Draft discussion paper

Funding instruments for energy efficiency and renewable resources

Basis for round table discussion, June 2010

CEE bankwatch network

CEE Bankwatch Network's mission is to prevent the environmentally and socially harmful impacts of international development finance, and to promote alternative solutions and public participation.

Executive summary

Bankwatch coordinators in Bulgaria, the Czech Republic, Latvia and Poland have interviewed energy and financial experts from national ministries and other institutions. This paper is a summary of their findings.

The research has been focused on possibilities of public financial support for energy efficiency and renewable resources through different **funding instruments** – subsidies, loans, guarantees; coming from EU funds, national budgets, international financial institutions and other environmental funds such as Green Investment Schemes.

In the **energy efficiency** field, public finances have brought some progress in the countries of central and eastern Europe (CEE), but more incentives are still needed. Individual housing and multi-apartments are not covered – or only covered insufficiently – in Bulgaria, Latvia and Poland. Administrative burden, a lack of coordination among private flat-owners and the conditions of loans discouraging individual owners have been the major problems in this field to date. For the development of **renewable resources**, limited grid capacity together with market uncertainties and misguided incentives have posed as major constraints in all of the countries.

Energy efficiency in the CEE housing sector remains a crucial priority in the near future. This is linked to support for the heating sector, which has had little attention so far. Support for biomass will be necessary to provide the feedstock for heating. Smart grids and energy storage need to be designed and developed in order to continue the growth of the share of renewable electricity. Energy efficiency in industry is still a problem in the CEE region and needs attention.

Where individuals or small beneficiaries are concerned, subsidies can easily overcome most of the problems that are connected with financing. In other cases, Energy Performance Contracting can help, but needs public financial support to overcome the risks involved. A revolving fund for energy efficiency could be established for major projects. It will be necessary to improve the integration of the funding instruments with regional planning policies. The revenues that accrue from auctions of allowances are one of the promising sources of finance, but need strict conditions to be applied in order to control them.

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Introduction

Climate change, energy security and economic competitiveness are some of the most important challenges that the European Union is facing. The EU has set clear priorities to tackle these challenges in the EU 2020 strategy: a more resource-efficient, greener and more competitive economy is to be promoted. The development of renewable resources and advances in energy efficiency are the key tools in this strategy and the EU has several means for fostering these – financial support in different forms is one of the most important.

For the new member states in CEE, these challenges are especially pressing. The economies of the region continued to rank among the most energy intensive in Europe, energy generation is often dependent on low quality lignite or on gas imports, and the countries' building stock is generally in poor condition. In spite of significant amounts of finance pouring into these sectors already, some major areas have remained uncovered, some problems have appeared during the implementation and new challenges have also appeared.

CEE Bankwatch Network coordinators have conducted more than 50 interviews with energy and financial experts from national ministries, environmental funds, academia, the banking sector and industrial associations in Bulgaria, the Czech Republic, Latvia and Poland. The aim of these interviews was to identify good practice as well as the problems associated with the current funding instruments, to reveal the priorities and opportunities for future funding and the instruments that could deliver positive results. This paper provides a summary of the key findings of those interviews.

Barriers for energy efficiency and renewable resources

Administrative burden

Application andproject approval processes that are extremely time- and resource-consuming and adjourned monitoring and reporting are seen as major obstacles for increased absorption of EU funds for energy efficency and renewable energy.

The documents required for applications are often the same for small projects and large infrastructure projects- there is thus a gap that does not take into account the scale of the project and the capacity of the beneficiaries to complete such detailed applications. Applicants such as individuals, associations of flat owners or SMEs often lack experience and know-how to deal with the application criteria, to supply the required data, technical and legal documents, and provide an assessment of expected impacts. Local administrations and agencies often lack capacity to support applicants in presenting solid projects. In many cases, these obstacles are being addressed through consultancy companies, resulting in increased costs for the projects.

In the CEE region, both problematic and good cases can be found.

In **Poland**, the application process is extremely complicated for the EU funds. Project evaluation and appraisal systems are bureaucratic and resource-consuming and do not result in improvement

of the quality of the projects selected. At the same, one example of good practice in project selection and appraisal is the EkoFundusz.

