CEE bankwatch network

Tug of War

Fossil fuels versus green energy at the EBRD

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Glossary

Annex-I countries – those countries, listed in Annex I of the Kyoto Protocol, that took on binding emissions reductions obligations under the agreement.

kt – kilotonnes, ie. 1000 tonnes

CO2e – CO2 equivalent

EBRD – European Bank for Reconstruction and Development

EBRD countries of operation / EBRD region – Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Macedonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan

EU – European Union

GHG – Greenhouse gases

IPCC – Intergovernmental Panel on Climate Change

MENA – Middle East and North Africa

New renewables – renewable energy sources, excluding large hydropower that has been in use for over a century, and traditional wood combustion. Newer, more efficient forms of biomass combustion are included.

SEI – Sustainable Energy Initiative (SEI1 = SEI phase 1)

UNFCCC – United Nations Framework Convention on Climate Change

Executive summary

The European Bank for Reconstruction and Development, founded in 1991, is mandated to promote market economies in countries of the former Eastern Bloc and at the same time, environmental sustainability in all its activities. A very significant part of this work necessarily involves using its investments to tackle climate change.

Addressing the climate crisis by drastically reducing greenhouse gas emissions by 80 to 95 percent in developed countries and 50-70 percent globally is becoming ever more urgent. International bodies such as the International Energy Agency are warning that carbon-based energy consumption is already to a large extent locked into existing infrastructure and that building new power plants, roads and industrial facilities dependent on fossil fuels risks completing this lock-in to such an extent that achieving the necessary emissions reductions will be impossible.

The EBRD's current energy policy, which has guided the bank's lending to the energy sector since 2006, is however inadequate to face these challenges and urgently needs to be revised. While the current policy contains a much-needed emphasis on sustainability and laid the ground for increased energy efficiency and renewables financing, the policy allows the bank to finance almost anything, including the most carbon intensive energy sources such as coal[1]. Dramatic events since the policy was approved, including new proof of impending catastrophic climate change, the bank's expansion to the southern and eastern Mediterranean region, rising oil prices, and the death of the so-called nuclear renaissance, necessitate a new approach.

At the same time, the EBRD is also currently revising its mining policy, and a draft version shows that the EBRD has so far failed to rule out financing coal mining. This must be changed before approval by the bank's Board of Directors.

Between 2006 and 2011, the EBRD provided EUR 6.7 billion in loans and equity for the energy sector. During this time there were some welcome developments such as a large increase in the bank's energy efficiency and new renewables investments, and the EBRD should continue to develop these areas.

However this good news is overshadowed by the bank's continued financing of fossil fuels, which made up almost half (48 percent or EUR 3.26 billion) of its overall energy lending in the period. In particular its increasing financing of coal and oil projects is problematic, as in 2011 each of these received investments equal to the amount of new renewables financed. Between 2006 and 2011 EBRD support for coal also increased from EUR 60 million to EUR 262 million, indicating a worrying trend.

The EBRD is prone to justify its involvement in such projects by arguing that these countries would burn fossil fuels anyway. However, the bank – a public institution – is obliged to finance projects only where other sources of financing are not available at reasonable rates. So if the EBRD is financing projects that would anyway go forward, then it is competing with commercial banks and contravening its mandate. In addition fossil fuels investments divert limited resources away from energy efficiency and new renewables financing, as well as other worthwhile investments. And the idea that something harmful/problematic is going to happen anyway is not an excuse for actively contributing to it.

Given the IEA's warnings regarding carbon lock-in in infrastructure, the bank needs to phase out lending for carbon-intensive sectors of the economy altogether, starting with an immediate halt in support for the extraction and combustion of the most carbon-intensive energy source, coal.

Another issue is that the increase in renewables lending brings with it new challenges that need to be addressed if renewable energy is to retain its integrity as an environmentally acceptable means of energy production. One example is Bulgaria, where the rapid but poorly-planned expansion of renewable energy has proved to be environmentally damaging. At the same time, the re-emergence of financing for unsustainable, large hydropower projects - the EBRD financed three such projects in 2011 - is also disconcerting given the high environmental costs of these investments. The EBRD therefore needs stricter sustainability criteria for defining what constitutes renewable energy and to contribute to careful planning of these technologies with national and local authorities.

1. Introduction: The need for dramatic greenhouse gas emissions reductions in the EBRD region

So far, the majority of the EBRD countries of operation have not made substantial steps to mitigate climate change. This will have to change soon if we want to avoid the effects of catastrophic global warming and to leave a habitable planet for future generations. Minor improvements in energy efficiency and carbon markets, weak or virtually non-existent for the most part in the EBRD region, will not lead us to these goals.

Although in the Kyoto Protocol the majority of post Communist transition countries were included into the Annex-1 group, and therefore theoretically obliged to reduce GHG emissions, the way the base year for calculating reductions was defined exempted them from undertaking serious efforts[2]. Economic downturn and the restructuring of economies at the end of the Communist era did the job for them, substantially reducing GHG emissions. In the 1990s and 2000s, market-driven improvements in the energy intensity[3] of many sectors did lead to a decrease in the carbon intensity[4] of the post-Communist economies. At the end of the 2000s, the regional leaders in this area - Latvia, Hungary, and Slovenia - reached the average level of carbon intensity of the EU-15. Despite these improvements, several EBRD countries, namely Kazakhstan, Mongolia, Russia, Ukraine and Uzbekistan are still among the most carbon intensive in the world, performing much worse than the EU-15, but also emitting between 50 and 200 percent more CO2 per unit of GDP than China[5].

While changes in the relative carbon intensity of the EBRD region give reasons for optimism, the situation is much more bleak when one looks at absolute GHG emissions in the context of the reductions that are necessary in order to reach the internationally recognised goal of keeping the temperature rise below two degrees compared to pre-industrial levels[6].

Achieving this goal is no easy task. If we discard geo-engineering[7] there is no other way than to limit the overall level of GHG emissions globally by 50-70 percent by 2050 compared to 1990 levels[8] and then to gradually decrease the level of their concentration in the atmosphere. The level of CO2eq in the atmosphere accepted by the EU authorities and the scientific community as a level that allows for an acceptable degree of certainty for humanity not to face the most dire consequences of climate change is 450 PPM (with 350 PPM concentration being even safer especially for the developing countries in the Global South).

According to the IPCC, the most authoritative source in the area, this would require dramatic GHG emissions reductions in the Annex-I countries – at least 80 percent emissions decreases in 2050 compared to 1990 levels[9]. According to the European Commission's predictions the most technologically and economically feasible scenario for achieving this means the almost total de-carbonisation of the energy sector by 2050[10].

A major part of the EBRD region belongs to the states included in Annex I. Outside of this group are the countries of Central Asia, Southern Caucasus, the Western Balkans[11], the MENA region and Mongolia. However, in the two-degree scenario these countries will also have to start tackling emissions. In the IPCC documents, reductions in the Non-Annex-I countries are presented not in

the form of absolute reductions compared to the base-year, but deviation from the baseline or a business as usual scenario, i.e. one without any climate policy interventions. The deviations from the baseline necessary to stay within a two-degree rise until 2020 are not large (between fifteen and thirty percent), but substantially increase with time, reaching the level of 80 per cent deviation from the baseline in 2050[12].

While the IPCC global emission reduction scenarios do not give specific figures for individual countries or regions, these may be found in the reports of other organisations. In the Greenpeace Energy [R]evolution scenario transition economies can reduce CO2 emissions by 2050 by 80 percent compared to 2007 levels, still keeping the carbon emissions per capita in the region at the highest level in the world. This result is achieved with net employment gains and reduced electricity prices in the long-term, when compared to the reference scenario[13].

The complicated IPCC calculations, on which the post-Kyoto agreement will have to be based, become more tangible when looking at the practical implications for newly constructed infrastructure. According to the most recent International Energy Agency World Energy Outlook, the total energy-related CO2 permissible to keep the temperature rise below two degrees[14] is already "locked in" in existing capital stock. If stringent new action is not forthcoming by 2017, the energy-related infrastructure then in place will generate all the CO2 emissions allowed up to 2035, leaving no room for additional power plants, factories and other infrastructure unless they are zero-carbon, which would be extremely costly[15].

Waiting for fossil fuels' scarcity to drive prices up and trigger this change is not an option. Burning all the fossil fuels, whose extraction is already technically and economically feasible, would emit 10 times more CO2 than we can afford to emit in the two-degree scenario[16].

1.1 False economy of delays

One of the most commonly repeated answers to calls for radical action against climate change is the issue of its high cost. Nevertheless, more and more evidence is showing that giving up or even delaying action will be even more costly. The most well-known study concluding that the costs of inaction will radically outweigh the costs of mitigation was prepared for the British government by Lord Nicholas Stern and his team. The report, published in 2006, said that stabilising the climate through mitigation measures would cost 1 percent of world's GDP per year. Failure to do this would lead to damage costing at least 5 percent and perhaps more than 20 percent of global GDP. In 2008, Stern increased the estimated costs of mitigation at two percent of world GDP[17].

The situation of the EBRD region in this regard is specific. A 2011 report by the Grantham Research Institute on Climate Change and the EBRD (EBRD/LSE report) concluded that, "while climate change mitigation will entail higher economic costs in the transition region than in advanced OECD economies, particularly in resource rich countries, ambitious mitigation measures are strongly aligned with the long-term economic interests of the region. The end-result of successful mitigation efforts will be reduced resource dependency, and likely higher long term growth[18]."

In the economics of climate change mitigation, the speed of action is crucial. According to the International Energy Agency every dollar of investments in the power sector avoided before 2020, corresponds to an additional USD 4.30, which will have to be spent to compensate for higher emissions after 2020. "Delaying action is a false economy" concludes the report[19]. The authors of the EBRD/LSE study also accept this logic. They write, "Although mitigation may be costly, particularly for the energy exporters in the region, it is in the best interests of these countries to undertake mitigation policies, in order to adapt production and exports to the lower future global demand for fossil fuels and to maintain economic competitiveness. The sooner this occurs, the lower the costs of mitigation[20]."

Both the EBRD/LSE study and the IEA's calculation concentrate on the costs of mitigation. They do not capture significant co-benefits like avoidance of the so-called 'resource curse' in the fossil fuel exporting countries and reduced costs of air pollution. If Russia reduces emissions in line with the two-degree scenario costs of air pollution in this country would be reduced by USD

2.2 billion per year by 2030[21]. Neither do these models take into account the costs of damage, if catastrophic climate change happens. The EBRD region has already experienced the effects of extreme weather events associated with a changing climate, like the large scale fires in Russia during the heatwave in 2010[22]. It is difficult to precisely predict the consequences of decreasing water availability and the switch and movement of climate areas in some of the EBRD region, but in the already water-stressed region of Central Asia they may be severe. The river runoff is estimated to decline there by about 20 percent in the next 50 years[23] and will seriously increase the risk of political and armed conflicts over water.

At the end of 2011 the EBRD expressed its intention to start lending for projects contributing to adaptation to climate change. In the long-term adaptation to the results of climate change will be much more expensive than mitigation and may even reach 20 percent of world GDP. It is true that adaptation measures are becoming increasingly necessary, and some measures bring both mitigation and adaptation benefits. However lending for adaptation measures without first giving up support for projects which increase or maintain emissions levels is economically reckless – especially in these times when public finances need to be scrutinised even more carefully than usual – and morally questionable given that climate change will most affect those who did not cause it.

1.2 Stopping fossil fuel subsidies is a priority

There is a growing consensus that a reduction of subsidies for fossil fuel projects, including loans from public banks[24], is one of the most urgent tasks. In 2009 during the G20 summit in Pittsburgh world leaders called for the phasing out of fossil fuels subsidies, which would reduce overall human induced GHG emissions by 10 percent by 2050[25]. Calculations by the International Energy Agency, which focuses on subsidies for consumption, estimate that phasing out fossil fuel subsidies by 2020 would reduce growth in energy demand by 4.1 percent and cut growth in CO2 emissions by 1.7 Gigatonnes[26].

Fossil fuels subsidies via public banks recently became a target of criticism by Lord Nicholas Stern, a former World Bank chief economist, and advisor on the EBRD/LSE low-carbon study. During the Durban climate conference in December 2011, he said that rich economies waste money and disadvantage renewable energy by giving away tax breaks, loans, and other subsidies to the fossil fuel industry. Cutting them would bring about USD 10 billion a year, which should be directed towards helping poor countries on climate change[27].

In view of the above, and taking into account the EBRD's plans to revise its energy lending policy and its current revision of its mining policy, this study aims to provide an overview of the bank's energy lending 2006-2011, including several case studies, and to put forward our proposals for the bank's new lending strategies. We also emphasise that the energy policy needs to be updated urgently – the time left for substantial action on climate change is very limited. After introducing the bank's current energy lending policy and draft mining policy and providing a statistical breakdown of its lending, we focus on two areas which in our opinion need decisive changes.

Firstly, the EBRD's continued support for fossil fuel projects, starting with coal, needs to be halted. While most of the bank's energy efficiency investments are highly welcome, a deeper look at some of them reveals them to involve extending the lifetime or the capacity of fossil fuel generation or production.

Secondly, there is a need for an increase in the quantity and sustainability of the EBRD's investments into new renewables. We believe that a phase-out of fossil fuel lending would send a clear signal to those countries, which have so far been unenthusiastic about new renewable energy that they should start to take it more seriously. However, at the same time, investments in renewable energy need to be carefully planned to avoid potentially serious environmental impacts, and here the EBRD has a key role to play, through technical assistance and planning advice.

2. EBRD policy goals in the energy sector

The EBRD's investments in the energy sector are currently governed by the bank's Energy Operations Policy[28], approved in July 2006. This may not seem long ago, but as we outline below, the policy is looking very outdated and needs to be urgently revised. The bank is also currently developing a mining policy, the current draft of which also includes coal mining. As the EBRD has a somewhat ambiguous role, being 60 percent owned by the EU and its member states but not an EU institution, its energy policy does not draw directly on EU policy. In any case, EU energy policy has changed considerably since 2006. However, the EBRD policy emphasises similar concepts to those that have been present in EU energy policy until recently: sustainability, security of supply and competitiveness.

