

Revised Results Monitoring Framework of the Energy Sector Strategy

Explanatory Note

March 2018

1. On June 15, 2017, the Board of Directors recorded its support for the Bank's Energy Sector Strategy including a preliminary Results Monitoring Framework (the Framework). It was agreed that this Framework would be finalized and submitted to the Board of Directors in its first quarterly meeting in 2018. Management included the conclusion of this Framework approval process as one of the 2018 Business Plan milestones.

2. The objective of the proposed Framework is to monitor and assess the implementation of the Energy Sector Strategy. It will do so by: (i) monitoring and reporting on the energy sector portfolio, (ii) measuring results and performance against an agreed set of indicators across the portfolio, and (iii) supporting the sharing of best practice and lessons learnt to promote better implementation and build AIIB's reputation in the sector.

3. This Explanatory Note sets out the basis for the revised Framework.

4. In devising this Framework, the Bank first sought to learn from the experience of the other Multilateral Development Banks (MDBs) in defining the best ways to measure results across a sector portfolio. This included work by the World Bank, Asian Development Bank (ADB) and the European Bank for Reconstruction and Development (EBRD) on results based monitoring, energy sector strategies, corporate result frameworks and scorecards and other relevant documents.¹ Second, the framework is attuned to AIIB's own strategic goals, its business model and ensuring that it is appropriate for project implementation in AIIB's early years. The result is an AIIB's framework with the following characteristics:

- (a) The Framework is built around the six Guiding Principles of the Energy Sector Strategy.
- (b) It focuses on monitoring implementation rather than on setting targets for evaluation given the Bank's early stage of development (e.g. small portfolio size, policies under development, limited staff capacity).
- (c) The Framework will monitor the Bank's energy investments' outputs and outcomes but will not attempt to monitor country outcomes given that the Bank will be just one contributor among the collective development efforts of the countries themselves, MDBs, bilateral agencies and the private sector. In addition, since other MDBs are monitoring outcomes at country level, the Bank does not need to repeat.
- (d) Indicators were selected on the basis that they are clear, relevant to the Bank's Energy Sector Strategy Guiding Principles and monitorable and that they can be sensibly aggregated at the portfolio level. This is also well aligned

¹ ADB Energy Policy (2009); EBRD Energy Sector Strategy (2013); World Bank Group Corporate Scorecards (2017); ADB Transitional Results Framework (2017-2020); Kusek, J. and R. Rist (2004) *Ten steps to a results-based monitoring and evaluation system*, World Bank. See Annex 3 on MDBs Benchmark on Energy Portfolio Level Indicators.

with the approach to project quality in the Project Prioritization and Quality Framework.

- (e) All energy projects financed by the Bank will include these indicators in their results framework where applicable. Project level indicators will be aggregated across the Bank's portfolio to monitor progress towards implementing the Energy Sector Strategy.
- (f) The selection of indicators is the same for both Sovereign and Non-Sovereign Backed Financing to ensure accurate and consistent reporting across all Bank operations.
- (g) For reporting at the portfolio level, the Bank will use a zero-baseline starting from the beginning of its operations in 2016.
- (h) When co-financing projects, the Bank will follow the results framework of the lead co-financier complemented by the Bank's own indicators.

5. Taking these factors into account, it is proposed to adopt the following Framework:

| Guiding Principles | Portfolio Level Output / Outcome Indicators² | Investment amount (US\$ million) |
|--|---|--|
| Promote energy access and security | Total generation capacity installed, MW Total T&D lines / pipelines financed, km Number of households with increased access to electricity (grid and non-grid), million | Amount of Bank investments in energy access |
| Realize energy efficiency potential | Primary energy consumption saved, GWh | Amount of Bank investments in energy efficiency |
| Reduce the carbon intensity of energy supply | Renewable generation capacity installed, MW Greenhouse gas emission reduction, tons of CO ₂ equivalent per year ³ | Amount of Bank investments to reduce carbon intensity of energy supply |
| Manage local and regional pollution | * measured at specific project level, e.g. reduction of CO ₂ , NO _x , SO ₂ and particulate matter, tons per year | Amount of Bank investments in local pollution management |

² Definition of Portfolio Level Output/Outcome Indicators in Annex 1.

