

## **EIB energy sector lending policy consultation**

Counter Balance Submission

Counter Balance is a coalition of European environmental and development organisations created in 2007 that looks into EIB financing, with a focus on EIB financing outside of the European Union. We therefore emphasise this area in the submission. However, we also comment on the questions of coal, carbon markets and nuclear lending, given the global effects of these energy sources.

### **EIB energy lending outside of the EU**

#### **Context guiding the EIB's lending outside the EU**

In its energy lending outside of the EU, the EIB as an EU institution is obliged to adhere to the objectives of EU external action set in Article 21 of the Lisbon Treaty. These objectives include support for democracy, the rule of law, human rights and the principles of sustainable economic, social and environmental development of developing countries with the primary aim of eradicating poverty.

The European Parliament and Council agreed on 25 October 2011 to give an EU guarantee for the EIB against losses under loans and loan guarantees for projects outside the Union. The decision contains clear guidance for EIB energy lending in countries outside of the EU that are not covered by the Cotonou Agreement. This legally binding document obliges the EIB to develop a strategy for increasing the percentage of projects promoting the reduction of CO<sub>2</sub> emissions and phasing out financing projects detrimental to the achievement of Union climate objectives (Article 6). The strategy should be ready and public by the end of 2012.

This Decision of the Parliament and the Council gives a clear direction for the EIB lending outside of the EU. The EIB should increase mitigation efforts and phase out detrimental projects, which would lock countries into high-carbon energy infrastructure in its energy lending outside of the EU.

- In a developing market context, where should the balance lie between meeting local energy needs at least cost and reducing global greenhouse gas emissions – the trade-off between affordable energy for all and sustainable energy for all?

Too often under the objective to provide “affordable energy for all” fossil fuels and big dams

projects are promoted and financed by the bank outside EU despite the fact that they do not only have negative environmental and climate impacts but also do not result in providing access to electricity for the local populations.

Examples of such projects include:

1. Bujagali Dam in Uganda, where the European Ombudsman is investigating EIB's failure after the bank was unable to handle satisfactorily complaints about a lack of environmental assessment, a lack of adequate compensation for affected communities and inadequate mitigation measures.<sup>1</sup>
2. Inga Power Rehabilitation in DRC, where important demands of affected communities such as preferential access to jobs for community members or electrification of all affected communities were not fulfilled.<sup>2</sup>
3. Dos Mares in Panama, where affected farmers accused the project promoters of land grabbing and causing environmental damage.<sup>3</sup>
4. Mozambique-South Africa Natural Gas exploration and export to the Republic of South Africa.
5. West African Gas Pipeline in Ghana. Both gas-pipelines are export-oriented and neglect the needs of local population.

Generally the EIB's portfolio of energy funding to African countries has a strong orientation towards the construction and restoration of hydropower dams and the refurbishment and expansion of power grids.

It seems that the EIB is, at the moment, not well equipped to finance clean energy projects in the least developed countries. Hardly any loans in the last years were granted in ACP countries for renewable energy and energy efficiency (excluding large dams) which would provide an alternative option better suited to reaching the poor, especially in rural areas. As it currently operates, we suggest that the scope and extent of EIB lending operations outside the EU neighbouring countries is halted until such time as the Bank can demonstrate consistent fulfilment of its development obligations.

When considering how to fulfil these obligations in the future the European Parliament addressed a potential way forward in its resolution on the World Bank's energy strategy for developing countries, which specifically underlined, that "the best way to resolve potential trade-offs is to examine supply security, health, environmental and economic impacts on local communities and the development and transfer of technology needed both at national and local level in order to guarantee access to sustainable technologies and renewable energy sources."<sup>4</sup>

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<sup>1</sup> Links to the EIB complaint ([www.counterbalance-eib.org/?p=136](http://www.counterbalance-eib.org/?p=136)) and the complaint to the European Ombudsman ([www.counterbalance-eib.org/?p=1455](http://www.counterbalance-eib.org/?p=1455))

<sup>2</sup> [www.internationalrivers.org/resources/field-report-from-inga-drc-3973](http://www.internationalrivers.org/resources/field-report-from-inga-drc-3973), <http://www.internationalrivers.org/resources/inga-1-and-inga-2-dams-3616> and [www.internationalrivers.org/fr/resources/la-banque-mondiale-devrait-s-adresser-le-legs-d-inga-3236](http://www.internationalrivers.org/fr/resources/la-banque-mondiale-devrait-s-adresser-le-legs-d-inga-3236)