In **Latvia**, EU funding has been made available for energy efficiency measures in multi-apartment buildings covering up to 50-60 percent of the costs. However, the implementation has been low due to application bureaucracy and reporting requirements. Some of the requirements were abolished or modified in mid-2009 in order to increase absorption. Further measures are needed to support the process.

In **Bulgaria**, municipalities lack qualified and motivated staff. Resources are lacking for adequate remuneration and motivation as well as for capacity building. More attention to this aspect is needed within the scope of the EU funds – there is a desire for improvements in Bulgaria.

Decentralised governance, external control and strict monitoring were named by the expertsas solutions with positive anti-corruption effects. Authorities with knowledge of local conditions and needs should participate in the project selection. The competition principle, with clearly set criteria to benefit high quality projects, could also be a solution.

In the case of the **Czech Republic**, available resources have been fragmented into too many (24) Operational Programmes (OPs) and the managing authorities have been struggling for the funds. This has resulted in the fragmentation of the capacities of the applicants, especially municipalities, that had to deal with 24 different application processes. Many of the OPs also limit the flexibility in shifting resources to areas with higher needs and disbursement rate. In **Poland** the variety of different procedures was also noted as problematic.

Increased technical assistance and capacity building could increase the quality of projects and absorption capacity, especially in the case of small municipalities. This would further address the issue of economic inequalities that comes when accessing the funds between small municipalities or rural regions and large cities.

Limited grid capacity

In the renewables market, the regulation of connections to the grid poses a major difficulty for investments. Potential investors submit a high number of applications in order to secure a connection, yet only a limited number of projects is carried forward.

Feed-in tariffs have provided the incentive for a major boom in photovoltaics in the **Czech Republic**. Very high demand for grid connection permissions has lead to speculations with these – a high number of permissions have been issued for projects that will never materialise. The distribution authority ultimately decided to stop connecting any renewables, thereby harming real project developers. Similarly, in **Poland**, only a small part of the applications is submitted by investors intent on realising the investments.

Therefore, national rules need to ensure that speculators do not abuse the market, e.g. there need to be limits on the time validity of the grid connection permissions. The financing of different kinds of renewable resources need to be differentiated carefully, including the use of criteria on size, effectiveness, placement (e.g. rooftop PVE vs. green field sites) and environmental impacts.

The development of renewables in **Poland** has been identified as insufficient: considering the current engagement of the government the goals of renewables share of 7 percent in 2010 and 15 percent in 2020 appear difficult to fulfil. Although moderate development of renewable electricity production has started thanks to tradable Green certificates, the constraints of connections to the grid is restricting further progress. Distribution companies in **Poland** are obliged to pay 50 percent of the renewables grid connection costs, resulting in a burden rather than an investment incentive. A potential solution would be to guarantee their share of income from these connections.

Similarly, in **Bulgaria**, the distribution companies lack a guarantee that they will be compensated for investments into connections. The responsibilities and rules are not clear, putting off investors who consider the conditions to be risky.

In the **Czech Republic**, the 13 percent renewables target is generally evaluated as achievable when viewed in terms of the current boom in generation fuelled by the feed-in tariff with target return on investment of 7 percent for 20 years. Again, grid capacity issues play a role, and the issuing of licenses for new connections have been temporarily stopped because of lack of grid capacity.

In **Latvia**, the inadequacy of the grid has yet to become an issue as connection licenses are issued on the basis of a quota system that limits the number of connections for each type of source. This regulatory approach brings another market distortion and uncertainty for project developers: a lack of transparency and susceptibility to corruption was acknowledged by national experts who we interviewed.

A failure to decouple energy generators and distributors, when large generators operate a significant part of the network, was identified as a further barrier in **Poland** and the **Czech Republic**. Grid investment is focused according to the needs of conventional generators and the connection of renewable resources does not satisfy the commercial interests of the distributors.

Market uncertainties

Apart from the technical potential of the grid, it is necessary to guarantee long term market conditions through policy making.

