subsidies – no or very little sustainable development considerations are integrated therein[31].

When analyzing trends in economic development, the NEP soon returns to the energy sector. While the economy has been growing since 2000, the industrial SO_2 emission decreased (in proportion to production) with 40% between 2000 and 2006, while, admittedly the CO_2 emission decreased only mildly. The total energy demand of the industry grew between 2000 (366 PJ annually) and 2006 (421 PJ annually) significantly, although these latter factors (SO_2 and CO_2) were detached from energy consumption (see Figure 8)[32].

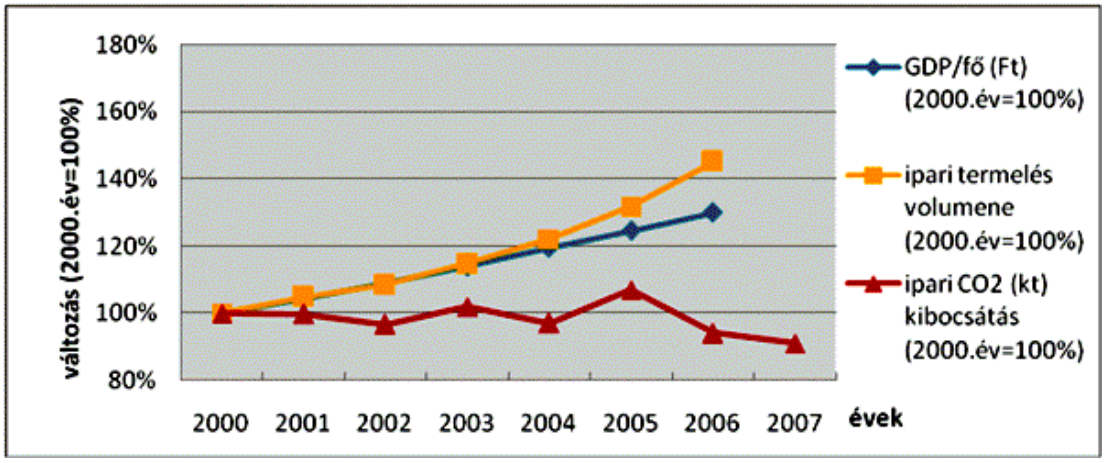


Figure 8: Detachment in the industry: industrial production, GDP and industrial CO_2 emission
source: Central Statistical Office of Hungary

It is interesting to see that the NEP unambiguously negatively evaluates the low energy intensity of agriculture when comparing the EU average value (5,2 kW/ha motor output) and the 2005 Hungarian 2,1 kW/ha value. However, the renewal of outdated agricultural machinery and the introduction of new ones offer an opportunity to harmonize these measures with the needs of environmentally friendly agricultural practices. For the time being animal husbandry and grain production (because of the use of fertilizers) produce nearly the half of the NH_4 emission of the whole economy and almost the whole of the ammonia emission. Paradoxically, the introduction of biofuel production may further boost intensive agriculture and can get into conflict with food production.

In the field of energy supply another paradox phenomenon was reported in NEP III. The gross energy supply of the country between 2000 and 2006 grew with 2% average. Moreover, this energy supply was based on fossil fuels primarily (see Figure 9).[33]

[31] Point 1.1.1 of NEP III
[32] Chapter 1.1.3 of NEP III
[33] Ibid.

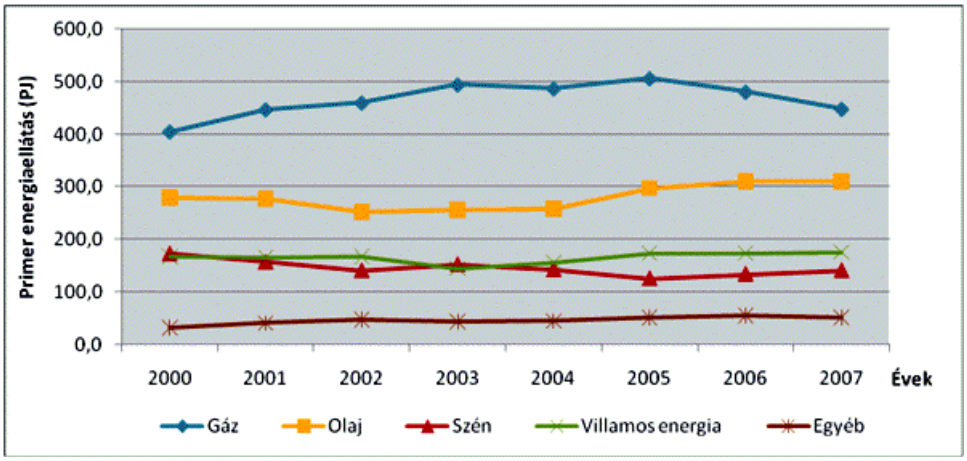


Figure 9: Primary energy supply: gas, oil, coal, electric energy, other
source: Central Statistical Office of Hungary

While in the said period energy intensity had decreased with 13%, economic growth and energy consumption have overdone this trend. The report further examines the direct energy consumption according to social and economic areas.

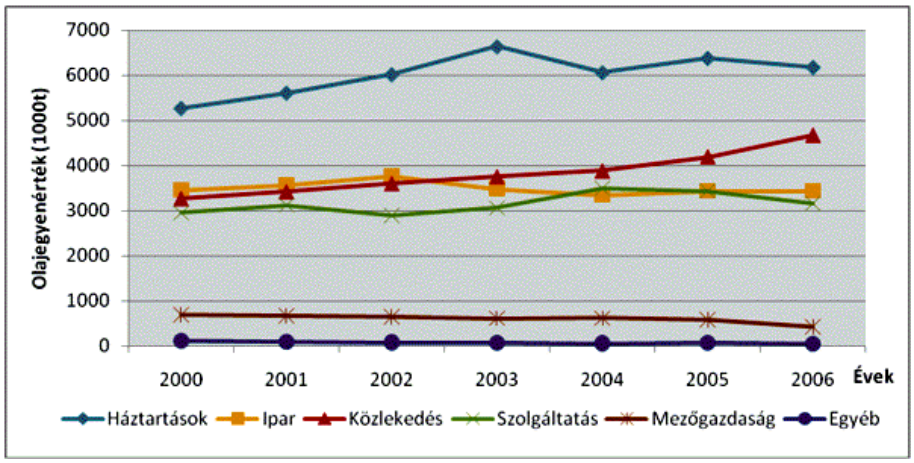


Figure 10: Direct energy consumption in several economic areas: households, industry, transport, service, agriculture, other
source: Central Statistical Office of Hungary

During the implementation of the previous National Environmental Programme (NEP II) the use of renewable energy sources – actually biomass in heat and electricity production in 90% – has grown because of the favorable subsidy system. Significant further renewable energy sources in Hungary are geothermic energy, waste incineration and small hydropower (see Figure 11).[34]

[34] Ibid.

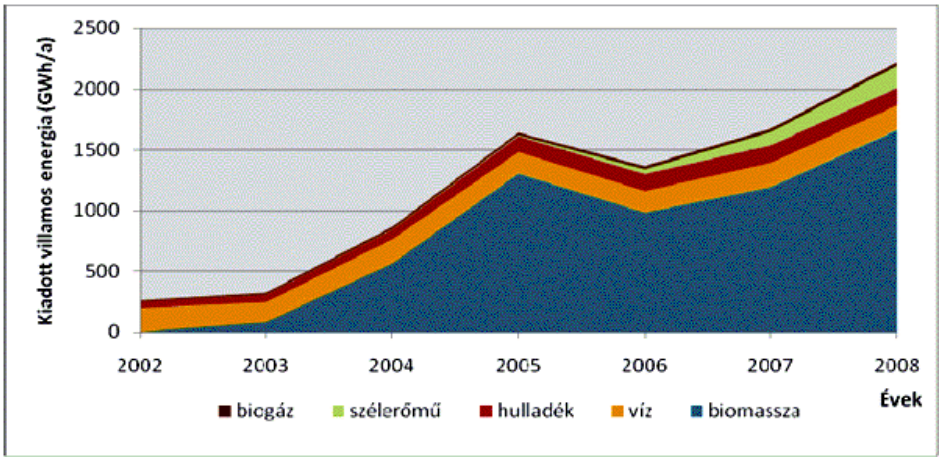


Figure 11: Renewable and waste based electric energy producing capacities: biogas, wind, waste, water, biomass

source: Central Statistical Office of Hungary

As concerns the data on energy consumption in NEP IV, in 2009 because of the global economic crisis the Hungarian energy consumption decreased with 7,6%, while thereafter continued to diminish in a smaller rate. More information was available for the editors on the agricultural relationships of energy economy (because in 2010 the environmental administration was rendered under the Ministry of Agriculture). The greenhouse gas emission of the agriculture, while it was slightly growing between 2000 and 2006, diminished after this period and by 2012 it was 7% less than that of the year 2000. Although the NEP IV underlines the importance of biomass based energy production and warns about the risks of energy grass experiments, it fails to publish concrete numbers on these aspects. Concerning the renewables, their use has reached 9,7% from the total energy consumption in 2012.