<sup>3</sup> [www.counterbalance-eib.org/?p=1281](http://www.counterbalance-eib.org/?p=1281)

<sup>4</sup> European Parliament resolution of 17 February 2011 on the World Bank's energy strategy for developing countries

**Recommendations:**

The EIB energy investments outside of Europe should be limited to the Neighbourhood Region and should focus on poverty eradication and access to energy for local people, targeting local demand, while avoiding the export oriented energy investments or other investments aimed at providing energy for industrial users active in energy intensive sectors like oil, gas, mining and carbon-intensive production. For each project the Bank should seek to establish and make transparent whether there are direct benefits for the local population and in particular it should address the needs of rural populations without electricity access.

It is crucial that the EIB improves its environmental and social impact assessments. Projects done outside the EU should meet both local and EU standards in terms of environmental and social issues. Projects should undergo an adequate appraisal process: including consultation with the local population and country representatives of all levels, transparency (revenues, monitoring and evaluations) and an ex-post evaluation of each of the projects. Project assessments should not be limited to the specific project financed, but should consider impacts related to the connected projects. For instance, pipeline projects should consider impacts of wells; transmission lines should consider impacts of power plants or impact on electricity production and the potential export. Similarly, assessment of new energy facilities should include possible impact of related infrastructure.

For all energy projects outside of the EU, the Bank shall include in the ex-post evaluation performance indicators in relation to development, environmental and human rights aspects of projects funded, which will ensure that the bank performance is in line with the obligations from the Lisbon Treaty article 21.

Investments into projects with state ownership or guarantees should also be assessed as an integral part of the national strategies (and the impacts of these energy strategies). In such a case strategic environmental assessment should be required and taken into account by the Bank. National strategies (or even positions at international negotiations) to combat Climate Change should also be considered.

There are several environmental principles in the Lisbon Treaty that should be of central importance to the energy policy of the bank:

- The integration principle (Article 6); requires that environmental considerations be appropriately weighed in all aspects of the Bank's energy sector lending policy and in all the projects it finances.
- The EIB should aim in its energy policy, in accordance with EU environment policy, for a high level of protection based on the application of the precautionary principle, and the polluter pays principle (Article 95 (3) and Article 174 (2)).
- Any restriction in terms of access to environmental information, public participation in decision-making, and access to justice in environmental matters would go against the definitions and objectives of the Aarhus Convention.
- No ambiguity about the social principles incorporated in the Charter of Fundamental Rights of the European Union (the "Charter") through the energy projects that the Bank finances (in neighbouring countries) should be allowed.

- What should be the role of the EIB in promoting new technology and helping to transfer existing technologies to new markets?

In order to promote an urgent transition toward a low carbon economy, the European Union should concentrate its financial resources on its Member States, particularly at a time of continuing severe economic crisis and the accompanying difficulties for national governments in mobilising additional public resources. Therefore the European Investment Bank should significantly redirect its energy lending towards the European Union, instead of concentrating more and more on lending for large-scale fossil fuel infrastructure in neighbouring countries and sub-Saharan Africa, planned for boosting energy resources export to Europe<sup>5</sup>.

In EU neighbouring countries, the EIB should support the development of renewable energy and energy efficiency through investments in the **production** of those technologies in the countries outside of the EU (rather than just the export of the technologies). The UN report “A Global New Green Deal” says “that while the price of renewable energy has not fallen fast enough to save the world from experiencing dangerous climate change. Nor will it fall rapidly enough, on its own, to do so. But this problem is actually an enormous opportunity in disguise – for it is a problem the world can do something about. By working together to push down the price of renewable energy, as rapidly as possible, we can lift up the prospects of people everywhere, both environmentally and economically”<sup>6</sup>.

#### **Recommendations:**

Therefore, the EIB can ensure unique additionality through supporting renewable energy and energy efficiency investments in neighbouring countries, and ensuring that new technologies are affordable by investing in smaller scale renewable energy investments. Nowadays, there is an uneven distribution of clean energy investments within and outside of the EU, and the direction of investment needs to be significantly changed.

