Reviewing the European Investment Bank's carbon footprint methodology

December 2016

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It is encouraging that the European Investment Bank (EIB), which developed its methodology for calculating greenhouse gas emissions, published in 2012, is now considering its further review.

It is crucial for the Bank to periodically review the methodology, to be in line with the latest scientific developments regarding emissions calculations from different sectors in order to properly track the impacts of financed projects. For the EIB, the EU's financial arm, it is a matter of policy compliance to prevent the lock-in of carbon intensive technologies, if Europe is going to meet its commitments made under the Paris Agreement to pursue efforts to limit temperature rise to 1.5°C.

Sound methodology helps to reliably calculate greenhouse gas emissions which are further taken into account in the bank's economic assessment when it calculates the cost of projects' environmental externalities.

In 2012, when the bank published the methodology, it also explained that that the results of calculations would be taken into account during the development of sectoral strategies. However, it did not make a clear commitment on how it would use the results on the project level. It also outlined concerns about adopting a policy of not financing projects with GHG emissions increases, on the grounds that in developing countries certain projects may be badly needed. Currently the bank uses the carbon footprint methodology on a project level in order to put a price on project-related carbon and to screen out fossil fuel power plants against its Emission Performance Standard of 550 gCO2/kWh. Additionally, the bank provides reports on some individual projects' absolute and relative carbon emissions while, in its annual Sustainability Report, it provides aggregated information on the entire portfolio of relative and absolute carbon emissions.

Since 2012, the bank has reviewed only one sectoral strategy – the Energy Sector Strategy – and adopted its first Climate Strategy. However, despite previous commitments, there is no evidence whether the bank took into account the result of carbon calculations during the development of these strategies.

In 2012, CEE Bankwatch Network provided comments on the EIB's Draft Greenhouse Gas Accounting Methodology which primarily focused on how baselines are set for calculating relative carbon emission and for the treatment of scope 3 emissions. This briefing presents six case studies which show the application of the methodology for gas projects, in particular examining the issues of baselines and scope 3 emissions. The objective of the case studies is to analyze whether our initial comments are still relevant in practice.

The baseline issue

In order to calculate whether or not a project contributes to overall emissions reduction, the bank applies a baseline against which it calculates project relative emissions. The bank uses the most likely alternative option for the financed projects. The major criticism of this solution was that it assesses new projects against business-as-usual, usually the technology of the past, instead of the best socially, environmentally and economically feasible and acceptable option or the best option in terms of reaching the 2030 and 2050 emissions reduction targets. In some cases, the existing technology could not even continue to operate for the lifetime of the project. For example, power plants not complying with the Industrial Emissions Directive and forthcoming Best Available Techniques standards for large combustion plants will have to be closed or retrofitted and could not form a baseline for the lifetime of a power plant project.

The issue of Scope 3 emissions

Whereas scope 1 emissions are direct GHG emissions which physically occur from sources that are operated by the project within the project boundary, and scope 2 accounts for GHG emissions from the generation of electricity that is consumed by the project, thus the indirect emissions which are produced outside the project boundary, scope 3 emissions are a consequence of the activities of the project but that occur from sources not operated by the project itself. However, the EIB does not currently account for these scope 3 emissions in the majority of cases. It justifies this decision by considering that their quantification is not technically feasible, that they are a limited contributor to total emissions and that there is a risk of double counting from scope 3 emissions when other entities from the same value chain could account for emissions from the same source/s.

Thus, in gas extraction, gas pipeline and LNG terminal projects, no emissions are counted from the later combustion of the gas in homes, industry or power stations if they contribute to maintaining or increasing current levels of emissions. For LNG and power station projects, the emissions from extraction and transportation of gas are not taken into account either if they contribute to maintaining or increasing current levels of emissions. However, in the case of the GATE LNG terminal expansion in the Netherlands for instance, the calculation does take account of LNG combustion in ships, and in the ETAP extraction and pipeline project, the calculation does take account of later combustion in power plants. In other words, when GHG benefits are perceived, Scope 3 calculations are included, but when they would rather worsen the emissions picture of the project, they are not included. This approach is hardly justifiable.

The summary of case studies and recommendations

The EIB's strategy towards supporting gas projects is based on the arguments that:

- Gas is expected to help the EU achieve its climate policy objectives and hence is considered critical for the transition of the EU energy system towards a low-carbon economy.
- Ensuring security of supply from various sources at a time of decreasing EU internal gas production is another argument driving the bank's lending policy for gas infrastructure in Europe.