Suggestions in NEP III and NEP IV

The initiatives in NEP III that should have cascaded down to other plans, legislation and implementation according to the desire of the Preamble of the NEP are discussed in a separate chapter. Here we are analyzing only three relevant chapters from the NEP: climate change, nuclear safety and energy.

Climate

In the climate change section the NEP calls again the attention to the growing level of danger connected to the raise of average temperature and also to the necessity of concerted global actions that Hungary is ready to accompany. The sum of actual losses that have already happened (floods, droughts, forest fires etc.) is expressed in a portion of the GDP only (unfortunately overlooking the alternative indicators of genuine development): it is more than one percent still.

Apart from mitigation measures there are incremental efforts for adaptation and for resilience. Within the framework of related programs, the NEP refers to the biannual National Climate Change Programmes (but fails to mention the Climate Change Strategy). The main goals of the NEP in the field of climate change are:

- decreasing the emission of greenhouse gases (*focusing on* energy, agriculture, transport and waste management; *aiming at* emission trade, emission inventory, administrative-legal regulations, Green

Investment System; using the following *indicators*: net greenhouse gas emission per sectors, per materials and per persons, facilities taking part in emission trade and the number of their reports)
- enhancing energy efficiency and economical use of energy (*focusing on* energy security including diversification of sources, energy efficiency including decentralization of energy production, competitiveness and sustainability including the use of renewable sources; *aiming at* 1% amendment in efficiency annually, 13% renewable ratio, including 10% biofuels; through the Energy Efficiency Action Programme house insulation actions within the Climate-friendly Building Framework Programme, life cycle analyses for renewables, economic incentives, Agro-Energy Programme, biogas programmes for local public buildings, energy recovery from wastewater sludge, geothermal energy use with reinjection, introduction of intelligent energy operation systems in households; following up with the *indicators* of energy consumption per sectors and per persons, ratio of the renewables, territories occupied by energy vegetation, number and production of biogas facilities);
- enhancing sinks through increasing the territory of larger free soil surfaces and vegetation;
- enhancing resilience against the ecological, social and economic effects, prevention and mitigation of damages, enhanced level of energy efficiency rate of the buildings and household electronic tools.[35]

In 2015, the fourth NEP was already in the position to refer to the 5th Report of IPCC of 2013 autumn. Also, instead of giving the details of the climate policy of the country the NEP IV simply refers to the National Climate Strategy. In the Programme there is only a short summary of climate protection suggestions, such as new climate models, capacity building and awareness raising in climate issues and concerning the general role of several stakeholders, such as municipalities, the business sector and the NGOs. The climate related tasks also appear in several special chapters in NEP IV, such as the agro-environmental, the forestry, spatial planning (especially the resilience issues), public health (especially in connection with the question of access to health related information) habitat protection and water management.

Nuclear safety

There are several exclusively energy specific sections in the NEP. One of them is nuclear environmental safety that is a priority issue within environmental safety. The financial basis for this activity is the Central Nuclear Monetary Fund, managed by the National Nuclear Energy Agency. Apart from this, the other major institutional basis of nuclear safety is the National Catastrophe Prevention Directorate General (OKF) that operates the National Radiation Signaling and Controlling System (OSJER TMH) which is part of the European radiology monitoring data exchange system (EURDEP). The goals of this field of activities are:

- safe disposal and handling of nuclear waste and spent fuel in harmony with the latest scientific results and the international experiences and expectations in a way „not putting larger burden on the future generations than it is acceptable";

- research for a disposal site for high activity radioactive waste;
- activities in connection with dismantling nuclear facilities;
- further developing the national environmental radiology monitoring system and mobile laboratories.

The *indicators* will be:

- number and capacity of storage cells in the Bátaapáti underground storage facility (NRHT)
- the same in the Paks transitional storage facility

[35] Point 5.2

- number of distant measuring stations within the national environmental radiology monitoring system and the mobile laboratories[36]

We note that – contrary to other sections of the NEP, the nuclear safety chapter does not contain specific suggestions to the Government and other stakeholders, only the goals and the monitoring measures.

Quite understandably – because of the realisation of the plan of the extension of the Paks nuclear power plant with new units – the NEP IV has a more detailed chapter on nuclear safety. Apart from the goals in NEP III, it aims at monitoring of both ionizing and non-ionizing radiation levels and the radiation load of the population (together with a national radon map) and at raising the level of preparedness for emergency situations. The tasks in connection with storage of nuclear waste become more concrete, too, in respect to all the storage facilities in Bátaapáti, Püspökszilágy and in Paks (a transitional one), namely the National Radioactive Waste Storage Facility in Bátaapáti, in the Processing and Storage Facility in Püspökszilágy and in the Paks Interim Spent Fuel Storage Facility.

Energy in general

In the energy policy section the third NEP underlines again the main principles of the Hungarian energy policy familiar from the climate change section, namely energy security, competitiveness and sustainability. This latter is identified by climate change goals, mostly overlooking general clean air and other environmental and social sustainability viewpoints. As concerns energy security, the most important goals are diversification and decentralization, in which renewable energy sources shall play a determining role. The goals of the NEP III in the field of energy are:

- Improving energy efficiency between 2008 and 2016 with an annual 1%, in harmony with the National Energy Efficiency Action Plan. We should note that it is not an overly ambitious goal, considering that the European Commission targeted a 20% improvement between 2007 and 2020;
- Achieving a 15-16% use of renewable energy sources and a 10% biofuel use ratio on top of the prescribed 13% ratio (by 2020, a 20-21% ratio in renewables in electricity production is achieved, that means a 240% growth in heat production and an almost 10 times higher amount of biofuel use).

In order to reach these goals the Government should implement the Energy Efficiency Action Programme with the help of municipalities, companies and the public in the context of a program package containing the renovation of public and private buildings, developing and implementing a Renewable Energy Source Program[37], introducing full life-cycle analyses for renewable energy production, developing economic incentives (such as tax reliefs) and a legal regime for supporting renewables, encouraging energy saving and supporting agricultural waste use as renewable energy sources.

The Government should use the following indicators

- per capita energy consumption in the branches of economy and social life

[36] Point 5.9.3.2

[37] We note that the Hungarian Government has duly filled in the template according to the EU Decision 2009/548/EC, and it is available on the Internet, but the plan has no legal form, neither as a law or regulation nor as a Governmental decision that would be a mandatory document within the administrative system at least. Certain partial issues are dealt with in legislative form, however, such as the Act No. 117 of 2010 on Biofuels or the Governmental Decree No. 309/2013. (VIII. 16.) Korm. on the certificate of connected electricity production.

- energy saving category rating in buildings and household electronic tools
- ratio of renewable energy sources within the whole energy balance and within electricity production
- territory of biomass plantations
- number and capacity of biomass facilities

The NEP IV significantly reduces the goal of developing renewable energy sources, instead of the approximate number 20-21% of NEP III, it determines a 14,65% renewable ration by 2020 and a total 10% energy saving by that time. The tools and methodology to achieve these goals are broken down to governmental bodies, municipalities, economic role players, NGOs and the members of the general public.

The National Nature Conservation Program attached to the NEP also deals with energy issues. It stipulates that in-depth analyses are necessary to gauge the real renewable energy content and detach those works that are non-renewable in reality (such as plant protection works, harvesting or transport, all with the involvement of fossil fuel run devices).

Biomass production shall not prevail over food and animal feed production, neither over nature conservation. Although farmers may decide themselves the types of uses of their lands, the financial subsidy system should orient them to sustainable agricultural practices. A proper biomass production should be bolstered by certain administrative rules, for instance provisions that prescribe which agricultural by-products could be incinerated in what kind of (maximum size) facilities and how much mileage could be added to their transportation.

Contrary to this, bioethanol production is especially risky from a nature conservation viewpoint. Priority plantations in these projects are wheat and corn – plants that demand quite intensive agricultural techniques, including over-fertilization and monocultures. They are undesirable from a nature conservation viewpoint. [38]

The nature protection section of NEP IV does not contain similar energy related provisions.

The evaluation of NEP III and NEP IV from sustainable development viewpoints

In sum, both the NEP III and NEP IV respond to almost all of the aspects we have enlisted with the help of contemporary sciences, the Constitution and the National Sustainable Development Framework Plan. The NEP IV brings really only a few new elements, but repeats the most important elements from NEP III. However, the majority of the areas covered can be found only in the descriptive parts of these Programmes, such as the future generation language, the systemic approach to ecological threats and to economical consumption patterns. International outreach and cooperation in the major global ecological cycles is well represented in the NEPs. There are new elements, as well, such as the necessity to gauge and prepare to *ecological risks*, or *public participation* as a major tool for effective implementation of the environmental plans, policies and programs, in addition to *environmental indicators* (only in NEP III) ensuring a proper feed-back to the decision-makers and some specific principal statements concerning nuclear energy (first of all the priority of dismantling the existing facilities and concentrating only on the safe organization of storage of nuclear waste).

