BEST PRACTICES FOR POLICIES AND MEASURES IN THE REPUBLIC OF BULGARIA

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Countries' national circumstances differ widely, that's why there are some inherent difficulties in considering an internationally applicable concept of best practice for policies and measures to abate greenhouse gas emissions. This in turn influences countries' selection and implementation of policies and measures. In addition the effectiveness of a given policy or measure can only be considered in the broader context of the implementing countries' national circumstances. Bulgaria considers that there is little value therefore in examining a given policy or measure in isolation from the totally of country's **National Climate Change Action plan** (NCCAP). Policies and measures need to be a part of a comprehensive and coherent national strategy aimed at achieving the emission target in a cost-effective manner.

The expected revival of Bulgarian economy will increase the GHG emissions if no mitigation measures are undertaken in advance. On the other hand, the emission trend will depend not only on the trends in energy demand but also on the energy mix, the application of efficient technologies and on the successful implementation of environmental policies and legislation. Under the existing social and economic circumstances in Bulgaria the guiding rule of the Bulgarian climate change policy is joining the international efforts in the field to a level consistent with the national economy and the potential for involvement of foreign investments to be used for GHG mitigation. Mitigation policy and measures should be as cost-effective and possible and economically beneficial.

NCCAP is an optimal mitigation scenario under the adopted economic development rates, demographic rates, energy demand projections, etc. NCCAP should be approved by the Government and then should be used as a frame for the sectoral activity plans, to be implemented, updated, adapted and monitored. The GHG measures in Bulgaria have to include **packages of measures at national level in *administrative, legislative, economic, educational and research aspects.*** The keys of them are as follows:

- Application of a National Climate Change Action Plan (NCCAP) at sectoral and state level. Development, approval and application of consistent climate change sectoral and municipal action plans;
- Development and application of legislative measures to stimulate GHG mitigation;
- Establishment of control and monitoring of the processes that emit GHG;
- Introduction of new economic instruments;

- Application of new technical and technological decisions for GHG reduction. *Lately the non-technical options (legislative, financial, etc.) are gaining importance.* For optimization of mitigation activities the technical solutions should be applied together with the non-technical options.

1. Administrative

NCCAP application requires a single **monitoring body** to be established that will be also responsible for providing consultancy to enterprises involved in GHG mitigation activities. Such a structure could be formed under the supervison of the Ministry of Environment and Waters or of the Government. The implementation of recommended measures will need good coordination among numerous ministries and overall monitoring of achieved results, processing of proposed new mitigation measures, search of financial support to the efficient mitigation measures.

A networks to facilitate NCCAP implementation should also be established. It could be based on the ESCo or energy efficiency centers that already exist in some towns. Energy efficiency centers disseminate information and provide consultancy service to enterprises, institutions and households. Monitoring of the implementation of the action plan at local level could be carried out by a network of experts from the corresponding regional environmental units. A clear allocation of responsibilities for the GHG emissions along the country is necessary as well as control and sanctions for non-compliance with the reduction targets. The action plan should serve as a frame for development of programs at sectoral, municipal and plant level. Later on some information sufficient for self-estimate of the GHG emissions of each enterprise could be provided. The information could be available as a free access web site.

2. Legislative

Legislation is the main instrument to facilitate plan implementation. It should provide environment for compliance with the goals of the NCCAP through long-term planning and application of modern technological, organizational and economic options. The key approaches for meeting the GHG reduction target are: establishment of temporary rules for GHG reduction under the existing legislation; adoption of special regulations related to GHG reduction and development of supporting ordinances; harmonization with EU legislation.

Some of the existing laws directly or indirectly related to the GHG emissions are the Environmental protection act, Law on pollution protection of air, water and soil, Law on agricultural land protection, Law on the owing and use of agricultural land and the Regulations for its application, the Law on Energy and Energy efficiency, the Law on Biodiversity, Law on fertilization of agricultural lands. Some other ordinances concerning the vegetation production, fertilizers, recultivation of distorted areas, etc. are also to be updated.