³ Draft Proposed Approach for Calculating Net Greenhouse Gas (GHG) Emissions of the Bank's Energy Projects included in Annex 2.

| Guiding Principles | Portfolio Level Output / Outcome Indicators² | Investment amount (US\$ million) |
|---|---|---|
| Catalyze private capital | * Cross reference to relevant indicators in the Strategy on Mobilizing Private Capital | Amount of non-sovereign backed Bank energy investments |
| Promote regional cooperation and connectivity | * measured at specific project level, e.g. cross-border transmission of electricity (GWh per year) and natural gas (bcm per year) | Amount of Bank investments to support cross-border trade of electricity and natural gas |

Annex 1. Definition of Portfolio Level Output/Outcome Indicators

- **Total generation capacity installed, MW**
Total installed capacity in megawatts (MW) resulting from generation projects using conventional and renewable energy sources.
- **Total T&D lines / pipelines financed, km**
The indicator includes the measures of 1) the length of transmission lines (ground distance in kilometers), e.g. power, gas, and oil; or 2) the length of the distribution network of lines or pipes in kilometers, e.g. power, district heating and urban gas supply.
- **Number of households with increased access to electricity (grid and non-grid), million**
Number of households that have received a new connection from increased power generation or new or upgraded transmission / distribution lines (grid and non-grid).
- **Primary energy consumption saved, GWh**
For the same level of output, the primary energy consumption saved (converted to GWh) will be the difference in electricity or fuel used with and without the energy efficiency measures, or the difference between electricity or fuel loss with and without the energy efficiency measures.
- **Renewable generation capacity installed, MW**
Total installed capacity in megawatts (MW) resulting from generation projects using renewable energy sources. Renewable energy includes hydropower and power from wind, solar, geothermal, and biomass.
- **Greenhouse gas emission reduction, tons of CO₂ equivalent per year**
The avoided carbon dioxide (CO₂) equivalent emission as a result of a lower carbon and efficient energy generation or energy efficiency project or component of such a project. Projects with CO₂ emission reduction include renewable energy generation; supply- and demand-side energy efficiency projects; and use of cleaner fuels.
- **For the management and reduction of local and regional pollution**, the output/outcome indicators are measured at specific project level, e.g. reduction of CO₂, NO_x, SO_x, and particulate matter, tons per year, while not aggregated at the portfolio level.
- **Cross reference to relevant indicators in the Strategy on Mobilizing Private Capital**

| <i>Monitoring Indicator</i> | <i>Definition</i> |
|--|---|
| a. Private Direct Mobilization achieved across the Bank's investment portfolio, US\$ million | Financing from a private entity on commercial terms due to the active and direct involvement of the Bank leading to commitment. Evidence of active and direct involvement include mandate letters, fees linked to financial commitment or other validated or auditable evidence of the Bank's active and direct role leading to commitment of other private financiers. Private Direct Mobilization does not include sponsor financing. |
| b. Private Indirect Mobilization achieved across the Bank's | Financing from private entities provided in connection with a specific activity for which the Bank is providing financing, where no MDB is playing an active or direct role that leads to the commitment of the |

investment portfolio,
US\$ million

private entity's finance. Private Indirect Mobilization includes sponsor financing, if the sponsor qualifies as a private entity.

- **For improved regional cooperation, connectivity and energy trade**, the output/outcome indicators are measured at specific project level e.g. cross-border transmission of electricity (GWh per year) and natural gas (bcm per year), while not aggregated at the portfolio level.

Annex 2. Draft Proposed Approach for Calculating Net Greenhouse Gas (GHG) Emissions of the Bank's Energy Projects (pending internal consultation)

1. The objective of this *Annex* to the Results Monitoring Framework of the Energy Sector Strategy is to provide clarification on the methods available for calculating the indicator on *Greenhouse gas emission reduction, tons of CO₂ equivalent per year*.

2. The proposed approach for the Bank are based on methodologies jointly developed and adopted by Multilateral Development Banks (MDBs), individual MDB methodologies and guidance notes, as well as methodologies and guidelines issued by internationally recognized bodies in this domain, notably the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM), the Global Environment Facility (GEF) and the GHG Protocol (GHGP).

