

Buildings Efficiency Guidance

Guidance for assessing the greenhouse gas impacts of buildings policies

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What is the guidance and why should I use it?

1. INTRODUCTION

With the adoption of the Paris Agreement in 2015, governments around the world are increasingly focused on implementing policies and actions that achieve greenhouse gas (GHG) mitigation objectives. The buildings sector contributes nearly 25% of global GHG emissions and represents more than 30% of final energy consumption.¹ Countries are increasingly implementing policies and actions in the buildings sector to meet their energy efficiency targets and commitments. In this context, there is an increasing need to assess and communicate the impacts of energy policies and actions to ensure they are effective in delivering GHG mitigation and helping countries meet their sectoral targets and commitments.

Purpose of the guidance

This document provides methodological guidance for assessing the GHG impacts of energy efficiency policies in the buildings sector. The guidance provides a stepwise approach for estimating the effects of policy design characteristics and barriers associated with regulatory and financial support policies on GHG impacts. It is applicable to the commonly implemented buildings policies described in the *Scope and Applicability* section.

This guidance is part of the Initiative for Climate Action Transparency (ICAT) series of guidance for assessing the impacts of policies and actions. It is intended to be used in combination with any other ICAT guidance documents that users choose to apply. The series of guidance is intended to enable users that choose to assess GHG impacts, sustainable development impacts and transformational impacts of a policy to do so in an integrated and consistent way within a single impact assessment process. Refer to the *Introductory Guide* for more information about the ICAT guidance documents and how to apply them in combination.

¹ UNEP 2016. Available at: <https://wedocs.unep.org/rest/bitstreams/45611/retrieve>

Intended users

This guidance is intended for use by policymakers and practitioners seeking to estimate GHG mitigation impacts in the context of Nationally Determined Contribution (NDC) development and implementation, national low carbon strategies, and Nationally Appropriate Mitigation Actions (NAMAs) and other mechanisms. The primary intended users are developing country governments and their partners who are implementing and assessing buildings policies. Throughout the guidance, the term “user” refers to the entity implementing the guidance.

The main emphasis of the guidance is on the assessment of GHG impacts. Impact assessment can also inform and improve the design and implementation of policies. Thus, the intended users include any stakeholders involved in the design and implementation of buildings efficiency policies, strategies, NDCs or NAMAs, including research institutions, businesses and non-governmental organisations.

Scope and applicability of the guidance

This guidance provides methods for assessing the GHG impacts of energy efficiency policies² in the buildings sector. The guidance targets residential, commercial and public buildings. Users should be aware that assessments involving the commercial and public sectors may be more challenging for some countries. This is mainly because commercial and public building types are sometimes defined less precisely than they are in the residential sector, as there is a general lack of knowledge on the composition of the building stock and missing standardised classification of different building types.

The guidance is applicable to three building stock types: new buildings, existing buildings with retrofit, and existing buildings without retrofit. It is applicable to the following types of buildings policies, which are described in more detail in Chapter 3:

- **Regulatory policies (for new buildings):**
 - Mandatory and voluntary building codes
 - Minimum energy performance standards (MEPS) for appliances
 - Mandatory labelling, certification and energy audits
- **Financial support policies (for new and existing buildings):**
 - Direct financial incentives
 - Fiscal measures

Table 1.1 presents the scope of the guidance in terms of the main elements targeted by buildings policies. The guidance focuses on the assessment of impacts from built-in energy loads, including space heating, cooling, lighting and hot water. Appendix C lists the full criteria used to choose the scope of the guidance.

² Throughout this guidance, where the word “policy” is used without “action,” it is used as shorthand to refer to both policies and actions. See Glossary for definition of “policies or actions”.

Table 1.1: Guidance scope

Building use	Space heating and cooling	Appliances related to heating, cooling and hot water	Appliances not related to heating, cooling and hot water*	Lighting**	Cooking
Residential	Yes	Yes	No	Yes	No
Commercial	Yes	Yes	No	Yes	No
Public	Yes	Yes	No	Yes	No

* All other hardwire load appliances and plug load appliances (e.g., network connected appliances and brown goods)

** Lighting covered by building code regulations

This guidance details a process for users to follow when conducting a GHG assessment of buildings policies. It provides guidance on defining the assessment, an approach to GHG assessment including ex-ante (forward-looking) assessments and ex-post (backward-looking) assessments, and monitoring and reporting. Throughout the document, examples and case studies [*to be developed*] are provided to illustrate how to apply the guidance.

The guidance is applicable to policies:

- At any level of government (national, subnational or municipal) in all countries and regions
- That are planned, adopted or implemented
- That are new policies or extensions, modifications, or eliminations of existing policies

When to use the guidance

The guidance can be used at multiple points in time throughout a policy design and implementation process, including:

- **Before policy implementation:** To assess the expected future impacts of a policy (through ex-ante assessment)
- **During policy implementation:** To assess the achieved impacts to date, ongoing performance of key performance indicators, and expected future impacts of a policy
- **After policy implementation:** To assess what impacts have occurred as a result of a policy (through ex-post assessment)

Depending on individual objectives and when the guidance is applied, users can implement the steps related to ex-ante assessment, ex-post assessment or both. The most comprehensive approach is to apply the guidance first before implementation, regularly during policy implementation and again after implementation. Users carrying out an ex-post assessment only skip Chapter 8. Users carrying out an ex-ante assessment only skip Chapter 9.

