

Executive Summary: ICAT Renewable Energy Methodology

Assessing the greenhouse gas impacts of renewable energy policies

RENEWABLE ENERGY AND CLIMATE CHANGE

According to the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, the energy sector is the largest contributor to global carbon dioxide (CO_2) emissions. Reducing emissions from this sector is therefore critical to limiting the rise in global temperatures and achieving global climate goals.

In this context, renewable energy policies play a central role. Around the world, governments are adopting ambitious strategies to accelerate the shift from fossil fuels to renewable energy sources. They also seek reliable ways to assess how these policies influence greenhouse gas emissions (GHG) and whether they are helping to meet national and international climate targets.

The Initiative for Climate Action Transparency (ICAT) *Renewable Energy Methodology: Assessing the greenhouse gas impacts of renewable energy policies* helps policymakers assess the impacts of renewable energy policies and improve their effectiveness. It offers practical guidance for tracking progress and providing the information needed to prepare reports under the Paris Agreement's Enhanced Transparency Framework and for the Sustainable Development Goals.

PURPOSE OF THE GUIDE

The purpose of the guide is to support governments and stakeholders in evaluating the GHG impacts of renewable energy policies in a transparent, consistent, and credible manner. The guide provides a methodological framework that can be applied throughout the policy design and implementation stages, helping users make informed decisions. More broadly, the guide enables users to:

- Estimate emission reductions resulting from renewable energy policy interventions.
- Improve policy design and implementation by identifying strengths, gaps, and opportunities for greater impact and efficiency.
- Facilitate transparent reporting under the Paris Agreement's Enhanced Transparency Framework.
- Inform the formulation and updating of national climate strategies, including Nationally Determined Contributions (NDCs) and long-term low-emission development plans.
- Support alignment with broader sustainable development objectives, reinforcing the link between renewable energy deployment, economic growth, and social well-being.

SCOPE AND APPLICABILITY

The guide presents key concepts and a structured methodology for estimating the GHG impacts of five major types of renewable energy policies, and can be used ex-ante or ex-post. It is specifically designed to support the assessment of policies that promote the deployment of renewable energy for grid-connected electricity generation. To illustrate practical applications, the guide includes examples and case studies that show how the methodology can be applied in real-world contexts. The framework is flexible and can be used by any country, regardless of its stage in policy design or implementation.

The five key types of renewable energy policies covered in this guide include:

- Feed-in tariff policies (including feed-in premiums)
- Auction policies (including tender policies)

- Tax incentive policies
- Net metering
- Variable renewable energy (VRE) integration with grid-battery storage policies

INTENDED AUDIENCE

The primary intended audience is developing country governments and their partners who are planning, implementing, and/or assessing the GHG impacts of renewable energy policies in the context of developing and implementing their NDCs, national or subnational low-carbon strategies, nationally appropriate mitigation actions (NAMAs), and other mechanisms. The primary intended users are developing country governments at any level (national, subnational, or municipal), and relevant stakeholders who are designing, implementing, and assessing renewable energy policies.

ASSESSMENT STEPS

The guide provides a step-by-step approach to estimating the GHG impacts of renewable energy policies. The assessment process includes the following three parts:

Part I: Plan the assessment
Provides a brief overview of reporting frameworks, stakeholder engagement, policy objectives, and methodological considerations relevant to the renewable energy sector. For more detailed guidance on planning the assessment process, users are encouraged to refer to the ICAT Introductory Guide.

Part II: Select and describe the policy
Helps users in identifying renewable energy policies relevant to their context, including an overview of policy types and the scope of the methodology, and supports users in clearly describing the selected policy, outlining its activities, identifying intermediate effects and potential GHG impacts, developing a causal chain, defining the assessment boundary and period, and considering interactions with other policies.

Part III: Assess the policy
Presents the core methodology for assessing renewable energy policies, including steps to estimate renewable energy addition, assess GHG impacts (ex-ante and ex-post), and analyze the cost of policy implementation.

THE ICAT SERIES OF POLICY ASSESSMENT GUIDES

ICAT aims to help countries assess the impacts of their climate actions, and to support greater transparency, effectiveness, ambition, and trust in climate policies worldwide. The Renewable Energy Methodology is part of the ICAT series of guides for assessing the GHG, sustainable development, and transformational impacts of policies and actions in an integrated way. They are complemented by process guides that strengthen the quality and transparency of assessments through effective stakeholder participation and independent technical reviews. The guides are the result of collaboration with technical experts from around the world. The ICAT Renewable Energy Methodology can be used on its own or together with other ICAT guides.



The ICAT policy assessment guides have been used to support capacity-building for transparency in more than 50 countries. Case studies are available on the ICAT website. To learn more about how ICAT supports countries, visit www.climateactiontransparency.org or email ICAT at ICAT@unops.org.