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Introduction to ESMAP's recent work on marginal abatement cost methodology

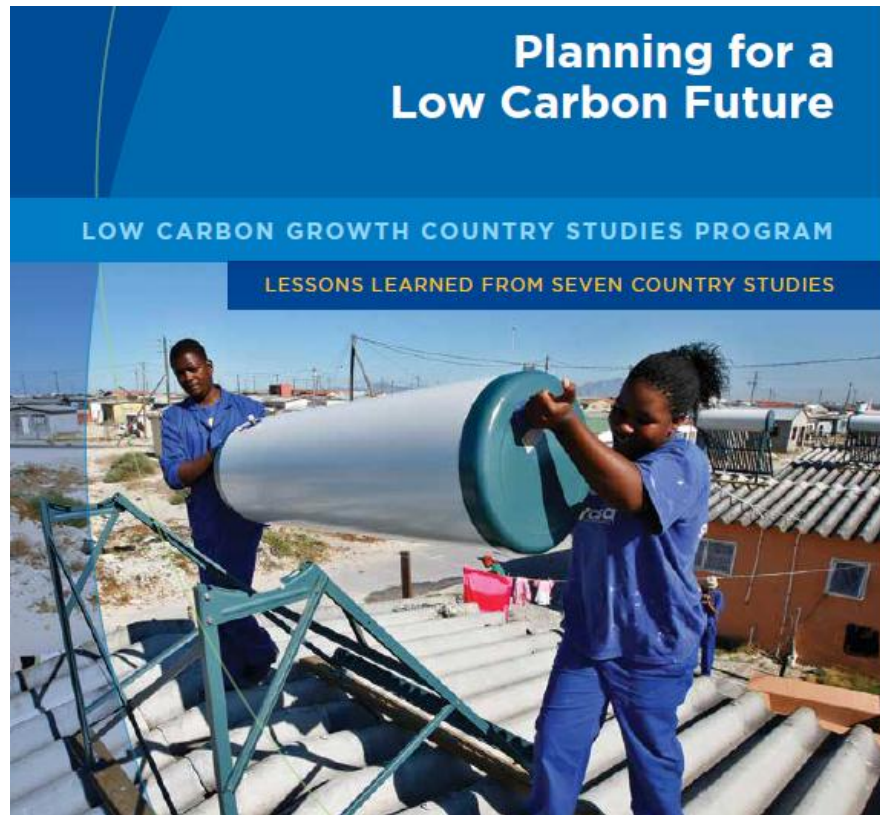


What is ESMAP?

- **Energy Sector Management Assistance Program**
 - Global knowledge and technical assistance program administered by the World Bank
 - Mission to assist countries to increase know-how and institutional capacity to achieve environmentally sustainable energy solutions
 - Climate Change is one of ESMAP's areas of focus which includes the integration of climate change mitigation into energy sector planning