In general, the EIB should follow the EP resolution, that directly advises the World Bank to “focus its energy strategy on making sustainable technology projects commercial and competitive through innovative financing and institutional development programmes, in order to promote a combination of energy efficiency and renewable energy as a viable and attractive option” and “that the development of clean technologies in poor countries is linked to technology transfer, which requires the main barriers to the dissemination of green technologies in developing countries to be identified in order to address climate change, as well as though to be given to new flexibilities with regard to intellectual property rights;”

The major obstacle in the way of developing truly renewable energy and ensuring energy efficiency, both in the immediate neighbourhood as well as in the Global South, is the lack of a suitable legal framework to provide the long-term sustainability of projects and programs. In addition, a lack of awareness regarding EE and RE projects means they appear to be of high risk and new, more efficient technologies seem not fully available. EIB’s financing therefore

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<sup>5</sup> „Beyond our Borders. [A critique of the external dimension of the EU energy policy and its financing mechanisms](http://www.counterbalance-eib.org/wp-content/uploads/2012/04/BEYOND-OUR-BORDERS.pdf)”; <http://www.counterbalance-eib.org/wp-content/uploads/2012/04/BEYOND-OUR-BORDERS.pdf>

<sup>6</sup> A Global Green New Deal for Climate, Energy, and Development, 2009  
[http://sustainabledevelopment.un.org/content/documents/cc\\_global\\_green\\_new\\_deal.pdf](http://sustainabledevelopment.un.org/content/documents/cc_global_green_new_deal.pdf)

needs to be embedded in a wider strategy of EU policies, programmes and instruments in different regions.

Taking into account that renewables also have significant potential to harm environment and communities, any renewable energy project should be based on the comprehensive consultation with local communities on the basis of early information and without any kind of pressure. Projects should also be small in scale and decentralised, based on sustainability criteria to limit the possible negative impacts of renewable energy as described above.

### **EIB's investments into large dams**

Large hydropower often has significant negative impacts on biodiversity, affected communities, and in some cases produce significant greenhouse gas emissions that often cannot be mitigated or compensated. These impacts have been analysed in great detail by the World Commission on Dams (WCD), which produced a set of recommendations that received wide international support. However, too many dams are still built that do not adhere to these standards.

Though it is true that hydroelectric power plants emit very little CO<sub>2</sub> compared to the combustion of fossil fuels, this does not mean that the output of dams is neutral in terms of Greenhouse Gas (GHG) Emissions. In fact, the decomposition of organic compounds in the dams' reservoirs frees large quantities of greenhouse gases that may contribute to global warming far more than CO<sub>2</sub>, such as methane (25 times more powerful than CO<sub>2</sub>) or nitrous oxide (300 times more powerful). Large dams therefore emit nearly 104 million metric tons of methane every year, which make them significant contributors to global warming.

According to an early estimation recognized by the WCD, "the raw emissions from the reservoirs may account for between 1% to 28% of potential global warming through GHG emissions".<sup>7</sup> Moreover, according to the National Brazilian Institute of Spatial Research, the 52,000 large dams in the world contribute to more than 4% of the climate change linked to human activity.<sup>8</sup>

In addition, beyond the recognition of all the GHG emitted from active dams, it is essential to note that a serious evaluation of their climate impact would require a complete analysis of their life cycle, including the emissions linked to their construction (the production of construction materials, especially cement and steel, the use of fossil fuels by machines, deforestation, road construction...), the emissions linked to the modification of land occupancy needed for the dams (deforestation, the conversion of floodplain wetlands to intensive agriculture, the adoption of irrigation on once rain-fed lands, and the increased use of fossil-fuel based artificial fertilizers<sup>9</sup>),

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[http://hqweb.unep.org/dams/WCD/report/WCD%20report\\_Barrages%20et%20D%C3%A9veloppement\\_Chapitre%203.pdf](http://hqweb.unep.org/dams/WCD/report/WCD%20report_Barrages%20et%20D%C3%A9veloppement_Chapitre%203.pdf), p.81

<sup>8</sup> [www.internationalrivers.org/node/1361](http://www.internationalrivers.org/node/1361). For more information, Dirty Hydro: Dams and Greenhouse Gas Emissions : [www.cdm-watch.org/wordpress/wp-content/uploads/2009/07/pub\\_internationalrivers\\_dirtyhydro.pdf](http://www.cdm-watch.org/wordpress/wp-content/uploads/2009/07/pub_internationalrivers_dirtyhydro.pdf)