Two general principles of building up the country's energy system could also be found in NEP III and IV: the diversification of sources and the decentralization of production, with a view in both principles to enhancing the production and consumption of renewable energy.

[38] Point of 1.6 of the Annex to NEP III (National Nature Protection Program)

5. National Climate Mitigation and Adaptation Strategy and the National Climate Program

General legal background[39]

Based on the Act No. 60 of 2007 on the implementation framework of the UN FCCC and the Kyoto Protocol (the Climate Change Act), Hungary prepared the first National Climate Change Strategy (NCCS-1) in 2008 adopted by the Parliamentary Resolution No. 29 of 2008 (20 of March). The NCCS-1 obliged the Hungarian Government to issue a detailed National Climate Change Programme biannually. For the years 2009-2010 in a relatively late timing the Governmental Decision No. 1005 of 2010 (21 of January) performed this task. The report on the implementation of this Programme was submitted to the Hungarian Parliament that accepted it on 12 June, 2012. According to the Climate Change Act, as modified in 2013 in smaller details, the responsible governmental agency (the State Secretariat responsible for Climate Change Policy Issues in the Ministry of National Development) was required to revise the implementation of the NCCS-1 after five years from its entering into force and prepare a draft of the 2nd National Climate Change Strategy (NCCS-2). The Ministry prepared the first full draft of the NCCS-2 by 30 September, 2013 but until the closing date of the present study it has not yet been promulgated in a Governmental or Parliamentary Resolution. Therefore, we have to fall back on the analysis of the NCCS-1 with only a small outlook to NCCS-2.

The major features of NCCS-1

The NCCS-1 had three major directions of activity: mitigation, adaptation and awareness raising.

The mitigation part of NCCS-1 had much more emphasis while in the NCCS-2, within the same structure, adaptation will have at least as much importance as mitigation. This is due to the time elapsed and the change of mindset of experts and politicians dealing with climate change issues worldwide and in Hungary: due to the recently accumulated data and analyses, they are more and more aware that certain negative effects of climate change are unavoidable.

A progressive feature of the NCCS-1 was that it rested on a very wide scale of scientific analyses of the so called VAHAVA (Changes-Effects-Responses) project that started in 2003 by the Hungarian Academy of Sciences and the Ministry of Environment.

Within the series of researches in the framework of the VAHAVA project, a number of legal analyses were conducted, too, in which the participating environmental lawyers revealed as many as 200 legal institutions in which climate change mitigation and adaptation should be reflected and result in significant changes. These administrative legal fields included: environmental law, environmental procedural law (public participation, EIA, SEA etc.), spatial planning, energy, transport, mining, agriculture, forestry, waste management, chemical safety and catastrophe prevention.

In its Preamble, the NCCS-1 refers back to the National Sustainable Development Strategy, but it is silent about the NEP. The leading principles of the NCCS-1 that are supposed to determine the detailed regulations and the interpretation thereof are:

[39] The first three paragraphs of this chapter are based on the national report EMLA prepared for the EU Climate Adapt project in April, 2014.

- Sustainability: the measures of the strategy shall take into consideration the living conditions of future generations and their needs.
- Systemic approach: the strategy shall interpret climate change in a dynamic system of driving forces, burdening factors, statuses, effects and responses.
- Environmental justice: equal access to environmental public goods and healthy environment shall be ensured without discrimination according to age, gender, ethnicity and social-economic status, as well as the environmental burdens shall be fairly distributed.
- Integration: environmental protection shall be an organic part of all branches in administration, therefore the viewpoints and instructions of the climate change strategy shall be built in into all governmental strategies, plans and policies that are directly or indirectly relevant for climate protection. In addition, the viewpoints of the Strategy shall be present even in the ongoing projects, through a climate sensitivity assessment. Also by the integration principle, climate change should be part of all the relevant research activities, especially in searching for new social, economic and technology directions. Public participation and the participation of the business sector also form part of the integration principle, in the same way as the sub-principle of decentralization and territoriality.

In the chapter about climate change mitigation, the NCCS-1 discusses a series of strategic goals in the field of energetics[40] in harmony with the numbers and suggestions of the Hungarian Energy Policy between 2007 and 2020, the Renewable Energy Strategy and the National Energy Efficiency Action Program. The main strategic goals are:

- Decreasing the use of fossil energy sources, within the framework of a change of energy source structure while keeping in mind the viewpoints of energy security;
- Decreasing the total energy use of the society, while considering that in a medium term only a leveling effort is realistic, so significant decrease could only take place in a long term – for achieving this goal the energy use shall be detached from the GDP growth and a significant movement of energy saving shall be initiated both for the population and the economic sector, based on tools of proper consumer policy and good examples from governmental and municipality institutions;
- Reforming the budgetary policy in line with climate protection, for instance through eliminating harmful subsidies and transforming the tax system according to the needs of climate protection.
- Enhancing energy efficiency, the spread out of renewable energy sources (wind, solar, geothermic, biomass and others), taking into consideration that the connected energy production can result in as much as 30% saving in fuel.[41]

As concerns the renewable energy sources the NCCS-1 highlights that the best potential renewable sources for Hungary are biomass and geothermic sources. However, in the case of biomass certain other environmental and nature protection viewpoints might hinder the increase of capacities, while the technology of using geothermic sources has not spread out yet to a significant extent. As the strategy itself states

„Therefore, instead of unconditionally increasing the rate of renewable sources the NCCS-1 puts an emphasis on energy saving through developing energy efficiency"[42].

The per capita CO_2 emission in Hungary is the fifth lowest in the EU owing to the fact that 40% of electricity is produced by the Paks nuclear power plant and the ratio of use of natural gas in Hungary is

[40] Point 3.3.1 of NCCS-1
[41] Point 3.3.1 of the NCCS-1
[42] Point 3.3.1.2

the highest in the EU (43%). Starting from these data the NCCS-1 establishes that nuclear power production is climate friendly, but there are other sustainable development viewpoints that require further consideration when deciding on that way of energy production.[43]

The NCCS-1 devotes a separate chapter to environmental NGOs. Their actions make the population more aware of climate programs and the information from NGOs help the citizens change their lifestyles and consumption patterns in order to align with the climate change requirements. Apart from these, NGOs have long term values and can take part in climate change planning and implementation, first of all through watchdog activities.[44] It is really important that the NCCS-1 puts an emphasis on the role of local communities, municipalities and churches, as well.[45] Especially in the field of climate resilience these groups may play a decisive role. Local climate protection and resilience plans shall be encouraged, following the foreign examples from Europe and the USA.

The National Climate Program

Based on the NCCS-1 the Government issued the first Hungarian operative program on climate issues[46]. The Program underlines that the best areas of mitigation of greenhouse gas emissions are energetics, transport, agriculture, waste management and waste water treatment. Although the population is responsible for one third of emissions of greenhouse gases, climate mitigation measures have not reached them so far. Taking all of these into consideration, the main priorities of the Program are energy efficiency in households, combined energy production, support of renewable energy sources, decreasing energy consumption and need of transport, while enhancing sink functions by new forest plantations with species that originate from this region. [47]

Since energetics is responsible for 45-50% of the greenhouse gas emissions, the bulk of efforts shall go to this branch of social and economic life. A new energy saving movement shall be started and both the institutions and the population shall be encouraged to join. In addition, the technical conditions shall be amended for energy saving and energy sources with less CO_2 emission shall be preferred, first of all the renewables.[48] The measures designed in the program are:

- a special program (ZBR panel program) for renewal of block flat houses (*sources*: the budget of the ministries responsible for environment and municipalities, and the earmarked money from Kyoto quota sales; *responsible*: the two said ministers; *indicators*: to be determined);
- support for individual regulation and measuring of use of heat energy per flats in houses (*responsible*: the minister responsible for municipalities, using her own budget, no indicator has been determined yet);
- local renewable energy sources for local energy needs (*source*: Operative Program, *responsible*: ministers responsible for transport, telecommunication and energy and also for national development and economy; *indicators*: use of renewables in PJ, ratio of them in the national energy mix and annual decrease of the total greenhouse emission);
- support for large, medium and small size bioethanol facilities (*source*: Operative Programs; *responsible*: the ministers responsible for agriculture and rural development and for national development and economy; *indicators*: use of renewables in PJ, ratio of them in the national energy mix and annual decrease of the total greenhouse emission);

[43] Point 3.3.1.3
[44] Point 5.2.3
[45] Point 5.2.4
[46] Governmental Decision No. 1005/2010. (I. 21.) Korm.
[47] Chapter I of the Program
[48] Point I/1.

- support for biogas facilities (*source*: Operative Program, *responsible*: the minister responsible for agriculture and rural development, *indicator*: to be determined).

Evaluation of the climate plans from sustainable development viewpoints

Since the NCCS-1 and 2 and the climate program are already sectoral plans, not all of the general sustainable development, constitutional and environmental values and viewpoints can be expected from them. Yet, intergenerational justice, system thinking, international cooperation, sustainable initiatives at local level, the integration and the public participation principles are present strongly in these climate focused texts. Neither these plans contain further viewpoints of analysis of the lower level energy plans, because of their content – at least in these principal issues – overlap with the higher level plans, they only break down these viewpoints into more practical elements.