However, based on the case studies on six gas projects (2 LNG terminals, 2 gas extraction projects, a combined heat and power plant and a gas transmission and distribution network), we have drawn up the following recommendations:

Recommendation 1

The bank should phase out all support to projects that promote production and consumption of fossil fuels given that such an approach would best meet the bank's own commitment to pursue efforts to limit global temperature rise as agreed in the Paris Agreement.

At the moment, the European Union is officially committed "to reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050 in the context of necessary reductions by developed countries as a group".[1] In its Roadmap for moving to a competitive low-carbon economy in 2050, the European Commission anticipated what the energy sector should look like in 2050 to reach that objective: while renewable energy sources and energy efficiency are described as the leading options allowing the EU to achieve this goal, a drastic reduction of primary energy consumption ("30% below 2005 levels") is also expected, at the same time as "imports of oil and gas would decline by half compared to today".[2] With the Paris Agreement in force, this ambition however now has to be even higher.

Yet, such a decrease can only happen with a long-term energy strategy organising a smooth but fast phase-out from fossil fuel consumption. Further delaying this transition away from fossil fuels would not only create a serious risk of missing the EU's commitments made under the Paris Agreement to pursue efforts to limit temperature rise to 1.5°C but would also very likely be at the origin of many stranded assets, built with significant public financial support, at the expense of sustainable and low-carbon solutions. In other words, if new fossil fuel infrastructures (gas in particular) continue to find financial support (especially from public banks), it would lock Europe in a high carbon and fossil fuel future for many decades.

Gas infrastructure indeed has a significant lifespan: Pipelines, LNG terminals and power plants are "a long-term business" which can last at least 40 years according to the industry.[34] But reality shows that they can last even longer. The oldest LNG terminals in Europe still in operation – Barcelona terminal (1969), the Panigaglia (La Spezia) (1971) and Fos Tonkin in France (1972)[5] – were built nearly 50 years ago, and nothing indicates they will be shut down anytime soon. Mega-pipeline projects are usually designed to last for at least 50 years.[6] In March 2016, Azerbaijan's Energy Minister Natig Aliyev confirmed for instance that the Southern Gas Corridor is "projected to remain active for 50-60 years".[7]

With the time it takes to build this infrastructure (on average from five to eight years[8,9,10]), it means that new fossil fuels infrastructure decided today would, therefore, be built only by 2020 at best (2025 more reasonably) and would be planned for being used until at least 2070, way after 2050 when Europe is (at the latest) expected to have almost completely decarbonised its economy and therefore phased out its reliance on fossil fuels.

This is why the bank should therefore develop and present, as a matter of urgency, a plan to phase out lending for any fossil fuel projects. Only as a short-term term solution the bank should revise and improve the existing carbon footprint assessment methodology.

Recommendation 2

The bank should review its emission methodology and update existing information to be in line with the most recent reliable scientific findings on climate. In particular, it should properly account for average amounts of natural gas leakages and their climate impacts.

First, the bank should update the global warming potential (GWP) indicator it uses for methane, from the existing 21 to 86, in line with the latest IPCC report 5.[11]

Use of the GWP 21 is outdated for two important reasons:

- It corresponds to an obsolete figure from the 1996 IPCC Assessment Report;
- It is based on an inappropriate 100-year timescale while methane has an atmospheric lifetime of only about 10-12 years.[12] Using the shorter 20-year timescale suggested by the IPCC therefore is much more relevant given that the world is already on track for 2.9 to 3.4°C degrees[13] warming and risks breaching the 1.5 and 2 degrees limits within the next 20 years.[14] This should lead to the use of an 86 GWP figure (see table 1), which is four times higher than what the EIB is currently using, with all the implications it can have in terms of climate impacts and Emission Performance Standards.