The main horizontal operational priorities of the EBRD's 2006 energy policy are:

- increasing the bank's focus on sustainability. The bank adopted a target to invest a minimum of EUR 1 billion in energy efficiency and renewable energy projects during the period 2006 to 2010 (compared to EUR 674 million during the five year period 2001 to 2005).
- putting a stronger focus on the energy sectors of Southeast Europe and CIS, in particular the Early Transition Countries
- putting an increased emphasis on regional cooperation in project selection to achieve greater competition, diversi-fication and economies of scale, while opening up new transport routes and access to new markets for the Region
- increasing the use of equity and equity -type instruments to attract greater private sector interest
- continuing to require adherence to best international transparency, governance and revenue mana-gement standards in projects for production, transportation, distribution and processing of oil, gas, and coal.
- requiring project sponsors to enhance environmental perfor-mance and adopt measures designed to benefit local stakeholders where practicable.
- continuing to manage the nuclear safety grant funds; continue to apply the existing EBRD policy for the financing of nuclear facilities, with one modification: while the Bank will not consider providing financing to new reactors, it may provide financing to an operating facility in relation to nuclear safety improvements, or for the safe and secure management of radioactive waste and spent nuclear fuel, as well as for decommissioning, without a direct link to the closure of high risk reactors.

The increased emphasis on sustainability has taken the shape of the Sustainable Energy Initiative (SEI), launched in 2006. Two phases of the SEI have now been completed and SEI3 is about to get underway. According to the EBRD, SEI1 (2006-2008) saw EBRD investments of EUR 2.7 billion, with an estimated annual emission reduction of 21 million tonnes of CO2 (equivalent to Croatia's emissions) and estimated annual energy savings of 8 million tonnes of oil-equivalent (three times Albania's annual energy consumption)[30]. SEI2 (2009-2011) aimed to achieve EUR 3.5 billion of EBRD financing with a carbon emissions reduction range of 25-35 million tonnes CO2 per annum[31]. (For a critical look at the EBRD's claims regarding the SEI, see section 3.1 of this study).

The emphasis on sustainability has been a useful step forward and the setting of clear targets has proved to be a useful stimulant for energy efficiency investments. However, the bank's Energy Policy suffers from the same weakness as many other institutions that try to combine often contradictory goals in their energy policies. The bank does not exclude from its portfolio, projects with a large carbon footprint and does not stipulate ambitious CO2 reductions to be achieved by its projects, which often leads to a clash between sustainability in terms of climate impact and security of supply and/or competitiveness.

This is exemplified by three main problems with the EBRD's current energy policy:

1. It does not set clear greenhouse gas emissions reductions goals for the EBRD's energy portfolio, nor does it restrict lending for fossil fuels.

While the SEI sets goals for the energy efficiency and renewables parts of the portfolio, there are no clear targets for other investments by which EBRD staff can judge which ones have acceptable climate, Impacts and which ones do not.

In spite of a lack of any formal goals, the EBRD claims that since 2006 its overall investment portfolio has been carbon neutral or better[32]. As explained below in the section on measuring results, we

find it difficult to agree with this claim. However, even if it is true, the question remains, what next?

If there is to be a global reduction of 50-70 percent of CO2e by 2050, and most of the EBRD's countries of operation are among those who, as so-called 'developed' countries, should be contributing significantly to those reductions due to their high energy intensity and significant historic emissions then the bank's goals need to be specific and ambitious. Carbon neutral is no longer enough. For countries of operation which have aspirations to join the EU, nothing less than almost total decarbonisation of the sector is required, while others also need to speed up their transition to a low-carbon economy in order to avoid being late starters in developing their domestic low-carbon industries. This will not happen without a significant push that could be provided among other things by the EBRD adopting stringent portfolio-wide GHG reduction targets.

2. Like the EBRD's other sectoral policies, it does not sufficiently take account of the bank's role as a public financing institution

It cannot be emphasised enough that the role of the EBRD is to support those projects, which could not otherwise access financing from other sources at reasonable rates. It also cannot be emphasised enough that the bank's mandate requires it to promote environmental sustainability in all its activities. These two facts together mean that the bank should lead new markets and take on additional risk for promising environmentally acceptable energy projects which are not well-established commercially as yet, as well as providing technical assistance to ensure that the regulatory framework is in place to support and regulate those projects and others like them.

However, instead of choosing projects that combine all the desired features, the bank looks at the goals separately and finances projects which fit any of them. A look at the bank's sub-sector priorities in the policy shows that, with the clear exception of the construction of new nuclear power plants, it allows the EBRD to finance basically any project in the energy sector which is financially viable and follows the bank's safeguard standards.

Such a situation certainly makes it easier for the bank to find projects to lend to, however such a broad spread of goals that allows lending to almost every type of energy production (other than nuclear new-build) does not really constitute a strategy, and certainly not one for bringing about a transition to a low-carbon economy.

However, given the EBRD's role as a public financing institution, the bank has no reason to spread itself thinly across all energy sub-sectors in its countries of operation, as it attempts to do in its current energy policy. Most of the energy sector consists of well-established operations that do not need public support. Therefore, the 2006 policy's apparent emphasis on sustainable energy is a suitable one, but the bank's continued investments in unsustainable sub-sectors such as coal and oil is not only environmentally perilous but is also supporting sectors that are surely able to attract financing from other sources.

During discussions with bank staff and Executive Directors, it has sometimes been argued that the bank has no right to dictate its beneficiary countries' energy mix. However, it should be made

The EBRD's new mining strategy

After several years of gestation, the EBRD has recently published a draft mining strategy[29] for public consultation.
Until its publication, it was not clear whether the document would cover coal mining or whether this would be left for the energy policy revision. The publication of the document has not clarified much either, except that the EBRD has failed to exclude investments into coal – either for coke in steel production or for electricity production. The draft states that: "The Strategy does not cover the extraction of hydrocarbons such as oil and gas, which are covered in the Energy Operations Policy approved in 2006. The Strategy covers EHS&S [Environmental, health, safety and social] issues associated with thermal coal mining, but not the issues of thermal coal and climate change, its role in the energy mix and its contribution to energy security in certain of the Bank's countries of operations. These aspects will continue to be covered by the Energy Operations Policy and its subsequent updates." On first reading, this might appear to imply that the EBRD will not invest in expanding production but rather concentrate on environmental and health and safety improvements. However previous experience, for example with the Kolubara lignite mine in Serbia, shows that the EBRD is happy to finance components of projects which result in significant expansion of production while promoting them as environmental improvements, thus the above statement guarantees nothing.

While the bank's attempt to distinguish between thermal and coking coal might initially seem reasonable given that it is more challenging to replace coking coal than thermal coal, this distinction should be treated with caution, as the bank's support for coking coal mining in Mongolia (see box below) results in coal that is transported for use in China and combusted under environmental and health and safety conditions over which the EBRD has no control at all.

clear here that the bank certainly has the right to decide what it will and will not finance on the basis of its statutes and sustainability standards and the criteria resulting from it. Anyone who administers a fund or bank of any kind has priorities and limits to what they will fund. While it is to be expected that this would have an influence on a country's investment plans, it is hardly the same as dictating. It is simply about making a policy decision and supporting what needs to be supported on the basis of a clear and transparent policy, rather than just lending to a bit of nearly everything.

3. Much has changed in the world since 2006 and the EBRD's energy strategy is looking rather outdated

While the EBRD has generally followed its policy, the document is not fit for the purpose of addressing the challenges which face the transition countries in the field of energy and climate today.

Climate change and the need for decarbonisation have moved up the political agenda. A set of legal documents, known as the Climate and Energy Package, was adopted by the EU in 2008. It gave clear guidance on the direction of development of the energy sectors of EU countries and candidates joining the block. This 2020 perspective addressed in the climate and energy package is not reflected in the EBRD's energy policy, but also, as pointed out in the introduction, it is increasingly recognised, including in the EU Roadmap to a Low Carbon Economy and the EU Energy Roadmap to 2050, that an 80-95 percent reduction in greenhouse gas emissions is needed in the so-called 'developed' countries, with significant reductions needed elsewhere compared to "business as usual".

There is a growing understanding of the implications of these debates on the lending of International Financial Institutions. In October last year, the European Parliament and the European Council legally obliged the European Investment Bank to develop a strategy for the portion of its lending outside of the EU to be covered by an EU guarantee aimed at increasing the percentage of projects promoting the reduction of CO2 emissions and phasing out financing projects detrimental to European Union climate objectives. The strategy should be ready by the end of 2012[33].

Although the EBRD energy policy does recognise that "In the long-term a switch to carbon-free technologies is also needed to address the threat of climate change", it has become clear even to relatively conservative bodies such as the International Energy Agency[34] that change is needed not in the long-term, but right now, and the EBRD's current strategy does not address this sufficiently.

The EU now emphasises almost total decarbonisation of the economy, particularly the energy, residential and industrial sectors, by 2050 as a policy goal, and while the EBRD has made efforts to look at this issue in separate publications such as its 2011 Low Carbon Transition report[35], its energy policy does not explore this goal at all.

It mentions mechanisms such as the Kyoto Protocol, the EU Emissions Trading Scheme (EU ETS) and carbon markets, but does not sufficiently analyse the extent to which these mechanisms are effective or not in bringing about real GHG emissions reductions. In addition, with the expiry of the Kyoto Protocol this year, low carbon prices in the EU ETS and considerable uncertainty about what will happen next, relying heavily on market based climate mitigation mechanisms is very risky.

Biodiversity protection is becoming increasingly urgent. Biodiversity protection has been subject to several international agreements. For example, in 2000, a goal of achieving a 'significant' reduction in biodiversity loss by 2010 was set as one of the Millennium Development Goals, but was not met[36]. In October 2010, participants in the Convention on Biodiversity COP 10 meeting agreed on the so-called Aichi Targets, committing to at least halve and where feasible bring close to zero the rate of loss of natural habitats including forests during the next 10 years[37]. In May 2011, the European Commission adopted a Biodiversity Strategy to 2020 with a headline target of "Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss". By 2050, the goal is that: "European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided[38]." Much of the transition

region has relatively rich biodiversity compared to western Europe, however it is under constant threat from a variety of activities including infrastructure construction, and decision-makers often do not make sufficient effort to protect it. In the energy sector there are a variety of threats to biodiversity but among those the region is least well prepared for are the relatively new threats of climate change and the uncontrolled spread of renewable energy installations at inappropriate sites (see section on renewable energy).

Oil prices have risen significantly. The EBRD energy policy rather quaintly states: "As of May 2006, oil prices had risen to over US$70/bbl and many predict that prices will remain well over US$30/bbl for the foreseeable future." At the time of writing, the dated Brent spot price for oil is USD 122.28[39]. Such price fluctuations should be an excellent incentive at least for non-oil producing countries to hasten their transition to a low-carbon economy and to reduce demand for energy overall. At the same time, as the EBRD points out in its Low Carbon Transition report, if oil producing or coal-dependent countries wait until later to make their transition, they will disadvantage themselves in the development of low-carbon and highly energy efficient technologies and become second-class players in the field.

The development of unconventional natural gas sources has dramatically transformed the US gas market within the last couple of years and continues to transform the electricity generation sector. With news of exploratory drilling in the EBRD region, some decision-makers have high expectations for the technology and for easing dependence on Russian gas imports to countries like Poland, Hungary, Romania and the Baltic states. The new 'fracking' technology is accompanied by numerous controversies – water pollution and excessive use of water, climate impacts, air pollution, noise, soil pollution, impact on seismic activity – leading to the introduction of moratoria on use of this technology in Bulgaria, France and some regions of the United States.

The global financial and economic crisis has challenged assumptions about the quantity of energy needed over the coming years and has made it more essential than ever that investments not only offer good value for money but also create jobs and stimulate local economies. It has been widely recognised[40] that the transition to a low-carbon economy can play an important role in mitigating the impacts of the crisis, by encouraging new technologies, creating new 'green-collar' jobs, opening up new opportunities in fast growing world markets, keeping energy bills for citizens and businesses in check, and reducing Europe's dependence on foreign energy[41]. The recent years of economic uncertainty have also proved that energy sector planning, often driven by corporate interests, has a tendency to overestimate future energy demand. However, as the EBRD's policy was approved before the crisis these aspects were not analysed for the EBRD region in this policy.

The so-called 'nuclear renaissance' is dead. While the EBRD's current energy policy refrains from financing the construction and regular operation of nuclear power stations, concentrating on decommissioning and safety improvements, the policy does make some relatively positive noises about nuclear as a source of power. "The debate on nuclear power has intensified in recent months as a response to both climate change and security of supply issues. Since nuclear power stations emit relatively small amounts of GHG and other pollutants into the atmosphere, the development of nuclear power (which also can be carried out on a large scale while exploiting relatively small areas of the landscape) is being re-evaluated in some countries around the globe, including in the Bank's region, as a potential solution that balances growing demand for energy, security of supply and climate change issues." Both Fukushima and the increasingly costly, late and problem-ridden construction of 4th generation reactors in Flamanville in France and Olkiluoto in Finland should put a stop to any ideas at the EBRD about widening the circle of its activities in relation to nuclear. Despite this, the current policy is, in practice, allowing the bank to consider investments that would allow the operating company to extend the lifetime of nuclear reactors under the name of "safety upgrades", thus contributing to higher nuclear risks in the region[42]. Instead, the EBRD should narrow down its investments into the nuclear sector to safe closure and decommissioning, as well as for the safe and secure management of radioactive waste and spent nuclear fuel, to exclude any basis for the bank to support the further expansion of nuclear energy.

Climate change is already having a significant impact on hydropower generation, for example, in southeast Europe. In late 2011, Serbia's hydropower plants were operating at their lowest level since 1926 due to a prolonged drought, and other countries in the region were seriously affected as well, including of course Albania, which is extremely dependent on hydropower[43]. However

other energy sources are also being affected by changing weather conditions, for example in 2011 a close eye was being kept on nuclear power stations in France to see whether they would need to be temporarily shut down, as they are mainly situated on rivers and use river water for cooling[44].

Last but not least, the EBRD's expansion to the southern and eastern Mediterranean region represents a huge change that has arisen since the bank's last energy policy was written and now needs to be addressed.

