EBRD protocol for assessment of greenhouse gas emissions

Background

The EBRD first published an assessment of the impact of its investments on greenhouse gas emissions in 2003. The purpose was to see climate change impacts in the wider context of the transition impacts of EBRD projects. The assessment also aimed to answer the simple question: "What impact is the Bank having, through its investments, on the build-up of greenhouse gases in the atmosphere?"

The EBRD GHG assessment methodology developed for this purpose provided a framework for the integration of GHG assessments into project due diligence and for the annual reporting of the forecast impact of the new direct investment projects added to the portfolio.

The Bank's focus on climate change mitigation, through promoting investments in energy efficiency, renewable energy and emission reduction projects, grew substantially via the Sustainable Energy Initiative (SEI) and later through the Sustainable Resource Initiative (SRI). The SEI was launched in 2006 with the aim of scaling up sustainable energy investments, improving the business environment for sustainable investments and removing key barriers to market development. In 2015, the EBRD's Board approved the Green Economy Transition (GET) approach, which replaces the SEI and aims to increase EBRD investments in the green economy to 40 per cent of Annual Bank Investment (ABI) by 2020.

Over the same period, in response to policy-makers' calls for greater harmonisation, the MDBs have agreed common principles for GHG accounting and are continuing to work towards more harmonised, sector-specific approaches. These developments required an update of the EBRD's approach to GHG assessment and reporting. This revision continues to serve its original objectives but now also encompasses the GHG benefit assessment of GET projects, which has a wider scope. The harmonisation process has led to the IFI Framework for a Harmonised Approach to GHG Accounting[1] and the sector approaches for Renewable Energy[2], Energy Efficiency[3] and Transport[4]. Additional sector approaches will be agreed between the IFIs.

Objectives and basic principles

The EBRD is committed to estimating the future GHG impact of the projects that it finances on an ex-ante basis where these are likely to result in significant increases or reductions in emissions. Consistent with the Bank's transition mandate, the principal objectives are:

- to provide a fit-for-purpose estimate of the change in GHG impact that each year's newly signed projects will have, once fully implemented
- to demonstrate the broader climate change mitigation benefits that an increasing number of EBRD projects are designed to achieve.

Where possible, the assessment is undertaken during project appraisal.

In developing a GHG assessment methodology aimed at meeting these objectives, a wide range of choices in approach is available. Several basic principles, identified below, exist to help narrow such choices and these have been applied in shaping the EBRD approach:

Transparency and clarity of definition: In any project, some choices may remain subjective. A project may be assessed in different ways for different purposes. It is thus essential that choices and assumptions are clearly stated to preserve the usefulness of the assessment. Most important in this context is a clear understanding of what a project comprises, in terms of geographical and operational boundaries.

Conservatism: To minimise the risk of understatement of emissions or overstatement of savings, a conservative approach to assumptions should be made wherever significant uncertainty exists.

Fitness for purpose: Where a GHG assessment is required to form the basis of financial transactions – for example, carbon trading – greater resources will generally be required in order to apply the more complex approaches demanded. Where the assessment is carried out for information purposes only, simpler, less resource-intensive approaches may be acceptable.

Project specificity versus general applicability: It may be necessary to strike a balance between the desire to achieve as much project-specific accuracy as possible and the benefit of comparability that the use of common, consistent approaches provides across many projects of a given type.

Methodology

Selection of projects and thresholds

All direct investment projects are screened at the Concept Review stage of project appraisal and categorised according to the type of assessment needed.

Some direct investment projects involving corporate loans are excluded from assessment when a lack of

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information to identify precisely how funds are used makes GHG assessment impossible.

Most projects funded via financial intermediaries (FIs) are excluded from assessment on the grounds that they involve transfer of control to a third party. GHG assessment is undertaken, however, for certain FI framework projects in which substantial funds are ring-fenced for investment by the FI in relatively large numbers of small energy efficiency and renewable energy sub-projects. Although individually small, the combined impact of many sub-projects may be highly significant. The aggregate savings of a number of such FI funds which have been established have made a major contribution to total GHG savings in recent years.

From November 2014, the Bank's Environmental and Social Policy (ESP) mandated clients to procure and report the data necessary for the GHG assessment of projects whose emissions are expected to exceed 25 kt CO_2e per year.

Projects that are expected to result in a change in emissions, either positive or negative, of more than 25 kt CO_2e per year are subject to an ex-ante GHG assessment in line with this protocol. Projects that are expected to reduce GHG emission by less than 25 kt CO_2e per year may also be subject to a GHG assessment.