Part II: Evaluation of the Hungarian energy policy in the mirror of sustainable development sciences, the Constitution and the general sustainable development plans

A checklist for energy policies concerning major sustainable development problems

After the analysis of these basic documents we are now in the position to make a short survey of the most important elements of sustainable development established by natural scientists, economists and also by lawyers. The basic scientific approaches in the layers of sustainable development are:

a. environmental justice (reconciliation of intergenerational justice with intra-generational justice – this element is richly represented in all general documents we examined in Part I);
b. climate protection (it is also present in all examined documents, in addition to that there are types of plans that especially target this issue and give a long list of evaluative elements both a from mitigation and an adaptation (resilience) angle);
c. a holistic approach of the system of ecological threats (our sustainable development planning is just in the phase of passing the silo approach – cross references, practical use of integration principle are the milestones of this process);
d. use of a fair share of raw materials (the major policy documents of the Hungarian legal system as a rule fail to address this important element of sustainable development – a vague warning against overconsumption and economical use of resources can be found, however both in the NSDP and in NEPs).

The first area where such grievous scientific warnings find their way to social science is law, primarily the constitution that should reform the values of the entire legal system in light of the new knowledge on ecological threats. In some cases the role of the constitution is just to convey the message of the relevant sciences and transform them into a legal language as in case of provisions about intergenerational justice (this element is mostly overlapping with points a.-d. above, but the future generation language represents a new level of legal and constitutional development of our times).

In other instances the Constitution substantially develops the concept of sustainable development into the field of social practice. This latter can be seen when the Constitution speaks about

e. safe and healthy environment (which is the old core of the right to environment, from the time where it did not exist on its own, only as a consequence of a right to health and the responsibility of the State to ensure the safety of its citizens);
f. equal opportunities for all, decent housing (this item also ensues from other basic constitutional concepts of ensuring fair and equitable conditions for all citizens – at the same time it mostly overlaps with the modern concept of intra-generational justice);
g. the non-regression principle (developed by the practice of the first generational Constitutional Court in Hungary and gains importance especially when we compare several energy related plans in time: any step backwards in ensuring the right to environment, safety, health and other related rights will contradict to this principle);
h. the polluter pays principle (it is the only one of the basic principles of environmental law that directly got into the text of the new Hungarian Constitution – any plan, legislation or practice that ensures free access to ecological services and that lets producing environmental external expenses without compensation will contradict to this principle);
i. also an important new, practical element that in order to have a better chance to tackle with global ecological crises, the State shall follow a proactive international sustainable development policy;
j. institutionalisation and financial guarantees (the responsibilities of the State to create the proper institutions and procedures to enhance the effective fulfillment of a right to healthy

environment and promote the interests of the future generations) and also guarantees that are aimed to prevent the State Budget to burden future generations above a tolerable level.

The general sustainable development, environmental and climate change plans and programs of the country contribute with more sustainable development aspects to our checklist:

k. ecological services concept (in connection with justice and the polluter pays principle in points a. and h. with more concrete references to actual economic regulatory measures);
l. sustainable local settlements (an important element of resilience, or in other words from the plans analysed: diversified and decentralised solutions in order to avoid the consequences of a possible collapse of large, fragile systems – see also a., e., and f. above);
m. integration principle (breaking down sustainable development concepts into lower level plans and laws, a basic concept to exceed the old silo thinking in environmental administration);
n. alternative indicators (necessity of measuring the results and giving feedback to the decision-makers with the help of sustainable development indicators that are different from GDP).

Finally, the national environmental and climate protection plans add to our checklist a couple of more practical items:

o. environmental risks to be taken into consideration (risk preparedness and risk management are newly emerging features of our legal thinking);
p. greening the economy (as an effect of the unsuccessful Rio+20 conference, the strive to spread out the concept of sustainable development in the relevant branches of economy appeared in some Hungarian planning documents, too, especially in the NSDP – compared to point h. greening the economy seems to be a general concept)
q. the principle of public participation in both developing and monitoring the relevant plans is generally part of the major sustainable development plans of Hungary – however, some of them tends to overlook this principle of inconvenience for the business and sometimes to the administration, too;
r. the precautionary principle is the most revolutionary one of the Rio Principles – no wonder that only a few hints can be found on it in our major plans: no development decision shall be taken until any uncertainty remains concerning the ecological and/or health consequences of the planned action;
s. energy specific goals of the major plans: i) energy security (decentralisation), ii) energy efficiency (insulation, life cycle analyses etc.), iii) raising the rate of renewable sources (diversification), iv) avoidance of harm to agriculture (biodiesel, biomass production etc.).

Part III: Energy plans and their analysis according to sustainable development aspects

Analytical methodology

After having completed the research of the environmental and sustainable development plans of Hungary adopted in the last 5 years, we are directing our focus to the energy related plans and apply the same analytical framework and the criteria as above. We will use the following research components in order to judge whether the concept of sustainable development has sufficiently infiltrated the energy plans and whether the major environmental threats discovered and characterized by the Planetary Boundaries concept were taken into due account in the preparation, drafting and adoption of the policies, plans and programs. The Planetary Boundaries Analytical Framework consists of four major areas as described in the foregoing in the so-called Doughnut Figure: intra- & intergenerational justice, climate protection (mitigation & adaptation (resilience)), system of ecological crises and preservation of a fair share of resources. Parallel to this, we are also making an effort to compare whether the energy plans have done anything in promoting the constitutional values and concepts that are important for implementing the sustainable development theory in practice by legal means. This will cover the following constitutional aspects: safe and healthy environment, equal opportunities for all, decent housing, non-regression principle, polluter pays principle, international cooperation, institutional and financial guarantees of implementation. Since the purpose of our analysis is also to compare how coherence in guaranteed among different plans and programs of the government, we take a look at how energy related plans could embrace the approach and attitude of other plans such as sustainable development plans and environmental plans. Within this sphere, we analyze if the ecological services concept, the idea of sustainable local settlements, the integration principle, the alternative indicators, the concept of environmental risks to be taken into consideration, the initiative of greening the economy, the public participation principle, the precautionary principle, the energy related goals: i) energy security (decentralisation), ii) energy efficiency (insulation, life cycle analyses etc.), iii) raising the rate of renewable sources (diversification) and iv) avoidance of harm to agriculture (biodiesel, biomass production etc.) could make their way into specific energy related plans. For the analysis, we apply the below matrix and use a simple color code for expressing our evaluation: green for a good mark, red for a bad mark (in this case, if the plan does not take into account the analyzed aspect, we consider it bad unless it would be irrational to expect that from the plan in question, in which case we apply grey and a neutral mark or the equivalent of Not Applicable (N/A).

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the “doughnut”	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	

	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

List of analyzed plans

In the course of the comparison of energy related plans with the foregoing benchmarks we have listed the most relevant and important plans, programs, policies either adopted by the Parliament or by the Government of Hungary in energy related topics. We have identified the following plans (original title and English translation):

HU	EN
63/2005. (VI. 28.) OGY határozat az alternatív és megújuló energiahordozók elterjesztésének hatékonyabbá tételéről	Parliamentary Resolution on making the spreading of alternative and renewable energy sources more effective
40/2008. (IV. 17.) OGY határozat a 2008-2020 közötti időszakra vonatkozó energiapolitikáról	Parliamentary Resolution on the energy policy for 2008 and 2020
77/2011. (X. 14.) OGY határozat a Nemzeti Energiastratégiáról	Parliamentary Resolution on the National Energy Strategy
1160/2015. (III. 20.) Korm. határozat a Nemzeti Energiastratégia energiafelhasználás-	Government Resolution on updating energy consumption forecasts of the National Energy

előrejelzéseinek frissítéséről	Strategy
Magyarország Megújuló Energia Hasznosítási Cselekvési Terve	National Renewable Energy Action Plan of Hungary
1002/2011. (I. 14.) Korm. határozat Magyarország Megújuló Energia Hasznosítási Cselekvési Tervével összefüggő egyes feladatokról	Government Resolution on tasks related to the National Renewable Energy Action Plan of Hungary
1374/2011. (XI. 8.) Korm. határozat Magyarország II. Nemzeti Energiahatékonysági Cselekvési Tervéről 2016-ig, kitekintéssel 2020-ra	Government Resolution on the 2nd National Energy Efficiency Action Plan of Hungary until 2016 with forecast until 2020
Magyarország II. Nemzeti Energiahatékonysági Cselekvési Terve 2016-ig, kitekintéssel 2020-ra	2nd National Energy Efficiency Action Plan of Hungary until 2016 with forecast until 2020
1073/2015. (II. 25.) Korm. határozat a Nemzeti Épületenergetikai Stratégiáról Nemzeti Épületenergetikai Stratégia	Government Resolution on the National Building Energy Strategy National Building Energy Strategy
Közlekedési Energiahatékonyság-javítási Cselekvési Terv	Transport Energy Efficiency Action Plan

Parliamentary Resolution on making the spreading of alternative and renewable energy sources more effective (not in force any more)

This Resolution of the Parliament intended to improve the spread of alternative and renewable energy sources by requesting the Government to create a new legal regulation of the area. The cornerstones of the regulation should be according to the Resolution of the Parliament, that a mandatory feed-in tariff should be set, a simplified environmental permitting procedure should be set up, the thermal water resources of the country should be better used, the agro-fuels should be mixed into regular fuels following the requirements of the EU, more biogas should be produced, energy grass production should be subsidized and the Forestry Act should be amended to make more room for energy plantations.