Meanwhile still *there is not a law addressing the GHG emissions in particular* or prescribing limits for their emissions. It is highly desirable the mitigation measures to be supported by such a law. Thus for the successful implementation of one of the most efficient GHG mitigation measures, i.e. the introduction of renewable energy sources, the legislation in the field should be adapted.

An option for legal allocation of the responsibilities and penalties in case of non-compliance to the GHG reduction commitments is the allocation of the permissible emission amounts among sectors, ministries, institutions and big enterprises. This approach should be based on the inventories on the emissions of each production unit (sector, ministry, institution, company, plant) and on the study on the mitigation potential and necessary investments for GHG mitigation. *Legal emission restrictions contradict the market mechanisms, but under the economic transition they could be useful for the major GHG emitters* (electricity and heat generation, big industrial enterprises and energy transformation plants) along with the market instruments. Economic mechanisms will be the major impetus for the small emission sources that are hardly to be covered in the regulations. The legislative framework has to include stimuli for the plants that took and meet more stringent emission reduction targets, as well as sanctions for non-compliance.

3. Economic

In the process of transition to free market economy, the ***economic instruments*** gain importance in environmental policy of Bulgaria. In this situation, economic instruments can complement command and control mechanisms in specific cases and, these instruments can allow environmental problems to be addressed more quickly, more effectively and/or in a more cost-efficient manner. The economic instruments include fiscal instruments (pollution taxes, input taxes, product taxes, export taxes, import tariffs, tax differentiation, investment taxes credits, accelerated depreciation, subsidies), financial instruments (subsidies, soft loans, grants, location incentives, subsidized interest, revolving funds, sectoral funds, ecofunds, green funds), market creation (emission trading), etc.

There is experience in Bulgaria with the pollution charges and taxes, non-compliance charges ("environmental fines"), product charges (e.g., on gasoline and tires), tax differentiation or exemption (e.g., lower taxes for unleaded gasoline/petrol and tax relief for environmental equipment or investment), etc. But the entire mitigation potential of the economic instrument is not used in Bulgaria. Applied instruments such as the practices for financial support to MSW management, for example, suffer many shortcomings. According to the current legislation provisions waste charges are set by the municipalities depending on their planned accounts. *But these accounts include just the operational costs and pay no attention for the future costs and the payback of credits. There is no economic instrument to stimulate waste reduction or utilization.*

The energy sector is the greatest industrial sector in the world that is developing with priority looking many years forward. The development of economy leads to growth in energy demand. This requires more state and private investments. Open markets contribute to development of independent small producers that will be interested in introduction of renewable technologies that would also contribute to GHG mitigation. This is the case especially for micro hydro development, utilization of biomass and solar radiation for electricity and heat production, wind for electricity production and geothermal energy for heating.

Fuel and energy price liberalization is among the priorities of the strategy in the energy sector. The speed of liberalization will impact the rate of penetration of energy efficiency and conservation measures, promotion of renewable energy sources and technologies, GHG emissions mitigation.

Their is a consensus among experts, that in Bulgaria and the rest of EIT countries the price liberalization and removal of subsidies are sufficient economic measures and in short run there will be no need for a carbon tax in order to reduce energy demand.

Price liberalization should be performed in parallel with the procedure of integrating the environmental externalities in the energy prices. Such altitude is already available at the Committee of Energy. Price segmentation is considered as a transparency option and impetus for reduced consumption of high polluting fuels. This problem is at the initial stage of its study since it is a complex issue with numerous social and other aspects (e.g. increase final prices, unemployment in the ex-mine regions, etc.).

The successful implementation of the action plan is closely dependent on the ***financial resources.*** It could rely on different financial flows. Economically feasible measures have to be included in the development plans of the sectors and to be financed by the Government and the private companies. Existing environmental funds are also a source for financial support of GHG mitigation projects. Local banks could also provide loans but it is not a popular practice in Bulgaria. In longer terms financial support could be gained from the purposeful use of the incomes from carbon/energy taxes. Parallel with the local investments, part of necessary funds could be received by foreign companies, international organizations, funds, banks, etc. Some modern financial mechanisms to promote energy efficiency and environmental protection could be:

- *Build, Operate, Transfer* mechanism that envisages signing of concession contract for a specific project for building or modernization of a facility which at a later stage is transferred to the government;
- *Interest Rate Subsidies* as a governmental tool to make money borrowing cheaper for a particular sector, activity, etc.;
- *Revolving Loan Funds* that offer specific loans at preferential terms;
- *Venture Capital* to promising new or existing companies and projects;
- *Third Party Financing* under which a company with major energy consumption uses the services of ESCo with expertise in energy efficiency and both companies share the economic benefit.