The uncertain quota for the share of renewables in **Poland** after 2017 poses a risk for investors. They expect more clarity regarding future renewables policies in order to mitigate their risks. In both **Latvia** and **Bulgaria**, regulation on the amount paid for the feed-in tariff can be changed easily, which has resulted in a lack of trust from both investors and private banks.

On the other hand, if funding instruments are well designed and stable, then banks are willing to provide loans to project implementers. This has been the case in energy efficiency projects in housing approved for financing from the Green Investment Scheme (GIS) in the **Czech Republic**, where banks themselves offer a “package” of a loan and support in the application process.

Wrongly designed incentives for renewable resources

Some of the incentives for renewable sources have in fact led to the promotion of technologies or projects that rely on fossil fuels, that are not efficient or that bring about market distortions.

Green certificates in **Poland** promote the co-combustion of biomass and coal, leading to reduced efficiency in the use of biomass. These technologies are still classed as renewable, even though they include coal.

Clear rules need to be set at the EU level to define what kind of renewables are eligible for public support and count towards the country's target under the Renewable Energy Directive, as on the national level corporate interests often promote unsustainable solutions. This is the case in **Bulgaria**, where pressure exists to promote gas instead of biomass for heating, endangering the energy security of the country.

EU funds have been made available for waste incinerators producing heat in **Poland**, that could result in decreased rates of recycling, air pollution and long distance transport of waste.

Inadequate criteria in the application procedure for the modernisation of industrial processes is an example of missed opportunities for achieving higher energy efficiency in companies in **Latvia**. Environmental and climate-related criteria were not included in the assessment. Although some of the projects implemented have had some effects on energy efficiency, much more could have been achieved with proper environmental prioritisation.

In **Bulgaria**, support for renewables allows the usage of second hand technologies which are not appropriate for the country conditions and results in higher maintenance costs as well as reliability and noise problems in the case of wind turbines.

Problems with loans

In **Bulgaria**, where the European Bank for Reconstruction and Development (EBRD) has opened credit lines for energy efficiency and renewables, several problems have appeared. The funds are delivered through loans managed by local commercial banks, and they have applied market interest rates on the loans. Although the beneficiary can receive 20 percent of the eligible costs in the form of a subsidy at the end of the project's realisation, these credit lines have discouraged especially individual and small beneficiaries – the difficulties attached to the administration and the interest rate constitute a burden that the subsidy can not overcome. Even though all of the funds were distributed, there remains a question of whether the EBRD contribution – ie public money – has served the basic required purpose or has been instead used as an additional source of profit for the banks involved.

Soft loans with advantageous interest rates are especially not suitable for households. With limited willingness to bear the risk of the loan, as well as lingering doubts about long-term investment in energy efficiency, this tool is not encouraging households sufficiently. Subsidies are a better tool, especially in the beginning, when the changing of opinions and behaviour is needed. An adequate subsidy can help motivate a household to take a loan for co-financing.

Lack of coordination/interest from flat owners

Even if funds for energy efficiency are available and easy to obtain, flat owners in multi-apartment buildings are often not willing to cooperate together or unable to organise themselves if the

administrative burden is too high and the financial incentive low, as in the case of the credit lines in **Bulgaria**.

Similarly this lack of cooperation among flat owners has been observed in **Latvia**. In order to apply for funding and to start heat insulation measures in multi-apartment houses, there is a need for the consent of at least 50 percent of flat owners in a building, and often this appears to be difficult. The disbursement of EU funds in this area is very slow, with only 10 percent spent so far.

One of the possible solutions is financial support for the design of projects, that can be obtained separately from the financing of the project itself – this has proved to be successful in the Czech GIS. Another potential solution for both the problems of limited financing possibilities as well as lack of motivation could also be the services of Energy Services Companies, guaranteeing energy savings without the necessity for upfront financing by the property owner.

Setting investment priorities

Energy efficiency in buildings

Energy efficiency in buildings has often been named as priority number one for public funding by the experts interviewed in all of the countries. Several funding opportunities for this exist in each of the countries, but the potential is far from exhausted.