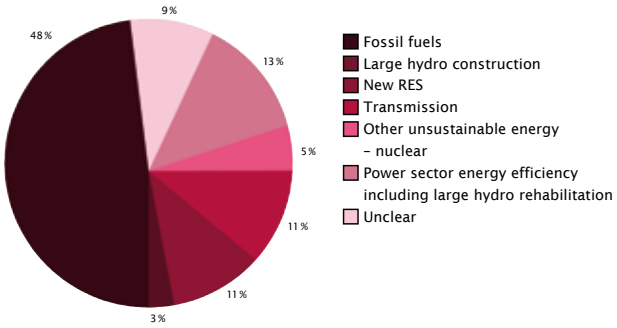
Unsurprisingly, with a policy that even in its time was not sufficiently strategic and specific about what it wanted to achieve and how, and with such dramatic changes taking place in the field of energy during the last few years, as we will see in the latter sections of this paper, too many of the EBRD's investments in the energy sector have supported projects which are not 'future-proofed' in relation to the above issues.

3. How does the EBRD's energy lending match up to today's needs?

3.1. A breakdown of EBRD energy lending 2006-2011

For the purposes of the analysis below we have used the EBRD's own list of signed projects. For 2006-2010 the projects are from the spreadsheet available on the EBRD's website[45], while the 2011 figures have been added manually from additional lists of projects obtained from the bank. Where this analysis differs from the EBRD's own claims about its energy lending is in the categorisation of projects. This is because we take into account both the negative and positive impacts of projects. In our opinion, the EBRD's categorisation tends to overemphasise relative efficiency gains, while not sufficiently taking into account the unwanted effects which its investments may have, such as delaying the transition to a new renewables-based economy or locking in carbon-intensive energy production for several more decades. An explanation of our methodology is provided in Annex 2.

EBRD energy investments 2006-2011 simplified



Between 2006, when the current EBRD energy policy was approved, and 2011, the EBRD lent a total of EUR 6.7 billion for energy and energy-related natural resources projects. A breakdown of this figure in terms of sub-sectors is presented in Annex 3, while the most interesting results are highlighted here. An examination of the figures reveals some good news and some bad news from the point of view of promoting an environmentally sustainable energy system that will be resilient to commodity price fluctuations and able to function in an increasingly changing climate.

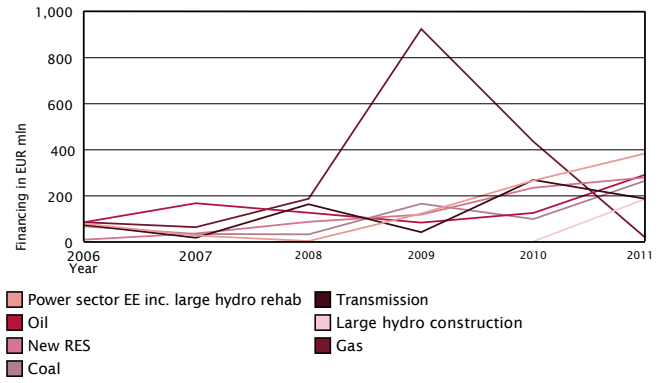
The bad news is that in terms of overall support for different sub-sectors, fossil fuels have been dominant, receiving 48 percent of the financing, or a total of EUR 3.26 billion. A more detailed version of this graph in Annex 3 shows that gas has been the largest single recipient sub-sector, with 26 percent of the financing, or EUR 1.7 billion.

A closer look year on year reveals a number of interesting trends. The graph should be treated with some caution as in the long process of a EBRD project cycle it may be a coincidence that a project is signed in a certain year and not the year before or afterwards. However, with that caveat in mind, investments in fossil fuels have generally increased, at a time when exactly the opposite should be taking place.

EBRD energy lending 2006-2011 simplified

Looking at a more detailed version of the graph (below), it is evident that coal and, to a lesser extent, oil investments have risen. It is also impossible to miss the huge spike in gas lending in 2009, which has since plummeted. It is not exactly clear why the peak took place. The peak coincided with a period of increased interest in the EU of investing in gas generation, storage and transportation, which has then been followed by a period of greater scepticism since the Ukraine-Russia gas dispute of January 2009 disrupted supplies to the EU and highlighted the risks of relying too heavily on gas as a fuel. However, this does not seem to explain the EBRD's lending pattern as much of the 2009 gas lending was not directed at EU countries. The reason for the peak remains unclear.

EBRD energy investments 2006-2011

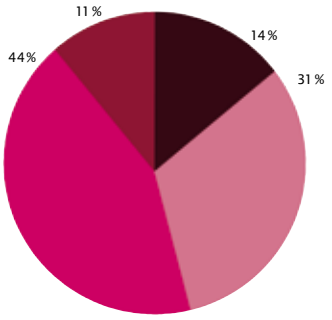


The EBRD needs to develop a coherent position towards financing gas in the coming years. Although gas is undoubtedly less carbon intensive than coal and oil, it is still a fossil fuel that has severe environmental and social impacts on the territory where it is extracted, is ultimately unsustainable, and the existing gas infrastructure will still last for many years to come, making it unwise to build more without carefully considering how much gas technology is already 'locked in' to the energy system, potentially contributing to preventing stringent climate targets from being reached. Gas energy production technologies are also mature and do not need to be supported by public financing institutions, with the exception of shale gas extraction, which is beginning to be explored in the EBRD region. However, given the high risks and controversial nature of this technology, the EBRD should treat this as a no-go area. In any case, financing gas takes up valuable public resources that should be dedicated to leading new markets in new renewables and energy efficiency – especially considering the costs of infrastructure needed for transportation and storage – and ultimately leads us further away from the decarbonisation of the energy sector rather than closer to it.

Another development bringing potential concerns is the series of three new large hydropower plants that the EBRD approved in 2011, having not approved any such similar projects since the 1994 Yenikend project in Azerbaijan as far as we have been able to ascertain. For more on this see the section on Renewable Energy and Sustainability.

On the positive side, however, there is a clear and steady increase in financing for new renewables, as well as for power sector energy efficiency. New renewables lending started from a tiny base of EUR 6.8 million in 2006 and rose to nearly EUR 272.9 million by 2011, while over the same period power sector energy efficiency financing more than quintupled from EUR 73.9 million to EUR 394 million.

EBRD energy generation investment by volume 2006-2011



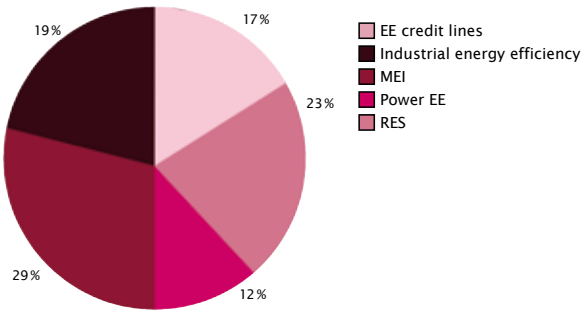
EBRD energy generation investments Figures in EUR mln	
Coal	225.846
Gas	519.313
RES	736.100
Large hydro contruction	187.600

New renewables have accounted for 44 percent of the EBRD's electricity generation investments between 2006-2011. This is a significant improvement given its low starting point of only EUR 6.8 million in 2006. However, it should also be noted that new gas and coal generation together – totalling 45 percent of generation investments – still slightly outweighed new renewables in terms of financing volume.

The Sustainable Energy Initiative

The EBRD classifies some of its investments under its Sustainable Energy Initiative (SEI), as mentioned above. There is some overlap between these projects and the bank's energy sector lending, however the SEI also includes investments into energy efficiency in other sectors, for example in municipal infrastructure (including district heating, which the bank classifies under Municipal and Environmental Infrastructure, not energy), industrial energy efficiency and credit lines for energy efficiency or small-scale renewable energy. In the figures above, we have included only power sector energy efficiency because the calculations are done only for the energy sector, not for all the other SEI sectors. Below we show the SEI investments for each sector, both according to the EBRD's methodology and according to ours.

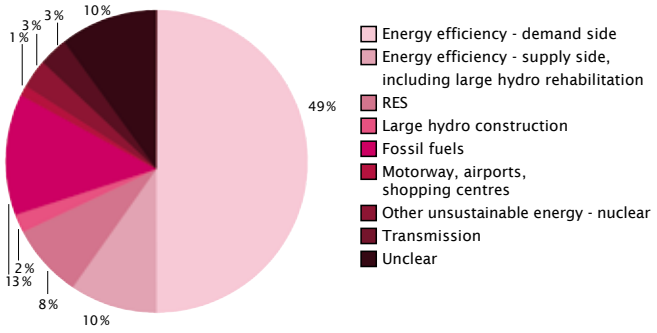
EBRD SEI investment 2006-2011 by EBRD classification



The EBRD's breakdown shows the five kinds of SEI investments – renewable energy plus four different kinds of energy efficiency. According to the EBRD figures from the databases provided, from 2006-2011 the SEI financing totalled EUR 8.7 billion. It is apparent that the largest levels of financing have been provided for power sector energy efficiency and industrial energy efficiency.

Taking a closer look at the project lists, however, we would question some of the projects that have been included in the SEI list for various reasons. For example, some power sector energy efficiency projects allow the combustion of fossil fuels in a more efficient way, but significantly extend the lifetime of a fossil fuel facility or construct a new unit instead of allocating resources to the development of renewable energy (this issue is explored below). In some cases, the publicly available materials give no indication that there will be a clear overall energy efficiency improvement as a result of the project (corporate loan projects for example). Other projects involve new shopping centres or road expansions, claiming congestion decreases from these developments, however the evidence for this is not publicly available and does not match the experience from many other cases. In addition, the construction of three large hydropower plants was included in the SEI list for 2011. While these are certainly less carbon intensive than fossil fuel plants, the projects in question are likely to have unacceptable impacts on biodiversity (mainly water levels in the Paravani case in Georgia) and are all subject to complaints being investigated by the EBRD's Project Complaint Mechanism at the time of writing. For some transmission projects, the entire project amount was assigned as SEI. All these issues were discussed in greater detail in our December 2011 paper on the SEI[46].

EBRD SEI investment 2006-2011 by Bankwatch classification



Overall it is clear that the largest portion of the SEI investments are for demand side energy efficiency. This is very welcome, as demand side energy efficiency is inherently the most efficient kind of energy saving because there is no question about losses during transmission and distribution.

The portion we assigned to supply-side energy efficiency is very low compared to the EBRD's own calculation of its power sector energy efficiency investments, above. In a few cases this is because the investments included demand-side energy efficiency, but more usually it is because the investment seemed to lead to lifetime extensions or capacity increases of fossil fuel energy production, or because attempts were made to include whole projects (eg. transmission lines, corporate financing) where we found it justified only to include a smaller energy efficiency component – or none at all.

Overall we conclude that the inclusion of around 32 percent, or nearly one third, of investments in the SEI is insufficiently substantiated (see the portions of the graph in black and the darker shades of pink). The thirteen percent portion of these which involve fossil fuel energy investments are explored further in the next section.

EBRD SEI investments by year 2006-2011

Looking at the SEI investments year on year, the good news is that the energy efficiency investments have almost quadrupled, from EUR 431.5 million in 2006 to 1.7 billion in 2011. This is really a large step forward that needs to continue. As outlined above, new renewables investments have also risen. It is unfortunate that fossil fuels projects, large hydro and traffic-generating projects muddy an otherwise increasingly optimistic picture concerning the EBRD's energy efficiency and renewables investments.

3.2. CO2 emissions reductions and the need to stop financing fossil fuels

3.2.1. How coal slips in by the back door: relative efficiency gains versus overall and lifetime emissions

According to calculations by the International Energy Agency (IEA), 80 percent of the cumulative CO2 that can be emitted between 2010 and 2035 if the world is to have a chance of keeping the global mean temperature rise below two degrees centigrade is already locked into existing capital stock. For a two-degree scenario, all investments after 2017 will need to be in zero-carbon utilities, unless existing infrastructure is scrapped before the end of its economic lifespan.

It is likely that the IEA study underestimates the existing capital stock lock-in, not taking into account the capital stock whose life will be extended beyond the planned lifetime, as is the case in a number of the EBRD's countries of operation. In such cases, investments that prolong the overall lifetime emissions of a project actually add to the cumulative total annual GHG emissions of the country, thus taking up space in the country's GHG emissions quota.

Such investments limit the already short time for action against climate change. According to the IPCC Fourth Assessment Report: Climate Change 2007[47], "delayed emission reductions lead to investments that lock in more emission-intensive infrastructure and development pathways". This significantly constrains the opportunities to achieve lower stabilisation levels and increases the risk of more severe climate change impacts.

The EBRD often finances projects that it considers as producing energy efficiency gains by lowering the energy required per unit of output, and as we have seen above, usually includes them in its Sustainable Energy Initiative. However, such projects may lead to an increase in the overall lifetime emissions of the project, and thus two different perspectives collide – increased efficiency vs. large-scale absolute emissions reductions.

Two categories of project are a good example of that clash. The first category is refurbishment of an existing industrial or power generation facility or efficiency increases in existing mines, and the second category is the replacement of an obsolete generation power unit with the latest best available technology version (based on the same fuel type).

For the first category it is true that a refurbishment can seriously limit the emissions of various types of organic and toxic particles and thus lead to an overall improvement of air quality in the

area or region where the industrial or power generation facility is located. However, when it leads to an increase in the absolute lifetime GHG emissions an alternative way to look at it is that it prolongs the time before that generation or production technology is replaced by a more environmentally friendly and less polluting one or that demand is reduced so that it does not need to be replaced. Any lengthening of the lifetime of fossil fuel power plants also means that the owner of the facility is continuing to extract profits from passing the external costs onto society at large (at least in countries not covered by the EU ETS. Even in the EU, the costs of emissions other than CO2 are not fully accounted for and with CO2, the uncertainty of the future CO2 price makes it a difficult task).

In order to be included in the EBRD's Sustainable Energy Initiative, refurbished plants must increase electricity efficiency by at least 3 percentage points (e.g. from 30 percent to 33 percent) and reduce specific carbon emissions per kWh generated by at least 10 percent[48] Let us assume a 206 MWe coal-fired unit built in the 1970s or 1980s is refurbished in the EU. Without the refurbishment it would not meet the requirements of the Large Combustion Plant Directive[49] and its operation would therefore be illegal. In such cases, especially in the EU or accession countries, the EBRD's financing of refurbishments that have unambitious requirements and do not go further than the legislation requires have little added environmental value compared to financing coming from a commercial bank.