<sup>9</sup> Mouvement Mondial pour les Forêts Tropicales: Barrages Le combat contre les dinosaures modernes: avril

and the emissions produced during their disassembly.<sup>10</sup>

However, according to the EIB Environmental and Social Practices Handbook, hydroelectric projects above 20 MW cannot be considered as projects with a negative impact on climate change while their net carbon balance is assumed to be positive.<sup>11</sup> Nevertheless, it was agreed upon by the International Association of Small Hydroelectricity and the working group on renewable energy of the International Energy Agency that “small hydroelectricity” have a capacity limit of 10 MW.<sup>12</sup> If we add to this that the calculations of carbon output of large dams are questionable, it is consequently incorrect to state that these hydroelectric projects above 20 MW do not have negative impacts on the climate.

Finally, large dams often cause irreversible impacts to freshwater biodiversity and ecosystem services that are culturally and economically valuable to affected communities living downstream.

### **Recommendation:**

For all these reasons, we believe that the EIB’s investments in the sector of large dams must be redirected toward true renewable energy sources with great urgency.

### **Need for clear definition of Clean Energy**

The issue of large dams shows the need for the EIB to develop a strict definition of renewable energy, limiting the options for support of wind, solar, tidal, thermal and small-scale hydropower and small-scale, non food competing biomass projects.

It is noteworthy that the European Parliament (EP) in its resolution relating to the World Bank Energy Strategy “expresses its concern about the fact that the World Bank considers hydroelectric, biofuel and nuclear energy as clean energy and draws attention to the warnings of the UN Food and Agricultural Organisation about the threat of biofuels to food supply”. These same concerns can be projected on EIB lending for clean energy.

### **EIB investments in biomass and biofuels**

The EIB should stay out of the production of energy crops, as it triggers conflict between food and fuel production and in many cases led to a development which goes at the expense of poor people and the environment.

### **Climate Finance**

The EIB’s role in international climate finance has been on the rise as also witnessed by the increase of the bank’s overseas lending by €2 billion between 2011 and 2013 to be directed towards climate change protection.<sup>13</sup>

Next to loans for specific clean energy projects, the EIB has signed several similar Climate

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2003, p.17-18, see: [www.wrm.org.uy/deforestation/dams/texten.pdf](http://www.wrm.org.uy/deforestation/dams/texten.pdf)

<sup>10</sup> [www.internationalrivers.org/node/571](http://www.internationalrivers.org/node/571)

<sup>11</sup> [www.eib.org/attachments/environmental\\_and\\_social\\_practices\\_handbook.pdf](http://www.eib.org/attachments/environmental_and_social_practices_handbook.pdf), p.15

<sup>12</sup> <http://www.amidelaterre.org/IMG/pdf/AT->

[IR Douze raisons pour exclure les grands barrages des ENR dec 05.pdf](http://www.amidelaterre.org/IMG/pdf/AT-IR_Douze_raisons_pour_exclure_les_grands_barrages_des_ENR_dec_05.pdf), p.5-6

<sup>13</sup> <http://www.euractiv.com/climate-environment/commission-teams-eib-climate-fin-news-495238>

Change Framework Loans with governments or financial intermediaries in other countries as well. The first of such Framework Loan was signed with China in 2007 and up until now the total amount dedicated to CCFLs almost reaches €2 billion, mostly disbursed to intermediaries in emerging countries and for substantial amounts of money per loan (see Figure 1 below).

**Figure 1: EIB Climate Change Framework Loans**

<b>Loan</b>	<b>Country/region</b>	<b>Signature date</b>	<b>Amount in € (x1 million)</b>
Central America CCFL	Central America	15/12/2011	100
Investec Climate Action FL	South Africa	28/10/2011	50
Brazil CC Mitigation FL	Brazil	05/10/2011	500
Crescent Clean Energy Fund	Turkey +	12/09/2011	25
ICICI Bank CCFL	India	25/08/2011	200
China CCFL II	China	03/12/2010	286
Pakistan Renewable Energy FL	Pakistan	24/11/2009	100
Vietnam CCFL	Vietnam	26/05/2009	67
Exim Bank of India FL	India	02/12/2008	100,5
China CCFL	China	28/11/2007	500
<b>Total</b>			<b>1928,5</b>

Source: <http://www.eib.org/projects/loans/sectors/energy.htm>

The EIB can only provide loans and no grants, which means that the EIB cannot respond to the need to make adaptation funding available as grants and not loans, given the historic patterns of causing climate change. Whereas the UNFCCC Copenhagen Accord and Cancun Agreements promised balanced allocation between adaptation and mitigation, the current situation clearly shows an imbalance in the way climate funding is spent.<sup>14</sup> And the EU climate change funding through the EIB further contributes to this imbalance. The EIB is therefore not the right institution to play a role in climate financing outside EU.

