



# A CRITICAL DECADE FOR CLIMATE POLICY: TOOLS AND INITIATIVES TO TRACK OUR PROGRESS

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## EXECUTIVE SUMMARY

The last five years have seen both broad and deep advancements in national policies to mitigate future greenhouse gas (GHG) emissions. The next five years will be instrumental in ensuring that these policies are implemented effectively, creating sustained change that will achieve gigatonne-scale GHG reductions, and laying the foundation for countries to move ahead with ever more ambitious approaches to reduce GHG emissions and limit the dangers and costs of a changing climate.

In order to support effective development and implementation of climate policies, a suite of policy tracking tools and initiatives is evolving, with a variety of characteristics tuned to address different questions and audiences. Underlying these efforts is the observation of metrics related to climate policy development, adoption, implementation, and/or effect. These initiatives seek to complement the measurement, reporting, and verification (MRV) processes under the United Nations Framework Convention on Climate Change (UNFCCC), promoting accountability for governments to set and meet ambitious yet feasible goals and targets, identifying barriers and facilitating course corrections when necessary, and ultimately supporting overall policy progress and effectiveness.

## CONTENTS

Executive Summary.....	1
Introduction.....	3
Background and Context.....	3
Approach.....	8
Results and Discussion.....	12
Conclusions and Recommendations.....	19
Acronyms.....	22
References.....	22
Endnotes.....	23

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Government and intergovernmental organizations are the key actors who adopt and implement policies and actions; however, independent analysts, non-governmental organizations (NGOs), and the private sector play a vital role from the early stage development of climate, energy, and land use policies on through to adoption and into implementation, in order to ultimately achieve the desired GHG reductions. In this context, the field of climate policy tracking can serve to:

- Build and maintain political momentum, and offer technical analysis and design principles.
- Provide independent estimates of likely policy effects as well as risks, strengths, and uncertainty.
- Spread shared learning and best practices between countries or sectors to improve efficacy.
- Juxtapose policy portfolios with reduction pledges, abatement potential, and climate needs.

In order to succeed in this role, a complete climate policy tracking landscape needs to fulfill a range of functions, which may then be tailored to particular needs and questions. Successful efforts will have many things in common. Ongoing and continuous monitoring of policy progress should be coupled with evaluations of policy effectiveness and appraisals of likely and expected outcomes of policy trajectories. A combination of quantitative and qualitative inputs and outputs are necessary both to measure expected outcomes and progress toward milestones, but also to recognize the non-linear and imprecise nature of policy development and implementation.

This paper represents an initial effort by our institutions to broaden our collective lens and learn more from each other and our peers in the climate policy tracking community. We will supplement this analysis in the future, and aim to convene practitioners on a regular basis. Given our current understanding of the climate policy tracking landscape, we offer the following observations:

- The climate policy tracking community has developed a diverse portfolio of methodologies and frameworks to address a range of policy tracking needs.
- Nevertheless, information about climate policies remains patchy. In particular, there is little coordinated monitoring of policy implementation (in contrast to policy adoption) or of policies currently under development. Geographies are unevenly covered and quantifications and projections are often inconsistent.
- Many climate policy tracking efforts are conducted by international organizations and target the needs of an international audience, though some good examples exist at the country level.
- Technical abatement potential serves as a useful goalpost but lacks political and policy context.

Drawing from this body of work, we offer the following recommendations for other practitioners, funders, and governments:

- Deepen monitoring and evaluation of policy implementation and policies under development, drawing on existing methodologies and frameworks.
- Strengthen climate policy tracking at the country level—in partnership with national organizations—while maintaining internationally focused efforts.
- Enhance coordination and collaboration among climate policy tracking practitioners, including with regard to ongoing refinement of methodologies, coordinating deployment of methodologies to answer priority questions, and communicating results.
- Continue to scope out emerging issues, including country- and sector-specific tracking efforts, the intersection of independent tracking with biennial reports and biennial update reports under the UNFCCC, and the need to develop a more nuanced understanding of abatement potential to inform ambitious yet feasible goals against which to track progress.

## I. INTRODUCTION

We are in the midst of a critical decade for climate policy. Global GHG emissions must peak by 2017 to retain even a 50% chance of limiting the average global temperature increase to 2°C, yet they continue to climb—according to the International Energy Agency’s 2012 *World Energy Outlook*, carbon dioxide emissions from fossil fuel combustion reached a record high in 2011.<sup>1</sup> A dramatic change in course seems unlikely in the absence of immediate and effective policy intervention by the governments of the world’s largest economies.<sup>2</sup>

In this context, it becomes imperative to track closely the development, adoption, implementation, and effect of the specific policies and measures that countries undertake to advance their transition to a low-carbon economy. At the domestic level, timely access to this information can help policymakers and other stakeholders identify barriers, facilitate course correction, and understand how policy interventions are affecting GHG emissions and other issues of national concern. Internationally, it can enhance trust among countries regarding the extent of national action, determine the extent to which needed reductions are likely to occur as a result of existing approaches, improve targeting of international assistance and climate finance to address key barriers, and help countries learn from one another’s experience. Taken together, these functions can help maximize the extent to which countries deliver on their international GHG reduction pledges as well as on their domestic policy commitments.

Independent observers and civil society organizations play a legitimate and fundamental role in environmental governance,<sup>3</sup> and this is particularly true in the case of tracking climate change policy. These actors not only supplement government perspectives on policy potential and effectiveness, but they also fill in gaps in accurate and timely reporting of climate policy information that has emerged slowly and inconsistently through official channels.

This paper examines efforts that have emerged in recent years to address the need for climate policy tracking, with a special emphasis on independent tracking efforts, and with a view toward identifying remaining information gaps and opportunities to fill them. As a basis for the discussion, it introduces definitions and concepts related to climate policy tracking and presents the background and context for current climate policy tracking initiatives, including efforts within and outside of the UNFCCC. It then describes international climate policy tracking efforts, as well as illustrative country-specific and sector-specific approaches, and analyzes these efforts with regard to a range of variables. Finally, it identifies priorities for future climate policy tracking efforts.

An earlier draft of this paper served as input to the Practitioners’ Workshop on Climate Policy Tracking, co-convened by the ClimateWorks Foundation and the World Resources Institute in October 2012. This version reflects input received from workshop participants, among other internal and external reviewers, but does not attempt to present a consensus view.

## II. BACKGROUND AND CONTEXT

### Defining “Climate Policy Tracking”

In this paper, **climate policies** refer to actions that can be taken or mandated by a government to accelerate the application and use of measures that curb GHG emissions.<sup>4</sup> Examples of climate policies include carbon taxes, fossil fuel taxes, cap-and-trade programs, renewable energy incentives, energy efficiency standards, and land use policies. Additional examples and explanations are provided in Table 1.

