IFI Joint approach to GHG assessment in the Transport Sector

November 2015

Background and Objectives

This note is dedicated to laying out a set of principles that a technical working group of IFIs[1] agreed should be applied to GHG assessment of their interventions in the transport sector.

It is drafted as a sector-specific follow-up to the IFI Framework for Harmonized approach to GHG Accounting[2].

Definition of transport projects

Transport projects include any type of projects involving the provision of services to help the movement of goods and passengers.

Projects considered fall in one or several of the following categories:

- Links - e.g.:
  - Roads
  - Public transport networks
  - Railways
  - Waterways
- Nodes - e.g.:
  - Ports
  - Airports
- Equipment - e.g.:
  - Freight and logistics
  - Vehicle acquisition, retrofit and renewal
- Non-physical interventions impacting the transport sector such as Policy and operational interventions

Agreed Principles for GHG assessment

1. ***Scope of GHG calculations:*** The majority of GHG emissions for the transport sector arise from vehicles whose movements occur on or due to the infrastructure. This means

[1] AFD, AfDB, ADB, EBRD, EIB, GEF, GIB, IDB, NIB, IFC, and the World Bank with support from the UNFCCC; to be widened to include more IFIs as work progresses. This note will be reviewed and updated periodically by the IFIs.
[2] See "International Financial Institution Framework for a Harmonized Approach to Greenhouse Gas Accounting, Oct .2015"

that this type of Scope 3[3] emissions relating to use of the infrastructure must be a primary consideration for GHG assessment of transport projects. Other scope 3 emissions that relate to the construction of the transport infrastructure may be included in the analysis for certain types of transport sector projects where such emissions are known to constitute a large part of total emissions[4].

2. CO_2 comprises the majority of transport GHG emissions. Unless there are reasons to believe that other GHGs are significantly affected by the project (e.g. use of bio-methane as the transport fuel, N_2O), the assessment should focus on CO_2 emissions.

3. Demand analysis:

a. Whenever scope 3 is considered, GHG assessment should be derived from a cross-modal[5] demand analysis on how transport policies and projects induce changes in transport demands, fossil fuel use, and GHG emissions. This analysis should take account of the main drivers of user behaviour, in particular income, monetary travel cost, and travel time.

b. Boundary for scope 3 GHG analysis: material changes in demand determined by the cross modal demand analysis will inform the definition of boundaries for the GHG analysis.

c. The distinction between induced and diverted traffic is essential for GHG analysis.

4. The complexity of traffic modelling will vary with the project circumstances. The quality and robustness of traffic forecasts will largely determine the validity of the GHG assessment. Therefore, IFIs should take care that traffic modelling used to inform GHG assessment is defensible and robust.

5. ***Alignment with economic or financial analysis, assessment period:*** Economic or financial analysis and GHG assessment should have consistent assumptions regarding analyses' boundaries, demand scenarios and impacts, and assessment period.

6. ***Representative year:***

A representative value for annual GHG emissions will be derived from an average of emissions over the assessment period.

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[3] See "International Financial Institution Framework for a Harmonized Approach to Greenhouse Gas Accounting, Oct .2015"

[4] Emissions related to energy carriers, e.g. construction of infrastructure dedicated to the provision of new fuel upstream of projects , can be also significant in some instances ; while the principle of their systematic inclusion in the scope of emissions calculation would be difficult to implement, project ad-hoc approaches may be developed by IFIs on this matter

[5] Where necessary

7. ***Basic construct of transport GHG emissions:***

Transport GHG emissions are calculated as a product of level of **A**ctivity, modal **S**tructure, **I**ntensity of fuel use and **F**uel carbon content (ASIF in short -please refer to Appendix 1 for illustration-), whereby:

a. Activity reflects demand expressed in passenger kilometres or ton kilometres;
b. Structure reflects the share of that demand broken down by mode;
c. Intensity is the fuel consumption of the considered mode (depending notably on load factors); and
d. Fuel is the GHG emissions per unit of fuel.

The forecasts in relation to Activity and modal Structure are addressed in principles under paragraphs 3 to 6 above.

8. Factors that inform an appropriate Intensity level should be matched to relevant local context, and may include:

. Vehicle characteristics;
. Speed (potentially affected by congestion and safety considerations)
. Vehicle loading;
. Driving cycles; and
. Driver behaviour.

Where project-specific data on Intensity and Fuel carbon content -to be used as a priority where possible- are not available, IFIs should rely on authoritative sources, for example UNFCCC.

9. ***Choice of specific tools and methodologies:***

The choice of specific assessment tool and/or methodology should be left to the discretion of each IFI, as long as the tool and/or methodology adheres to the basic principles laid out in this document.

***10. Baseline for calculation of net emissions*:**

The baseline for the assessment of the net GHG footprint will refer to a situation when the project is not implemented. In most cases, this base line corresponds to a situation without an alternative new project, while trend investments to ensure the integrity of existing infrastructure and cater for demand, if any, would be included.

The baseline will in all cases be dynamic regarding the demand and the parameters impacting it. In any case, a GHG calculation baseline entailing consistency with the economic analysis is to be adopted, and the emissions associated to it should follow the same calculation principles as those adopted for “with-project” emissions.

For grid connected projects, the grid emission factor is to be calculated according to the IFI Approach to GHG Assessment in Renewable Energy Sector.

Conservatism in terms of assumptions implying emissions reductions within the net GHG emission calculation is an overarching general principle.

Information recording and disclosure principles, and continuation of harmonisation efforts:

Where individual project level emissions forecasts are made public, the essential information and assumptions relating to the calculation should be available along with the forecasts, *inter alia*: sources of emissions; physical boundaries; effect of induced traffic; length of assessment period; source of data if not project specific.

The IFI working group commits to continue its harmonisation efforts regarding the GHG assessment of transport projects, in coordination with the MDB Working group on sustainable transport. This concerns notably the sharing of experience relating to demand scenario analyses carried out by the IFIs in the framework of transport projects, specific topics[6] and mutual comparison and enrichment of databases with regard to aggregated emissions factors in particular.

Appendix 1: ASIF framework

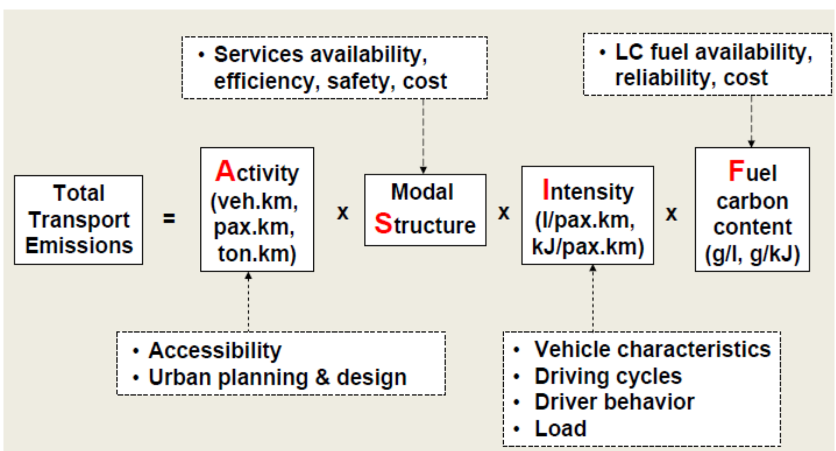

Figure 1. Factors influencing emission trends

[6] For example energy carrier emissions