The comparison of those mechanisms indicates the Third Party Financing and Build, Operate, Transfer mechanism as the most appropriate under Bulgarian conditions due to the fact that they do not rely on governmental funds and do not require considerable changes in the legislative framework.

Modern financial instruments

Financial instrument	Government funds	Profitability	Legislation changes
Build, Operate, Transfer	no	High	some
Interest Rate Subsidies	yes	Moderate	yes
Revolving Loan Funds	yes	Moderate	yes
Venture Capital	no	Very high	no
Third Party Financing	no	Moderate/high	no

4. Educational

The success of the NCCAP is dependent on the ***motivation and participation of the society*** in its implementation. This makes the task of rising the public awareness and engagement of all stakeholders in decision-making an important goal of the NCCAP. The approaches to meet this goal are various: information campaigns, education, motivation, participation in decision-making, implementation and supervision activities, etc.

Involved institutions and ministries should develop a program for public participation in the GHG mitigation activities that should include periodic review of the level of public awareness on the climate change; campaigns at national, regional and local level using the medias to inform and educate the society; distribution of informative leaflets and other materials; inclusion of the issues in the school programs; training to different target groups; pilot projects for establishment of models for public involvement.

The Ministry of Education and Science has prepared a regulation for the uniform state requirements in the field of *environment and environmental protection*. In October 1997 a National Environmental Program was adopted by the Ministry of Education and Science. It aims to upgrade the environmental knowledge and requires interdisciplinary approach in the subjects from the curricular (particularly biology, physics, chemistry, geography), optional courses in environmental education, special lessons on environmental issues, activities outside class and school areas. The program has a modular structure (I.non-living nature; II.living nature; III.Interactions between living and non-living nature; IV.mankind and environment; V.interactions between man and environment; VI.global environmental issues; VII.sustainable development). The climate change is addressed under the global environmental issues module. Further development and update of the materials used should be made, as well as establishment of database, preparation of materials for distributions, educational movies, and other materials to help teaching.

The activities of the ***NGOs*** working in the field should not be underestimated. These organizations could be engaged as a mediator between the research centers and the society, as well as a supervisor of the measures and activities undertaken by the Government and in the country under the UNFCCC.

Along with the environmental education a *sound **public awareness** campaigns* outside schools have to be performed. They have to be in compliance with the Bulgarian situation and to address particularly the win-win options, or the so-called good housekeeping practices. The options for informal education in the field of environmental protection include use of mass media - newspapers, TV programs, booklets; use specialized conferences to put accent on the

issue (e.g. lamp producers conferences to promote energy saving bulbs); conferences, workshops for the public; continuous information to the journalists; work with NGOs; work with communities; pilot projects and dissemination of their results; practical advises supplemented with economical information, etc.

Another option is the ***energy management*** *at the work place*. Energy management aims at maximal benefits but it integrates environmental aspects of production. Its key principles are: purchase at lower prices; manage at peak efficiency; harness the most appropriate technology.

For the moment Bulgaria is in position to take advantage just from the second principle. Some measures in this direction are: development of an energy policy and strategy; gaining commitment from top management to downward; appointing energy manager; forming an energy task force; ensuring that energy management staff is well trained; allocating energy end-use responsibility; conducting energy audit; implementing an energy monitoring and targeting system having clear energy investment criteria; ensuring energy efficiency is built into the design and planning of all process, buildings and equipment; ensuring energy efficiency is incorporated within planned maintenance procedures; delivering specialist energy training to meet identified needs; raising the motivation and awareness of all staff; implementing publicity and advertising campaigns; maintaining momentum by integrating energy efficiency into company culture and procedures.