Table 1 | **Types of Climate Policies**

POLICY TYPE	DESCRIPTION	EXAMPLES <sup>5</sup>
Regulations and standards	These specify abatement technologies (technology standards) or minimum requirements for pollution output (performance standards). They may also set obligations or mandates for specific sectors (e.g., 20% of electricity supply must be from renewable sources).	Vehicle fuel economy standards (Canada, China, European Union, Japan, South Korea, United States) Power plant performance standards (United States)
Taxes and charges	A levy imposed on each unit of activity by an emissions source (e.g., fuel tax, carbon tax, traffic congestion charge, import or export tax).	Carbon pricing mechanism (Australia) Coal tax (India) Carbon dioxide tax (Norway)
Tradable permits	A program that establishes a limit on aggregate emissions by specified sources, requires each source to hold permits equal to its actual emissions, and allows permits to be traded among sources. Tradable permits can also be issued for attributes other than emissions (see India example, right).	Emissions Trading Scheme (European Union) Perform Achieve Trade Scheme (India)
Voluntary agreements	An agreement between a government authority and one or more private parties beyond compliance to regulated obligations (e.g., with the aim of improving environmental performance). Not all VAs are truly voluntary; some include rewards and/or penalties associated with participating in the agreement or achieving the commitments.	Energy Efficiency Benchmarking Covenant (Netherlands) Kaidanren Voluntary Action Plan on the Environment (Japan)
Subsidies and incentives	Direct and indirect benefits and payments, tax reductions, rebates, price supports or the equivalent thereof, from a government to an entity for implementing a practice or performing a specified action.	Renewable energy feed-in tariffs (China, Germany, India, Japan, Thailand, United Kingdom) Production Tax Credit (United States)
Information instruments	Required public disclosure of information (e.g., environmentally related information), generally by industry to consumers. These include labeling programs, rating, and certification systems, as well as information campaigns aimed at changing behavior.	Green Light Programme (European Union) Bureau of Energy Efficiency Star Label (India) ENERGY STAR (United States)
Research and development (R&D)	Activities that involve direct government funding and investment aimed at generating innovative approaches to the physical and social infrastructure (e.g., to reduce emissions). Examples of these are funding and incentives for technological advances.	High Tech Strategy 2020 (Germany) Sun Shot Initiative (United States)
Public procurement policies	Policies requiring that specific attributes (e.g., environmental attributes) be considered as part of public procurement processes.	Sustainable Public Procurement in Urban Administrations (China) Green Procurement Law (Japan)
Infrastructure programs	Provision of sustainable infrastructure (e.g., high speed rail).	Integrated Transport Network (Curitiba, Brazil) Janmarg (Ahmedabad, India)
Financing and investment	Grants or loans (e.g., to support development strategies or policies).	The American Recovery and Reinvestment Act of 2009 (United States)
Strategies framed in terms of desired outcomes	Government or private sector strategies (e.g., increasing renewable energy generation or reducing deforestation by 20% by 2020).	Action Plan to Prevent and Control Deforestation in the Amazon (Brazil) Jawaharlal Nehru National Solar Mission (India)

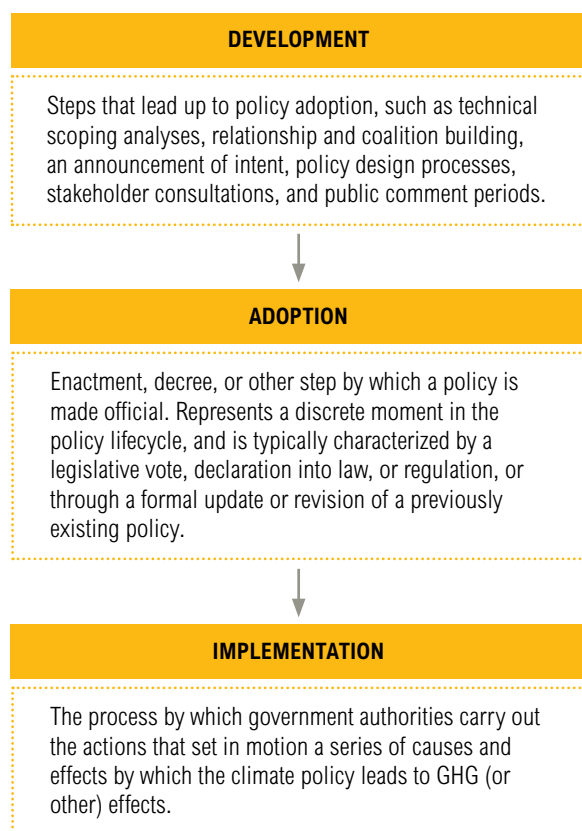
Adapted from GHG Protocol (2012).

**Climate policy tracking** refers to the ongoing observation—or monitoring—of metrics<sup>6</sup> related to climate policy development, adoption, implementation, and effect. It also comprises climate policy evaluation, when conducted on a periodic basis in the interest of tracking policy effectiveness over time. We propose these terms—tracking, monitoring, and evaluation—with the understanding that they are used differently by different communities of practice.

Climate policy metrics may be designed to address any stage in the policy lifecycle (see Fig. 1). They may capture:

- Financial, technical, sociopolitical, or human resource inputs
- Distinct actions associated with stages of developing, adopting, or implementing the policy
- Effects or results of the policy, including changes in GHG emissions, related sector- or policy-specific interim outcomes, or other costs or benefits
- Underlying circumstances and external drivers that influence policy development, adoption, implementation, and effectiveness<sup>7</sup>

Figure 1 | **Stages in the Policy Lifecycle at which Monitoring Can Occur**



In contrast to **monitoring**, which involves collecting data over time, climate policy **evaluation** makes use of data to answer specific questions about policy implementation, effects, or other related issues. Outcome or impact evaluations seek to identify the effect of a particular policy program, intervention, or investment. Evaluations may assess policy effectiveness vis-à-vis environmental impact, cost, or other qualities. Evaluations can be qualitative or quantitative in nature. They can take place on an ex-ante or ex-post basis,<sup>8</sup> and can occur as one-off efforts or on a periodic basis throughout the lifecycle of a particular policy effort.

Understanding the **effect** of climate policy is a common objective of climate policy tracking, and generally draws on both monitoring and evaluation. Monitoring systems can track metrics related to climate policy effect (e.g., megawatts of renewable power installed or number of inefficient boilers replaced), but generally cannot establish causality on their own. Outcome or impact evaluations may be able to establish the contribution of particular policy efforts toward policy outcomes.