Further projects aimed at energy efficiency increases are mining projects, including fossil fuel extraction. The EBRD is currently developing a new Mining Strategy, however it has failed to exclude coal mining from its recently published new draft strategy. Currently the bank even includes mining projects in the SEI, when they improve specific energy consumption by at least 10%[52]. However, for example the majority of investments in more efficient coal mining lead to a significant increase of coal extraction and result in overall higher CO2 emissions (when counting both emissions from the mine and from burning the mined coal).

The EBRD is very fond of arguing that countries are going to burn coal anyway as a means of justifying its involvement, however this is unacceptable for three reasons. First, the bank is mandated to finance projects where other sources of financing are not available at reasonable rates, thus if it is financing projects that would happen anyway, then it is competing with commercial banks and contravening its mandate. Second, the fact that something is going to happen anyway is not an excuse for actively contributing to it. And third, whatever is invested in fossil fuels is diverting limited resources away from energy efficiency and new renewables, as well as other worthwhile investments.

One way to tackle this would be for the EBRD to develop a climate policy, which, among other things, could clarify what the bank regards as the quota of GHG emissions "available" to each country

Case study: Turceni lignite power plant rehabilitation, Romania

The rehabilitation of unit 6 in Turceni TPP in Romania[50] for which the EBRD approved a EUR 150 million loan in 2008, will enable it to comply with the EU's Large Combustion Plant Directive[51], regulating emissions of sulphur dioxide, nitrogen oxides and dust from installations burning various types of fuels. Without this intervention the plant would have to be closed by the end of 2015, but with it it will continue polluting for next 15 years with slightly lower CO2 emissions per unit of energy produced. In this way, an EBRD intervention classified as 'sustainable' is radically increasing the lifetime CO2 emissions of the given unit.

Case study: Kolubara lignite mine, Serbia

In July 2011, the EBRD Board of Directors approved a loan worth EUR 80 million for the expansion of Kolubara mine, the largest lignite mine in Serbia. The Bank justifies its involvement in this project with improvements in efficiency of coal extraction and combustion equal to 200 000 tonnes of CO2 saved yearly. However this improvement cannot be a justification for supporting the mining of 87 million tonnes of lignite in the eastern part of Kolubara basin[53], which, when burned, will result in approximately 80 million tonnes of CO2 being emitted, cancelling the efficiency gains many times over and locking Serbia into coal dependency for decades to come.

Case study: Ukhaa Khudag coal deposit, Mongolia

The EBRD has so far made three investments in the massive UHG coal deposit in Mongolia. In 2009, it invested EUR 14 million in an equity investment in Energy Resources; in 2010 it provided a loan for a coal washing plant to the same company for EUR 89.5 million and in the same year it provided a loan of EUR 11.1 million to Leighton Mongolia contract mining. Although the bank has not attempted to classify these investments under its Sustainable Energy Initiative, it is unclear how it can justify being involved at all when the project's Environmental Impact Assessment shows that even from the mining itself there will be direct emissions of 1.4 million tonnes CO2e per annum during the period of peak operation, mainly from diesel consumed by mining equipment and coal combustion for on-site energy production. Even more concerning are the emissions from the end use of the coal, which is mostly exported to China: 22.6 million tonnes of CO2e per annum[54].

of operations, both within and outside of the EU. This could be based on the country's historic share of GHG emissions, the necessary reductions up to 2050 for that country, and the distribution of the allowed emissions between different sectors of the economy, including refurbishments that lead to lifetime extensions. This would require close cooperation with each country of operations/the UNFCCC and would need to take account of updated developments of each of the sectors of the economy rather than just concentrating on any given investment separately. Investments by the EBRD, whether within the scope of SEI or outside, should fit the quotas established in this way. However, it may be much simpler for the EBRD to just phase out investments into high carbon intensity sectors.

Replacement or lifetime extension can be considered as a two-phase process:

- old obsolete technology is coming to the end of its economic or technological life, and thus it needs to be scrapped or closed
- new investment is undertaken that will perform the same functions as the technology/facility that has been scrapped or closed.

However, it is often treated as one process, choosing a new plant at the same site as a default option.

In order to meet the EBRD's criteria for a replacement classified as part of the SEI, it has to be state of the art in efficiency and CCS-ready in line with the requirements of the relevant EU Directives[55]. Additional environmental value added is missing here for plants in the EU or EU accession countries, as they would have to meet these requirements anyway.

What is also missing here though is a real link with climate policy targets. The so-called replacement of a large-scale fossil fuel generation unit from the 70s or 80s with a BAT unit ignores the developments in climate science and the cumulative knowledge indicating the urgency and scale of the challenge posed by climate change. If the new unit does not bring an increase in CO2 emissions, but maintains them on a similar level to the current ones, the EBRD tends to assume that this is good enough, without analysing the unit's impact on long-term climate goals such as the EU 2050 targets.

Case study: Belchatow II, Poland

The main component of this project is the construction of a new state of the art lignite-fired unit in the Belchatow power plant, the largest absolute emitter of CO2 in Europe[56], situated in the central part of Poland. The new 858 MW unit will replace two 370 MW blocks, which are not able to meet the requirements of EU environmental legislation and will have to be closed by the end of 2015[57].

With the construction of a new unit and decommissioning of two units, which have to be closed anyway, CO2 emissions per unit of energy produced will certainly decrease. At the same time the new unit alone will emit yearly 5.5 million tonnes of CO2 for at least 40 years of its planned lifetime going beyond the year 2050, when according to the European Commission the EU energy sector should be decarbonised[58].

Case study: Kolubara B, Serbia

The EBRD is currently considering a EUR 400 million loan for the 750 MW Kolubara B lignite power plant in Serbia, to be built and operated by a project company consisting of Serbia's state-owned EPS and Italy's Edison. The EBRD justifies this with the involvement of the private sector in Serbia's power sector, and with the fact that the plant will provide replacement capacity and not additional capacity. While it is true that existing units in Serbia will have to be closed in order to comply with EU requirements, it is far from clear that replacing them with more lignite units is the answer. Although the CO2 emissions forecasts for the project have not been published yet, it is clear that if the unit operates for the next 40 years, which would be comparable with the projected lifespan of Sostanj unit 6 for example, then the chances for Serbia to reduce emissions by 80-95 percent by 2050, as it will be required to do once in the EU, will be very low.

One has to bear in mind that any investment that will start construction from 2014 (2013 for coal and lignite) onwards in order to drastically reduce emissions needs either to include CCS technology (highly unlikely given that experts project CCS to be commercially viable in the late 2020s at the earliest[67]) or to be renewable given that the time necessary to construct a gas power plant is at least four years and the construction of a coal or lignite power plant takes at least five years.

Thus, in practice, the EBRD does not show enough ambition during the process of climate impact assessment of replacement projects. Such an approach leads to maintaining overall emissions levels and thus undermines the achievement of sustainability and climate targets. Closing the old facility down and either replacing it with industrial-scale sustainable renewable energy investments, or even better working with the local authorities or local communities to reduce energy consumption by investing in demand-side energy efficiency measures and decentralised, locally-owned small-scale renewables would be a more sustainable and climate friendly option than a replacement. Replacements of old plants with more modern versions of the same technology endanger the below two-degree Celsius trajectory and in the near future will go against the recommendation by the IEA that all investments after 2017 should be in zero-carbon utilities, unless existing infrastructure is scrapped before the end of its economic life-span.

From that point of view, any replacement in energy generation after 2013 for coal and 2014 for gas should be turned down by the EBRD on the basis of climate science.

Relative energy efficiency gains do little to limit the climate impact of oil refineries and gas, oil and LNG infrastructure as these types of infrastructure are designed to last decades, thus intrinsically generating demand for fossil fuels by lowering their costs or by the need to recover the investments in such infrastructure. They also hamper efforts to decarbonise the power sector by using up a portion of the resources that are needed to transform the economy into a resource-efficient new renewables-based one and are at risk of ending up as stranded assets.

Thus, the EBRD needs to look much more critically at planned fossil fuel refurbishment and replacement projects and examine whether they are compatible with 50-70 percent global GHG reductions by 2050 and 80-95 percent reductions in the EU. It also needs to tighten up its project selection criteria accordingly, to ensure that it brings real added value with its investments rather than financing projects which may bring plants into compliance with current legislation but may inhibit the transition to an energy efficient new-renewables-based economy.

3.2.2. Measuring the EBRD's climate impact

The EBRD's measurement of its projects' climate impact takes several forms. Since 2003, the bank has applied a greenhouse gas accounting methodology to projects, which will result in increases or decreases of more than 20 ktCO2e per annum. From 2006 onwards, the bank has claimed that its overall investments have been carbon neutral or better. As part of its Sustainable Energy Initiative (SEI) it has begun to calculate the expected CO2 reductions from projects involving an energy efficiency or renewables element. For example, in 2010, according to the bank, signed SEI projects expected to achieve total carbon emission reductions of 11.4 million tonnes of CO2 equivalent per annum once fully implemented.

However, experience has shown some rather questionable results:

- In 2010, the bank did not admit to having any projects that resulted in CO2e increases of more than 20 ktCo2e pa, but claimed to have 27 that brought decreases of more than this amount[68]. It seems unlikely that there were no projects with large increases, considering that among the projects signed in 2010 were Pulkovo airport concession/expansion[69] and investment in oil production in Central Europe[70].
- At the same time, the bank claimed that the new lignite-powered Sostanj thermal power plant Unit 6, approved in 2010 but signed in 2011, would save 1.2 million tonnes of CO2 annually[71]. The bank's counter-intuitive argument that a new lignite-powered unit can result in CO2 reductions

Case study: Sostanj Unit 6, Slovenia

In 2009, the European Council, the highest decision-making body of the EU, called for aggregate developed country emission reductions of at least 80-95 percent by 2050[59]. In the case of Slovenia, a small country that in 1990 emitted 20.2 million tonnes of CO2 per year[60], an 80 percent reduction, if extrapolated for one country, means that by 2050, Slovenia can emit only around four million tonnes of CO2 – from all sectors – annually. A 95 percent reduction means that Slovenia can emit only around one million tonnes of CO2 by 2050.

Yet in 2010, the EBRD approved a EUR 100 million loan for a new unit at the Sostanj lignite-fired power plant in Slovenia. The claims about the apparent emissions reductions that will result from this project vary widely[61]:

- "Unit 6 will utilise state of the art high energy-efficient technology and will lead to significant carbon emissions reduction of around 1.2 million tonnes CO2 p.a. in the long run. This carbon reduction represents around 8% of the total GHG emissions of Slovenia[62]." However, it is not clear whether this relates to 1990 levels or the most recent levels of emissions – there is a difference of nearly a million tonnes of CO2 in these estimates[63].
- In the fourth version of the Investment Plan CO2 emissions for unit six range between three Mt in 2015 and 2.2 Mt in 2054 per year[64]. The latter figure is based on an assumption that the plant will decrease its operations towards the end of its lifetime. However, the environmental permit for the power plant issued by the Slovenian Environment Agency on 16 February 2011 does not restrict the scale of operation, so in theory the plant can work on full load emitting up to 3.4 Mt as described in the Environmental Impact assessment[65].

Even the largest of these possible reductions comes nowhere close to helping Slovenia fulfill its part in the EU's 2050 targets, if extrapolated to the level of individual countries. According to the European Commission if 80-95 percent reductions are to be achieved, the energy sector needs to be almost totally decarbonised. This was confirmed by recent policy documents of the European Commission[66]. Even if the emissions are 2 248 000 tonnes by 2050 – a scenario we find rather unlikely as it would require the plant to voluntarily work at less than full capacity – this single unit would at best emit more than 56 percent of Slovenia's total emission quota. In the worst case, it would emit 300 percent. In both cases it would be virtually impossible for the country to meet the EU targets as even in the best case Slovenia would have to make extremely large emissions reductions in areas such as transport where it is much harder to reduce emissions than in the energy sector.

relies on comparing emissions not to the future planned situation at the plant (ie. that the old blocks would have to be closed anyway) or to a realistic alternative, but to the current situation, which is untenable.

This stems from two main issues – baselines and indirect emissions.

Baselines: The EBRD's guidelines provide little guidance on baseline setting. In the case of emissions from an industrial or thermal power plant upgrade, the EBRD assumes that the emissions from the plant prior to upgrade would be the baseline. This is incorrect, as it needs to be compared against the current lowest GHG options, taking into account criteria such as:

- Technological feasibility and efficiency
- The extent to which the project is compatible with or can be partly replaced by energy efficiency and conservation measures
- Greenhouse gas emissions
- Other environmental impacts: water and land use, pollution
- Social impacts
- Cost

A plant upgrade can only be considered to reduce relative emissions if the upgrade results in reduced GHG gas emissions levels that are equal to the current most environmentally acceptable option.

In addition, existing plants would have had to be closed down anyway, either to meet new more stringent pollution legislation or because of reaching the end of its economic life, so it cannot be assumed that the emissions from a plant form a baseline beyond the end of the plant's life.

In the case of a new plant, the EBRD's guidance states that for a new facility the baseline emissions would be the emissions from operations that are to be displaced due to the construction of the new facility. This is only correct if existing facilities are able to meet demand growth. Otherwise the emissions of the facilities must be compared against the current lowest GHG options.

Indirect Emissions: It appears that the EBRD does account for scope 2 emissions (electricity purchased/consumed for the project) in its methodology. It also appears that in the transport sector scope 3 emissions may be accounted for, as the methodology requires annual fuel use and distance travelled by each vehicle type.

Otherwise the EBRD does not consider other indirect emissions (in particular scope 3 emissions) and writes that "a life-cycle approach is not considered practical or appropriate". Naturally estimating scope 3 emissions is not always straightforward and requires balancing accuracy and completeness. But if an entity is interested in reducing greenhouse gas emissions from its operations it is essential to consider scope 3 emissions as they can be significant.

While it may have been true a few years ago that access to data needed to evaluate scope 3 emissions was not readily available, and there were methodological issues related to double counting of emissions among the various scopes, many of these issues have been resolved. In fact the Greenhouse Gas Protocol released a comprehensive Scope 3 Accounting and Reporting Standard last October. The Standard also provides guidance on identifying the scope 3 emissions that should be accounted for to ensure that major emissions are included, while making the exercise manageable and not too cumbersome.