In **Poland**, funding from the National Fund for Environmental Protection is available for public buildings, but private housing and housing societies are not covered. Family houses are not covered at all in **Latvia**, and the finance available for other buildings – multi-apartments from the EU funds and municipal and public buildings from the GIS – does not cover all of the stock sufficiently. In **Bulgaria**, credit lines for housing have not attracted enough interest in the housing sector and subsidies for renovations from the EU funds do not pinpoint energy efficiency specifically.

Passive buildings in particular need more attention when it comes to legislation and funding. In **Bulgaria**, for example, there is no support available at all. The Energy Performance Building Directive will require a zero energy standard for all new buildings and major renovations from 2021. The existing building stock will continue its lifetime. It is therefore necessary to design financial instruments for the renovation of current buildings, where suitable, already now. Funding for passive buildings should be designed as well as a focus on new public buildings such as schools, in order to achieve positive demonstration effects. In the **Czech Republic**, this has already been partly achieved by the GIS. Designer and building companies are already reporting increased interest of private investors in passive housing.

Small-scale renewable sources in buildings, such as solar and geothermal heating and hot water production, need to be supported as well. It is necessary to start the marketisation of these technologies in order to decrease the costs involved.

Banks providing loans and mortgages for buildings should also be stimulated to include efficiency criteria in project selection and appraisal. Energy efficiency measures cut the running costs of

buildings, helping the financial security of the owner, increasing the market value of the building and mitigating the risk of building stock value crashing.

Funding in the heating sector

Funding for the heating sector was identified as a top priority by experts in all the countries. Partial advances have been made, but as this sector is highly interlinked with other issues (energy efficiency in buildings, hot water production, support for biomass, multiple stakeholders), a systemic approach addressing this complex issue is necessary.

A lack of support for modernisation and for increases in the efficiency of heat production and distribution in district heating systems leads to price increases for heat production. This results in disconnections for users, further price increases and the deterioration of the whole system. Without support, the high share of district systems that have potential for the use of renewable sources may decrease, which would mean the loss of a major opportunity for efficient and cost-effective solutions.

In **Poland** and the **Czech Republic**, the most visible investment in renewables is taking place in the electricity sector, but the heating sector is not sufficiently covered. A wide legal framework for the support of renewable heat, similar in significance to the feed-in tariffs and Green certificates, is required to start and boost the development of the sector.

In **Latvia**, a major portion of multi-apartment residences is covered by district heating, and some modernisation of boilers (though principally gas-fired) as well as distribution networks has taken place in the last few years. The EU Cohesion funds provided EUR 60.22 million for all of the important parts of the heating systems – to increase the efficiency of heat production, to reduce the losses in the transmission and distribution systems and to foster the replacement of imported fossil fuel types with renewables. These funds have been insufficient in comparison with the scope of the needs, and have been exhausted very quickly.

Funding for complex projects is needed, not only for heat production and distribution, but also for the insulation of inefficient buildings and the installation of individual regulation and measuring devices for the occupants, so as to motivate behavioural change. Funding must be directed into appropriate sustainable technologies, avoiding the examples described in the 'Wrongly designed incentives' section above. This type of integrated approach is to be trialled as part of the Green Investment Scheme in **Latvia**.

In family houses, subsidies are needed for the exchange of boilers for biomass in **Bulgaria**, **Latvia** and **Poland**. In the **Czech Republic**, the GIS provides grants for the exchange of boilers in family houses, but without an affordable and abundant supply of biomass the trend can not be sustained. Solar heating and hot water production is supported to some extent, but the volume is far from sufficient. Methodology for the implementation and monitoring of small heating projects also needs to be developed.

EIB funding was supporting combined heat and power installations in **Latvia** and **Poland**, but the focus needs to change from gas to biomass in order to improve energy security.

Complex funding for biomass

There is very important potential in biomass for energy purposes in the CEE countries. The challenge in terms of support for biomass is the coordination of the whole process of production, processing, distribution and use with many different stakeholders.

Missing pieces in the chain restrict the development of the other parts, leading to a deadlock situation. A coordinated approach that brings together local farmers, municipal or private owners of heating plants and processing facilities, as well as individuals, needs to be designed – this approach would increase the trust of the consumers, provide for long-term planning and avoid long distance transport, export and price increases.