The effect of a climate policy can be modeled or estimated at any stage in the policy lifecycle (provided the policy is defined in sufficient detail). Quantification is subject to uncertainty across a number of variables, which need to be monitored to help determine whether the policy generates the anticipated effect.

### Climate policy tracking under the UNFCCC and elsewhere

As policymakers and other stakeholders have grappled with questions related to climate policy design, implementation, and effectiveness, a new set of tools, technical approaches, and language has begun to address climate policy tracking needs. In the context of the UNFCCC, formal efforts to ramp up climate policy tracking were catalyzed by the Bali Action Plan of 2007, which called for MRV of a range of developed and developing country efforts. This gave rise to a range of new tools and approaches under the UNFCCC—including biennial reports, biennial update reports, international consultation and analysis, international assessment and review, and a periodic review of progress toward meeting the 2°C temperature goal—which will complement the national communications and inventories that have already laid the foundation for government reporting on progress under the Convention.



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Another body of work, however, has emerged outside of the UNFCCC, with overlapping—though not identical—objectives and approaches. This includes independent (i.e., non-government) efforts that track policy progress across a range of countries, as well as both government-backed and independent initiatives at the country and sector level. These efforts can potentially complement UNFCCC-sanctioned approaches in a number of ways:

- Providing an independent or supplementary perspective on climate policy progress that may validate or call into question current and expected outcomes reported in national communications
- Making information available to a broader audience, in a more timely fashion, or in a more user-friendly format than parties have agreed to under the UNFCCC
- Promoting consistent analytical approaches and best practices—for example, in quantifying policy impact, monitoring progress over time, or in projecting future GHG emissions—across policies, across sectors, and across countries
- Tracking progress in a manner that is tailored to the needs of a particular country or sector<sup>9</sup>
- Providing insights into issues not prioritized by formal monitoring processes, such as innovation or effectiveness

As the UNFCCC systems are discussed elsewhere,<sup>10</sup> this analysis—while considering climate policy tracking efforts broadly—gives special emphasis to the role that independent efforts, both within and across countries, have played and can play in meeting these objectives.

## Objectives of Climate Policy Tracking

Both within and outside of the UNFCCC, climate policy tracking has facilitative functions, which promote policy effectiveness, as well as accountability functions, which provide assurance that policy commitments are being met.<sup>11</sup> Information generated by tracking climate policies can facilitate effectiveness in a number of ways. First, it can provide policymakers and other stakeholders with timely information on policy implementation processes and their effects, allowing them to correct course when implementation or an external driver does not proceed as intended or to meet targets in more effective ways during the implementation process. Second, it may be able to facilitate the flow of funds to support the policy<sup>12</sup>—for example through international climate finance mechanisms, which have monitoring requirements. Third, climate policy tracking—in particular, evaluation—can identify success factors and barriers and inform the design and adoption of more effective policies based on lessons learned, including by creating greater certainty around effective and ineffective methods of policy implementation and identifying best practices. To the extent that policy tracking documents positive policy outcomes, this may also serve to build political capital in support of climate policy.

In addition to facilitating effectiveness, climate policy tracking can also promote accountability of public institutions for implementing appropriate, ambitious, and effective policies, and for delivering on GHG-related and other policy commitments. Tracking promotes accountability by providing the necessary information to determine whether governments are on track to meet GHG targets and other policy goals, and whether policies are sufficiently ambitious. By improving transparency of the climate policy implementation process, tracking can also facilitate stakeholder participation. This, in turn, can contribute to adoption of appropriate policy measures to which stakeholders can hold their governments accountable.

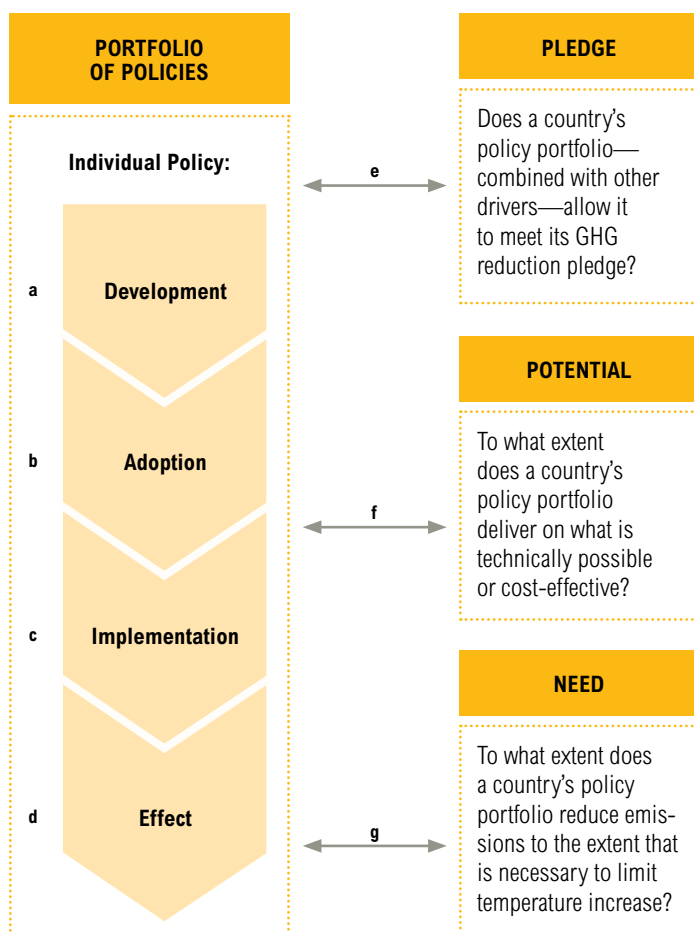
Ensuring that these objectives are met requires monitoring individual policies throughout their lifecycle—from development to adoption to implementation and effect. It also requires understanding how a portfolio of policies, taken together, relates to what countries have pledged to deliver, what is technically possible to deliver, and what is required to limit temperature increase. Finally, it requires evaluation to understand and replicate the factors that contribute to policy effectiveness.

Figure 2 illustrates what a climate policy tracking landscape that meets these needs might encompass. For example:

- Tracking policy development (*a* in Figure 2) facilitates stakeholder participation and can help build and maintain political momentum for future progress.
- Adoption (*b*) provides a discrete point to begin to quantify likely and full potential policy outcomes as well as to evaluate a policy's relative risk, certainty, and/or strength.
- Tracking the extent to which an adopted policy is being implemented (*c*) and having the desired effect (*d*) facilitates course correction and promotes accountability at the domestic policy level.