	20 year	100 year
IPPC 1996	56	21
IPPC 2007	72	25
IPPC 2013	86	34

Table: IPCC's assessments of methane global warming potential (GWP)

Secondly, recent solid scientific findings have showed that the methane emissions of natural gas total lifecycle (from extraction to consumption) are much higher than was thought for a long time, including by the EIB.[15] For example, the case study on the EIB loan for the GATE LNG Terminal Expansion cites a new study on methane emissions from LNG bunkering of vessels which shows routine bunkering leakages can have an important impact on overall GHG emissions. More generally, scientific knowledge on methane emissions has progressed rapidly over the past six years, driven in part by the precipitous rise of shale gas development in North America. For conventional fossil gas, scientific community commonly agrees that between 3.6% and 5.4% of the lifetime production of gas wells is emitted to the atmosphere, including both leaking and venting at the well site and during storage & delivery to consumers.[16] For US shale gas – which could soon represent an important share of European gas imports, according to the EU strategy for LNG and gas storage[17] – information is still being gathered, but emissions are likely 3-fold greater, or 12% of lifetime production, according to recent peer-reviewed scientific research. Satellite methane emission rates in the major US shale gas production regions – Eagle Ford (Texas), Marcellus (Pennsylvania) and Bakken (North Dakota) – have reached 9.5% of the total methane production and are by far the main reason explaining the recent rise of global emissions of methane.[18] It must also be noted that these observations were only made for upstream emissions and don't fully account for downstream emissions during storage and delivery of gas to customers, which may on average add another 2.5% of methane emissions.[19]

As a consequence, it is not surprising to see peer-reviewed studies (including a very recent one published in Nature) conclude that total fossil fuel methane emissions are 60 to 110% greater than current estimates.[20]

The bank should therefore urgently review its emission methodology and update existing information in line with the recent climate science developments as the results of reliable scientific research.

Recommendation 3

In order to carry out well-informed decision-making and prevent underestimation of projects' climate impact, the bank should take into account all direct and indirect emissions related to projects.

In all the analyzed cases, the bank's methodology limited the scope of emissions calculated, to the extent possible, to the direct emissions, except in the situations when calculation of other indirect emissions was necessary to show a relative emissions reduction. For example, for the ENI EDISON Security of Supply - gas extraction project in Italy, the calculation took into account the fuel gas burned for operations, but ignored the fugitive emissions, the gas consumption for compression and for transportation, and the gas combustion. Meanwhile, for the similar ETAP project in Tunisia, Scope 3 emissions for burning the gas for electricity production were calculated. It is hard to justify such inconsistency in the bank's approach other than the fact that calculating Scope 3 emissions enabled the Bank to show the emissions reductions which would not be captured without the supported projects. However it is hardly fair to show only reductions and not increases.

In cases of EIB loans for LNG terminals, the calculations were also very limited in terms of scope and they only took into account direct emissions. The bank's methodology limited the emissions calculation to the financed component of the gas life-cycle, ignoring the fact that before gas reaches respective LNG terminals it has to be extracted, liquefied, transported, regasified, transported again before being eventually burned. In order to carry out well-informed decision-making and prevent underestimation of projects' climate impacts, the bank should take into account all emissions caused by projects financed by the Bank. Double counting is not an important criteria, except for country-level reporting for the UNFCCC or EU climate targets.

Recommendation 4

The EIB could take a more holistic view and weigh a number of factors against each other to find a baseline that encapsulates best practices and provides real added policy value to the bank's financing. The bank should develop criteria to identify the best option socially, environmentally and economically, rather than the business-as-usual baseline option.

In the analyzed cases, the methodology used a baseline against which relative emissions were calculated based on an assumption that future behaviours and practices would simply replicate past behaviours and practices. For power and heat supply projects, neither existing renewable technology potential nor energy efficiency potential were calculated into the baseline. Such an approach to baseline setting may result in lock-in of practices which are somewhat better than the existing ones but that could be quickly superseded by superior and less climate-damaging ones. The case study on the LNG terminal in Lithuania for gas to be used mainly for heating and electricity generation is a good example of a missed opportunity for integrating the energy efficiency first principle into project decision-making by prioritizing supply over untapped significant energy efficiency potential. Could retrofitting of buildings make a contribution to lowering emissions in an alternative baseline? The baseline should not just be the status quo, but rather the most environmentally acceptable and economically feasible option. It is clear that using the most environmentally acceptable alternative is not the approach that the bank has foreseen in its draft on GHG accounting methodology, however we believe that the massive challenge of addressing climate change requires a thorough examination of what may be possible, combined with going the extra mile to achieve it.