### **Financial intermediaries are not the right approach**

As can be noted in the list above, the EIB provides its climate change framework loans (CCFLs) through financial intermediaries, mostly private or public banks. Counter Balance member Both ENDS has investigated one of these CCFLs - the one managed by the Brazilian Development Bank BNDES - in great detail, identifying fundamental flaws in the approach of working with financial intermediaries.

<sup>14</sup> For example only 9 to 25% cent of fast-start climate finance is for adaptation; <http://pubs.iied.org/pdfs/17115IIED.pdf>

Actually BNDES is failing to reach International Finance Institutions (IFI) standards on safeguards, transparency, accountability and public participation, yet it is the major lender for the large scale infrastructure projects in the country. BNDES' recent portfolio includes multibillion loans to controversial mega dams like Belo Monte and Jirau, the controversial nuclear power plant Angra 3, meatpacking companies (which are unsustainable cattle tenure in the Amazon forest, sugarcane plantations in indigenous areas and paper and pulp factories leading to conflicts over land). The unsustainability of proceeding with the growth model promoted by BNDES, which capitalizes on Brazil's natural resources and fails to create high value jobs in the processing industries, is denounced by civil society organisations in Brazil. Moreover, looking at the types of operations BNDES finances, it is immediately clear that in its current set-up the institution is the wrong agent to promote sustainable development of any sort.

For instance, BNDES is a major financial supporter of Petrobras. Moreover, one of the projects BNDES is currently supporting is the highly controversial Belo Monte dam in the Amazon, where adequate environmental impact assessments and mitigation plans are lacking and where Free Prior and Informed Consent of affected Indigenous peoples has not been obtained. This runs against European principles and those of the EIB. Indeed, investing in a CCFL managed by BNDES contributes to freeing up resources for BNDES to continue investing in large dams and polluting industries.

Climate finance lending should not have been envisaged with a financial intermediary with such an unsustainable portfolio as BNDES. The same goes for private equity funds – often associated with increasingly opaque money flows, which are expanding risks such as corruption and the wrong people profiting from funds in which the EIB invested.<sup>15</sup>

## Coal and Carbon markets

- **What role will coal and lignite fired generation have in the EU power system in the medium term, with or without CCS, and how is this consistent with the EU's Climate Action goals and its security of supply objectives?**

Coal-fired power plants are the largest source of anthropogenic greenhouse gas emissions responsible for global warming<sup>16</sup>. According to James Hansen, director of NASA's Goddard Space Institute, ending emissions from coal "is 80% of the solution to the global warming crisis"<sup>17</sup>. Hansen thus advocates a moratorium on new coal-fired power plants and a phase-out of existing coal fleet.

Hansen is not the only scientist expressing concerns with the rate at which coal generation and consumption is expanding. The International Energy Agency's 450 Scenario examines the actions necessary for the global climate to have a reasonable chance of staying within the 2°C rise from pre-industrial levels and finds that almost four-fifths of the CO<sub>2</sub> emissions allowable by

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<sup>15</sup> Emerging Capital Partners Africa Fund II is one example in which EIB invested. The fund invested in Nigerian companies reported to be „fronts“ for James Ibori, an ex-governor of Nigeria's oil rich Delta State, who was found guilty to embezzling millions of dollars of Nigerian public funds in London in April 2012. For more: Counter Balance "Hit and run development" November 2010 and Counter Balance "Gaining control" June 2012

<sup>16</sup> Heffa Schucking, Lydia Kroll, Yann Louvel and Regine Richter, Bankrolling Climate Change, December 2011.

<sup>17</sup> Letter from James Hansen to Nevada Governor Gibbons, April 14, 2008.