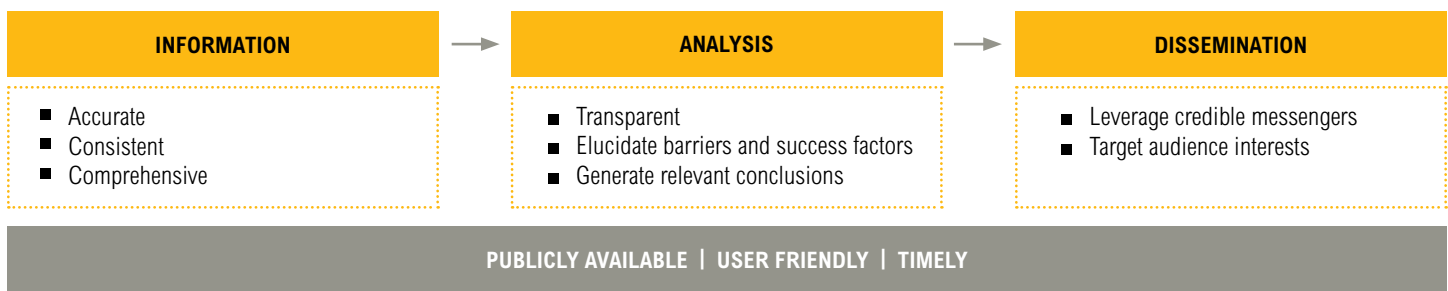
- Measuring the extent to which a country's policy portfolio is likely to deliver on its pledge (*e*) promotes accountability at the international level.
- Comparing a country's policy portfolio to what is technically possible or cost-effective (*f*) provides a measure of ambition and can identify areas for further policies or actions.
- Quantifying the extent to which policies or pledges, if implemented, would limit atmospheric GHG concentrations (*g*) promotes collective accountability and encourages course correction toward global mitigation goals.
- Monitoring the effect of particular policies (*c*) may be necessary for developing countries to secure international climate finance, and it can also contribute to learning and future effectiveness of policies in development.

Figure 2 | **Climate Policy Tracking Landscape**



In addition to providing information across this landscape, an effective climate policy information system will also be characterized by a range of other attributes (see Fig. 3). For example, information should be accurate, consistent, and comprehensive in its coverage (i.e., of geographies, sectors, and gases). Analysis should be methodologically transparent, elucidate barriers and success factors, and generate conclusions relevant to users. Information and analysis should be publicly available, user-friendly, and released in a timely manner to support policy decision-making. Strong communications strategies should leverage credible messengers and target audience interests to help ensure that the information will be used.<sup>13</sup> In the context of climate policy tracking, there is a particular need to ensure that analysis and communications strategies are designed to inform domestic policy debates, in addition to the international negotiations and venues.

Figure 3 | **Characteristics of an Effective Climate Policy Information System**



Adapted from Foti et al. (2008) based on Practitioners' Workshop on Climate Policy Tracking (2012)

The following section places existing initiatives—with a particular focus on independent, multi-country efforts—on the landscape described in Figure 2, and examines some of the variables that characterize the effectiveness of the overall climate policy information system.

### III. APPROACH

In preparation for the Practitioners' Workshop on Climate Policy Tracking, held in San Francisco in October 2012, WRI mapped a range of climate policy tracking tools and initiatives. The list of tools and initiatives was developed via informal interviews with climate policy tracking experts, and aims to provide comprehensive coverage of multi-country, climate-focused efforts, alongside illustrative examples of country- and sector-specific efforts.<sup>14</sup> The mapping exercise included selected tools, databases, and evaluation initiatives that link closely to the practice of climate policy tracking (even though not all of these correspond exactly to the definition of “climate policy tracking” initiatives described in Section II).

The tools and initiatives included in the mapping exercise are described in Box 1. This analysis considers as “tools” those methodologies and frameworks that are developed on a stand-alone basis, usually outside the scope of, or in parallel to, a specific effort to collect and track the

information that results from their use. It considers as “tracking initiatives” those projects that use tools, methodologies, and frameworks (their own or others’) to collect, report, and/or evaluate information regarding climate policy on a systematic, regular, ongoing basis. While this is not a firm distinction in all cases—tracking initiatives are, after all, also based on tools and methodologies—it facilitates a discussion of issues of coverage with respect to geography, policy, and other variables.

### Landscape Mapping

The mapping exercise first placed each tool or initiative according to:

- The point during the policy lifecycle at which it monitors or evaluates policies
- Whether it evaluates policies against pledged GHG abatement, some measure of abatement potential,<sup>15</sup> or the amount of abatement that is necessary to limit temperature increase<sup>16</sup>

### Technical Aspects

The mapping exercise then described each tool or initiative with regard to several technical variables:

- Whether the tool or initiative is primarily for monitoring, ex-ante evaluation, or ex-post evaluation
- Whether the tool or initiative draws primarily on qualitative data, quantitative data, or both
- Whether and how the tool or initiative addresses policy-level GHG quantification; sector- or national-level GHG projections; costs, co-benefits, or other non-GHG effects; assessment of policy risk or strength; and milestones related to policy development, adoption, or implementation



## Strategic Aspects

For tracking initiatives, the mapping exercise also identified:

- Geographic coverage, noting which countries each initiative addressed
- Lead implementers, grouped into the categories of international experts, national government agencies, and national independent experts

- Target audiences, grouped into the categories of international policymakers, domestic policymakers, and the private sector, on the basis of program documents and an informal evaluation of each initiative's communication efforts

An earlier classification of these tools and initiatives was subjected to peer review by representatives of each tool or initiative, where possible, as well as participants in the Practitioners' Workshop on Climate Policy Tracking.

## Box 1 | Tools & Initiatives for Climate Policy Tracking

### SIMULATIONS, FRAMEWORKS, & TOOLS

#### City-Scale GHG Analysis Framework

*C40 Cities and Stockholm Environment Institute (SEI)*

C40 Cities and SEI are developing a framework for quantifying city-scale GHG abatement policies on both an ex-ante and ex-post basis. [www.sei-international.org](http://www.sei-international.org); [www.c40.org](http://www.c40.org)

#### Adding Machine

*ClimateWorks Foundation (CWF)*

The Adding Machine is a tool for ClimateWorks' internal use that estimates and aggregates the carbon targets pursued by the ClimateWorks network, with a consistent methodology across regions and sectors and removing known instances of double counting.