Greenhouse gas emissions from selected EIB gas projects

Case study 1. ENI EDISON Security of Supply - gas extraction project, Italy, loans for EUR 1.3 billion total signed 2013-2015[21]

The EIB's description of the project states that it involves the expansion of Italian gas production mainly offshore, but with small onshore elements. The 26 sub-projects' activities cover the drilling of sidetrack and workover wells[22]; infill drilling in already producing fields; and the installation of a number of new platforms. The majority of the investment will be in the Adriatic Sea; one is in the Mediterranean, and a few components will be in the Ionian Sea and onshore. The bank states that many of the schemes consist of the modification or extension of existing offshore facilities in order to maximise the recovery of gas. However it can be assumed that there are 11 new greenfield sub-projects as this is the number of environmental impact assessments (EIAs) that need to be carried out for the project components. There are several surprising aspects to the EIB's environmental and climate assessment of the project:

- The project was categorised as B, with low to moderate social and environmental risk, despite the number of EIAs needing to be carried out.
- No Strategic Environmental Assessment was recorded as having been carried out for any plan or programme associated with the project.
- Climate risk is classified as low.

The absolute carbon footprint of the project is estimated at 216 ktCO2e/annum while the relative footprint is estimated as -24 ktCO2e/annum.

The calculation rightly takes into account the fuel gas burned for operations, but no fugitive emissions, no gas consumption for compression for transportation and no emissions from combustion of the gas. In contrast, it is assumed that if the project did not take place, imported gas would be used instead. In neither the baseline nor the project calculations are the Scope 3 emissions from the combustion of the gas counted, and it is not indicated what proportion of the gas is used for electricity production and what amount for heating, cooking or other uses.

It seems problematic to automatically assume that imported gas would be used to cover all of the demand in the absence of the project. While it does not seem unreasonable to assume that imported gas would cover some of the demand, it is easily possible that, if the imported gas were to be more expensive than the domestic gas, other solutions would be stimulated instead, for example solar water heating, heat pumps, and energy efficiency measures, or renewable electricity generation if electricity generation is the main use of the gas. Therefore relative emissions should be measured against the most environmentally acceptable and economically feasible baseline, not just one that assumes that future behaviour would replicate past behaviour.

Scope 3 emissions are usually not counted due to a concern about double counting. However, given that the EIB does not report emissions to the EU or to the UNFCCC, double counting does not occur if the EIB Includes Scope 3 emissions in its calculations. Banks financing more than one part in a chain of projects with significant amounts of GHG emissions may wish to count Scope 3 emissions only once in the chain in their overall institutional GHG emissions accounting, but should take them into account in all projects in the chain.

Case study 2. ETAP South Tunisia Gas project, loans for EUR 380 million signed in 2014[23]

The EIB describes the project as allowing gas discovered in the Nawara concession in southern Tunisia (part of the Jenein Sud Exploration Permit) to be delivered to the existing national gas grid in the northern part of the country. The main components of the project are 9 production wells, flowlines to a central processing facility, a 370 km gas pipeline, a 10 km condensate pipeline and a gas treatment plant.

The project was categorised as B, with low to moderate environmental risk, even though it involves fossil fuel production and transportation. Climate risk is also assessed as low. An EIA was carried out for the gas production and transportation components but not for an airstrip that comprises part of the project. The Tunisian Decree 2005-1991 of July 11, 2005, does not require an EIA with a runway less than 2200 m in length, while in this case the length is 2000 m.

Absolute emissions are put at 50 kt CO2e/annum, comprising 34.5 kt due to fuel gas burned for operations; 0.2 kt due to diesel burned for operations and 15.4 kt for fugitive gas leaks from the pipeline.

In this case, Scope 3 emissions for burning the gas for electricity production are calculated, and put at 1477.3 kt CO2e/annum.

The baseline, with which the project is compared to get the relative emissions, comprises 2064.8 kt CO2e/annum from fuel oil burned for electricity generation and 805.4 kt CO2e/annum from distillate burned for electricity production. Thus the scenario with no project is estimated at 2870 kt CO2e/

annum, making relative emissions -1343 kt CO2e/annum.

Presumably the justification for calculating Scope 3 emissions in this case is that this is where the gains are and that they would not be captured without doing so. However it is also important to measure what other alternatives there are to the project and whether the fuel-oil gas replacement could instead or partly be a fuel-oil, solar or fuel-oil, wind replacement. The baseline should not just be the status quo, but rather the most environmentally acceptable and economically feasible baseline, not just one that assumes that future behaviour would replicate the past. Such an approach to baseline setting may result in lock-in of practices which are somewhat better than the existing ones but that could be quickly superceded by superior and less climate-damaging ones.