3. The proposed approach for the Bank need to be further tested and improved reflecting experiences gathered. This means: (1) for projects⁴ for which methodologies have been jointly developed and adopted by MDBs, the Bank will closely follow up and engage with the International Financial Institutions (IFIs) Joint Working Group on GHG Accounting, to integrate the latest developments into the Bank's approach; (2) for projects⁵ for which methodologies have not yet been jointly agreed upon by MDBs, the Bank will consider the merits of the available methodologies and adopt those that are most appropriate for the Bank.

Table 1. summarizes existing international approaches and methodologies according to energy project categories. It is followed by a more detailed review, and proposed approaches for the Bank.

Table 1. Available GHG accounting approaches and methodologies

| Project category | MDB common method | MDB guidance notes | International guidelines |
|-------------------------|-------------------|--------------------|--------------------------|
| Renewable energy (RE) | | | |
| <i>Power generation</i> | ✓ ⁶ | ✓ | ✓ |
| <i>Heat production</i> | | | ✓ |
| Energy efficiency (EE) | | | |

⁴ Renewable energy and energy efficiency projects according to the definitions provided in the IFI Approach to GHG Accounting for Renewable Energy Projects, and the IFI Approach to GHG Accounting for Energy Efficiency Projects.

⁵ Greenfield gas-fired power plant and T&D capacity expansion projects, and heat production from renewable energy projects.

⁶ If the pre-investment facility has not reached the end of its technical life, the approach set out in the 'IFI Approach to GHG Accounting for Energy Efficiency Projects' should be followed.

| | | | |
|---|----------------|---|---|
| <i>Thermal power plant – retrofit, fuel switch, co-generation</i> | ✓ | ✓ | ✓ |
| <i>T&D⁷ retrofit and capacity expansion</i> | ✓ ⁸ | ✓ | ✓ |
| <i>Energy efficiency in buildings, industry and public services</i> | ✓ | ✓ | ✓ |
| Other project categories | | | |
| <i>Greenfield gas-fired power plant</i> | | ✓ | ✓ |
| <i>T&D capacity expansion⁹</i> | | ✓ | |

I. Renewable energy

Electricity generation from renewable energy

4. Under the International Financial Institution (IFI) Framework for a Harmonized Approach to Greenhouse Gas Accounting, MDBs and other IFIs¹⁰ jointly developed the IFI Approach to GHG Accounting for Renewable Energy Projects to account for the net (or avoided) GHG emissions resulting from *electricity production from renewable energy sources*.

5. According to the IFI approach, net emissions are calculated based on a common set of baseline emission factors (BEFs) for countries and for sub-national and interconnected grids where applicable.

6. To support the harmonized approach, the IFI working group also maintains an Interim Dataset of Harmonized Grid Factors, which consists of standardized baseline emission factors from the International Energy Agency (IEA) and the UNFCCC, as well as official country emission data sources developed by designated national authorities.

7. **Proposed approach for the Bank:** adopt the IFI Approach to GHG Accounting for Renewable Energy Projects, and the IFI Interim Dataset of Harmonized Grid Factors.

Heat production from renewable energy

8. UNFCCC CDM methodology is available for calculating GHG emissions avoided by solar water heating systems. Regarding geothermal use for direct heat supply, there is currently no international methodology available.

9. **Proposed approach for the Bank:** Calculate GHG emission reduction on a project-by-project basis in line with the latest available methodologies and guidelines issued by internationally recognized bodies.

⁷ transmission and distribution

⁸ For capacity expansion project (or project components), the IFI Approach to GHG Accounting for Energy Efficiency Projects only includes the portion of the investment that is reducing existing losses.

⁹ T&D capacity expansion projects that do not reduce existing losses are considered under this category.

¹⁰ ADB, AfDB, AFD, EBRD, EIB, GEF, GIB, NIB, NEFCO, IDB, IFC, and WB, with support from the UNFCCC secretariat.

II. Energy efficiency

10. Under the International Financial Institution (IFI) Framework for a Harmonized Approach to Greenhouse Gas Accounting, MDBs and other IFIs¹¹ jointly developed the IFI Approach to GHG Accounting for Energy Efficiency Projects to account for the net (or avoided) GHG emissions resulting from the following energy project types: *renewable energy power plant retrofit, T&D retrofit and capacity expansion; thermal power plant retrofit, fuel switch and co-generation; energy efficiency in buildings, industry and public services.*

11. According to the IFI approach, net emissions of energy efficiency projects are calculated as the overall change in emissions, namely emission reductions from reduced emission intensity of the output of the pre-investment facility during its remaining life, and net emissions from the additional output related to increased operating capacity and extended operating life.