#### Campaign Expected Path

*ClimateWorks Foundation*

The Campaign Expected Path is a timeline that projects the major policy and implementation milestones—legislation, financial commitments, rule-makings, etc.—necessary to achieve ClimateWorks Network 2020 emissions reduction goals within a given geographic region and economic sector. [www.climateworks.org](http://www.climateworks.org)

#### C-ROADS and En-ROADS

*Climate Interactive*

C-ROADS and En-ROADS are dynamic computer simulations that are oriented toward decision-makers and help users understand how we can achieve our energy transition, poverty, and climate goals through changes in our energy use, consumption, and policies. [www.climateinteractive.org/simulations](http://www.climateinteractive.org/simulations)

#### GHG Protocol Mitigation Accounting Standards

*World Resources Institute (WRI)*

The GHG Protocol Policies and Actions Standard provides guidance on how to quantify and report GHG effects from climate change mitigation actions (e.g., increased energy efficiency, increased renewable energy generation, reduced deforestation) and policies

(e.g., performance standards, efficiency standards, emissions trading programs, carbon taxes, etc.). The GHG Protocol Mitigation Goals Standard provides guidance on how to track and report progress toward national and subnational GHG reduction goals (e.g., goals stated in terms of reduction from a base year, reduction in emissions intensity, reductions to an absolute level, and reductions from a baseline). Both standards are developed by WRI through a global multi-stakeholder process. [www.ghgprotocol.org/mitigation-accounting](http://www.ghgprotocol.org/mitigation-accounting)

#### Open Climate Network Policy Implementation Toolkit

*World Resources Institute*

The toolkit aims to help bridge the gap between policy adoption and impact by facilitating the monitoring of steps in policy implementation and the diagnosis of barriers to effective implementation. [www.openclimatenetwork.org](http://www.openclimatenetwork.org)

### MULTI-COUNTRY TRACKING INITIATIVES

#### Climate Action Tracker (CAT)

*PIK, Climate Analytics, Ecofys*

CAT aims to provide an up-to-date assessment of country reduction targets and overview of their combined effects on global GHG concentrations and temperature, and to make these pledges transparent and encourage those countries that have not yet done so to make (or increase) their pledge. CAT v1.0 quantified the effect of countries' GHG targets—if fully implemented—on global GHG concentrations. CAT v1.5 aims to quantify the effect of 28 countries' "top three" policies on GHG emissions. CAT v2.0 provides detailed analysis of policies adopted to reach the pledges for selected countries (Australia and Mexico to date). [www.climateactiontracker.org](http://www.climateactiontracker.org)

### **ClimateWorks Foundation Gigatonne Scorecard**

*ClimateWorks Foundation*

ClimateWorks estimates and aggregates network-wide carbon targets for 2020 with an internal tool, the Adding Machine, for ClimateWorks Foundation's portfolio of investments in developing and implementing climate, energy, and land-use policies in the highest emitting regions and sectors. Estimates are linked to the Campaign Expected Path tool and discounted based on likelihood of successful policy development and implementation. Funders—including other private foundations and public donor agencies—are the Gigatonne Scorecard's primary audience. [www.climateworks.org](http://www.climateworks.org)

### **Climate Policy Initiative**

*Climate Policy Initiative (CPI)*

Climate Policy Initiative evaluates the effectiveness of climate and energy policies around the world. They assess, diagnose, and support the efforts of policymakers to achieve low-carbon growth. [www.climatepolicyinitiative.org](http://www.climatepolicyinitiative.org)

### **Global Climate Change Policy Tracker<sup>17</sup>**

*DeutscheBank Climate Change Advisors and Columbia Climate Center*

The "Climate Tracker" incorporates results of a model prepared by Columbia Climate Center researchers that estimates the impacts on carbon emissions of each of 270 major climate policies, and aggregates them at country, regional, and global levels. It then provides a risk rating of countries and regions based on their relative attractiveness to investors. It is designed to help investors identify the best risk-adjusted returns in climate change investment opportunities around the world. [www.dbcca.com/dbcca/EN/investment-research/investment\\_research\\_1780.jsp](http://www.dbcca.com/dbcca/EN/investment-research/investment_research_1780.jsp)

### **GLOBE Climate Legislation Study**

*Global Legislators Organization for a Balanced Environment (GLOBE) and Grantham Research Institute on Climate Change and the Environment*

The aim of the GLOBE Legislation Study is to map existing climate change and energy legislation to identify gaps and best practice, helping to establish what has worked well and could be replicated elsewhere. The 3rd annual study (covering 2012) included 33 countries, with an enhanced focus on developing countries and adaptation legislation. [www.globeinternational.org/images/climate-study/3rd\\_GLOBE\\_Report.pdf](http://www.globeinternational.org/images/climate-study/3rd_GLOBE_Report.pdf)

### **IEA Policies and Measures Database and Scenarios**

*International Energy Agency (IEA)*

The policies and measures database provides information on energy-related policies and measures taken or planned to reduce GHG emissions and covers measures taken in IEA member countries. Delegates from IEA member countries are given the opportunity to review information in the databases twice a year. IEA also uses this database to produce multiple policy scenarios in their *World Energy Outlook* and other reports. [www.iea.org/policiesandmeasures/](http://www.iea.org/policiesandmeasures/)

### **Open Climate Network**

*World Resources Institute*

The Open Climate Network (OCN) brings together independent research institutes in key countries around the world to monitor national progress on climate change policy. In its first phase (2011–2012), OCN partners conducted high-level assessments on a range of topics, including climate policy, climate finance, and clean technology. In its second phase, OCN is developing indicators to track policy progress, and conducting in-depth national assessments of climate policy implementation. [www.openclimatenetwork.org](http://www.openclimatenetwork.org)

### **UNEP Emissions Gap Report**

*United Nations Environment Programme (UNEP)*

The aim of the annual Emissions Gap Report is to understand and interpret the range of results coming from different studies on global emissions pathways based on the Copenhagen Accord Pledges, and to provide policymakers with an overview of results from various studies, as well as their areas of agreement and disagreement. [www.unep.org/publications/ebooks/emissionsgap2012/](http://www.unep.org/publications/ebooks/emissionsgap2012/)

## **ILLUSTRATIVE EXAMPLES OF COUNTRY-SPECIFIC EFFORTS**

### **Australia | Tracking Progress towards a Low-Carbon Economy**

*ClimateWorks Australia*

The first index of Australia's progress toward a low-carbon economy will be published in 2013. It will include an assessment of current and planned abatement activity in major sectors of the economy, and

estimate the resulting emission reductions. It will also investigate the coverage of abatement policies in these sectors with a detailed examination of policy impact for industrial energy efficiency. [www.climateworksaustralia.org/](http://www.climateworksaustralia.org/)