As seen the human factor is quite important. It is crucial for no cost measures, which put emphasis on the awareness, motivation and empowerment of people using existing equipment. The human input is substantial even when combined with new technology implementation.

In many organizations there is a significant potential to save energy by good housekeeping (no cost measures) and by rising the awareness and motivation of the staff. Saving of 10-15% of the total energy bill can be achieved. For Bulgaria this figure is probably higher. End users should be encouraged to avoid waste and to take personal initiatives to save energy. To utilize this potential some awareness campaigns are necessary. The final consumers should be motivated to save energy. Clear explanations of what is the state and organizations energy policy, what is the potential for saving energy; why is it necessary to save energy (various aspects of the issue) are necessary. Different ways to motivate people could be used. The training programs can also have different forms: on-site short training with internal or external trainers; short open courses; on-the-job training; academic courses leading to recognized qualification; open learning materials.

5. Research Aspects

There are numerous ***studies*** in Bulgaria directly or indirectly dealing with the climate change issue. The research work is focused in the various institutes to Bulgarian Academy of Sciences, such as Forestry Institute, Institute of Nuclear Research and Nuclear Energy, Institute of Economics, National Institute of Meteorology and Hydrology, as well as other research institutes as Agricultural academy, Energoproekt, etc. The National Co-ordination Center on Global Change co-ordinates the activities of more than 20 institutions and organizations including BAS, the National Center of Environmental Protection and Sustainable Development, the National Statistical Institute, Energoproekt PLC, Economic Analysis and Forecasts Agency, University of National and International Economy, Union of the Scientists, Balkan Center for Architecture and Ecology, etc. Part of the activities are

within the frame of international projects. *Research activities should continue and to get closer to the application phase.*

6. Example for Best Practice in "Kyoto Mechanisms" in Bulgaria

The mechanism that is most of all applicable in Bulgaria is the *Joint implementation*. Using it Bulgaria could obtain economic, technical and expert support. Joint implementation mechanism relies on development of projects and sharing the GHG mitigation units. Therefore, this mechanism creates opportunities not just for project financing, but also for economic benefits from the GHG mitigation policy in the country. In the pilot phase Bulgaria has gained positive experience with AIJ- projects together with Netherlands. As a result of successful implementation of the first pilot project, which aimed increasing energy efficiency and environmental management at DHC Pleven, our countries decided to continue the process. On 10 April we shall sign a Memorandum of Understanding, indicating the amount of CO_2 to be put available by Bulgaria-the host country to the Netherlands, and the agreement on the procedure for public procurment and also we shall sign a Letter of intend for the following three JI projects:

- **Combined Heat and Power-unit for the District Heating Company Pravez.**
  The project aims at increasing energy efficiency and environmental management at DHC Pravez e.g. through the installation of a Combined Heat and Power unit. The Netherlands' Government intends to contribute NGL. 1 000 000, – to this project.

- **Optimization of the Heat Supply System (HSS) in Sofia.**
  The project aims at reducing emissions of greenhouse gases e.g. through installation of a grid for District Heating in Sofia. The Netherlands' Government intends to contribute NGL. 1 100 343, – to this project.

- **Modernization of District Heating Company (DHC) in Varna's substations**.
  The project aims at energy saving in DHC Varna e.g. through an adjustment of existing substations. The Netherlands Government intends to contribute
  NGL. 999 975, – to this project.

In case of the above mentioned three projects the credit sharing will be **35 and 65%** for Bulgaria and the Netherlands, respectively. In the meantime the projects are a good start to gain experience in real Joint Implementation and provide a sound basis for future co-operation between Bulgaria and the Netherlands in the effective implementation of international environmental convention. In the meantime taking into account outputs of the pilot phase - lack of capacity for implementation of JI projects in Bulgaria, Netherlands part started to prepare study on "Capacity Building for Joint Implementation in Bulgaria".

In closing, I wish to stress once again the importance of sharing experience and exchanging information on best practices, while recognizing the need to take into account that policy and measures are designed and implemented in accordance with the national circumstances of each Party.