2035 are already locked-in by existing power plants, factories, buildings, etc. If action to reduce CO<sub>2</sub> emissions is not taken before 2017, all the allowable CO<sub>2</sub> emissions would be locked-in by energy infrastructure existing at that time. According to the HSBC's Global Research report out of the global carbon budget of 1.000-1.500 Gt CO<sub>2</sub> for the first 50 years of this century, we have already appropriated 420 Gt in the first 11 years alone.<sup>18</sup> That means that no more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2 °C goal, unless carbon capture and storage (CCS) technology is widely deployed.<sup>19</sup> According to the IPCC, the most authoritative source in this 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<sup>20</sup>. 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<sup>21</sup>. 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<sup>22</sup>.

#### **Recommendation:**

It is therefore imperative that the EIB restrains from financing coal power plants new builds as much as retrofits that allow longer lifetime of the plant.

#### **Carbon markets**

The EIB is active on the carbon market, through direct management of six carbon funds and a portfolio of € 589 million,<sup>23</sup> and through a specific fund for the purchase of post 2012 carbon offsets generated from CDM projects aimed at *adding price certainty to investors' Post 2012 emissions portfolio*.<sup>24</sup> Despite this initiative, the price of carbon in Europe reached a historical minimum in December 2012, with permits selling at €0.15 and offset credits at €0.31<sup>25</sup>.

Evaluating the effectiveness of EIB actions to secure carbon price certainty is necessary in the context of the EIB energy review. Also, the effectiveness of EIB carbon investments in reducing global emissions and in securing the implementation of horizontal EU objectives in the areas of sustainability, poverty reduction, environment protection should be evaluated in the context of the EIB energy review.

#### **Recommendation:**

The EIB should stop supporting emission trading schemes with the purpose of justifying new polluting projects - like coal power plants and incinerators - in the EU and in accession countries, for instance through the use of the NER 300 fund. The evidence of the past years shows that emission trading is about trading and not about reducing the emissions from specific facilities that will lock Europe in fossil fuels dependency for the decades to come.

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<sup>18</sup> HSBC Global Research, „How to avoid the climate cliff. Doha climate conference preview”, 24th October 2012.

<sup>19</sup> International Energy Agency, World Energy Outlook 2011, Paris, France: IEA Publications.

<sup>20</sup> Intergovernmental Panel on Climate Change, The fourth assessment report, 2007.

<sup>21</sup> European Commission, A Roadmap for moving to a competitive low carbon economy in 2050, March 2011

<sup>22</sup> International Energy Agency, World Energy Outlook 2011, Paris, France: IEA Publications.

<sup>23</sup> CounterBalance (2011), Banking on Carbon Markets. <http://www.counterbalance-eib.org/?p=1551>

<sup>24</sup> <http://www.eib.org/about/press/2009/2009-096-post-2012-carbon-credit-fund.htm>

<sup>25</sup> Point Carbon, 12 December, 2012, UN offsets crash to 15 cents ahead of EU ban vote, [www.pointcarbon.com/news/1.2098417](http://www.pointcarbon.com/news/1.2098417)

Thus the EIB should not invest in the creation of new market based mechanisms in natural resources areas. If emission trading is about trading, and not reducing emissions, there is no legitimate reason for the EIB to invest in projects outside of the EU that do not contribute to achieving EU external action objectives as expressed in Article 21 of the Treaty.

## Nuclear

*What role do you expect nuclear power to play in the European energy markets?*

Nuclear energy creates a risk of huge catastrophe as the predicament of Fukushima since March 2011 clearly shows (as had the accidents in Chernobyl, 1986, and Three Mile Island, 1979). Besides this risk remains the unsolved problem of nuclear waste that continues to emit radiation for many thousand years, plutonium-239 in used fuel rods for example takes about 100.000 years before it meets the radiation level of natural uranium<sup>26</sup>. While the nuclear industry claims that the use of nuclear power can help solving the threat of climate change, this view is not shared broadly since the “scale of financial, political and institutional commitments required to build new nuclear power plants will undermine support for new technologies (such as renewable generation) and demand reduction measures, which are vital to achieving a low carbon economy” as a paper of Warwick Business School puts it.<sup>27</sup> The authors continue: “The undermining of other technologies means that nuclear power is not complementary to other low carbon technologies. This refutes the argument that all low carbon technologies should, and are able to, be harnessed together so that they can harmoniously work together to reducing carbon dioxide emissions. On the contrary, the government has to make a choice between a nuclear future and one dominated by renewable generation and the more efficient use of energy.” Since each Euro can only be spent once, it should go into real sustainable solutions instead of locking countries into centralised and dangerous energy systems for decades to come.