### **Canada | Reality Check: The State of Climate Progress in Canada**

*National Roundtable on the Environment and the Economy (NRT)*<sup>18</sup>  
NRT provided an independent assessment of Canada's progress toward its 2020 target, including both federal and provincial/territorial actions. [nrtee-trnee.ca/wp-content/uploads/2012/06/reality-check-report-eng.pdf](http://nrtee-trnee.ca/wp-content/uploads/2012/06/reality-check-report-eng.pdf)

### **Denmark | Annual Climate Outlook** *CONCITO*

CONCITO conducts an annual analysis of Danish climate efforts in the form of The Annual Climate Outlook of Denmark (ACO). The ACO comprises three sections: a projection of current Danish emissions and adopted policies; an analysis of the carbon footprint of individuals and companies in Denmark; and an in-depth analysis of a specific theme. [www.concito.info](http://www.concito.info)

### **United Kingdom | Committee on Climate Change** *UK Committee on Climate Change (UKCCC)*

The goal of the UKCCC is to monitor progress toward delivery of mandated carbon budgets and to provide information on what measures are required to meet carbon budgets. With this information, the UKCCC provides an annual report to the UK Parliament on the level of progress overall and with recommended policies and actions for government. [www.theccc.org.uk](http://www.theccc.org.uk)

### **United States | Reducing GHG Emissions in the U.S. Using Existing Federal Authorities and State Action**

*World Resources Institute*

This project aims to provide an assessment of the possible GHG reductions in the U.S. using existing federal and state authorities, and tracks progress toward these reductions. [www.wri.org/publication/reducing-ghg-emissions-using-existing-federal-authorities-and-state-action](http://www.wri.org/publication/reducing-ghg-emissions-using-existing-federal-authorities-and-state-action)

## **ILLUSTRATIVE EXAMPLES OF SECTOR-SPECIFIC EFFORTS**

### **Buildings | Policy Comparative Tool**

*Global Buildings Performance Network (GBPN)*

This interactive tool enables comparison of dynamic energy efficiency policies for new buildings (residential and commercial). This tool currently reviews 25 state of the art building energy efficiency codes using 15 criteria developed with some of the world's leading experts in the field, and will add to the database over time. [www.gbpn.org/databases-tools/purpose-policy-comparative-tool](http://www.gbpn.org/databases-tools/purpose-policy-comparative-tool)

### **Industry | Industrial Efficiency Policy Database**

*The Institute for Industrial Productivity (IIP)*

The Institute for Industrial Productivity's database provides information on industrial energy efficiency and GHG mitigation policies. The database illustrates a country's policy package as a "Policy Pyramid" composed of three policy levels: Effort-Defining Policies, Supporting Measures, and Implementation Toolbox. [iepd.iipnetwork.org/content/policy-pyramid](http://iepd.iipnetwork.org/content/policy-pyramid)

### **Power | New Energy Policy Dashboard and Power Policy Database**

*Bloomberg New Energy Finance (BNEF)*

The New Energy Policy Dashboard is a central reference point designed to help clients navigate the policy maze. The Dashboard integrates the research Bloomberg New Energy Finance has undertaken on policy developments in the past four years with a database of records tracking key government clean energy measures and programmes worldwide. By subscription only. [www.bnef.com/Policy](http://www.bnef.com/Policy)

### **Transportation | The Global Transportation Roadmap Model**

*International Council on Clean Transportation (ICCT)*

The Global Transportation Roadmap is a tool to help policymakers worldwide identify and understand trends in the transportation sector, assess emission impacts of different policy options, and frame plans to effectively reduce emissions of both greenhouse gases and local air pollutants. [www.theicct.org/transportation-roadmap](http://www.theicct.org/transportation-roadmap)

## IV. RESULTS & DISCUSSION

This section presents and discusses results from the mapping exercise—including the landscape mapping, technical aspects, and strategic aspects.

### Landscape Mapping

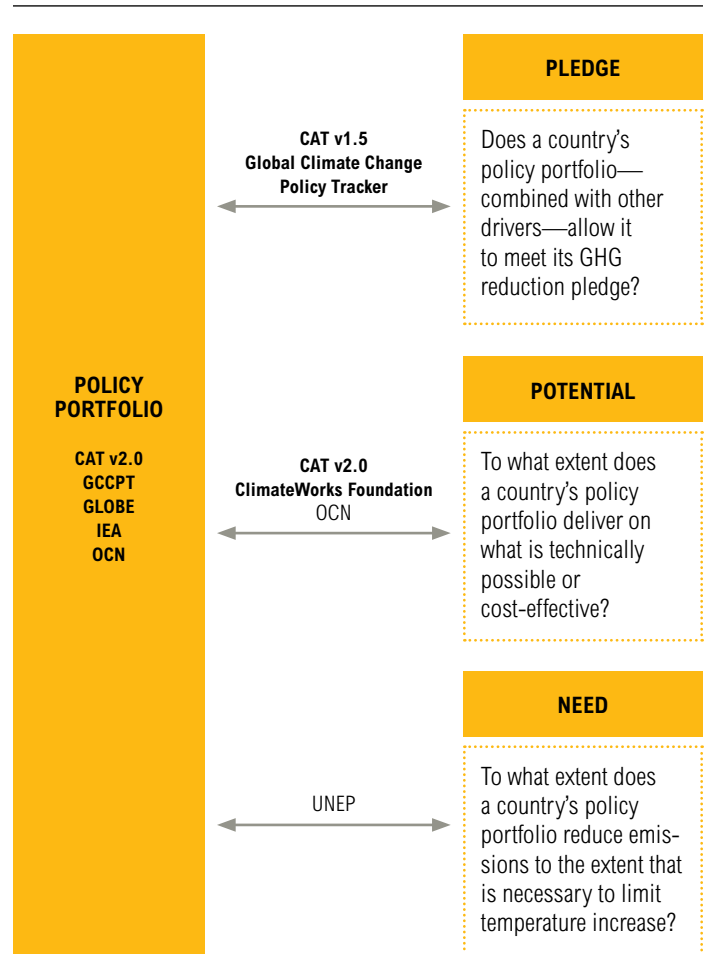
This section describes the point in the policy lifecycle—development, adoption, and/or implementation—at which various initiatives track (or, in some cases, “count” abatement resulting from) climate policies. The adoption of new policies provides a discrete moment at which they can be considered. While policy development and implementation are equally critical to policies’ ultimate effect, these stages in the lifecycle are addressed by fewer initiatives.