Project boundaries

The project boundary separates the entities (in other words, the facilities and operations) whose emissions are included in the assessment from those that are not. The project boundary is generally defined as the geographical boundary of the facility but may need to include associated facilities and activities where these exist solely to serve the project. Where, for example, a project involves a change from in-house production to external sourcing of a feedstock, it may be necessary to draw project boundaries to include external operations, thus ensuring no fundamental difference in the scope of service provision between the baseline and the post-investment scenario.

Where a project is a direct replacement for some, or all, of another, separate, existing facility (such as one owned by the same entity) this latter facility may be brought within the project boundary, provided the closure is certain to take place as a direct consequence of the project's implementation.

The project boundary for renewable energy (RE) power generation projects is always regarded as encompassing the electricity grid in which they serve. By nature of their role, they are assumed to displace the emissions associated with other electricity generation on the grid. Specific grid studies may be undertaken to derive appropriate carbon factors.

If high-quality project or regional grid emission studies are available, these should be applied. As a fall-back, it is possible to use national grid-average factors, as long this will not lead to an underestimation of the project impact or an overestimation of the GHG reductions.

In some cases a project may have impacts on GHG emission upstream or downstream in a supply chain or in the market that it serves. These would typically be considered as Scope 3 [5] and excluded from EBRD's project boundary. However, if these impacts have significant mitigation benefits that underpin the rationale for the EBRD's investment in the project, the Bank may choose to extend the boundary of the assessment to include these benefits. These benefits may be included in reporting for the GET approach or as a separate line in the *Sustainability Report*, but are excluded from the reporting of overall GHG impact of the portfolio, which includes only Scope 1 and 2.

Different aspects of projects can have impacts over different areas. The boundaries used to assess, for example, a project's transition impact or social impact may therefore differ from those used for the GHG assessment.

The with- and without-project principle to determine baseline and project scenario

In keeping with the Bank's transition mandate, the EBRD methodology has focused primarily on estimating the change in GHG emissions (ΔGHG) that is to be brought about by investments. We may define this logically as the difference between the emissions following the implementation of the project investment ('project emissions') and the emissions that would have occurred in its absence. This 'without-project' scenario is referred to as the 'baseline' or 'reference scenario'.

While the project emissions are relatively predictable (and amenable to routine monitoring during the project lifetime), the emissions that would have occurred in the absence of the investment – the baseline or reference scenario – will remain hypothetical and therefore should be based on conservative assumptions.

Dynamic baseline

Depending on the extent of information available and the extent to which future developments can be predicted, a time-dependent (or dynamic) baseline or reference scenario may be constructed. An example of an instance where sufficient information might be available to develop a robust dynamic baseline is a power generation project that is part of a national power generation capacity modernisation plan, backed up by adequate technical assessments. Dynamic baseline approaches may be relatively complex and resource-intensive to develop yet are necessary, in particular when they are to underpin carbon trading transactions.

[5] Using the definitions adopted by the GHG Protocol of the WBCSD/WRI, direct emissions are called 'Scope 1', emissions from grid electricity used are 'Scope 2', while other upstream and downstream emissions are 'Scope 3'.

For the relatively small, but increasing, number of EBRD projects seeking to benefit from carbon mechanisms (for instance, those qualifying under the UNFCCC's JI or CDM), project and baseline emission assessments are based on methodologies approved by the UNFCCC or other internationally recognised bodies for this purpose.

Fixed baseline
Where the development of a dynamic baseline is not justified, a fixed (not time-dependent) baseline may be adopted. The simplest approach, and the one preferred for most EBRD projects, is the use of the pre-investment emissions within the project boundary as the baseline. In the case of greenfield projects, this is taken as zero, unless there are existing facilities included within the project boundary.

Alternatives to using pre-investment emissions as the fixed baseline are benchmark technologies or benchmark levels of operational performance. It is important to note that the forecast of a project's GHG impact depends critically on the choice of baseline. Thus clarity of definition and consistency in the choice of baseline type are fundamental for the sake of comparability.

Project scenario
The with-project emissions are taken as those expected to occur in a representative (usually the first) year following full implementation of the project.

Capacity expansion and increased output
Whenever the production output of a project is forecast to change as a result of the investment, the GHG emissions or savings associated with that change must be accounted for. In such cases, if efficiency improvements have been introduced, the resulting efficiency savings are only applicable to the pre-investment output level and must not be applied to the expansion increment unless it is certain that the same increase in output would have occurred in the absence of the project – in other words, unless the expanded output is entirely independent of the project implementation.