### **Lack of political and social acceptance**

The political and social acceptance of nuclear power declined remarkably after the Fukushima disaster, which brought even the ambitious Chinese nuclear programme to a six months construction halt and a lowering of its target for the construction of nuclear power plants.<sup>28</sup> Germany, Switzerland and Belgium have decided to phase out nuclear power by 2022, 2030 and 2025 and Italians confirmed in a referendum in June 2011 that they want to stick to their no-nuclear policy. Worldwide polls show that nuclear power gets little public support and that opposition to building new reactors has risen markedly, even in countries that are traditionally pro-nuclear such as France or Russia. BBC News commissioned a global poll published in November 2011 that compared 2005 and 2011 numbers and found that for example in France opposition against building new reactors rose from 66% to 83%, similarly as in Russia where opposition went up from 61% to 83%.<sup>29</sup>

This decline in acceptance impacts on the realisation of planned nuclear power plants (NPP) as the example of the Visaginas NPP project in Lithuania shows. In October 2012 nearly two thirds

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<sup>26</sup> „Achtung Atommüll, bitte nicht ausbuddeln!“ <http://www.zeit.de/wissen/umwelt/2012-08/atommuell-atomsemiotik>

<sup>27</sup> Warwick Business School, 2006: „New Nuclear Power: Implications for a Sustainable Energy System“ Cathrine Mitchell and Bridget Woodman, March 2006, p. 6

<sup>28</sup> New York Times, 25.10.2012 „China Slows Development Of Nuclear Power Plants“

<sup>29</sup> <http://www.bbc.co.uk/news/science-environment-15864806>

of Lithuanians voted against the planned 1350 MW GE-Hitachi advanced boiling water reactor.<sup>30</sup> The referendum was non-binding, but the outcome means a problem either for the project promoters and investors, or for democracy: if Lithuanians have to face the fact that a referendum is only taken into account if the result suits the government, this will severely undermine their trust in the use of referenda, political processes, government and democracy in general. If, on the other hand, the voice of Lithuanians is being taken seriously and the project stopped, the project promoters will have wasted a lot of money.

### **Nuclear power stations are an economic liability**

This latter case shows the economic risks of nuclear projects, since nuclear power is not only the most controversial and dangerous form of energy generation, but also one of the most expensive ones, which makes it an economic liability for the project promoters. This view is shared by rating agencies: Moody's corporate finance for example says "utilities that pursue the new nuclear generation option will be ascribed a higher relative business and operating risk profile, which may pressure credit ratings over the intermediate- to longer term horizon".<sup>31</sup> Standard and Poor's points to the fact that "the scope of nuclear back-end liabilities is somewhat uncertain, with the potential for costs to ultimately escalate beyond those accounted for by the utilities"<sup>32</sup>. The Bulgarian state electricity utility NEK experienced being downgraded by Standard and Poor's due to their involvement in the planned nuclear power station Belene.<sup>33</sup> French nuclear company Areva faced the same due to the severe problems with its news builds in Finland and France.

A paper of Citigroup Global Markets points in the same direction. The document "New Nuclear – The Economics Say No" warns that developers of new nuclear power stations face five substantial risks: planning, construction, power price, operational and decommissioning/waste. Planning is risky because of the controversial nature of nuclear power that results in fierce opposition against plans to build NPP, which extends planning procedures and times. Decommissioning/waste is a risk because the price of decommissioning and waste is difficult to estimate as there exists very little experience with decommissioning and waste disposal, resulting in the fact that estimates "of these costs can jump around by many £ bn's depending on what discount rates are used, etc."<sup>34</sup> The remaining three risks are called "corporate killers", that "could each bring even the largest utility company to its knees financially"<sup>35</sup>. In Europe two recent nuclear projects illustrate the construction risk: Olkiluoto 3 in Finland and Flamanville in France. Beginning of December 2012 the French electricity utility EDF raised the estimated cost of the nuclear reactor in Flamanville to € 8,5 billion, planning to start operation in 2016. The initial estimates in 2007 were of € 3,3 billion costs and a 2012 startup.<sup>36</sup> The construction site of the NPP Olkiluoto 3 in Finland faces similar problems: costs went up from planned € 3 Euros to € 8 billion (Finnish newspapers even report € 8,5 billion pure costs without profit for Areva<sup>37</sup>) and while the initial plans were to start operation in 2009, project promoter TVO announced in