Case study 3. Gas Import Facility in Lithuania

The project involves the construction of a liquefied natural gas (LNG) import facility in the port of Klaipeda[24]. The facility consists of a jetty and other facilities to accommodate a floating LNG storage and regasification unit as well as a pipeline connecting it to the national gas grid[25]. The Bank states that the project was important for ensuring the security of supply and diversification of energy sources.

The project was categorized as B, with low to moderate social and environmental risk, although it is located in the sensitive ecosystem of the Curonian Spit, close to a Natura 2000 site. The Environmental Impact Assessment was compulsory and it triggered an Espoo Convention transboundary assessment. Climate risk was also categorized as low although the project was subject to a GHG emissions assessment.

The absolute carbon footprint of the project is estimated at 126.3 ktCO2e/annum while the relative footprint is estimated as 98.7 ktCO2e/annum.

The calculation is very limited in terms of scope and it only takes into account direct emissions from the regasification of LNG, including from such components as engines, regasification and auxiliary boilers and the emergency generator.

The calculation did not account for fugitive methane emissions from gas exploration, liquefaction of natural gas to LNG, its transportation or Scope 3 emissions from combustion of gas for electricity and heat purposes. The bank’s methodology limits the emissions calculation to the financed component of the gas life-cycle, ignoring the fact that, before it reaches Lithuania, the gas has to be extracted, treated, transported, liquefied, transported by ship, regasified, transported again and that it will be eventually burned. During this time a significant amount of methane, which has significant climate impacts, is very likely be emitted to the atmosphere, but this is not taken into account in the bank's calculations.

In order to take well-informed decisions, the bank should also take into account all induced emissions it causes by financing a particular project. In this case, it is not clear to what extent the bank expects that gas demand will increase due to easier availability as a result of the LNG terminal's construction.

Given that the EIB does not report emissions to the EU or to the UNFCCC, double counting does not occur if the EIB Includes Scope 3 emissions in its calculations.

The baseline for calculation of relative emissions was considered as a standard overland natural gas transmission system - 1900 km of gas pipeline which would otherwise substitute LNG and which would emit 27.6 ktCO2e/annum. It was assumed the gas will be used for electricity and heat generation. Neither renewable energy nor energy efficiency measures were considered as at least partial alternatives to project proposed and built in to the baseline. In Lithuania, we recommend considering energy efficiency as a priority option and as a source of energy before new energy supply installations are considered: According to the European Commission, 96% of multistory family buildings were built before 1993 and are in a poor state in terms of energy efficiency[26]. Yet, the EIB has not invested a cent in energy efficiency in Lithuania between 2013 and 2015. Therefore, relative emissions should be measured against the most environmentally acceptable and economically feasible baseline and the energy efficiency first principle should be integrated into the EIB's decision-making processes.

Case study 4. GATE LNG Terminal Expansion, Netherlands

The project involves expansion of the LNG terminal in the port of Rotterdam to include a loading facility for small LNG tanker ships. According to the Bank's description, the project will allow efficient LNG distribution and use of liquid gas as shipping fuel through the construction of a dedicated jetty[27]. The bank has already financed the construction of this LNG terminal with loans worth almost EUR 400 million. However, from mid-2014 to the end of 2015 its utilisation rate was generally around 5%[28], raising the issue of stranded assets and whether further investment in this facility represents the most rational use of public money. On the basis of Dutch environmental legislation, it was decided not to conduct an Environmental Impact Assessment. The bank environmental appraisal form provides some explanation on this issue. However the EIB's environmental appraisal indicates that the project will result in increased shipping traffic.

The bank analysis identified that emissions will come from facilities for fueling LNG powered vessels and from the combustion of LNG in vessels' engines. The absolute emissions were counted to be at the level of 0.46 ktCO2e/annum from the terminal facilities and 137.96 ktCO2e/annum from LNG combustion in ships. Relative emissions were calculated assuming ships would otherwise be fueled with marine gasoil or heavy fuel oil with sulphur scrubbers and were at the level of -49.79 ktCO2e/annum. As the bank explains in the environmental appraisal form, "the CO2 intensity of liquefaction and transport of LNG, as well as that of the transformation and transportation of liquid petroleum products is excluded from this calculation, as, in line with the Bank's GHG accounting methodology, they are taken into account in the footprint of upstream activities." Thus the scope of the calculation is limited: it takes into account the induced emissions from more vessels but does not take into account all induced emissions resulting from this project such as from additional natural gas extraction, liquefaction and transport. Double counting should not be of major importance except for country-level reporting for the UNFCCC or EU climate targets, while given the need for informed decision-making the bank should take all emissions into account from all projects in the chain.