Scope of emissions assessed
Included in the assessment of project emission:

1. direct operational GHGs as recognised by the IPPC (see for example IPCC Fifth Assessment Report, 2014)[6] occurring within the project boundary, together with
2. the estimated GHG emissions associated with the generation of grid electricity used by the project [7]
3. where a project is designed specifically to generate downstream system and end-user benefits – for example, one involved in the manufacture of carbon-saving or energy-saving materials or technologies and covered by the scope of the Joint MDB Report on Climate Finance – these benefits are reported as separate line items as they fall outside the scope of emissions routinely assessed.

Construction phase emissions are normally not included in the assessment as they are typically not considered to be significant compared with operational emissions. Construction related emissions will be included in the assessment where they are likely to be significant (greater than 5 per cent) relative to the anticipated emission increases or savings associated with the operation of the project.

Leakage
Leakage is the phenomenon through which efforts to reduce emissions in one place simply shift emissions to another location or sector where they remain uncontrolled or uncounted. This happens for example when additional public transport capacity frees up capacity on roads which is then filled by previously suppressed demand. It is important to recognise and take account of any significant leakage that may arise in a project.

Guidance on calculation methods
The accuracy required for the calculations of the greenhouse gases arising from the processes involved in the baseline and project operations will depend on the significance and size of the project. The selected methods should be fit for purpose, recognising the information and manpower resources available. Comprehensive recognised methodologies such as described in the GHG Protocol, the UNFCCC Clean Development Mechanism methodology, Verified Carbon Standard, Gold Standard and the EU Emissions Trading Scheme, ISO 14064 (Part 1 and 2), or other international standards can be used where feasible. Where the scope of the project or the scale of its emissions do not justify in-depth assessments of this type, conservative simplifications of these approaches will be adequate. Calculation methods must nevertheless be transparent and based on reasonable assumptions.

Sources of data
GHG data may be obtained from a number of sources depending on the project's size, sector and the nature of the EBRD's investment. Project-specific sources of data may include:

- environmental impact assessments
- environmental audits
- energy audits
- feasibility studies
- investment plans.

Data may be compared against industry databases or benchmarks that are published by appropriate authorities and regulators.

GHG performance metrics
Absolute project annual GHG emissions (gross GHG emissions) and the change in emissions brought about

[6] Emissions of non-CO_2 GHGs are expressed as CO_2 - equivalent based on their 100-year global warming potentials, as provided by the IPCC 2004 (op. cit).

[7] Using the definitions adopted by the GHG Protocol of the WBCSD/WRI, direct emissions are termed 'Scope 1' and emissions from grid electricity used are 'Scope 2'.

by a project (net GHG emissions) are generally calculated and reported in aggregate, although in some cases where a project involves only a part of a larger complex facility the concept of gross emissions is not readily quantifiable or necessarily relevant. In the latter case only the net emissions of the proposed project are calculated.

GHG emissions are calculated for the whole project, not pro-rata for the Bank's financial involvement. EBRD investments invariably improve efficiency of production even where increased emissions arising from increased production offset the savings made, leading to an increase in overall emissions. To demonstrate efficiency benefits, GHG emissions **per unit of product output** may be calculated for the project and baseline cases, in addition to the gross and net GHG emissions.

The EBRD will report the aggregated GHG assessment results for each year in its *Sustainability Report*. This report will typically include details of the number of projects assessed with GHG data presented for greenfield and GET projects.

Annual reporting by projects

In line with the EBRD's Environmental and Social Policy, projects with annual emissions of 25 kt CO_2e per year are required to report such emissions annually to the Bank. The scope of this report will typically be limited to the boundaries of the EBRD-financed project and will align with the scope of the GHG assessment carried out during project appraisal. Annual reporting of GHG emissions should form part of the project's normal environmental and social reporting to the EBRD.

Alignment of the EBRD approaches to GHG accounting with the agreed IFI Framework for a Harmonised Approach to GHG Accounting

The IFI Framework for a Harmonised Approach to GHG Accounting (November 2012)[8] has been approved by the following IFIs: Agence Française de Développement (AfD), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the UK Green Investment Bank, the Inter-American Development Bank (IDB), the International Finance Corporation (IFC), KFW Development Bank, the Nordic Environment Finance Corporation (NEFCO), and the World Bank (WB). In December 2015, these IFIs agreed sector approaches for the renewable energy[9], energy efficiency[10] and transport sectors[11].

A number of common principles have thereby been agreed but, for justifiable reasons, important differences in detail remain to be resolved. As a result a variety of alternative methodological options are included in the framework text.

8 http://www.ebrd.com/cs/Satellite?c=Content&cid=1395250240579&d=&pagename=EBRD%2FContent%2FDownloadDocument

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