Seven Low-Carbon Development Country Studies

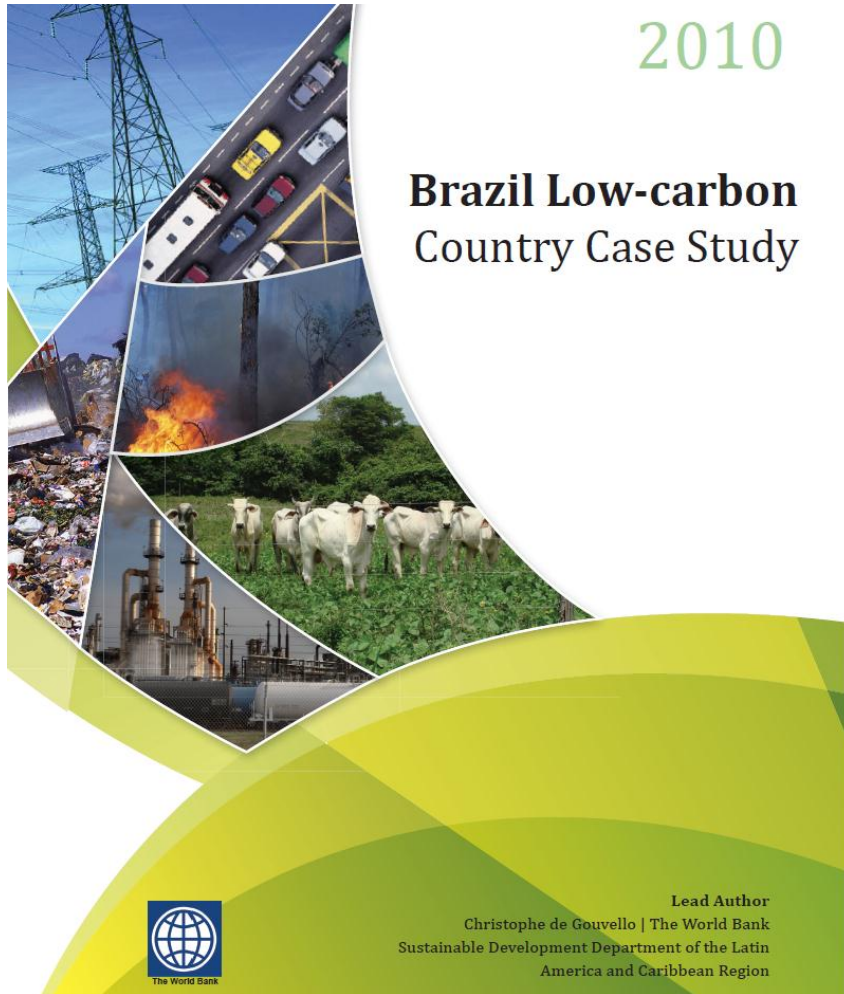
SINCE 2007



- Brazil
- Mexico
- China
- India
- Indonesia
- Poland
- South Africa

Methodology is Not Completely Uniform


SHOULD IT BE?

The cover image for the 'Brazil Low-carbon Country Case Study' features a collage of images: a highway with traffic, a power transmission tower, a large fire, a pile of trash, a herd of cows in a field, and an industrial facility. The year '2010' is printed in green at the top right.

2010

**Brazil Low-carbon
Country Case Study**

Lead Author
Christophe de Gouvello | The World Bank
Sustainable Development Department of the Latin
America and Caribbean Region

A collage of four images showing modern urban infrastructure in Shanghai: a skyline with skyscrapers, a busy street with pedestrians, a modern transit station interior, and a modern building exterior.

**Applying
Abatement Cost
Curve Methodology
for Low-Carbon
Strategy in
Changning District,
Shanghai**

August 2013



Energy Unit
Sustainable Development Department
East Asia and Pacific Region
World Bank



A S T A E
Asia Sustainable and Alternative Energy Program

Marginal Abatement Cost (MAC) Definitions

INCREMENTAL COST ANALYSIS IS A WELL ESTABLISHED APPROACH TO APPROXIMATE MACs

- MAC = Net present value (NPV) of the incremental costs of a Low-Carbon Option (LCO) per tCO₂e avoided over the LCO operating period
- Incremental costs are divided by incremental emission reductions
- “Incremental” implies comparison with a baseline (or “Business-As-Usual”) scenario
- Emission reduction has a positive value, while incremental costs may be negative, indicating “win-win” options

Note: tCO₂e = ton of CO₂ equivalent

Meta MAC

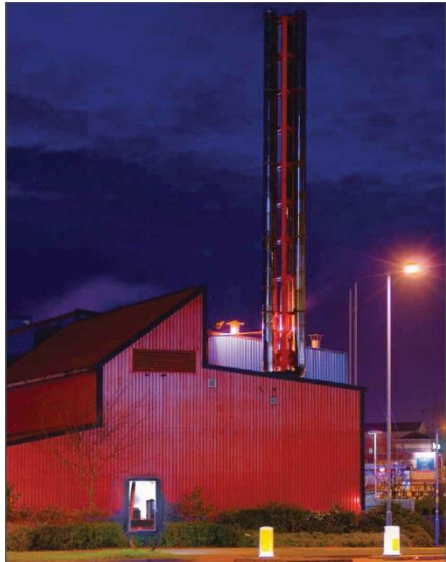
A MODULE OF MAC TOOL

- Meta MAC uses MAC Tool outputs as building blocks to build MAC curves on a more aggregate level
- Aggregation by sector (or region) may be more suitable for development of cap-and-trade schemes than technology-by-technology
- The model structure adheres to the UN international industry classification standards (ISIC)

Summary

LET FORM AND SUBSTANCE GO HAND IN HAND

- MAC Tool and Meta MAC programs are powerful presentation tools and provide an excellent framework for collecting and organizing data
- The power of MAC Tool is in its capacity to integrate the technology-specific MAC data into comprehensive and flexible graphical images
- Meta MAC takes the integrative flexibility to the next level by allowing aggregation of data by sector and geographic area
- However, the level of application of the tools needs to be thought out (geographic scope, sector emphasis), and
- Data quality is the ultimate foundation of valuable policy insights



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Thank You.

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