Public participation in the preparation of the plan:

There is no trace of public participation in the preparation of the plan.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the “doughnut”	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	

II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

The decision was not expected to deal with constitutional issues, therefore their lack is not a negative characteristic. However, the fact that it ignores major SD issues such as intra- & intergenerational justice and the system of ecological crises is clearly negative. For the same reason probably the decision does not pay attention to the ecological services concept and sustainable local settlements, to alternative indicators or environmental risks, nor to the public participation principle and the precautionary principle. In all other aspects the decision is fairly positive. It is important that the decision knows about climate issues and is practicable in terms of greening the economy.

Parliamentary Resolution on the energy policy for 2008 and 2020 (not in force any more)

In 2008, the Parliament has adopted a Resolution on the energy policy of the country for the period 2008 to 2020. Its aspects were security of supply, competitiveness and sustainability. The Resolution has set the following framework for the energy policy:

Its strategic aim is to optimize the three aspects. For the security of supply, a balanced energy source structure has to be achieved, and kept. In order to attain this, the domestic sources have to be preferred and also the transnational energy network infrastructures have to be developed. Sustainable development has to be promoted by the decrease of energy use, the increasing ratio of energy production from renewables and wastes, and the gradual introduction of environmentally friendly technologies. The harmony between the Hungarian energy policy and climate policy must be ensured. However, contrary to what one would suppose, it does not mean in the context of the Parliamentary Resolution that energy policies have to be climate-conscious. It instead means that whenever Hungary pledges to decrease its GHG emission, its impacts on the domestic economy, with special regard to security of supply and competitiveness, must be taken into account. The objectives of energy policy must be inserted into the system of priorities of the Hungarian foreign policy and diplomacy. Both the energy efficiency and the energy saving have to be promoted, in harmony with the objectives of the EU. The Parliament requested the Government to guarantee three objectives, the security of supply, the competitiveness and the sustainability. For the gas sector, it means the opening of the markets. The Government should start decision-making processes for new nuclear power plant capacities. It should be technically, environmentally and socially substantiated. To achieve the goals, the regional energy markets should be formed as soon as possible, including developments in gas pipelines such as the Nabucco, the South Stream and pipes coming from the LNG terminal. The Parliament orders the Government to prepare a strategy for increasing the use of renewable energy sources, in order to decrease the GHG emission, but this has to take into consideration the natural situation of Hungary, the burden taking capacity of the population, the principles of least cost and environmental sustainability and the aims of the EU. It also requires taking into account other factors such as distant heating, energy awareness in education, social subsidies for those in energy poverty, transport infrastructure.

Public participation in the preparation of the plan:

Public participation in the preparation of the plan was implemented in the form of consultation with the National Environmental Council, the tripartite advisory body of the government, encompassing civil society organizations, academia and the business sector. The NEC produced a statement on the plan and made a number of suggestions to the planner.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the “doughnut”	a. intra- & intergenerational justice	

	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

The overall evaluation of the plan is positive, except a few issues. It does not pay attention to the system of ecological crises and the major constitutional issues such as safe and healthy environment, equal opportunities for all, the non-regression principle or the polluter pays principle. As usual, it does not acknowledge alternative indicators and does not mention the public participation principle or the precautionary principle. On the other hand, it is aware of the major SD concepts and responds quite well to the issues raised by the sustainable development plan and the environmental plans of the country.

Parliamentary Resolution on the National Energy Strategy (in force)

The National Energy Strategy (NES) is a strategic planning document, which was prepared by the Ministry of National Development, adopted by the Hungarian Government first, later discussed by the Parliament and adopted by a Parliamentary Resolution.

> "The purpose of the National Energy Strategy is to create the policy framework which will result in the co-ordination of energy policy with climate change policy with a view to economic development and the sustainable environment, and to shape the future image of the energy sector with the involvement of the sector participants. The Energy Strategy gives detailed proposals for the participants of the Hungarian energy sector as well as the Government up to 2030, and sets up a roadmap up to 2050, placing the actions recommended to be taken by 2030 in a global setting and a longer perspective."

Authorization has been given for the elaboration of action plans fitting into the NES, which includes detailed measures required for the achievement of the formulated objectives. This will be followed by the adjustment of the legislative framework to the strategy and finally grants-in-aid and financial systems can be built on them.

The NES and the linked other concepts and action plans (climate change, renewable energy, energy efficiency, power and water supply to buildings) and sectoral (transport, rural development and tertiary education) strategies make a complete system of strategic objectives.

With the NES the Government's purpose was to create a strategic framework that will result in the coordination of energy policy with climate change policy with a view to economic development and towards a sustainable environment. In the light of global climate change challenges and the long-term decline of fossil energy reserves all over the world, the fundamental goals of the NES include – in compliance with the EU's principles – a shift towards guaranteeing the security of supply, increasing competitiveness and sustainability.

To sum up, the document sets out Hungary's goals for the energy sector for long term, until 2030. It sets out a new direction in Hungary's energy policies and stresses the need to adapt to climate change challenges and the long term decline of fossil fuels worldwide. It creates significant investment opportunities for investments which promote more efficient energy production and distribution and renewable energies.

The NES foresaw the preparation of the following plans and programs:

National Energy Efficiency Action Plan

Energy Strategy for the Building Sector

Power Plant Development Action Plan

Hungary's Renewable Energy Action Plan

Regional mapping of the renewable energy potential

Transport Concept

Reserve management and utilization action plan

Awareness-Raising Action Plan

Establishment of a network of energy engineers

Energy industry development and R&D&I Action Plan

District Heating Development Action Plan

In detail, the NES sets priorities until 2030. It envisages a full energy structural change, whose elements will be energy efficiency measures ranging all over the supply and consumption chain, the increase of low CO2 intense electricity production, renewables based and alternative heat generation and increase of the share of low CO2 emission transport modes. An explicitly formulated goal of the NES is not to find an optimal energy mix for the country but to ensure safe supply of energy, taking into account environmental sustainability, competitiveness and the burden bearing capacity of the society. It prefers a scenario that it finds the most realistic, called Nuclear – Coal – Green, and it means a long term role of atomic energy in the energy mix, the maintenance of coal based energy production and the increase of renewables based energy production taking into account the regulating potential of the grid and the burden bearing potential of the economy. This last reference is clearly a hidden agenda, a mild statement that in reality sets a clearly inferior role to renewables and it already lists the counter arguments against renewables. The Nuclear – Coal – Green scenario's main aim is to eliminate the 13% of the total energy production that today originates from energy import. It already envisages a 14% export that will be much needed by the decrease of the German and Swiss nuclear capacities. Other scenarios are not discarded, however, their realization will require a shift in government policy – which again means that this current government is not interested in anything else but a lot of nuclear, some coal and almost no renewables as basis of energy production.

The NES starts with a status analysis, describing the global trends (growing demands, more competition for the remaining resources), discarding the current practices as not competitive, not sustainable and not safe. The EU is characterized as high energy import dependency, changing regulation for the future and high ambitions but questionable implementation. As for the regional position of Hungary, the strategy acknowledges that our regional dependency can be managed only by diversifying supply routes and by regional cooperation. In Hungary, our gas demand is dependent on import but we have domestic resources and large storage capacities. In terms of electricity generation, we have a high portion of nuclear and a few outdated low-efficiency other power plants. We waste much heat energy due to the bad state of our buildings, motorization is growing while cargo transportation is done more and more by road transport, being more polluting. The NES lists the pillars of a system for Hungary, e.g. sustainability, competitiveness, security of supply, and poses measures on these pillars. It devotes a chapter to climate policy, fossil reserves, EU obligations, technological development, demographics, economic development, and gives future scenarios. These are the Business As Usual (called "Idle hands") characterized by growing energy use with 2% per annum, building energy programs missed, minimal share of electric in transportation and low rate of renewables. The Joint efforts scenario means a growing energy demand by 1,5% per annum, large scale building energy programs, large scale electrification in transportation and growing renewables ratio next to the renewal of the Paks NPP before 2030. Finally, the Green Scenario would mean a 1% growth in energy demand per annum, lowering demand for transportation, full scale energy efficiency programs and large share of renewables. Tools to achieve these goals are energy efficiency, renewables, grid development, decentralization in electricity production, and atomic energy. Interestingly, within the Joint efforts scenario, the NES lists 6 sub-scenarios with highly telling names, such as Nuclear-Green, No Nuclear-Green, Nuclear-Green+, Nuclear+-Green, Nuclear-Coal-Green, No Nuclear-Green+. Seemingly, the 5th one – later to be regarded as the only realistic – is introduced here into the list as a strange element, so one may have the impression that its introduction's only reason – or rather, the reason for the other 5 sub-scenarios – is to come up with this as a winner. Otherwise why would anyone list the others and discard them at once? Indeed the NES devotes considerable attention to nuclear energy, to the use of our domestic coal reserves and to renewables as well, in combination with detailing energy storage options.