**Policy Development:** The ClimateWorks Foundation uses its Campaign Expected Path tool to identify the activities and circumstances necessary to lead to a policy under development gaining momentum and being successfully adopted. The Open Climate Network tracks major policies under development according to expert surveys and published literature.

**Policy Adoption:** Several initiatives track or evaluate policies at the point of their adoption. For example, the *GLOBE Climate Legislation Study*<sup>19</sup> has provided an annual summary of newly adopted climate-related legislation in over 30 countries for the past three years. The Climate Action Tracker (v1.5) quantifies the effect of the “top three” adopted policies—collectively—on projected national GHG emissions across a range of countries,<sup>20</sup> and in v2.0 examines adopted policies against a menu of best-practice policy options. The ClimateWorks Foundation’s Gigatonne Scorecard quantifies the expected and full effect of key adopted policies. The Open Climate Network also tracks adopted policies and describes—as far as feasible—their state of implementation and expected effects.

**Policy Implementation:** In many situations, a significant gap can emerge among policy adoption, implementation, and ultimate effect, due to gaps in implementation (for example, lack of compliance and enforcement) or changes in external drivers (for example, macroeconomic trends or fuel prices that differ from what had been expected).<sup>21</sup> ClimateWorks’ Campaign Expected Path tool also provides a framework for identifying paths and obstacles to implementation, as does the Open Climate Network Policy Implementation Toolkit.

Figure 4 | Comparing Policies to Pledges, Potential, and Need



Bold font indicates completed or ongoing work; light font indicates planned work.

Figure 4 illustrates how various initiatives compare countries’ policy portfolios to (a) pledged GHG abatement, (b) potential GHG abatement, and (c) GHG abatement needed to limit temperature increase. This type of comparison typically considers a portfolio of policies combined with other drivers of GHG emissions—rather than an individual policy—in order to take into account the interactions between policies as well as macroeconomic trends.

To that end, the ClimateWorks Foundation quantifies the expected impact of policy interventions and goals by sector in its priority regions. Likewise, Ecofys and the Netherlands Environmental Assessment Agency have quantified the extent to which a country’s most important new policies will change its GHG trajectory, and the impact of this change on prospects for meeting its target, and the Climate Action Tracker proposes to expand that in

its upcoming work.<sup>22</sup> The Open Climate Network synthesizes literature on country GHG projections and scenarios and publishes these alongside other information in national policy assessments. Finally, the *UNEP Emissions Gap Report* examines the extent to which country GHG pledges—if fulfilled—would meet atmospheric requirements. The UNEP report also characterizes abatement potential by sector; in the future, UNEP aims to reflect policies as well as pledges in its reports.

## Technical Aspects

Table 2 characterizes the tools and initiatives with regard to several technical variables:

- Whether the tool or initiative is primarily for monitoring, ex-ante evaluation, or ex-post evaluation
- Whether the tool or initiative draws primarily on qualitative data, quantitative data, or both
- Whether and how the tool or initiative addresses policy-level GHG quantification; sector- or national-level GHG projections; costs, co-benefits or other non-GHG effects; assessment of policy risk or strength; and milestones related to policy development, adoption, or implementation

Table 2 | **Technical Aspects of Selected Climate Policy Tools and Initiatives**

	MONITORING AND EVALUATION			PRIMARY DATA TYPE		GHG QUANTIFICATION			OTHER METRICS			
	Monitoring	Ex-Ante	Ex-Post	Qualitative	Quantitative	Policy	Sector	National	Cost	Co-benefits	Policy risk/strength	Policy milestones
<b>SIMULATIONS, FRAMEWORKS, AND TOOLS</b>												
C40/SEI City-Scale GHG Analysis Framework	X	X	X		X							
ClimateWorks Foundation Adding Machine	X	X		X	X	X	X	X			X	
ClimateWorks Foundation Campaign Expected Path	X	X		X								X
C-ROADS/En-ROADS		X			X		X	X				
GHG Protocol Policy Accounting Standard	X	X	X		X	X						X
OCN Policy Implementation Toolkit	X			X								X



Table 2 | **Technical Aspects of Selected Climate Policy Tools and Initiatives, continued**

	MONITORING AND EVALUATION			PRIMARY DATA TYPE		GHG QUANTIFICATION			OTHER METRICS			
	Monitoring	Ex-Ante	Ex-Post	Qualitative	Quantitative	Policy	Sector	National	Cost	Co-benefits	Policy risk/strength	Policy milestones
<b>MULTI-COUNTRY TRACKING INITIATIVES</b>												
Climate Action Tracker	X	X		X	X		X	X			X	
ClimateWorks Foundation Gigatonne Scorecard	X	X			X	X	X				X	X
Climate Policy Initiative			X	X	X	X			X	X	X	
Global Climate Change Policy Tracker	X	X			X			X			X	
GLOBE Legislation Study	X			X								
IEA Policies and Measures Database and Scenarios	X	X		X	X	X	X	X				
Open Climate Network	X	X	X	X	X	X*		X*			X	X
UNEP Emissions Gap Report	X				X			X				
<b>COUNTRY EXAMPLES</b>												
Australia   Tracking Progress towards a Low-Carbon Economy	X	X	X	X	X				X		X	
Canada   National Roundtable on the Environment and the Economy	X	X	X	X	X	X	X	X	X		X	X
Denmark   CONCITO Annual Climate Outlook	X	X				X	X	X	X	X	X	
UK / Committee on Climate Change	X	X	X	X	X	X	X	X	X			X
US   WRI Federal and State Existing Authorities Report	X	X			X		X	X				
<b>SECTOR EXAMPLES</b>												
Buildings   GBPN Buildings Policy Comparative Tool	X	X		X		X	X				X	X
Industry   IIP Industrial Efficiency Policy Database	X	X		X							X	X
Power   BNEF New Energy Policy Dashboard and Power Policy Database	X			X	X							
Transport   ICCT Global Transportation Roadmap	X	X	X	X	X	X	X			X		

\*Reported based on literature, not original research in most cases.

Table 2 shows that a range of approaches—quantitative and qualitative—have been developed to monitor and evaluate diverse attributes of climate policy.<sup>23</sup> Several initiatives engage in monitoring and ex-ante assessments, though ex-post evaluation is slightly less common. Most initiatives provide some way to quantify the GHG effect of policies (see below). Monitoring and evaluation of costs and co-benefits appears to be more common at the domestic level than in international initiatives.