Scientific studies also indicate that scope 3 emissions are significant[72], with one study suggesting that scope 3 emissions can be as high as 75 percent of an entity's total emissions[73]. A study that estimated scope 1 through 3 emissions of all 491 economic sectors in the United States with the aid of a life cycle analysis mathematical model found that scope 3 emissions comprise at least 75 percent of total emissions from two-thirds of sectors providing goods and services[74]. The 10 percent of sectors with low scope 3 emissions (less than 20 percent scope 3 emissions) are well-known sources such as power generation, cement manufacturing or shipping.

For example, the manufacture of a car only accounts for 15-25 percent of total emissions from a car. The primary source of emissions are those from consumers. But when a car maker looks beyond simply reducing emissions due to the manufacturing of the car and extends it to emissions produced during use by the consumer, the manufacturer can realize that retooling cars to more efficiently burn fossil fuels or having cars[75] run on other sources of energy can lead to much larger climate benefits. This information allows companies to innovate and remodel their business rather than making small incremental changes. Knowledge is power. Therefore the EBRD should also require scope 3 emissions and adopt the framework developed by the Greenhouse Gas Protocol for reporting scope 3 emissions.

An additional issue appears in the coal mining sector: in the guidance on how to calculate greenhouse gas emissions from coal mining only fugitive emissions are accounted for. Emissions from diesel combustion or explosives do not seem to be considered.

An additional problem in measuring the EBRD's CO2 impacts is that the bank does not measure the post-project figures on CO2 emissions, which would be crucial in order to see what was achieved compared to the plan. A further issue is that of financial intermediaries, where the EBRD lends to commercial banks for specific credit lines, sometimes demarcated for energy efficiency and/or renewable energy projects, but very little information is available on who actually borrowed the money and what they have done with it, apart from a small number of selected case studies.

The bank's SEI brochures suggest that it counts new business volume as a major measure of success, rather than actual CO2 emissions, which are not measured. However, this brings three problems:

1) It promotes quantity of new loans signed, not quality or speed of implementation. In this respect, we support the EBRD Evaluation Department's recommendation on Results-Based Management: "Currently the E2C2 team tracks volume at approval. Indications are that disbursements lag Board approvals and some projects disburse (for example, working capital) but then delay the investments. The Bank should report on results achieved as measured by actual investments of EBRD funds. The E2C2 team's targets should be based on results-based accounting, not on new business volume[76]."
2) It misses low or no-cost opportunities, which as a bank the EBRD is perhaps not accustomed to look for, but as a body providing expertise on energy efficiency it could bring benefits to clients by pointing out these opportunities, in some cases as alternatives or partial alternatives to costly projects: "The projects funded range from large budget, high results projects (for example, new, clean power plants) to "low cost/no cost" opportunities, where there are potential carbon reductions for minimal to no investment. For the smaller operations, the EBRD has effectively utilised Financial Intermediaries (FIs) as the delivery vehicle. However, even FIs are incentivised to build a loan around specific investments, thus "no cost" options receive less attention. By adding carbon accounting to the equation, the EBRD could balance the business volume driven incentive with a carbon incentive[77]."
3) It promotes larger projects, which according to the Evaluation Department's review of SEI1, as well as Bankwatch's experience, have been less effective than small SEI projects[78].

Therefore, the incentive system for the SEI should be changed to look at CO2 saved rather than just at new business volume. In order to realise this, it is crucial to ensure that the actual CO2 savings are measured when the projects are completed and that the means of measuring CO2 reductions do not omit factors such as increased capacities and overall emissions, increased lifetime emissions, and induced emissions from factors such as new traffic generated.

Transition indicators

The EBRD's transition indicators have traditionally concentrated on measuring economic aspects of transition such as privatisation, liberalisation, competition etc, but have recently undergone amendments in order to incorporate some aspects of the transition to a low-carbon economy as well, both on the project level and the sectoral level. The incorporation of these new indicators is very welcome, however particularly on the project level some indicators directly related to a low-carbon economy are missing such as reduction in overall CO2 emissions and increase in

new renewables energy generation capacity. It also remains to be seen whether they will make a sufficient impact given that there is still a heavy weighting towards the large number of more traditional economic indicators, some of which are in our opinion too general to provide a picture of whether a certain development has been positive or not (e.g. a privatisation indicator does not offer information on how well the process went and whether there were significant public benefits from it). In addition, there is a need to take account of other environmental and social outcomes in the indicators, as these are not yet present. For Bankwatch's full comments and proposals on the EBRD's transition indicators please see our website[79].

3.2.3. Remaining gaps in the EBRD's energy efficiency investments

As outlined above, various issues have been identified regarding the EBRD's classification of energy efficiency projects in various sectors, as well as the bank's criteria for including projects or parts of projects in its Sustainable Energy Initiative. These have also been expanded on for sectors such as transport, industry and property in a December 2011 Bankwatch paper on the Sustainable Energy Initiative[80]. However, overall the bank's energy efficiency lending is still heading in a very positive direction, almost quadrupling between 2006 and 2011.

There are also signs that the bank further plans to increase its energy efficiency investments, indicated for example in its new draft Municipal and Environmental Infrastructure strategy. All this is good news, as action to improve energy efficiency is still needed on a massive scale in the EBRD region, particularly in the residential sector. This is because of climate change and resource efficiency, but also to reduce energy poverty.

Energy or fuel poverty is defined in many different ways, however in the transition region it mainly relates not to a lack of access to infrastructure per se, but to difficulty in maintaining sufficient warmth at an affordable cost. Although data for much of the EBRD region is lacking, one does not have to search far to find indications that fuel poverty is a serious problem in some of the bank's countries of operation. Eurostat gathers data on the number of households that have an inability to keep their home adequately warm in the EU. The 2010 results for the EU eastern new member states and Croatia were as follows:

Country	Percentage of households unable to keep their home adequately warm
Bulgaria	33.5*
Croatia	8.3
Czech Republic	5.2
Estonia	3.1
Hungary	10.7
Latvia	18.9
Lithuania	25.1
Poland	14.8
Romania	21.0
Slovakia	4.4
Slovenia	4.7

* This figure seems to have halved in one year, raising questions about the quality of the data.
Source: Eurostat: SILC: ilc_mdes01

The Macedonian state statistical office offers even more alarming findings – that in 2010 only 52.6 percent of households reported being able to keep their home adequately warm[81]. For most other countries of the EBRD region, it has not been possible to find data. As these statistics do not focus on cost, it should be borne in mind that there are also additional households connected to district heating systems who can keep their home warm – sometimes stiflingly so – but have no thermostat or meters and have to pay very high bills because of this, and thus under some definitions would qualify as fuel poor.

Accelerating high-quality energy efficiency retrofits of residential buildings presents well-known challenges, but helps to eradicate fuel poverty if undertaken on a large scale. It also brings numerous other benefits.

A 2010 study by the Institute for European Environmental Policy[82] examined the costs and benefits of an expanded housing renovation programme to improve the energy efficiency of the housing stock across the EU (not only the EBRD countries). It assumed that the renovation rate increases gradually from 2011 to 2021 achieving a rate of renovation approximately double the rate that was current when the study was conducted. The annual cost of the scenario for the EU-27 starts at EUR 3.9 billion in 2011 rising to EUR 54 billion by 2021. Assuming a discount rate of 4 percent, the present value (NPV) of the cost of the programme is approximately EUR 250 billion. The expected energy savings from the programme (and related GHG emissions) would by 2022 amount to an annual saving of some 34,000 ktoe, equivalent to around twelve percent of the EU-27 final energy consumption in 2007 or up to fifty percent of the final electricity consumption of the EU-27 in the same year. In terms of energy generation, the energy saving potential is the equivalent of the energy produced by around seventy standard power plants. By 2022, the renovation programme contributes to the avoidance of up to 276 Mt CO2 emissions. These savings continue on an annual basis thereafter.

Based on the study, the GHK consultancy later made an estimate of the annual EU employment impact of investing one billion Euros in improving energy efficiency in the housing stock in the EU and concluded that there would be an addition of around 25 900 direct and indirect jobs, with 15 000 of them being direct[83].

Meanwhile in the Czech Republic, real-life results for job creation have started to be visible from two government energy efficiency schemes. The Green Light for Savings programme is a green investment scheme launched in April 2009, which has been so successful that the total amount available under the programme, about EUR 780 million, was disbursed more than two years ahead of schedule. The 'Panel' scheme, a joint project of the Ministry for Regional Development and the State Housing Development Fund for thermally insulating multi-family prefabricated houses, was launched in 2001, and provided EUR 490 million in interest subsidies and nearly EUR 286 million in bank guarantees by 2010, mobilising nearly EUR 1.92 billion in private investment. The 'Panel' scheme helped to retain or created an average of 6 553 jobs annually in the Czech Republic. In total in its first nine years, the 'Panel' scheme retained or created 58 980 annual job opportunities. Between April 2009 and July 2010 after the launch of the 'Green light to savings' programme, the increased support for thermal insulation generated another 19 059 job opportunities[84].

In Hungary, a great deal of work has been undertaken on energy efficiency by the Center for Climate Change and Sustainable Energy Policy at the Central European University. A 2009 paper by Aleksandra Novikova and Diana Ürge-Vorsatz concludes that efficient lighting, heating and water flow controls are the most cost-effective measures for energy savings and that fuel switch to low carbon heating solutions and improvement of the thermal envelope in old buildings provide the largest potential.

Case Study: Unfulfilled energy efficiency potential in buildings in Kazakhstan

The EBRD's Sustainable Energy Action Plan (SEAP) for Kazakhstan signed in 2007 recognises that the problem with sustainable energy use in the country is not only the power generation sector, but also distribution and end use by customers.

The SEAP says that "A significant proportion of public buildings (e.g. schools and hospitals) and urban housing stock is equipped with inefficient energy systems and requires major refurbishment". It also says that "public services and residential buildings require significant investment". Since 2010, the EBRD has approved various projects on district heating in Kazakhstan[88], but still no investments have been made to improve efficiency of energy use by end users.

For example in Karaganda and also in Astana the usual way to regulate the temperature in houses is to open windows – even in the 5 month-long winter when houses are overheated. There are no regulators on radiators. At the same time in some parts of the city the heating does not meet demand and the local authorities have come to the conclusion that power generation should be increased – which has been supported by the EBRD in the form of loans for the district heating companies. Thermal energy consumption is not metered, so bills are paid according to the heated area. The authorities, with the support of institutions like the EBRD, should assess the capacity for increasing energy efficiency on the demand side before making decisions on increasing generation in district heating. There have been some projects financed by UNDP in Kazakhstan aimed at reduction of GHG emissions and improvement of energy efficiency in the municipal infrastructure. This experience should be taken into account by the EBRD.

The EBRD says that it is willing to provide technical assistance with regard to metering and also to finance private sector energy service companies (ESCOs) which can lead energy saving measures. Here the successful example of UkrEsco in Ukraine is often mentioned. However, no sign of such loans is in the bank's Kazakh portfolio yet.

The application of cost-effective measures would result in a reduction of approximately 29 percent of the total sector baseline CO2 emissions in 2025 (5.1 Mt CO2). Investments of EUR 9.6 billion over 2008-2025 are needed, but would result in energy cost savings of EUR 17.1 billion. The total maximum potential achievable if all investigated measures were to be implemented is around 50 percent of the baseline CO2 emissions in 2025 (8.7 Mt CO2)[85].

A World Bank Group study[86] has also attempted to quantify potential energy savings achievable in Russia through energy efficiency measures, as well as identifying barriers to their implementation and possible means to overcome them. It concluded that, in total, Russia can achieve energy savings equivalent to roughly 300 million tons of oil per year, or 2.1 tons of oil per inhabitant, and that the largest reductions in end-use energy consumption are achievable in residential energy consumption (53.4 mtoe), electricity generation (44.4 mtoe), manufacturing (41.5 mtoe), transport (38.3 mtoe), and heat supply systems (31.2 mtoe). In the residential sector, the sector offering the greatest potential, the technical potential to reduce energy consumption is 53.4 mtoe. Of this technical potential, over 80 percent is achievable through investments that are economically viable and 46 percent is achievable through investments that are financially viable with 2008 domestic fuel prices. Most of the potential energy savings come from improvements in space heating and water heating[87].

Overall, then, while exact data may be missing, there is little doubt that energy efficiency in residential and other buildings needs to be given a higher priority by the EBRD in order to realise the massive potential that exists.

Case study: Residential energy efficiency in Bulgaria: Good idea, but more benefits need to be passed onto customers

The EBRD approved the continuation of the Residential Energy Efficiency Credit Line (REECL-2, www.reecl.org) in the summer of 2011. The credit line offers a grant subsidy ranging from 20-35 percent of the amount of the loan to the borrowers. It is 20 percent for individual households and individual energy saving measures and 30-35 percent for multifamily buildings that apply as homeowners' associations. It is forbidden under the new credit line to do patchwork insulation and renovation in multifamily buildings, which is a positive step forward as the previous phase of the same credit line that was active 2005-2010 had a flat subsidy rate of 20 percent for all applicants and also supported patchwork insulation in spite of its questionable effectiveness.

The credit line is managed by a consultant who acts on behalf of the EBRD and evaluates each application to approve the subsidy part of it. Much of the criticism by applicants and potential applicants towards the first credit line, apart from the patchwork renovation that was stimulated, related to the high interest rates of the banks – some people were even joking that this is a programme for stimulation of the banks and not of energy efficiency. Indeed even under the shortest loan term the bank was able to get nearly half of the 20 percent grant due to various fees. Many people actually preferred to avoid applying under the complex bank requirements and just save 20 percent by asking builders and installers to apply the energy saving measures without declaring VAT.

The banks participating in REECL-2 are Procredit Bank and Raiffeisen Bank[90]. They offer generally the same conditions – minimum 6 months loan term, and around 12 percent annual interest rate. When applying for a credit one is asked to present a labour contract(s), all sorts of documents related to the registration of the homeowners' association if applying as such, and in individual cases a condition that one's salary is transferred to the bank applies.