Local farmers will need support for the switch to biomass production – this necessarily involves the establishment of energy crop cultures, machinery for harvesting and processing as well as know-how. Various energy scenarios for CEE countries show that large agriculture areas are available for non-food production. Common Agricultural Policy support is one of the possible finance sources for making such a shift.

In most countries, support already exists for the exchange of heating and CHP boilers to biomass. Processing plants for the local production of pellets or other suitable energy products will need to be established. Municipalities can play a mediator role here – in district heating, as (co-)owners of the heating plants or distribution, they ensure the off-take of biomass. In municipalities without district heating systems, a scheme supporting house owners to switch to biomass boilers, and at the same time securing the production and distribution of pellets, could be one solution.

Both financial support and capacity building is necessary in order to start such schemes. Complex funding schemes should take into account the sustainability of the projects, the long-term relationships of supply and demand, the effectiveness of the use of biomass and the local dimension of the projects.

It is necessary to ensure that priority is given to the use of biomass for heating, and not to electricity where the efficiency is lower. Special attention needs to be given to the environmental soundness of biomass cultivation. Countries willing to start such schemes should develop and enforce strict rules for biomass growing and any funding must be conditional on proper assessment of the wide and varied environmental impacts of such activities.

Smart grids and energy storage

Grids able to accommodate increased volume of renewable electricity sources need to be promoted by national and EU policies, as well as by public funding. Decentralised generation needs decentralised and flexible network management, based on a regional supply – demand balance.

The development of smart grids will be a major investment challenge: many components of the network – operation centres, transformers, new lines, domestic meters will need to be installed. It is necessary to start designing a working financial model that involves different mechanisms for different stakeholders. Currently, research, development and financing of pilot projects and

regions are key challenges. Adjustable capacity backups and energy storage require particular attention.

Legislation to prevent speculative grid access blocking needs to be designed. This could be, for example, a time limit on the validity of the grid connection permission, confirmation that the project is not contradicting urban planning or building regulation, or a preliminary contract with the property owner.

The transparency and availability of data on the origin of electricity for customers needs to be improved. EU technology standards should be prepared for smart grid communications, interconnections and for super grids. Clear signals are needed about the priorities, the designs of operation for stable energy supply, affordable prices and working business models.

Energy efficiency in industry

CEE economies are still among the most energy intensive in the EU. It is a possible risk factor for the region – as it will lose its investment attractiveness of cheap labour, companies will not be competitive without improvements in their resource efficiency.

Currently, little attention has been paid to the financing of industrial processes in most of the countries. In the **Czech Republic**, OP Enterprise and Innovation provided for energy efficiency in companies, but most projects involved the heat insulation of buildings or improvements of boilers. Much potential lies in the processes of industrial production itself, in sectors like steel, metals, glass and cement production where many companies still do not use the most innovative technologies. As the life-cycle of the technologies is long, funding can provide the incentive to speed up the change process and provide motivation to use better technologies.

Special care is needed here to make sure the investments are effective. Strict conditions must be set for both the provider of the support as well as for the beneficiary to prove the effect of the investment on efficiency improvements, to enable financial flows tracking and to apply due information disclosure.

Funding instruments

Subsidies to energy efficiency measures in buildings

Funding mechanisms need to cover all parts of the building stock – private houses, multi-apartment residences, public and municipal buildings and companies. The **Czech Republic** can be taken as an example, with different schemes covering the whole building stock: the GISe for family houses and multi-apartments, the Integrated OP and national Panel programme for the renovation of complex multi-apartment residences, OP Environment for municipal buildings and OP Enterprise for the buildings of companies.

Subsidies are a good tool for private housing, housing cooperatives as well as municipal buildings, as financial instruments in the **Czech Republic** and **Poland** have shown. For private persons and housing associations, subsidies can overcome the lack of trust and motivation that often

accompanies the complicated bureaucracy of the application process. In municipalities, especially small ones, direct subsidies decrease the financial risk associated with loans and enable the prioritisation of energy efficiency to other investment areas.