In terms of heat production, the tools to attain objectives are distant heating developments and involvement of renewables, in the building sector. In terms of transport, the solutions are electrification of transport, use of second generation agrofuels in community transport and railway development.

In the NES, there is a list of horizontal measures as well, including rural development (low carbon technologies), education and training (training for the energy sector with special regard to renewables), environmental protection and nature conservation (awareness raising and GHG mitigation in combination with adaptation) and social measures (management of energy poverty and help to disadvantaged groups).

The NES shows a significant interest towards global problems such as the energy dependency of the modern world, the appearance of China and India on the global energy market, or the zero carbon concept (100% renewables). It even contains a Hungary by 2050 forecast that includes the 6 sub-scenarios detailed in the foregoing, however, it projects that by implementing the No Nuclear-Green

sub-scenario, the country will reach the lowest GHG emission decrease and will be emitting more CO2 that with any other sub-scenario. Indeed so, because in the dictionary of the NES No Nuclear means Coal, Gas and Oil… And in the understanding of the NES, atomic is preferred due to its low GHG emission, low production cost (!) and low political and economic risk of obtaining fuel (!!!). All in all, in the NES the energy landscape of Hungary by 2050 is electricity generation by nuclear, heat generation by gas and renewables combined with CCS.

Public participation in the preparation of the plan:

The preparation of the National Energy Strategy involved an extensive public participation process. That included an online commenting platform as well as meetings held on the strategy. During the consultation, the text of the NES and the Environmental Report to the NES were available on the homepage of the Ministry of National Development, and there also was an e-mail account set up for purposes of receiving comments from the public. In addition, everyone had the opportunity to participate in the process through the homepage and the forums. The NES claims that its text incorporated almost 110 comments stemming from economic, scientific, professional and civil society organizations. It claims to have incorporated also the suggestions of consultative bodies of different ministries and of the International Energy Agency.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the "doughnut"	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	

	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

Not surprisingly the major energy plan, the NES of Hungary is the most open minded and broadly based plan among all, being clearly the most appropriate to accommodate SD implications. It knows about major SD concepts, includes constitutional values and responds well to the expectations stemming from the sustainable development plan and the environmental plans of the country. Perhaps the only areas where it is not strong or does not pay sufficient attention are equal opportunities for all and the non-regression principle. Since these are constitutional values, their lack should not be valued automatically negative, but since this plan is the most overarching among all, we still did evaluate it as a shortcoming. Ultimately, perhaps the largest "mistake" the NES commits is that its findings pave the way in Hungary for the construction of a new Nuclear Power Plant. Its preferred energy scenario prioritizing atomic energy clearly shows that the NES does not promote renewables sufficiently and that it does not really care about future generations.

Government Resolution on updating energy consumption forecasts of the National Energy Strategy (in force)

An interesting Government Decision is "hiding" among the many dealing with energy issues. It may have an insignificantly sounding title but its content is unnerving especially in light of the findings of the NES. It relies on data from 2012 and contains a forecast for energy uses. It is prepared for only two scenarios listed in the NES, the BAU and the Policy scenarios (the first is called in the original Hungarian version as "Idle hands" and the other is "Joint efforts"). The Government Decision is mostly a matrix of energy use data, however, a sentence below the table says: "taking all this into account, no

scenario foreseeing more significant energy saving, such as the previous Green Scenario, would show a realistically implementable energy use trajectory, therefore its presentation is not reasonable". It also is reasoned by a forecast of growing energy need also compared with the data in the NES, counting with the decrease in energy import and the increase in domestically produced energy (most probably due to the construction of the Paks II NPP). This is nothing else that the confession by the Government that it not only questions the success of a Green Scenario but it does not even counts with that, and does not even invests in trying to implement one of the scenarios within the NES, practically discarding it.

Public participation in the preparation of the plan:

There is no trace of public participation in the preparation of the plan.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the "doughnut"	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental	o. environmental risks to be	

Plans	taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

There are no overly burdensome expectations towards this decision, therefore the total lack of reference to constitutional values is not valued negatively. However, not knowing about major SD concepts and not responding to the expectations of the country's sustainable development plan, let alone to the environmental plans, is not a minor omission but a major mistake. Out of the many aspects the decision only acknowledges the integration principle and some energy related expectations.

National Renewable Energy Action Plan of Hungary (not in force any more)

The National Renewable Energy Action Plan (NREAP) of Hungary was prepared pursuant to the Commission Decision 2009/548/EC. As usual, the NREAP sets the major objectives as follows: security of supply, competitiveness and sustainability. It also lists those key areas where the plan has to function: security of supply (renewables are able to decrease the large dependency of Hungary on imported energy), environmental sustainability and climate protection (the renewables lower the GHG emission of Hungary), agriculture and rural development (the country's capacities are appropriate for producing energy from biomass, biogas and the like), Green Economy (the renewables are able to boost this sector of the economy) and contribution to the Union objectives (the objectives set by the EU are to be followed).

The NREAP contains data on energy use and projections, scenarios how this latter will change according to different calculations. As an iconic sentence of the NREAP, it says that renewables contribute to the national economic priorities therefore they have to be promoted to the largest possible extent. This is manifested in a forecast that is characterizing a 14,65% of the total gross energy consumption to be covered by renewables as a realistic goal by 2020. When listing the possible areas of renewables, the NREAP acknowledges hindering factors such as quantitative potential of the renewables types, the ability to regulate the electricity grid, and the limited financing environment. The NREAP prioritizes certain renewable energy production facility types such as small hydro power

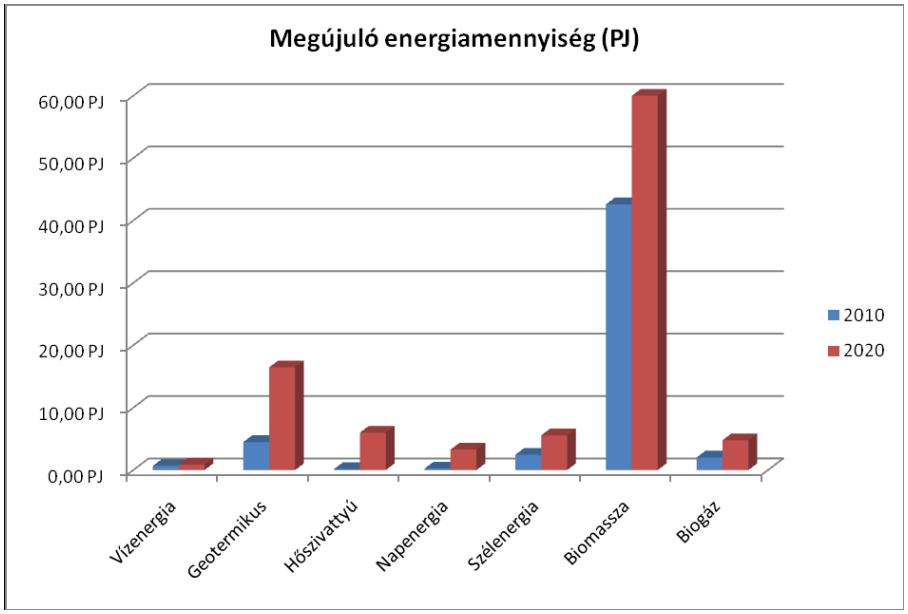
plants, wind farms (as long as their capacity can be integrated into the grid) and household wind turbines, geothermal energy, solar energy and biomass/biogas. It confesses that renewables are hardly competitive with fossil fuels until the price of the latter does not include its externalities. For this, it suggests to apply government funding to promote renewables. By 2020, the NREAP envisages the following percentages from renewables: heating and cooling 18,9%, electricity generation 10,9%, transport 10,0%, total in the gross consumption 14,65%, a minimum scenario 13%.

All this seems incredible ambitious – or rather superficial – in light of the developments having happened since the adoption of the NREAP.

In a large chapter, the NREAP enlists all existing and planned measured that are needed for the attainment of the goals set in the foregoing. When detailing the administrative system and answering the specific questions of the questionnaire (covered by the EU Directive), the NREAP acknowledges that the permitting regimes hardly take into account the specificities of the renewables.

Later the NREAP goes into extensive details on which government programmes are aimed at increasing the ratio of renewables in energy production. Also it covers the building energy plans and measures i.e. those that are aimed at improving the energy characteristics of buildings. The financing of all these programmes is presented by listing the available funding mechanisms, ranging from Operative Programs to other EU funded initiatives such as IEE, COST, FP7 and the like.