Genady Kondarev from CEE Bankwatch Network decided to apply for a loan to install solar water heaters on his parents' family house. The loan was for 3112 BGN (roughly 1590 EUR). Just days before signing the contract with Procredit Bank he learned that in case he wants to pay back his credit before the termination of the contract, which would save him money on the interest, he would have to pay a penalty of 500 BGN (approx. 250 EUR). A 20 percent grant calculated from 3112 BGN is 622 BGN. Considering that 30 BGN are paid as a fee to the bank to consider the credit and 78 BGN are paid to release the loan to the customer, paying this fee together with the fine would practically eat up the entire grant part. So in this case the customer is tied to the bank and has to continue paying the loan for at least six months even if s/he could cover the loan in advance. Out of curiosity Genady checked if this loan condition applies with the other bank in the credit line – Raiffeisen. Raiffeisen did not have such a condition. So this is purely the policy of one of the commercial banks that distributes the loan.

In response to a question to Procredit on why it enforces this condition, its representatives explained that this credit line is meant for people who actually need it. Most "needy people" though would not be able to present a proper labour contract or their credit history might not be ideal. In our case the client explained that the grant comes from the closure of nuclear power plants and every Bulgarian citizen should be able to benefit from that as well as the fact that the energy efficiency and small scale renewable energy applications require a lot of upfront investments and this is a deserved incentive no matter if you are rich, middle class or poor. Mr Kondarev was also asked if he could have his deposits blocked to the extent of the amount of the loan as a form of guarantee. The contract was signed.

It is strange how these banks can require such a high percentage of interest if they have their loan covered with an amount of money kept in their banks that covers 100 percent of the risk. In our case covering the interest of this loan for 6 months + all bank fees decreases the grant from 622 BGN to 388 BGN and the 20 percent grant has suddenly come down to less than 12.5 percent. The bank has kept 7.5 percent for 6 months for a risk-free loan, for capital that is provided by the EBRD and does not represent capital that the bank has made much effort to attract. On top of that a large portion of bad loans are actually guaranteed under the credit line under a risk-sharing first loss cover scheme[91], thus reducing the risk even further for the banks.

Energy efficiency investments through financial intermediaries

One of the main ways that the EBRD has undertaken small-scale energy efficiency projects is through financial intermediary credit lines. According to the EBRD's definition, "These are dedicated credit lines to local banks specifically designed to finance small to medium size sustainable energy projects (with upper limit varying from case to case but typically of up to 2.5 million per project). Minimum performance criteria (such as a minimum improvement of 20% in specific energy use) are set for sustainable energy projects, relating to the requirements of the different sector and countries. Alternatively, for smaller projects lists of eligible technologies are developed, again country/sector-specific, based on good standards[89].

In principle, the use of financial intermediaries to reach smaller scale projects may seem like a reasonable approach, especially when well targeted towards specific and measurable policy goals. However, as previously discussed with the EBRD, there is a worrying lack of transparency about where the financing is actually going and whether it achieves the stated goals. The only project so far for which we have obtained any meaningful information – an energy efficiency credit line in Kazakhstan – suggests that our concerns have some justification. In this project, the bank had to decrease its interest rates in 2011 in order to attract clients. Its clients also found the loan period of 36 months rather short. It is not yet clear whether, with the lower interest rates, the credit line has found a greater uptake or not. The EBRD therefore needs to work on better reporting about the success of its financial intermediary projects, both in terms of disbursement of the loans and about the actual work undertaken and its GHG emissions reductions results.

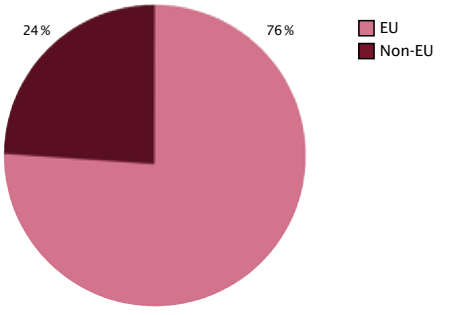
Another issue is the interest rates charged for the loans and whether the benefits are sufficiently passed on to borrowers. This issue is notable for example in the case of the Bulgarian Residential Energy Efficiency Credit Line Facility 2010-2014 (REECL-2), which also benefits from a grant amounting to approximately EUR 14.57 million from the Kozloduy International Decommissioning Support Fund. The grant is being used for technical assistance to support project development and incentive grants paid to the sub-borrowers after verification of completion of each sub-project, as well as funding consultancy services associated with REECL-2.

In summary, the bank is on the right track with its residential energy efficiency investments but needs to make further improvements and expansions to make sure that opportunities are not missed, especially on the demand side. When a supply-side project is offered to the bank for financing, it should also discuss with the sponsor and other relevant stakeholders the potential for demand-side measures which are inherently more efficient than supply side efficiency because they automatically decrease the demand for the whole chain of activities through which energy loss can take place, such as extraction, transportation, generation, transmission and distribution.

The EBRD also needs to do more to ensure that banks do not charge high interest rates for its financial intermediary credit lines, especially where the loans are partly guaranteed by grant funding. Additionally, where grant funding is available to supplement energy efficiency credit lines the EBRD needs to look for ways to ensure that it is not eaten up by high bank fees. If this proves difficult, the EBRD should consider supporting alternative means of lending for energy efficiency such as municipal funds that would be able to offer lower interest rates.

3.3. Renewable energy and sustainability

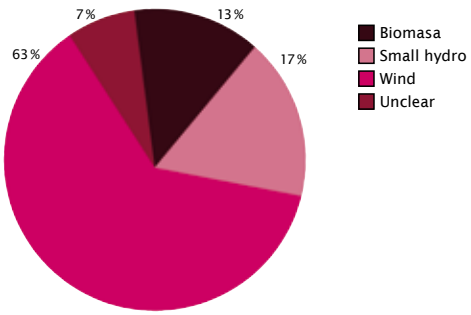
EBRD renewable energy regional distribution 2006-2011



Overview of the lending

The uneven regional distribution of the EBRD's new renewables investments is a concern, however 2011 did see some improvements in this direction. While our calculations 2006-2010 showed that 86 percent of the EBRD's new renewables lending was inside the EU, adding 2011 shows that this figure is down to 76 percent. While it is clear that the EU New Member States

EBRD renewable energy investments 2006-2011



do need support with the development of renewable energy[92], the countries outside the EU need it much equally – if not more – as they are not stimulated by the EU's 20-20-20 targets. The contrast is even more stark if one compares the ratio of renewables lending outside the EU with the EBRD's overall energy lending. 70 percent of the EBRD's energy lending takes place outside of the EU, so its renewable energy lending is even more unevenly spread than it seems at first.

The sub-sectoral distribution of new renewables projects is also very unequal, although also with an improving trend. From 2006-2010, 82 percent of investments were in wind power, while adding 2011 brings this down to 63 percent. Solar does not appear anywhere (with the possible exception of the MTS telecoms project for which we were not able to identify the precise renewable energy used, or under credit lines where the breakdown of end uses is unclear).

In its current energy policy the EBRD described the situation with solar as follows: "In other renewable technologies, principally solar, good potential exists in many countries of the Bank's Region but the markets are largely undeveloped. In the absence of a high level of regulatory and/or grant support it is unlikely the outlook will improve in the near future, although there is scope for solar thermal technologies to penetrate water heating markets, particularly if local manufacturing capacity can be established." If the bank has been working to change this, the results are not yet visible and efforts need to be stepped up. There have been no visible investments either in fitting solar thermal installations or in supporting local manufacturing of solar thermal equipment. In SEI3, the EBRD needs to continue the diversification of its new renewables investments, with a particular emphasis on developing solar projects of various kinds and on ensuring the environmental sustainability of other investments such as small hydro.

Ensuring that renewables are sustainable

Large hydropower (>10 MW) deserves a special mention here. We believe that it is quite reasonable to include the rehabilitation of existing hydropower plants under the Sustainable Energy Initiative, however we categorised large hydropower rehabilitation separately from new renewables as

Case study: Boskov Most HPP, Macedonia

The project Boskov Most HPP involves the construction of a 33 metre high dam and a hydro power plant with a total capacity of 70 MW. It is mostly located in the territory of the Mavrovo National Park, one of the oldest and most valuable protected areas in the country – also a future Natura 2000 site – and home to the endangered Balkan Lynx. The EBRD approved a EUR 65 million loan for the project in November 2011, in spite of the Environmental Impact Assessment having covered the impacts on mammals in just one insufficient page. Additional bio-monitoring is now planned to be undertaken, however no guarantees have been provided that preparatory works will not begin at the same time, thus undermining the whole point.

Case study: Paravani HPP, Georgia

In 2001, the EBRD approved a EUR 38.8 million loan and EUR 3.8 million equity investment in Turkish company Georgian Urban Energy (GUE) for the Paravani HPP, an 86 MW plant using a 14 km derivation tunnel. The main concerns around the project arise from the benefits compared to the considerable costs for the downstream ecosystems and population. The electricity is planned to be exported to Turkey, with the only benefits for Georgia being some minor tax contributions. At the same time, according to the Environmental Impact Assessment 90 percent of the water will be diverted from the Paravani river to the Mtkvari, thus leaving only 10 percent of the usual amount in the Paravani river and endangering its downstream ecosystems, while exposing people in the village of Khertvisi on the Mtkvari river to increased flood risks.

Case study: Ombla HPP, Croatia

Consisting of an underground dam and reservoir situated in a karst cave complex, this 68 MW plant's impacts on the rare subterranean cave fauna at the future Ombla Spring – Vilina Jama Natura 2000 site is largely unclear, as is its impact on the complex and poorly understood karst water system which stretches over the border into neighbouring Bosnia and Herzegovina. The Environmental Impact Assessment study for the project dates from 1999, rendering it illegal under Croatian law according to local civil society groups. While the EBRD did set an additional Natura 2000 impact study as a condition for its financing, it remains unclear why the bank was in such a hurry to approve its EUR 123 million loan for the project in November 2011 before it was proven whether it was in compliance with EU legislation or not. The most likely explanation seems to be political – the contract was signed four days before an election ejected the ruling HDZ party from government.

we are interested to see how the new markets in new renewables technologies are developing, not only the renovation of old hydropower plants. Additionally, large hydropower rehabilitation may have a considerable energy efficiency element, thus we categorised it as power sector energy efficiency.

However, the EBRD also financed the construction of three new hydropower plants in 2011, and classified them as SEI projects. At the time of writing, complaints are pending at the EBRD's project complaint mechanism on all three of these projects, related to the bank's assessment of their sustainability.
As well as finding that the EBRD's financing of individual large hydropower projects often contravenes the bank's own Environmental and Social Policy, we also cannot agree with the general inclusion of new large hydropower plants in the SEI, for the following reasons:

- The EBRD exists to support new markets, of which large hydropower is not one. There is no technology transfer benefit from large hydropower.
- Very few large hydropower plants do not have unacceptable negative impacts for people and the environment.
- Hydropower production is increasingly fluctuating in this era of climate change.
- Given the costs of large hydropower, it is likely to crowd out investments into new renewables.

Our recommendations for hydropower criteria, along with new renewables sustainability criteria, are in Annex 1.

As for other forms of renewable energy, according to the EBRD, its environmental safeguards for renewable energy are based on the relevant EU regulations. EU regulations[93], although a good start, may not be enough to ensure real sustainability in the renewables sector in reality, as the case of Bulgaria shows.

In order to address these concerns, Bankwatch has developed a set of criteria for renewable energy which, if adopted by financing institutions and governments, should help to ensure that renewable energy remains a positive tool in fighting climate change and that its environmental credentials do not further deteriorate as a result of poorly-sited or badly co-ordinated projects. These criteria can be found in Annex 1.

The EBRD can be of assistance in supporting the development of sustainable renewable energy in its countries of operation not only by financing projects directly, but also by insisting on proper planning and participating with technical assistance projects. There has already been some work in this direction, but it should be expanded and improved.

One example is the EBRD's efforts in Kazakhstan. The bank has made welcome steps towards the development of ESCOs in Kazakhstan and launched the KAZSEFF

Case study: Renewable energy in Bulgaria

The experience in Bulgaria is a good example of the insufficiency of using EU law as the only criteria for renewable energy development, for three reasons:
1) problems in enforcement;
2) lack of co-ordination between different regulations leading to holes in implementation;
3) EU law in some cases not going far enough to prevent environmentally harmful investments.

The general problems of enforcement of EU environmental legislation in Bulgaria resulted in a situation in which the sponsors of larger individual projects such as St. Nikola wind farm attempted to implement suitable mitigation measures on the project level, but at the same time many smaller renewable energy projects moved forward in an uncontrolled way. Combined with other pressures, e.g. for tourism development and urban infrastructure, the cumulative effect of RES projects was beyond mitigation, especially in Natura 2000 areas[94]. For example it is practically impossible for the responsible authorities to monitor the implementation of mitigation measures on numerous small hydropower projects on rivers which are practically dry in the summer and where all remaining water is diverted away from the fish passages in order to generate power.

Only after it was abundantly clear that there was a problem, in 2009, the European Commission intervened[95], threatening Bulgaria with an infringement procedure, and only then the government decided to develop a renewable energy strategy, putting a temporary moratorium on renewable energy development. This of course hit investors hard – both responsible and irresponsible ones. Currently a number of conflicting legislative proposals are attempting to address the problem, with the RES strategy still lagging behind as the energy strategy for Bulgaria until 2020 and the law on the use of agricultural lands[96] are pre-empting its development.

Additional concerns are now being raised by energy consumers, both households and industries, which started feeling the weight of their energy bills after the deepening of the economic crisis in the country. For example, the Bulgarian Industrial Chamber called for a RES law that will consider both realistic targets and a diverse mix of renewable sources, in order to deliver accomplishment of RES development goals at optimal costs for consumers. For this some sources like biomass should be given more attention, and the tendency of focusing on wind and solar (the most expensive ones) should be balanced in the future.

The lesson from Bulgaria is that strategic planning must go first, before many RES projects are developed. There is a need for Strategic Impact Assessment and development and enforcement of a set of sustainability criteria. This requires a real departure from the business as usual approach of developing 'green' projects - like any project that impacts on the environment, they need to be accorded with River Basin Plans (complying with the Water Framework Directive), N2000 site management plans or protected areas management plans.

Case Study: The Kazakhstan Sustainable Energy Action Plan

The SEAP in Kazakhstan has contradicting goals. On one hand, it plans a transition to a low carbon economy, but on the other hand it supports fossil-fuelled power generation projects. Six out of eight priority power generation projects in the SEAP are coal-fired power plants.