Other instruments for the support of energy efficiency in housing or buildings have been suggested, with some reservations: the system of White certificates would be very complex and complicated to introduce. The problems linked to credit lines in Bulgaria have already been mentioned.

Energy performance contracting (EPC)

Energy performance contracting is a service based on the realisation of energy efficiency measures that are paid during the time from the achieved savings. Companies specialising in these services are Energy services companies, or ESCOs.

After signing an agreement with the client, the company realises energy savings measures in the client's property. The agreement usually fixes a certain amount paid to the ESCO according to the client's current energy bill. The difference between the client's payments and the new reduced energy bill is the source of the ESCO's profit.

EPC can overcome several problems:

- a lack of upfront finance for the projects
- a lack of capacity and knowledge of project developers
- long-term project risks – monitoring and quality assurance.

In **Bulgaria**, the Bulgarian Energy Efficiency Fund (BEEF) provides portfolio guarantees for ESCOs, helping them to overcome the risk of clients' default or delayed payments, which otherwise restrict the ESCOs' access to commercial loans.

Currently, EPC is a little known business model in the CEE. Regulatory frameworks, promotion and pilot projects will all be needed to demonstrate the advantages and sustainability of such a model. An ideal financial mechanism should not only provide available finance for ESCOs to start their operation in the form of equity or a loan guarantee, but also handle the potential risks linked to the client's long term solvency.

A revolving fund for energy efficiency

In the case of cost-positive energy efficiency measures that are implemented by larger entities such as companies or big municipalities, and where the market is established and working, soft loans, guarantees or provisions of equity from a revolving fund could be a good instrument to help the implementers overcome the barriers to financing. Such a revolving fund could also be used to continue the positive experience of some of the existing support mechanisms.

Such a fund should be set up as non-profit; repayments into the fund and eventual revenues must be used solely to support efficiency measures. EIB lending indeed could be used to start the fund, with repayments designated to replenish the fund.

Integrated approach in EU funds

Under different points, the interviewed experts have identified that wider integration and coordination among different support measures is necessary. Related issues such as biomass and smart grids have been already covered; energy efficiency municipal projects and general accessibility of funding are a challenge as well.

As the example of the **Czech Republic** shows, public authorities lack the ability to coordinate various funding opportunities under the EU funds (i.e. regional and sectoral OPs) in one project and integrate them in the development plans. Strengthening this aspect would be beneficial from the point of view of the project results, as well as for more beneficiaries and partners.

In someOPs, conditions on beneficiaries (i.e. municipalities only) can cause problems in the case of wider projects, such as the renovation of heating systems – with complex ownership relations, some parts of the chain (such as privately owned heating sources or meters for individual flats) can not be supported, decreasing the overall efficiency.

An integrated approach is being put into practice in the **JESSICA** mechanism of the EIB. Measures contained in integrated development plans can be supported in urban areas under JESSICA. It would be useful to take this approach in the regions as well, which would enable smaller municipalities and local companies to take part and to focus on issues related to regional development such as agriculture and local energy.

Revenues from the auctions of allowances

The full auctioning of emission allowances for power generators should start from 2013. The revenues have been identified in the course of our interviews with experts as a very important source of finance for energy efficiency and smart grids.

However, a derogation to the directive enables all new Member States (with the exception of **Slovakia**) to allocate to the companies as much as 70 percent of the allowances in 2013 without auctions, with full auctioning only in 2020. According to the EU ETS Directive, the Member States concerned shall submit to the **European Commission** a national plan that provides for investments in retrofitting and upgrading of the infrastructure and clean technologies, diversification of their energy mix and sources of supply for an amount equivalent to the market value of the free allocation.

It is vital for the Commission to set proper criteria for the national plans. Projects eligible for this financing must prove that they will diversify the energy mix, and clearly reduce GHG emissions. They must use the best available technologies and be additional to the current plans of the investors. The promotion of smart grids is also necessary and the projects need to prove that they are well suited to be used in smart grids.

In **Bulgaria**, where derogation will not be used, the revenues from the auctions should ideally be directed to the National Trust Eco-fund, financing energy efficiency measures. Once again, criteria and strong guidance on how the money should be used is necessary.

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