

AIB GREEN BOND PORTFOLIO

CLIMATE IMPACT ASSESSMENT METHODOLOGY



PORTFOLIO AS OF
31ST DEC 2019

FEBRUARY 28, 2020



Introduction

AIB is accelerating the transition to a low carbon economy by financing renewable energy projects that reduce the need for carbon intensive energy technologies. Such renewable energy projects diversify the electricity grid and reduce the need for energy generated from fossil fuels (such as natural gas, coal or oil). Navigant was asked to calculate the positive climate impacts of AIB's green bond portfolio, which include wind, solar and anaerobic digestion technologies.

Methodology

The method used to calculate the avoided GHG emissions for AIB's wind and solar portfolio is based on Chapter 3.4.3 of PCAF's *Harmonising and implementing a carbon accounting approach for the financial sector*¹ and the *IFI Approach to GHG Accounting for Renewable Energy Projects*². The method used for anaerobic digestion is based on the EU Renewable Energy Directive II and *Harmonised Calculations of Biofuel GHGs in Europe*³.

Navigant measured the climate impacts from AIB's renewable energy portfolio by calculating the avoided GHG emissions from projects financed by AIB. The avoided GHG emissions were calculated by:

- Taking the estimated electricity production of the project, measured in MWh, multiplied by a country-specific and technology-specific emission factor
- For wind and solar projects, the country-specific emission factor is a weighted average of a *build margin* (BM) and *operating margin* (OM). The OM represents the marginal generating capacity in the existing dispatch hierarchy that will most likely be displaced by the project. The BM is the cohort of the prospective power plants whose construction and operation would be affected by the project, based on an assessment of planned and expected new generation capacity. The OM/BM split for these generation technologies is 75%/25%. The result of this calculation is the *combined margin* (CM) emission factor, and this is the value used in the calculations. The full dataset for CM emission factors is published by IFI⁴
- For anaerobic digestion projects, emission factors were calculated using AIB inputs and a specialised and proprietary tool by Navigant experts. Where data was not provided by AIB, assumptions were made by Navigant experts based on average values. Assumptions include, but are not limited to heat efficiency of CHP units, and feedstock source, mix, moisture contents
- In cases where the estimated electricity production was not provided by AIB, production is calculated by multiplying (1) the annual load hours of wind and solar, by (2) the project capacity (MW)
- In some cases, AIB does not finance the entire project, therefore the avoided emissions are adjusted by the share for which is financed by AIB. This share is calculated by taking (1) the amount outstanding on the deal and dividing by (2) the syndicated deal amount
- Vehicle calculations are based on UK data for average car journeys (emissions [kgCO₂/pkm], annual distance travelled [km], passenger number per journey)
- Tree calculations are based on how much CO₂ is absorbed by a tree over a 100 year lifespan
- The calculations are valid based on the portfolio (27 projects) as of December 31st, 2019

¹ <http://carbonaccountingfinancials.com>

² <http://documents.worldbank.org/curated/en/758831468197412195/pdf/101532-WP-P143154-PUBLIC-Box394816B-Joint-IFI-RE-GHG-Accounting-Approach-clean-final-11-30.pdf>

³ https://www.biograce.net/app/webroot/files/file/BioGrace_calculation_rules_-_version_1b_-_Public.pdf

⁴ https://unfccc.int/sites/default/files/resource/Harmonized_Grid_Emission_factor_data_set.pdf