The absolute emissions calculation for the project does not take into account methane leakage during bunkering. As recent studies[29] show routine bunkering leakages can have an important impact on overall GHG emissions and that relative emissions reductions compared to oil fuel are provided only for certain LNG engines taking into account the whole fuel-cycle emissions. Thus the bank, in order to understand whether the financing project indeed provides for emissions reductions, also needs to consider a wider scope of emissions.

Case study 5. Redexis gas transmission and distribution, Spain

The project consists of construction of gas transmission and distribution network in various parts of Spain, including 7 transmission pipelines requiring environmental impact assessments and LNG storage and a regasification station not requiring an EIA[30]. The EIB loan supports the borrower's investment program aimed at expanding the gas distribution network to customers who use fuel oil and propane for heating and cooking purposes[31].

No Strategic Environmental Assessment has been conducted for the borrower investment program. The bank assessed the climate risk of the project as low as it assumed the project will result in a reduction of greenhouse gases due to the fuel switch.

Absolute emissions were calculated for gas compression, pipelines gas leakages, LNG regasification and LNG trucks and amounted to 1.4 ktCO2e/annum. The bank's methodology for calculating the carbon dioxide equivalent of methane leakages is based on outdated IPCC studies from 1996, which assume that methane global warming potential is 21 times higher than carbon dioxide. The latest findings[32] by the Panel show that methane is in fact 100 times more dangerous than carbon dioxide within 10 years after emission and 86 time more damaging over the next 20 years. The EIB needs to update its methodology accordingly in line with the latest science otherwise it will continue to underestimate the climate impact of its projects. This is also recommendable as due to the urgency of the need for emissions reductions in order to limit global climate change to 1.5 degrees celsius as laid out in the Paris Agreement, it is appropriate for the bank to use the highest factor.

Scope 3 emissions were calculated for the project in order to show the relative emissions reduction. The absolute emissions for the gas combustion for cooking and heating purposes were calculated at the level of 413.8 ktCO2e/annum. The baseline against which relative emissions were calculated was LPG, fuel oil and electricity. The considered baseline constitutes the current status quo and does not take into account other possible alternatives such as electrical cooking and heating based on renewable energy from the sun and wind, heat pumps etc, whose development potential is high in Spain. It would be more appropriate for the bank to use the baseline which is the most environmentally acceptable and economically feasible option.

Other indirect emissions related to additional gas extraction and transportation were not counted in the bank calculations, leaving the project's global warming impact underestimated and its relative emissions reduction overestimated due to an inappropriate baseline.

Case study 6. Combined Heat and Power Plant Kiel, Germany, loan for EUR 105 million signed September 2016[33]

The project involves construction and operation of a cogeneration plant with around 200 MW capacity (power) and 200 MW capacity (heat) in Kiel, Germany. The plant is to replace an old coal fired facility. According to the EIB's Environmental and Social Data Sheet, the project has been subject to an environmental impact assessment process and has obtained a partial consent, with the consent and conditions for other project components to follow.

Absolute annual CO2 emissions from the plant are estimated at 344 000 tonnes of CO2e/year. It is pointed out that the current obsolete hard coal-fired unit would emit 800-900 000 tonnes of CO2 per year, generating the same amount of heat and less electricity.

The baseline emissions for the plant are calculated assuming that electricity is generated separately from heat. Electricity-related baseline emissions are calculated on the basis that the plant will displace existing (mostly coal-fired) and new (CCGT) power generators in Germany. Heat-related baseline emissions of CO2 are emissions from a gas-fired boiler, the most likely alternative heat generator. Taking these assumptions into account, baseline emissions are calculated at 609 000 tonnes CO2e per year resulting in estimated emission savings of 264 000 tonnes CO2e per year.

While it is quite likely that the plant really is displacing existing coal and new gas CCGT for electricity generation, counting these as the baseline seems very conservative and likely to miss the identification of opportunities for lower carbon solutions. Existing coal plants seem unlikely to continue to be the baseline for the lifetime of the gas plant as they would most likely have to be closed either for economic or pollution control reasons. The baseline needs to be set according to power sources that could realistically continue to generate power over the lifetime of the gas plant.