In its Kazakhstan country strategy, the EBRD plans to "channel financial investment into projects that comply with SEAP and support the transition to a low carbon economy by meeting the following key selection criteria:

- Utilise the best available techniques (BAT) structured to meet EU environmental and energy efficiency performance for new and existing coal-fired power plants with strong industry sponsors
- Target significant efficiency improvements and power supply reliability through rehabilitation of existing plants or construction of new plants"

However, under existing conditions supporting coal in Kazakhstan will smother opportunities for the development of renewable energy sources. Currently no known significant RES projects are being implemented in Kazakhstan, with a potential EBRD-financed project having been cancelled[97]. According to the data of the Ministry for Environmental Protection the share of RES in power generation in the country is only 0.03%, and according to the Ministry of Industry and New Technologies – 0.46 percent (taking into account small HPPs). This share is planned to be increased to 1.5 percent by 2015 and to more than 3 percent by 2020, but even this small increase seems very ambitious if the EBRD continues to support fossil fuels. The volume of coal extraction is expected to increase by 42 percent (123 million tonnes) by 2014 and to 158.35 million tonnes by 2020. The focus in the SEAP is on power generation projects in the north of the country and transmission to energy deficient regions, which involves significant energy losses caused by the huge distances.

The EBRD has already recognised that the energy tariffs in Kazakhstan remain low and some are still not cost reflective, and that they generally do not include environmental costs, so price signals do not provide incentives to use energy efficiently. This is possible because of the relatively cheap and abundant coal resources. The Government has not demonstrated political will in the real development of RES. The electricity and heating tariffs is a sensitive social issue and the Government is interested in keeping control over them. Therefore, the EBRD will face a challenge in changing the situation with the tariffs. RES will never be cost-effective in this situation. That means the bank needs to think about a different approach if it is keen to improve energy efficiency and develop renewable energy sources in Kazakhstan. It should not only provide direct support to true RES, but also cease investments to the coal sector and coal fired power plants.

The EBRD's involvement in the development of the Renewable Energy Law signed in 2009 was welcome, but the law needs to be supplemented by an enhanced legal and regulatory framework and there may be opportunities for technical assistance here. Considering that the SEAP does not give adequate coverage to new renewables and energy efficiency in Kazakhstan, additional action plans on RES and energy efficiency need to be developed, and more importantly implemented, for the country. For example, the National Program on Wind Power Development for 2015 drafted by the Ministry of Energy and Mineral Resources and the UNDP in 2007 has still not been adopted.

However, the method of developing strategic programmes should be changed. The current practice of energy efficiency planning in the Kazakh regions is based on collecting suggestions/projects from stakeholders to be included to the programme/plan. Upon receiving them, the programme designer develops the plan of activities. In parallel, s/he works with the state regional finance departments to consult about the availability of state funds for these activities, and only then does s/he formulate the objectives, tasks and indicators for the programme. Therefore, the goals and objectives of the programme are adjusted to the suggested projects and initiatives and not the other way around. This approach to planning does not allow the authorities to identify the key problems with energy efficiency and find ways to solve them.

- Kazakhstan Sustainable Energy Finance Facility initiative, which is the part of the Sustainable Energy Action Plan (SEAP) signed between the EBRD and the Government of Kazakhstan. Each country should have a Renewable Energy Action Plan and an Energy Efficiency Action plan or a Sustainable Energy Action Plan combining both. However proper public consultations must be organised in the process of preparation of such action plans and the content of the plans must truly concentrate on sustainable energy – new renewables and energy efficiency.

In 2011, the EBRD informed Bankwatch that is participating in financing strategic environmental assessments for renewables development in some countries[98]. This move is welcome, however so far no such processes have been visible within the countries that Bankwatch works in, so we anticipate more efforts to increase the coverage and visibility of these processes.

4. Conclusions and recommendations

Addressing the climate crisis by drastically reducing GHG emissions of 80-95 percent in developed countries and 50-70 percent globally globally is becoming ever more urgent. While the developed countries need to take the lead on this, all of the EBRD's countries of operations need to make significant reductions in emissions compared to business as usual and need to develop their renewable energy and energy efficiency sectors to avoid becoming uncompetitive in these areas.

International bodies such as the IEA are warning that carbon-based energy consumption is already to a large extent locked into existing energy facilities and that building new fossil fuel facilities risks completing this lock-in to an extent that it is impossible to achieve the needed reductions in emissions without technologies such as CCS or geo-engineering. However as CCS and geo-engineering are as yet unproven as well as being questionable in terms of their safety, they should not be relied on and it needs to be made clear, including by bodies such as the EBRD, that there is currently no real and economically viable option except to make the necessary emissions reductions.

However, while the EBRD's current energy policy, approved in 2006, brought a much-needed emphasis on sustainability and laid the ground for increased lending for energy efficiency and renewables, it did not sufficiently address other challenges such as the need to examine long-term requirements for emissions reductions and plan energy investments that would be compatible with these, and it is now in need of urgent revision. Since the Energy Policy was approved, a whole host of other issues have arisen that require a new approach, such as rising oil prices, the bank's expansion to the southern and eastern Mediterranean region, the death of the nuclear renaissance, and the impact of increasingly frequent droughts on hydropower generation.

During the past few years there have been some very welcome developments in the EBRD's energy lending, such as a large increase in its energy efficiency and new renewables investments, and the bank should continue to develop these areas.

However, this good news is spoiled by the bank's continued financing of fossil fuels, which made up almost half (48 percent) of its overall energy lending in the period. In particular, its increasing financing of coal and oil projects is problematic, as each of these received investments equal to the amount of new renewables financed in 2011.

The EBRD is often prone to argue that the countries would burn fossil fuels anyway, as a means of justifying its involvement in such projects. However, the bank – a public institution – must finance projects where other sources of financing are not available at reasonable rates. Thus if it is financing projects that would happen anyway, then it is competing with commercial banks and contravening its mandate. In addition, whatever is invested in fossil fuels is diverting limited resources away from energy efficiency and new renewables, as well as other worthwhile investments. Finally, the idea that something is going to happen anyway is not an excuse for actively contributing to it.

Too often the bank counts fossil fuel projects as energy efficiency projects due to a decrease in emissions per unit of output, without properly taking into account the fact that without the project a different alternative may have been implemented that may have brought significant absolute decreases in emissions. The bank is too accepting of projects that maintain current overall emissions levels, when in fact massive absolute emissions reductions are needed, particularly in countries that are already in the EU or have aspirations of joining.

For other EBRD countries of operation, it is not sufficient to wait for the outcomes of global climate negotiations, which may or may not bring conclusions in several years time. The bank needs to develop a cross-sectoral climate policy, in accordance with IPCC guidance, and assess

the degree to which emissions need to be reduced, and it needs to ensure that its investments follow this trajectory. Given the IEA's warnings regarding carbon lock-in of infrastructure, even before developing a climate policy the bank will need to phase out lending for carbon-intensive sectors of the economy altogether starting with an immediate halt in support for the extraction and combustion of the most carbon intensive-energy source, coal.

Given the problem of carbon lock-in in energy infrastructure, any replacement in energy generation after 2013 for coal and 2014 for gas should be turned down by the EBRD on the basis of climate science.

The second broad issue is that the increase in renewables lending brings with it new challenges that need to be addressed if renewable energy is to retain its integrity as an environmentally acceptable means of energy production. The example of Bulgaria shows that the rapid but poorly planned expansion of renewable energy can be environmentally damaging. The fact that the EBRD once again began to finance large hydropower plants in 2011 after a long time is a concern given the high environmental impact of the three projects approved. The EBRD needs to adopt strict sustainability criteria for renewable energy and to contribute to careful planning of these technologies with national and local authorities.

It is encouraging that the EBRD's financing for energy efficiency has almost quadrupled since 2006 and that the bank has indicated its intentions to undertake more residential energy efficiency projects, which can contribute substantially to emissions reductions as well as reducing energy or fuel poverty as well as creating jobs. Demand-side energy efficiency is always more efficient than supply-side and as such the bank needs to increase its efforts to finance this challenging sector.

Recommendations

Fossil fuels

- The EBRD must clearly exclude coal mining expansion – whether thermal or coking – from its mining strategy, which is currently under review.
- The bank needs to tighten up its definition of energy efficiency in power generation for the purposes of inclusion into the SEI. Efficiency improvements need to be more ambitious and based on climate science calling for a worldwide decrease of CO2 emissions of 50-70 percent by 2050.
- Any replacement in energy generation after 2013 for coal and 2014 for gas should be turned down by the EBRD on the basis of climate science. The bank should undertake to completely phase out investments into expansions of the carbon-intensive energy and transport sub-sectors and limit its investments in the carbon-intensive sectors only to energy efficiency or safety projects that neither increase the lifetime nor increase the capacity of the energy or mining facility.
- As a part of a wider plan to phase out support for fossil fuels the bank needs to adopt a clear policy of not becoming involved in fossil fuel projects in its new region of operations in the southern and eastern Mediterranean.

Renewable energy

- The EBRD needs to adopt more stringent criteria for its renewables projects. Our proposals on what should be regarded as sustainable renewable energy are in Annex 1.
- The bank should continue diversifying its renewables portfolio so that new renewables other than wind are more heavily supported, especially solar.
- The spread of renewables investments across the countries of operation needs to continue to be improved.
- The EBRD should ensure that its investments contribute towards a more balanced and diverse RES mix on the country level, so some RES sources are not favoured excessively, e.g. hydropower or wind projects, particularly in countries that already have an imbalance e.g. Albania, Georgia.
- The EBRD should assist in the development and financing of the following:
    - assessments of the potential for improving energy efficiency for end-users
    - Sustainable Energy Action Plans or Renewable Energy Action Plans+ Energy Efficiency Action Plans.
    - Strategic Environmental Assessments of the above plans
    - creation of structures for investments in public buildings
    - creation of markets for energy efficiency companies

- supporting producers of energy efficiency and RES equipment
- continuing support to ESCOs
- providing technical assistance in the creation of legal and regulatory frameworks for RES
- and EE legislation
- assessments of future energy consumption and development of demand management plans

Energy efficiency

- The EBRD needs to expand its demand-side energy efficiency investments, particularly residential energy efficiency.
- Credit lines need to have reasonable interest rates and it is to be expected that these would be lower if the loan were partly guaranteed.
- The EBRD needs to publish information on the results achieved through its energy efficiency and renewables credit lines, in terms of loans disbursed, CO2 emissions reduced, and projects that were supported.
- Benefits from grant co-financing for the projects must be passed on to the end users, not eaten up by bank fees and high interest rates.
- Where local banks are not willing to offer low interest rates, the EBRD should consider launching municipal funds for energy efficiency investments.

Overall

- The bank needs to prioritise the development of its new Energy Strategy to respond to the huge changes that have taken place in this sector since its current Energy Policy was approved
- The EBRD needs to develop a cross-sectoral climate policy, including the calculation of the trajectory of emissions reductions for its countries of operations that are needed to reach 50-70 percent global emissions reductions by 2050. Its investments must follow this trajectory, taking account of the long lifetime of certain energy infrastructure investments.
- Scope 3 emissions should be included in the EBRD's greenhouse gas accounting methodology, and for replacement or rehabilitations, project emissions should be compared with the most environmentally acceptable baseline option, not with the current emissions level from a plant.
- The EBRD needs to measure the GHG outcomes from its projects after the projects are implemented, not only taking the pre-project estimates and using them to publicise the results of the projects.

Annex 1: Bankwatch's sustainable renewables criteria

All renewables:

- Must be part of a renewable energy development plan that is subject to a Strategic Environmental Assessment Procedure;
- Must be in line with River Basin Plans and protected area management plans;
- Must not be in (planned) Natura2000 sites without a compatibility assessment and a cumulative impact assessment.

1. **Biogas,** By-products from the biogas plants should be used as a fertiliser only after independent certification (for example in case of biogas plants which use wastes from slaughter and meat processing factories as an input material).

2. **Solar**, if siting avoids valuable agricultural land and the potential impacts on wildlife have been addressed.

3. **Wind, if**

- the project is not developed in a protected natural area;
- the project is not developed along a bird migration route;
- the project does not impact bat populations (besides collision and habitat disturbance, the issue of ultrasound emissions is to be dealt with);
- wind farm projects will be based on biodiversity baseline studies and will undergo a environmental impact assessment, as any large industrial project;
- wind projects will have post-commissioning monitoring programmes to ensure there is no negative impact on communities and wildlife;
- the project will use state-of-the-art equipment, in order to minimise noise, vibration and electric and magnetic fields; old, used installations will not receive funding from IFIs;
- off-shore wind projects will be based on a thorough analysis of potential impact on both birds and mammals, including their habitats and feeding areas and sources.

4. **Water,** if the project meets international standards, including the recommendations of the World Commission on Dams and:

- the project is under 10 MW;
- the project does not involve dam, reservoir and resettlement;
- the project does not affect the water flow regime and wildlife circulation;
- the project does not affect biodiversity, nor people's water needs;
- the project does not affect possible investments to rehabilitate and increase efficiency of existing units in the project area;
- the project is not situated in a protected area (included in IUCN category IV);
- small hydro plants (below 10 MW) with derivation channels if the water intake is relatively small and does not negatively affect biodiversity and livelihoods downstream.
- not more than 30-50 percent of rivers in a catchment area are developed with small hydropower (exact boundary to be determined by experts).

5. **Geothermal, if:**

- the project injects the water back to the ground, there are no discharges that could thermally pollute river or lake systems;
- equipment is in place to eliminate harmful emissions of greenhouse gases, hydrogen sulphide and other gases in the thermal water.

6. **Biomass and biofuel, if:**

- the design and layout of plantations promotes the protection, restoration and conservation of natural forests, and does not increase pressures on natural forests or nature protected areas;
- a biomass origin certification system is in place;
- the plantations do not have a negative impact on natural habitats;
- the crops exclude genetically modified organisms;
- native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts;
- the project brings about improvements in soil structure, fertility and biological activity;
- the project does not involve the use of harmful fertilisers and insecticides;
- the project does not bring about adverse impacts on water availability and quality, or impact on river and lake systems for that matter;
- no species is planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems;
- the project does not raise land ownership, use or access issues;
- the project is not a threat to food security on any level (energy plantations drastically reducing/eliminating food crops in the area);
- the project does not involve a net increase in GHG emissions when biogenic emissions from the biomass are also included;
- the biomass resource is of local origin (no imports of biomass from the Global South);
- the project must not create social conflicts;
- biomass production must have a substantial positive energy balance (energy output versus input);
- exploitation of energy biomass from production forests has to be in accordance with rules of sustainable forestry (all lopping and 30 cubic metres per hectare should not be removed from the forest).