When detailing the diverse measures for the improvement of the electricity network, there is considerable attention devoted to the so-called intelligent solutions. Amongst them the plan envisages smart metering, smart grid and energy storage. Similarly, another chapter details how the biogas production could be connected to the gas pipeline system, how the distant heating and cooling system could be developed, how bio fuels could be introduced more significantly, etc. The forecast for changing the exploitation of renewables is shown on the following figure:



It shows the most significant planned increase in the geothermic, the heat pump and the solar sectors, while it suggests to keep the hydro energy potential on the same level as in 2010, as well as moderately increase the biomass, biogas and wind potential by 2020, compared with the previously prevailing ratio in 2010. As regards the beneficial impacts of such a change, the NREAP counts with a significant improvement on the labor market in the number of jobs. It expects a total of 51.200 new jobs, as well as a significant GHG emission decrease amounting to 565 million tons of CO2 annually.

Public participation in the preparation of the plan:

The NREAP very laconically mentions that during its preparation there were large scale consultations involving a number of stakeholders listed in the document. Later it details the consultation process, where 2 forums were held, each with approximately 35-40 NGOs participating. In the second phase, 26 NGOs and social partners were involved into the consultation. Later, the draft plan was displayed on the website of the Ministry of National Development for online commenting.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the “doughnut”	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment	

	(see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

This plan is probably the second most important after the NES, therefore it performs the second best in our evaluation, only slightly under the expectations. It knows the major SD concepts, except the system of ecological crises; it resonates with the sustainable development plan of the country except the alternative indicators, and knows about all important aspects of the environmental plans of Hungary. Where it underperforms is the area of constitutional values. It may be a matter of approach whether this is a shortcoming or not and whether such a plan should deal with such values at all. Since we believe in a positive answer, we evaluated these omissions negatively.

Government Resolution on tasks related to the National Renewable Energy Action Plan of Hungary (in force)

While some enlisted plans and programs do not qualify as true plans and programs (they are made in the form of Government Decisions whose standard content is not substantive but rather includes the distribution of tasks to government bodies, ministries and other organs of the public administration), this one shows certain signs of being called somewhere halfway between enlisting tasks and having real content.

The content of the Government Decision is closely linked the National Renewable Energy Action Plan of Hungary. It agrees with the target proportion of 14,65% of renewable energy sources until 2020 in the final energy consumption and with the 10% target in transport related energy consumption. The Government also adopts the Implementation Plan of the NREAP, and asks the Minister of National Development to report biennially to the Government on its implementation. The Government Decision also calls upon different ministries to consider opening new funding packages for channeling EU funds into independent energy or agro-energy programs. It calls upon the Minister of National Economy to consider allocating resources for increasing support for renewable energy sources and energy efficiency investments.

Public participation in the preparation of the plan:

There is no trace of public participation in the preparation of the plan.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the "doughnut"	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	

	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

The decision is quite an operative one therefore it was not meant to deal with major issues. Therefore we did not evaluate it negatively that it does not talk about intra- & intergenerational justice, climate protection (mitigation & adaptation (resilience)), system of ecological crises or the preservation of a fair share of resources. For the same reason we did not expect it to deal with the constitutional values of safe and healthy environment, equal opportunities for all, the non-regression principle or the polluter pays principle. However, the lack of reference to international cooperation is clearly a shortcoming. Other shortcomings of the plan are ignoring the ecological services concept, not mentioning sustainable local settlements, not knowing about alternative indicators or environmental risks. The public participation principle and the precautionary principle are also missing from the decision. Positive characteristics of the decision are the institutional guarantees, the practical arrangements and the effort to green the economy, in addition to being conscious about energy matters.

Government Resolution on the 2nd National Energy Efficiency Action Plan of Hungary until 2016 with forecast until 2020 (in force)

Another major document after the adoption of the NES was the adoption of the 2nd National Energy Efficiency Action Plan until 2016, with a forecast until 2020. The Government Resolution adopting the plan has its major content approving a 9% growth in energy saving in the final energy use between 2008 and 2016, and obliges the Minister of National Economy to prepare a Building Energy Strategy and a Transport Energy Efficiency Action Plan. These two plans were worked out as seen later.

Public participation in the preparation of the plan:

There is no trace of public participation in the preparation of the plan.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the "doughnut"	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	

IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

The decision is quite an operative one therefore it was not meant to deal with major issues. Therefore we did not evaluate it negatively that it does not talk about intra- & intergenerational justice, climate protection (mitigation & adaptation (resilience)), system of ecological crises or the preservation of a fair share of resources. For the same reason we did not expect it to deal with the constitutional values of safe and healthy environment, equal opportunities for all, the non-regression principle or the polluter pays principle. However, the lack of reference to international cooperation is clearly a shortcoming. Also the total ignorance of the sustainable development plan of the country is not a negative value, unlike the partial ignorance of the environmental plans from which only the following aspects are covered: greening the economy, energy security and renewable energy sources. The preservation of a fair share of resources and the operability of the plan are however positive signs.

2nd National Energy Efficiency Action Plan of Hungary until 2016 with forecast until 2020 (in force)

The 2nd National Energy Efficiency Action Plan until 2016, with a forecast until 2020 was prepared by the Government upon an obligation towards the European Union. The aim of the plan is to achieve the most saving in final energy use until 2016 by the efficient use of existing resources. It suggest, however, that the Government does not want to involve additional resources for the attainment of the goal which makes the entire goal somewhat dubious. The plan has a considerable part on problems and shortcomings uncovered and solutions suggested for their management. Firstly, the plan enlists the lack of data and statistics as a major obstacle for implementing the goals as well as gives a strategy for overcoming these by nominating tasks and responsible organs to collect the necessary data as well as create additional strategies on transport and building energy (see later). The plan lists those strategies that are committed to support energy efficiency, and the areas they cover. The energy consumption forecasts count with a 1% annual GDP growth with a 0,3% annual energy consumption growth. The set value of energy saving to be attained until 2015 is 57,4 PJ/year which seems a bit unrealistic in light of the attained values, such as 12,25 PJ/year until 2010 with a value for 2010 as 9,4 PJ/year. The difference really necessitates the involvement of extra resources which the

Government is planning to cover from EU sources partially. The plan lists the energy saving efforts to be made in each sector, including state programs for their implementation. Lastly, the plan describes the organizational background and the monitoring of the implementation.

Public participation in the preparation of the plan:

There was an extensive public participation process in the preparation of the plan, including a number of civil society organizations submitting comments to the plan. However, the introduction to the plan only claims that it was discussed with sectoral professional organizations in order to ensure the support of the entire sector (presumably the professional interest organizations rather than the civil sector).

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the "doughnut"	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	

	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

After the NES and the NREAP, this plan is next in line in terms of importance. Accordingly, it performs the third best among the plans and programs, with a wide focus on the SD concepts except on the system of ecological crises. It even responds well to the constitutional issues except the non-regression principle (which may be called a highly legal principle as well) and the issue of international cooperation. It resonates well with both the sustainable development plan and the environmental plans of the country, however, not fully: in the first aspect, the plan does not venture as far as acknowledging alternative indicators, and in the second, the precautionary principle remains stranger to the plan. But apart from that it contains a fair amount of reference to the major concepts and questions analyzed.

Government Resolution on the National Building Energy Strategy (in force)

National Building Energy Strategy

The National Building Energy Strategy (NBES) was adopted in February 2015. Its preparation was commissioned by a Government Decision dating back to 2011 with a deadline of 31 July 2012. The strategy is linked with the NES and was prepared by the Ministry of National Development. Its major goal is the improvement of the Hungarian building stock. In Hungary, the 40% of the primary energy use is attached to building, either via heating, cooling, producing hot water, etc. A significant part of the Hungarian building stock is obsolete in terms of energy parameters. Thus there is a high potential in the improvement of the stock by lowering the fuel need of houses. The specific objectives of the strategy are

- to harmonize this area with the objectives of the NES by 2030
- to harmonize with the requirements of the EU law
- to lower budgetary spendings
- to decrease energy poverty
- to decrease GHG emissions

The NBES intends to achieve the goals by renovating the private houses and public buildings. It has a list of to-do-s that includes the compilation of a National Building Energy Action Plan, the preparation of a new system of funds for energy efficiency increase of houses and public buildings, the spreading of renewable energy based solutions for heating buildings and for energy production, revision of the building codes, in particular affecting the equipment within buildings, the analysis of the building certification system, the preparation of a system for energy auditing of public buildings, R&D for new building technologies, the energy awareness raising for the public, the increasing of the sharing of know-how and experience among construction enterprises, the improvement of the energy related training and education of experts and workers, the development of the data collection system on building energy. The strategy describes the current situation regarding buildings in Hungary, with a special attention to energy issues. It also lists those government measures that were destined in the past few years to improve the energy features of the Hungarian building stock. Later the NBES shows two scenarios for the improvement of the affected houses: the first called Optimizing the costs and the second called Nearly zero (nearly zero energy demands). The priorities of building energy are to contribute to the security of energy supply, to improve the competitiveness of the economy and to ensure the sustainability of the domestic energy system. Indeed the strategy lists the responsible state bodies for implementation, the costs and budgetary implications of the strategy and its impacts on the labor market.