12. **Proposed approach for the Bank:** endorse and use the IFI Approach to GHG Accounting for Energy Efficiency Projects.

III. Other project categories

Greenfield gas-fired power plant and T&D capacity expansion¹²

13. MDBs have issued guidance notes to account for the net GHG emissions resulting from greenfield gas-fired power plants and T&D capacity expansion projects. International methodologies and guidelines are also available. For example, UNFCCC methodologies, Intergovernmental Panel on Climate Change (IPCC) National GHG Inventories guidelines, the GEF and CDM/Joint Implementation (JI) methodological frameworks, and GHG Protocol Initiative standards.

14. **Proposed approach for the Bank:** consider the latest available methodologies and guidelines issued by MDBs and internationally recognized bodies and adopt those that are most appropriate for the Bank, including:

- *World Bank (2013) Greenhouse Gas Accounting for Energy Investment Operations: Transmission and Distribution Projects Power Generation Projects and Some Demand-Side, Energy-Efficiency Activities*
- *ADB (2017) Guidelines for Estimating GHG emissions – Additional Guidance for Clean Energy Projects*
- *EIB (2014) Methodologies for the Assessment of Project GHG Emissions and Emission Variations*
- *UNFCCC Large-scale Consolidated Methodology: Construction of a new natural gas power plant (ACM0025)*

Where possible and considered to be necessary by the project team, net GHG emission reduction from other types of energy projects will be calculated on a project-by-project basis, in line with the latest international methodological developments.

¹¹ ADB, AfDB, AFD, EBRD, EIB, GEF, GIB, NIB, NEFCO, IDB, IFC, and WB, with support from the UNFCCC secretariat.

¹² T&D capacity expansion projects that do not reduce existing losses are considered under this category.

Annex 3. MDBs Benchmark on Energy Portfolio Level Indicators

| Categories MDB examples | ADB Energy Policy (2009) | ADB Transitional Results Framework (2017-2020) | World Bank Corporate Scorecard (2017) | AiIB - Portfolio Level Output/Outcome indicators |
|---|--|--|--|--|
| Promote energy access and security | Total additional capacity, MW | Installed energy generation capacity, MW | Generation capacity of conventional/renewable energy, MW | Total generation capacity installed, MW |
| | Number of new households connected to electricity | New households connected to electricity | People provided with new or improved electricity service, millions | Number of households with increased access to electricity (grid and non-grid), millions |
| | <ul style="list-style-type: none"> • Transmission lines installed or upgraded, km • Distribution lines installed or upgraded, km | <ul style="list-style-type: none"> • Transmission lines installed or upgraded, km • Distribution lines installed or upgraded, km | | T&D lines / pipelines financed, km |
| Realize energy efficiency potential | Electricity saved, GWh | | Projected lifetime energy and fuel savings, MWh and MJ | Primary energy consumption saved, GWh |
| Reduce the carbon intensity of energy supply | Additional installed capacity using renewable energy, MW | Installed energy generation capacity (megawatts): Renewable | Generation capacity of renewable energy, MW | Renewable generation capacity installed, MW |
| | Reduction of carbon dioxide emissions, tons of CO2 equivalent per year | Greenhouse gas emission reduction, tons of CO2 equivalent per year | Emission reductions with support of special climate instruments, million tons of CO2 equivalent per year | Greenhouse gas emission reduction, tons of CO2 equivalent per year |
| Manage local and regional pollution | | | | * measured at specific project level, e.g. reduction of CO ₂ , NO _x , SO _x and particulate matters, tons per year |
| Catalyze private capital | | | Private capital mobilized (direct), US\$ billions | * Cross reference to relevant indicators in the Strategy on Mobilizing Private Capital |
| Promote regional cooperation and connectivity | | Cross-border transmission of electricity, GWh per year | | * measured at specific project level, e.g. cross-border transmission of electricity (GWh per year) and natural gas (bcm per year) |