Annex 2: Methodology

For the purpose of this analysis, the EBRD's databases of energy and natural resources and Sustainable Energy Initiative projects received from the bank on request as well as the databases of EBRD projects available publicly on the bank's webpage were used to compile Bankwatch's own databases of EBRD energy projects signed between 2006 and 2011 and EBRD SEI projects 2006-2011.

In order to categorise projects sources of information like the Project Summary Documents on the EBRD's website were used, and where these were not sufficient, additional documents like environmental impact assessments and project promoters' Internet pages were consulted.

In the case of the EBRD's investments through financial intermediaries (banks and carbon funds – for private equity funds there is more information available) there is very little publicly available information on what the Bank's money was used for. CEE Bankwatch Network relied on the information provided in the EBRD's energy database and assumed that the information there is accurate with the exception of the EnerCap private equity fund where there is a serious mismatch between the information on the project promoter's website and the information given in the EBRD's database, mostly in terms of the countries where the fund is operating. In this case the project was categorised as 'unclear'.

All projects were categorised according to Bankwatch's own methodology for energy projects which is presented below, thus differences appear between the EBRD's and Bankwatch's categorisation. In addition the EBRD has different categorisations for different purposes, such as various categories in its Sustainable Energy Initiative.

We would like to highlight below the major differences between the EBRD's and Bankwatch's categorisation.

If a project causes increased overall energy use despite an energy efficiency component (according to the EBRD's SEI categorisation), its energy efficiency component is categorised in the same way as the main component (for example "Fossil Fuel"). If an energy efficiency project (according to the EBRD's categorisation) leads to the increased use of fossil fuels through an increase in the capacity of the installation or an extension of its lifetime it is also not categorised as an energy efficiency project.

A similar approach is applied to investments in the extraction of fossil fuels. Energy efficiency projects in the exploration of fossil fuels are classified as fossil fuels if they lead to an increase of he exploration rate per year or extension of the mine (drilling) to new resources or extension of the lifetime of the field or mine.

In addition, any energy efficiency component (according to the EBRD's categorisation) in the construction of a new fossil fuel fired power plant or unit is categorised as fossil fuel. CEE Bankwatch Network does not classify greenfield electricity and heat power plants (co-generation plants) as energy efficiency projects but depending on the energy source used they are classified under renewable energy category (RES) or as fossil fuel projects.

In the case of electricity transmission projects, although they may be classified as energy efficiency projects by the EBRD, Bankwatch categorises them as "Transmission" if they involve the construction of new lines or the extension of existing ones. Only if an energy efficiency component is identified separately under such projects Bankwatch categorises this component as energy efficiency. One additional issue here is transmission projects – so far in Ukraine – which serve nuclear power stations and are seen by Ukrainian civil society groups as back-door support for the Ukrainian government's planned life extensions of old nuclear reactors, which would otherwise be due to be closed in the next few years. These have been categorised separately as 'Other unsustainable energy – nuclear'.

As mentioned in the section on renewable energy, Bankwatch does not classify large hydropower

plants as renewable energy due to their usually serious environmental impacts and sometimes social impacts. However rehabilitation of existing plants is calculated together with power sector energy efficiency investments. Small hydro is counted as renewable energy, but with the caveat that it must comply with our renewable energy criteria in Annex 2.

I. Boundaries of the energy sector in CEE Bankwatch Network research

Investments in energy sector are operations related to:
- Heat and electricity generation: thermal power plants, renewables, large hydro, nuclear power plants, waste incineration with energy recovery (though the latter two were not financed by the EBRD during the period concerned)
- Energy storage, including pumped storage plants
- Fossil fuel extraction
- Electricity transmission lines
- Fossil fuel transportation and storage: pipelines, LNG terminals, gas and oil storage
- Production of fuels: refineries, biofuel refineries, uranium enrichment facilities, biogas production
- Production of equipment for energy generation: wind turbines, solar panels, gas and oil equipment
- Energy efficiency projects in the energy sector
- Rehabilitation and improvements in energy projects
- Equity investments in energy companies
- Projects in research and development in the sectors above.

II. Division of energy projects into categories and subcategories

Categories
- New Renewable Energy Sources (RES), Energy Efficiency (EE), Fossil Fuel (FF), Large Hydro (LH), Other Unsustainable Energy (OUE), Transmission, Unclear

Subcategories
- RES: wind, solar, biomass, biogas, biofuel, geothermal, hydro, unclear
- EE
- FF: gas, oil, coal, LNG
- Large Hydro: construction; upgrade and rehabilitation

Other Unsustainable Energy: Incineration with energy recovery, nuclear-related projects, clearly unsustainable renewables (the EBRD did not finance incineration during the period, nor other non-large-hydro clearly unsustainable renewables).

III. Additional heat or electricity generation

By investments in additional heat and electricity generation we mean all investments in generation of additional (new) capacity, e.g. construction of thermal power plants (TPPs), CHPs, wind turbines, PVs, concentrated solar power, NPPs. Rehabilitations of hydro power plants, TPPs and NPPs are also classified if there is an increase of nominal capacity of the installation.

IV. Bankwatch conditions determining categorisation of projects

Fossil fuels (FF):
Oil, gas, LNG, coal: extraction, storage, transportation infrastructure and combustion, refineries, research. Transmission lines, if they are clearly constructed due to a fossil fuel generation project and will mainly serve to transmit electricity from this project. Environmental and safety improvements in FF projects are classified as FF.

Large hydro construction (LH)
A project is categorised as large hydro construction (LH) if it concerns the construction of hydro power plants of a capacity larger than 10 MW. The aforementioned criteria also refers to PSP (pumped and storage plants).

Transmission
Construction of electricity transmission and distribution projects, unless they are clearly constructed because of a given electricity generation project and will mainly serve to transmit electricity from this project.

If the description of the project clearly differentiates the two components – energy efficiency and construction – each component is categorised separately.

Energy efficiency
By investments in energy efficiency we mean:
- Projects which lead to an increase in the degree in which the installation or process transforms the energy supplied in one form to energy in another form (for example energy from the sun to energy in a form of electricity), provided that this does not lead to an increase of lifetime or capacity of fossil fuel power plants.
- Projects aimed at increasing the ratio of the obtained results, services or goods to the energy input (energy used to obtain those results, services or goods) (examples: industrial energy efficiency - producing more shoes with the same or less energy; buildings - eg. insulation or better lighting)
- Investments in improved measurement of energy use, e.g. electricity meters and associated infrastructure and software.

Other unsustainable Energy

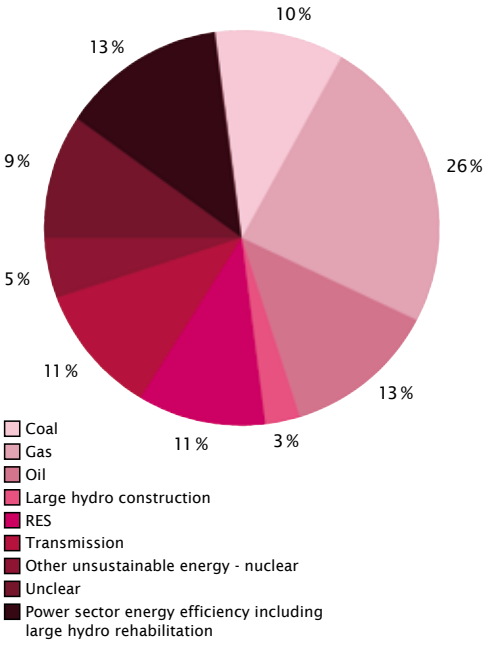
Investments in:
1. Unsustainable renewables
Renewables, which do not meet Bankwatch criteria for sustainable renewables, excluding large hydro construction which is categorised separately.
2. Incineration of waste with energy recovery (not currently applicable to the EBRD)
3. Nuclear
Environmental and safety upgrades leading to lifetime extension or capacity increase
Transmission lines, if they are clearly associated with nuclear reactors and will mainly serve to export electricity from them.

Annex 3: Additional graphs and tables

EBRD energy investments 2006-2011 figures in EUR mln

	Coal	Gas	Oil	Large hydro construction	New RES	Transmission	Power sector EE inc. large hydro rehab	Unclear	Other unsustainable energy – nuclear
2006	60.820	96.597	91.017	0	6.800	71.000	73.900	28.000	0
2007	41.968	60.654	159.098	0	35.000	26.764	25.200	161.662	0
2008	43.750	185.770	117.416	0	80.000	162.495	0	48.558	150.000
2009	165.194	929.169	75.591	0	109.800	45.682	121.100	42.756	0
2010	100.634	435.178	130.790	0	232.600	268.367	259.400	109.900	175.000
2011	262.400	18.600	281.300	187.600	271.900	187.000	394.000	205.500	0
	674.766	1,725.968	855.212	187.600	736.100	761.308	873.600	596.376	325.000
									TOTAL 6,735.930

EBRD energy investment by volume 2006-2011



EBRD energy investments in EUR mln	
Coal	644.766
Gas	1,725.968
Oil	855.212
Large hydro construction	187.600
RES	736.100
Transmission	761.308
Other unsustainable energy - nuclear	325.000
Unclear	596.376
Power sector energy efficiency including large hydro rehabilitation	873.600
	TOTAL 6,735.930

Footnotes

1. Except the construction and operation of nuclear reactors
2. Turkey, where GHG emissions increase by more than 100 percent between the base year and 2009, is an exception in the EBRD region.
3. Energy intensity of given economy is calculated by dividing the amount of energy consumed in the economy by its GDP.
4. Carbon intensity of given economy is calculated by dividing the amount of CO2 emissions from the economy by its GDP.
5. The Low Carbon Transition, The Grantham Research Institute on Climate Change at London School of Economics and the EBRD, April 2011.
6. This goal was recognised by parties to UNFCCC in the Copenhagen Accord as well as in the Durban Platform.
7. This is so far not anywhere near being proven to work and as such should not be taken for granted. Relying on such 'techno-fixes' also appears to diminish the urgency of taking action against climate change now, and provides fodder for those who wish to ignore the problem. An additional issue appears regarding the control and application of such technologies, which may, if controlled by a few, not be applied for the benefit of all of humanity but only for certain groups or regions.
8. 50 percent comes from the European Council Conclusions 29/30 October 2009. Paragraph 7: "The European Council calls upon all Parties to embrace the 2°C objective and to agree to global emission reductions of at least 50%, and aggregate developed country emission reductions of at least 80-95%, as part of such global emission reductions, by 2050 compared to 1990 levels; such objectives should provide both the aspiration and the yardstick to establish mid-term goals, subject to regular scientific review." However more recent scientific work points to the necessity to reduce emissions by 70 percent globally: Meinshausen, M. et al. (2009) Greenhouse-gas emissions targets for limiting global warming to 2° C, Nature, 458, 1158-1162 and Allen, M.R. et al. (2009) Warming caused by cumulative carbon emissions towards the trillionth tonne, Nature, 458, 1163-1166.
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60. UNFCCC: GHG Data 2006 – Highlights from Greenhouse Gas (GHG) Emissions Data for 1990-2004 for Annex 1 parties submitted under the United Nations Framework Convention on Climate Change (UNFCCC), p.16 http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/ghg_booklet_06.pdf
61. It is widely claimed, for example in the EBRD Board Document, and the project Environmental Impact Assessment, that the carbon emission factor of the plant will be reduced from 1.2 to 0.9 tonnes CO2/MWh1. However, for the purposes of this discussion, we can disregard the information on specific emissions or emissions per MWh, as what counts is the total amount of greenhouse gases in the atmosphere, not whether they come from efficient or less efficient coal plants.
62. EBRD Board Document: Slovenia: Šoštanj Thermal Power Plant Project, 20. 07. 2010, p.5 and 11
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64. Amended Investment Plan, Rev. 4, 18 August 2011. Unofficial translation, page 140-1.
65. Environmental Impact Assessment: p.530
66. European Commission: A Roadmap for moving towards a low-carbon economy in 2050, 08 March 2011; European Commission: Energy Roadmap 2050, 15 December 2011.
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research/sustain/sr10ed.pdf
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91. See conditions in the EBRD's Terms of Reference for a managing consultant for the REECL, available on request: "In order to facilitate implementation of more Building-level Sub-projects, the Facility is provided with a Risk-Sharing First Loss Cover Scheme. The PBs are entitled to receive reimbursement of up to 50% of eligible losses on the principal amount of eligible Sub-loans from the proceeds the KIDSF Grant Support ("First Loss Cover").

Eligible losses for reimbursement shall be the net outstanding principal amount of the Sub-loan (i.e. net of actual or expected proceeds from the exercise of any collateral or other future cashflow) that, (i) is considered uncollectible in the reasonable opinion of the PB's management having made due enquiry; (ii) has been written off and/or fully provisioned in accordance with PB's internal policies (which should be consistent with IFRS); and, (iii) has been in arrears for principal repayment for at least [365] days. Details on the First Loss Cover Scheme are provided in Annex 7."

92. With the possible exception of Bulgaria, which opened its doors to unfettered renewables development in often inappropriate locations and now needs to concentrate on improving the sustainability of its renewable energy planning.
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95. Press Release, Commission warns Poland and Bulgaria over nature protection shortcomings; closes German case, 29/10/2010: http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1651&format=HTML
96. Some proposals include moratorium for solar and wind projects on arable land from 1st to 4th category, which is up to half of agricultural lands in the country.
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While the European Bank for Reconstruction and Development has made some steps forward during the last few years, including large increases in lending for energy efficiency and renewable energy, the good news is spoilt by the fact that nearly half of the bank's lending from 2006-2011 still supported fossil fuels. With its new Mining Strategy under revision and its Energy Policy soon to be revised, the bank needs to seize the opportunity now and rapidly phase out fossil fuels from its lending, starting with the most carbon-intensive – coal.

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