Public participation in the preparation of the plan:

There was public participation in the preparation of the plan, involving online commenting as well as forums, however, mostly the professional interest organizations participated and submitted comments, such as the Hungarian Building Material and Building Product Alliance or the Hungary Green Building Council. Also the National Environmental Council, the tripartite advisory body of the government, encompassing civil society organizations, academia and the business sector. The NEC produced a statement on the plan and made a number of suggestions to the planner.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the "doughnut"	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	
	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to	

	agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

This plan is a sectoral one, however, we should not underestimate its importance. The quality of living is crucial not only for environmental reasons but also for energy saving and for constitutional aspects as well. From this angle, this plan shows quite a diverse picture. It has clear shortcomings and strengths. It does not encompass half the SD principles/aspects and half the analyzed constitutional values but still, it acknowledges the importance of equal opportunities for all, decent housing, the polluter pays principle and the role of institutional and financial guarantees of implementation. While not being fully in line with the sustainable development plan of the country, it still mentions sustainable local settlements and the integration principle (breaking down the SDP into plans and laws). Therefore it shows a mixed picture and leaves much room for improvement.

Transport Energy Efficiency Action Plan (in force)

The Transport Energy Efficiency Action Plan (TEEAP) was prepared in October 2013. Its forecast covers the timespan between 2013 and 2020. Curiously, the TEEAP starts with a telling sentence in the introduction, quasi complaining about the lack of a precise and definite task description for the planners and refers to the existing EU and national legal requirements, the previous plans and the current practice as the only cornerstones for the planning process. The plan finds it closest ties to the NES and compares the NES forecasts with its own ones, party relying on the NES terminology. Its major finding is that the BAU scenario will not result in a 60% decrease by 2050 as the EU White Paper would require, but a doubling of the transport related emissions. By 2030, it still foresees a 20% increase in the emissions. What is needed to eliminate the extra emissions it to increase the use of zero emission fuels, the self-constraining of transportation needs, the modification of transport task allocations, a supportive economic and spatial planning, environmentally friendly attitudes in the economy as well as in private life. In sum, the plan warns that the shift needed in the transport sector will be relatively more costly than in other sectors.

The TEEAP begins with an analysis of the current situation, enlisting all those fuels that have to be taken into account when planning for future energy sources of transport. The plan acknowledges that any method can be used to measure fuel use and also CO2 emissions, but they have to be seen in a context of transport modes and also having a realistic time span for future forecasts of 5 to 10 years. The plan also sorts out certain fuel uses as irrelevant, e.g. the use of fuels for small agricultural machinery, for household machines (e.g. leaf blowers) or by the air transport that falls under a different evaluation category. The plan presents graphs and tables with data on fuel uses in transport according to years, fuel types as well as purposes of use. The plan then devotes attention to listing vehicle types and then calculating fuel consumption data for the foregoing. It encompasses road vehicles, railway vehicles, as well as gasoline and diesel fuelled vehicles, etc. The plan envisages that there are three possible ways to transform transport into an energy saving, low carbon mode: 1. a basic measure should be to increase energy efficiency and change fuels from fossil to alternative propelling methods and solutions, 2. a secondary measure should be organizational, transport infrastructure related, logistics oriented, 3. and the last one is the use of financial incentives and

disincentives, also promoting R&D. As for the last point, the plan would like to heavily rely on the EU funds as most probable sources of a systemic change in transport. In order to decarbonize the transport sector to the desired level, actions need to be done and the major conclusions of the plan are that: 1. more than just technology change and shift from fossil fuels is needed, 2. renewal of the vehicle fleet of the country is a need, 3. but still there will be a gap between the target and the real values by both 2030 and 2050, 4. the other means needed are complex and range from land use planning, awareness raising and the like.

The TEEAP suggests the following actions to be undertaken to reach the goals:

1. decreasing and self-constraining transport and transportation fuel consumption by the limitation of needs:

bicycle lane development

creating low traffic zones

maintenance and expansion of road tolls

environmentally friendly campaigns for the transport sector

inspiring telecommuting

2. railroad development

network development, electrifying railroads

new energy efficient engine purchases

campaign for popularizing train travel

3. developing public transport

P + R system

bus replacements

public transport company developments

4. increasing fuel efficiency of existing car fleet

developing car factories

developing new technologies for cars

popularizing eco-driving

scrapping

Public participation in the preparation of the plan:

There was a public participation process in the preparation of the plan but it was not highly publicized and mostly the professional interest organizations were interested therein. Also the National Environmental Council, the tripartite advisory body of the government, encompassing civil society

organizations, academia and the business sector. The NEC produced a statement on the plan and made a number of suggestions to the planner.

Evaluation of the plan according to the analytical framework:

Source	Requirement	Quality of Response
I. SD concepts, Limits to Growth, Planetary Boundaries, the "doughnut"	a. intra- & intergenerational justice	
	b. climate protection (mitigation & adaptation (resilience))	
	c. system of ecological crises	
	d. preservation of a fair share of resources	
II. Constitution	e. safe and healthy environment (see point a.)	
	f. equal opportunities for all, decent housing (see point a.)	
	g. non-regression principle	
	h. polluter pays principle	
	i. international cooperation (see point c.)	
	j. institutional and financial guarantees of implementation	
III. National Sustainable Development Plan	k. ecological services concept (see points a. and h.)	
	l. sustainable local settlements (see points a., e., and f.)	
	m. integration principle (breaking down the SDP into plans and laws)	
	n. alternative indicators	
IV. National Environmental Plans	o. environmental risks to be taken into consideration	
	p. greening the economy (see point i.)	
	q. public participation principle	
	r. precautionary principle	
	s. energy related goals: i) energy security (decentralisation)	
	ii) energy efficiency (insulation, life cycle analyses etc.)	

	iii) raising the rate of renewable sources (diversification)	
	iv) avoidance of harm to agriculture (biodiesel, biomass production etc.)	

Narrative evaluation of the plan:

This plan shows a better picture than one would expect from such a sectoral, specific plan. Although it does not know about half the aspects of SD, it still encompasses the idea of preservation of a fair share of resources. And while one cannot expect it to be a plan fully acknowledging constitutional values, it still has a place for equal opportunities and the polluter pays principle. Where it performs the best is strangely the response to the issues raised by the sustainable development plan of the country except the idea of alternative indicators (which is not very widely accepted in other plans either). As regards the aspects contained in the environmental plans of the country, it mostly resonates with them, but still could not cope with the issues of environmental risks to be taken into consideration, the public participation principle and the precautionary principle.

Part IV: Conclusion

The study we undertook approached the problem of energy related policy-making in Hungary from a specific angle: do sustainable development aspects (sometimes manifested in constitutional provisions and in general sustainable development and environmental plans) appear in energy plans and programs?

Our findings are clear: most of the plans that govern energy related policy-making in Hungary more or less lack the sustainable development approach and while they may show certain signs of awareness about global problems regarding climate change, resource scarcity or other large-scale phenomena endangering the future of mankind, they do not make attempts to tackle with those problems in a systematic way but rather remain within the limits of their own realms. In other words, these plans are good in the context of their own interpretational frameworks but are rather mediocre in terms of a more holistic, sustainable development oriented viewpoint taking into account the future generations as well.

During the consultation process of this document we have gathered various views and suggestions, including critical remarks and opinions on numerous aspects of the Hungarian energy policy. Within the limits of this study, we stayed on the general level of the constitution and plans-policies-programs and could not yet touch upon a number of more concrete legal and policy issues, such as laws not yet enacted for the promotion of renewables (e.g. a single "Renewable Energy Act"), laws in the pipeline to be enacted later on energy issues or laws recently adopted (the Energy Efficiency Act), laws not directly linked with energy issues but having major implications on the area (the Taxation Acts), low quality funding applications for the Operative Programs of Hungary, lack of horizontal coordination of documents, lack of subsidiarity, the deterioration of the environmental public administration, the status of civil society with special regard to the lacking network of independent energy experts. These issues can form the basis of further research and consultations. Thus paradoxically we might even say that these missing parts reveal the strength of our study because they open the gate for further projects in many relevant directions.

All these issues and our findings, even in its pilot form have revealed an aching gap between theory and practice: fairly good general laws and policies and lack of enforcement in a specific branch of policies, namely the energy policies.

The questions whether specific, technical documents, such as energy related plans and programs should deal with or reflect high level principles and constitutional values, as well as have to have an open mind towards the newest solid scientific results in connection with the system of ecological threats are clearly answered positively in this paper. The reason is that such principles and theories do cascade down to everyday implementation and once they are missing, it is clearly visible in practice. There may be good objectives but the lack of institutions attaining them (such as in case of the deterioration of the environmental administration in Hungary) makes them meaningless. While not all the shortcomings of energy policy implementation and the practice in Hungary can be attributed to the failures of plans and programs, the current paper is capable of demonstrating a set of quite meaningful sources of practical problems.

If our current policy documents make possible a bad practice, then it is also the responsibility of those policy documents … and of the policy-makers as well.