Regarding heating, gas seems a reasonably likely baseline, however not the most ambitious in terms of emissions reduction. Perhaps a comparison with heat pumps or other highly efficient heating methods be made? Could retrofitting of buildings make a contribution to lowering emissions in an alternative baseline? The non-technical summary of the EIA[34] on the EIB's website states that alternative technologies for district heating and alternative locations have been examined but completely different options not involving district heating, or involving building retrofits plus less district heating do not appear to have been examined.

NOTES

1. Energy Roadmap 2050, COM/2011/885 (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0885&from=EN)
2. A Roadmap for moving to a competitive low carbon economy in 2050, COM(2011) 112 (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0112&from=EN)
3. https://www.asktheeu.org/en/request/3156/response/11289/attach/2/LNG%20and%20gas%20storage%20strategy%20report%20of%20meeting%20with%20GIE%20yesterday.txt
4. http://www.dma.dk/themes/LNG-infrastructureproject/Documents/Final%20Report/LNG_Full_report_Mgg_2012_04_02_1.pdf
5. http://www.gie.eu/download/maps/2015/GIE_LNG_2015_A0_1189x841_FULL_wINFO-GRAPHICS_FINAL.pdf
6. http://watercenter.unl.edu/downloads/2011-Worst-case-Keystone-spills-report.pdf
7. http://cbw.ge/gas/southern-gas-corridor-to-remain-active-for-50-60-years/
8. http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/571314/EPRS_BRI(2015)571314_EN.pdf
9. http://www.hydrocarbons-technology.com/projects/swinoujscie/, http://www.lngworldnews.com/poland-swinoujscie-lng-terminal-facing-more-construction-delays/, http://www.lngworldnews.com/poland-swinoujscie-lng-terminal-75-pct-complete/ and http://www.lngworldnews.com/polish-lng-terminal-cleared-to-receive-first-cargo/
10. http://www.hydrocarbons-technology.com/projects/klaipda-lng-terminal/ and http://www.gasnaturally.eu/uploads/3._Presentation_for_Gas_Naturally_COMPLETE_AND_FINAL_KLAPEIDOS_NAFTA.pdf
11. https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf
12. http://www.columbia.edu/~jeh1/mailings/2016/20160414_Electioneering.pdf
13. http://web.unep.org/emissions-gap/
14. https://www.carbonbrief.org/analysis-only-five-years-left-before-one-point-five-c-budget-is-blown
15. For example IPCC Climate Change 2013: The Physical Science Basis, http://www.climatechange2013.org/

16. Miller et al, 2013 (http://www.pnas.org/content/early/2013/11/20/1314392110.abstract), Brandt et al, 2014 (http://www.sciencemag.org/content/343/6172/733)
17. https://ec.europa.eu/energy/sites/ener/files/documents/1_EN_ACT_part1_v10-1.pdf
18. Schneising et al, 2014 (http://onlinelibrary.wiley.com/doi/10.1002/2014EF000265/abstract)
19. Hayhoe et al, 2002 (http://link.springer.com/article/10.1023%2FA%3A1015737505552)
20. http://www.nature.com/nature/journal/v538/n7623/full/nature19797.html
21. http://www.eib.org/projects/loan/loan/20130018
22. A sidetrack is to drill a secondary wellbore away from an original wellbore. In the cases here, these sidetracks will be able to access gas that was previously not accessed by the original well. A workover is the process of performing major maintenance or remedial treatments on a well – in the case of the workover sub-projects here, the workovers will enable enhanced gas production.
23. http://www.eib.org/projects/loan/loan/20120053
24. http://www.eib.org/projects/pipelines/pipeline/20120490
25. Environmental and Social Data Sheet http://www.eib.org/infocentre/registers/register/47293968
26. European Commission, Country Report Lithuania 2015 http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index_en.htm
27. http://www.eib.org/projects/pipelines/pipeline/20140236
28. http://gate.nl/en/commercial/operational-data.html
29. Methane emissions from LNG bunkering, https://www.marad.dot.gov/wp-content/uploads/pdf/Methane-emissions-from-LNG-bunkering-20151124-final.pdf
30. Overall environmental and Social Assessment, European Investment Bank, May 2014
31. http://www.eib.org/projects/pipelines/pipeline/20120132
32. "Climate Change 2013: The Physical Science Basis". IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Ch.8, p. 711-714, Table 8.7. 2013. http://www.climatechange2013.org/report/full-report/
33. http://www.eib.org/projects/loan/loan/20130557
34. http://www.eib.org/infocentre/register/all/65363833.pdf