Key recommendations

The guidance includes *key recommendations* that represent recommended steps to follow when assessing and reporting impacts. These recommendations are intended to assist users in producing credible impact assessments that are high quality and based on the principles of relevance, completeness, consistency, transparency and accuracy.

Key recommendations are indicated in subsequent chapters by the phrase “It is a *key recommendation* to...” All key recommendations are also compiled in a checklist at the beginning of each chapter.

Users that want to follow a more flexible approach can choose to use the guidance without adhering to the key recommendations. The ICAT *Introductory Guide* provides further description of how and why key recommendations are used within the ICAT guidance documents, as well as more information about following either the “flexible approach” or the “key recommendations” approach when using the guidance. Refer to the *Introductory Guide* before deciding on which approach to follow.

Relationship to other guidance and resources

This guidance uses and builds on several existing resources mentioned throughout the document, which are also listed in the References section.

The guidance builds upon the Greenhouse Gas Protocol *Policy and Action Standard*³ and the *Draft Policy and Action Standard – Commercial and Residential Buildings Sector Guidance*⁴ (both of which provide guidance on estimating the greenhouse gas impacts of policies and actions and discussion on many of the accounting concepts in this document such as baseline and policy scenarios), to provide a detailed method for specific buildings efficiency policies. As such, this guidance adapts the structure and some of the tables, figures and text from the *Policy and Action Standard*, where relevant. Figures and tables adapted from the *Policy and Action Standard* are cited, but for readability not all text taken directly or adapted from the standard is cited.

Process for developing the guidance

This guidance has been developed through an inclusive, multi-stakeholder process convened by the Initiative for Climate Action Transparency. The development is led by the NewClimate Institute (technical lead) and Verra (co-lead), who serve as the Secretariat and guide the development process. The first draft was developed by drafting teams, consisting of a subset of a broader Technical Working Group (TWG) and the Secretariat. The TWG consists of experts and stakeholders from a range of countries identified through a public call for expressions of interest. The TWG contributed to the development of the technical content for the guidance through participation in regular meetings and written comments. The energy sector TWG contributed to both the ICAT *Buildings Efficiency Guidance* and the *Renewable Energy Guidance*. A Review Group provided written feedback on the first draft of guidance.

This version of guidance will be applied with ICAT participating countries and other interested countries to ensure that it can be practically implemented, gather feedback for its improvement and provide case studies.

³ WRI 2014. Available at: <http://www.ghgprotocol.org/policy-and-action-standard>

⁴ Available at: http://www.ghgprotocol.org/sites/default/files/ghgp/standards_supporting/Buildings%20-%20Additional%20Guidance.pdf

ICAT's Advisory Committee provides strategic advice to the initiative. More information about the guidance development process, including governance of the initiative and the participating countries, is available on the ICAT website.

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2. OBJECTIVES OF ASSESSING THE GHG IMPACTS OF BUILDINGS POLICIES

This chapter provides an overview of objectives users may have in assessing the GHG impacts of buildings policies. Determining the assessment objectives is an important first step, since decisions made in later chapters are often guided by the stated objectives.

Checklist of key recommendations

- Determine the objectives of the assessment at the beginning of the impact assessment process

Assessing the GHG impacts of buildings efficiency policies is a key step towards identifying opportunities and gaps in effective GHG mitigation strategies. Impact assessment supports evidence-based decision making by enabling policymakers and stakeholders to understand the relationship between buildings policies and expected or achieved changes in various GHG impacts. It is a *key recommendation* to determine the objectives of the assessment at the beginning of the impact assessment process.

Examples of objectives for assessing the GHG impacts of a policy are listed below. The ICAT *Sustainable Development Guidance* can be used to assess the broader sustainable development impacts of policies and users should refer to that guidance for objectives for assessing such impacts.

General objectives

- **Estimate the GHG impacts of policies to determine whether they are on track to help meet goals** such as NDCs or energy efficiency targets in the buildings sector
- **Ensure that policies are cost-effective** and that limited resources are invested efficiently

Objectives of assessing impacts before policy implementation

- **Improve policy selection, design and implementation** by understanding the impacts of different design and implementation choices
- **Inform goal setting** by assessing the potential contribution of policies to national goals and targets, such as NDCs
- **Access financing** for policies by estimating potential GHG impacts

Objectives of assessing impacts during or after policy implementation

- **Assess policy effectiveness** by determining whether policies are delivering the intended results
- **Improve policy implementation** by determining whether policies are being implemented as planned
- **Inform future policy design** and decisions on whether to continue current actions, enhance current actions, or implement additional actions
- **Learn from experience and share best practices** about the policy impacts
- **Track progress toward national goals and targets** such as NDCs and understand the contribution of policies toward achieving them

- **Report**, domestically or internationally, including under the Paris Agreement's enhanced transparency framework, on the impacts of policies achieved to date
- **Meet funder requirements** to report on GHG impacts of policies

Users should also identify the intended audience(s) of the assessment report. Possible audiences include policymakers, the general public, NGOs, companies, funders, financial institutions, analysts, research institutions, or other stakeholders affected by or who can influence the policy. For more information on identifying stakeholders, refer to the ICAT *Stakeholder Participation Guidance* (Chapter 5).

Subsequent chapters provide flexibility to enable users to choose how best to assess the impacts of policies in the context of their objectives, including which impacts to include in the GHG assessment boundary and which methods and data sources to use. The appropriate level of accuracy and completeness is likely to vary by objective. Users should assess the impacts of their policies with a sufficient level of accuracy and completeness to meet the stated objectives of the assessment.