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<sup>30</sup> <http://www.boston.com/news/world/europe/2012/10/14/lithuanians-reject-new-nuclear-plant-project/NgQ20JagUBz0j6bYq0fuYI/story.html>

<sup>31</sup> Moody's Corporate Finance „New Nuclear Generating Capacity: Potential Credit Implications for U.S. Investor Owned Utilities“ May 2008, p.2

<sup>32</sup> Standard and Poor's „Nuclear Power Gains Political Momentum in Europe but Credit Concerns Cloud the horizon“ March 2007 quoted in Greenpeace „The Financial Risks of Nuclear Power“

<sup>33</sup> [http://sofiaecho.com/2010/10/05/971643\\_sp-downgrades-bulgarian-state-utility-nek-rating-over-belene-uke](http://sofiaecho.com/2010/10/05/971643_sp-downgrades-bulgarian-state-utility-nek-rating-over-belene-uke)

<sup>34</sup> Citigroup Global Markets "New Nuclear – The Economics Say No" November 2009, p.3

<sup>35</sup> ibd. p.1

<sup>36</sup> <http://www.businessweek.com/news/2012-12-04/edf-falls-in-paris-on-rising-costs-for-normandy-nuclear-reactor>

<sup>37</sup>

December 2012 that operation may start in 2015.<sup>38</sup> The last two remaining risks are the “power price”, which is unlikely to be high enough to cover the enormous building costs, and the “operational” which is related to the high fixed cost base of nuclear power plants, making them very vulnerable to shortfalls in output when operational problems occur and the plant has to be shut down for some time.

**Recommendation:**

Given the high risks and environmental problems, the high price, the economic liability and the lack of political and social acceptance of nuclear power, we do not see a role for this energy in European energy markets. The EIB should therefore not play a role in financing nuclear power. This includes the beginning of the nuclear cycle: the mining of uranium and production of nuclear fuel, which causes severe environmental and health damage in the countries of mining and production. Beyond the obvious environmental risks we think that an institution like the EIB that is so dependent on its AAA rating should not get involved in a sector that is so financially risky as nuclear energy.

*As nuclear power stations are aging, should their life be extended (where possible) or should they be replaced with other generation sources?*

The Heinrich Böll Foundation published in September 2010 a report “Myths about nuclear energy”. This looks (among other things) into the question of what happens to reactors growing old. The author points out that the body of knowledge of materials technology and metallurgy shows that “high temperatures, enormous mechanical stress, a chemically aggressive environment and the continual bombardment of neutrons from the nuclear fission simultaneously affect the security relevant construction elements which are difficult to reach. Again and again in recent decades there have been incidents of corrosion, radiation damage and crack formations on the surfaces and on the welded joints of central components – even on the inside. Serious accidents have often been avoided because the defects were discovered just in time either by the monitoring systems or through routine checks during periods of shut down and inspection. Yet again and again the timely discovery of serious damage can simply be put down to chance.”<sup>39</sup> The author gives examples of potentially catastrophic situations in the past: a burst pipe in the residual heat removal system at Civaux 1 in France, damage to nuclear fuel elements never seen before at Cattenom Block 3 in France, a serious hydrogen explosion in a pipe at Brunsbüttel in Germany, massive corrosion of the reactor vessel in Davis-Besse in the US, overheating of 30 highly radioactive nuclear fuel elements in the neutralisation pond in Paks, Hungary, a transformer fire in Krümmel in Germany.

**Recommendation:**

This shows that lifetime extension of ageing nuclear stations irresponsibly increases the risk of severe accidents. Lifetime extension promoters might argue that extensions should go with serious safety checks and potential upgrades. However, this would take away huge amounts of money from better and more sustainable solutions, therefore we strongly argue against lifetime extension and do not see any role for the EIB in financing this.

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<sup>38</sup> <http://www.foxbusiness.com/news/2012/12/13/areva-again-raises-estimate-cost-olkiluoto-reactor/>  
<sup>39</sup> Gerd Rosenkranz “Myths about nuclear energy”, September 2010, p.12