As previously noted, many climate policy tracking tools and initiatives seek to quantify the effect of climate policies on GHG emissions. Table 3 summarizes the treatment of these two issues by the major multi-country climate policy tracking initiatives.

Table 3 | **Policy-Level GHG Effect & National GHG Projections**

POLICY-LEVEL GHG EFFECT		NATIONAL GHG PROJECTIONS
Climate Action Tracker		Uses modeling to estimate effect of “top three” policy interventions on BAU trajectory (v1.5); impact estimate per segment/sector (v2.0).
Climate Policy Initiative	Varies by study.	Not addressed.
ClimateWorks Foundation Gigatonne Scorecard	Estimated based on grantee reporting, and discounted based on policy uncertainty, with reference to the Campaign Expected Path framework where appropriate.	Compares against BAU scenarios, primarily from 2008/2009 via the McKinsey Global Greenhouse Gas Abatement Cost Curve Model V 2.1.
Global Climate Change Policy Tracker	Not addressed.	Modeled.
GLOBE Legislation Study	Mentions policy targets where applicable.	Not addressed.
IEA Policies and Measures Database and Scenarios	Analyzed in aggregate in <i>World Energy Outlook’s</i> Current Policies and New Policies Scenarios.	Provides medium to long-term energy projections using its World Energy Model, a large-scale simulation model designed to generate detailed sector-by-sector and region-by-region projections for scenarios.
Open Climate Network	Reported based on existing literature, when available. Future work aims to use GHG Protocol.	Summarizes most recent, nationally available projections for key countries; clarifies major policy- and non-policy assumptions.
UNEP Emissions Gap Report	Previously has focused on national pledges and technical potential; generally synthesizes from other published analyses.	Synthesizes from other BAU scenarios across models and institutions, but primarily at the global level.
ICCT Global Transportation Roadmap	Individual policies are not quantified – policies are considered as a portfolio.	Models national and global transport emissions under three policy scenarios corresponding to adopted policies, pipeline policies, and potential.

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As discussed above, policy-level GHG effect is still—for the most part—quantified on an ad hoc basis and in an inconsistent manner. While such estimates are necessarily subject to uncertainty, there is room to improve consistency and transparency in the quantification of full and expected effects of policies. With regard to national GHG projections, while several efforts do address them to some extent, the work could be deepened with the development of more detailed and transparent scenarios. While governments increasingly publish national GHG projections, sometimes for a range of scenarios, up-to-date information that is transparent about its assumptions and methods, and that covers all sectors and gases, is not yet available for a number of major economies. In its preliminary national assessments,<sup>24</sup> OCN did not readily encounter projections with these characteristics outside of Europe—although several countries are in the process of producing them.<sup>25</sup> International efforts such as CAT’s 1.5 version offer the advantage of consistency among the top 28 highest emitting countries. The trade-off, however, is that fewer policies can be considered in less depth than may be possible for country-specific efforts.

## Geographic coverage

All of the multi-country initiatives surveyed covered Brazil, China, the EU and/or the top-emitting countries within the EU, India, and the U.S., all of which ranked among the top emitters in 2010.<sup>26</sup> Despite being the fourth highest emitter, however, Russia stands out as being covered by fewer initiatives and in less depth. At the opposite end of the spectrum, South Africa stands out as being included in a high number of tracking initiatives relative to its annual GHG emissions. This may be explained by its role as an emerging economy with growing emissions, a member of the BASIC group (Brazil, South Africa, India, and China) and the Major Economies Forum, and an active player in the international negotiations—along with the fact that its use of English makes information more accessible to the international community relative to countries such as Russia, South Korea, or Japan. This does not suggest, however, that climate policy tracking initiatives collectively deliver on the elements of quality presented in Section II for those countries where they are present, as discussed below.

Table 4 | Tracking Initiatives in the Highest Emitting Countries<sup>27</sup>

INITIATIVES	COUNTRIES (LISTED LEFT TO RIGHT FROM HIGHEST TO LOWEST IN EMISSIONS)																		
	China	US	EU	India	Russia	Indonesia	Brazil	Japan	Germany	Canada	Mexico	Korea	Australia	UK	France	Italy	Poland	S. Africa	
<b>MULTI-COUNTRY TRACKING INITIATIVES</b>																			
Climate Action Tracker	X	X	X	X	X	X	X	X	X	X	<b>X</b>	X	<b>X</b>	X	X	X	X	X	
Climate Policy Initiative	X	X	X	X		X	X												
ClimateWorks Foundation Gigatonne Scorecard	X	X	X	X		X	X				X								
GLOBE Legislation Study	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
IEA Policies and Measures Database and Scenarios	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	X	X	<b>X</b>	X	<b>X</b>	<b>X</b>	<b>X</b>	X	X	X	X	X	X	
Open Climate Network	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>			<b>X</b>	<b>X</b>	<b>X</b>	X	X		<b>X</b>	<b>X</b>	X			<b>X</b>	
UNEP Emissions Gap Report <sup>28</sup>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Selected domestic initiatives		WRI Federal and State Existing Authorities Report	Climate Policy Tracker; European Environment Agency						National Roundtable on the Environment and the Economy				Tracking Progress towards a Low-Carbon Economy; Climate Change Authority	Committee on Climate Change					

Bold font indicates countries where more in-depth work has been completed (relative to other work by the same initiative).

## Messenger & Audience

As discussed in Section II, the information provided by climate policy tracking initiatives can be used by a range of actors: by a country's government to correct course and improve its own policies; by civil society to advocate for such improvement; by governments of other countries to understand and learn from the extent and effect of other countries' efforts; by practitioners and implementers who have much to gain from analytical reflection on their own activities and those conducted around the world;

by donors and aid agencies, who look for guidance on low-carbon development pathways and opportunities; by negotiators who require knowledge on feasible and likely mitigation options; and by the private sector to evaluate risk and make investment decisions. Despite the role of all of these actors in making use of climate policy tracking, each may require different information, at different points in time, and may respond to different framing and different messengers. Table 5 maps tracking initiatives by audience and messenger.

Table 5 | **Tracking Initiatives by Audience and Messenger**

INITIATIVE	PRIMARY AUDIENCE			PRIMARY MESSENGER		
	Inter-national Policy-makers	National Governments	Private/Independent	Inter-national Expert	National Government	National Independent
<b>MULTI-COUNTRY TRACKING INITIATIVES</b>						
Climate Action Tracker	X	X		X		
ClimateWorks Foundation Gigatonne Scorecard			X	X		
Climate Policy Initiative	X	X		X		
Global Climate Change Policy Tracker	X		X	X		
GLOBE Legislation Study	X	X		X	X	X
IEA Policies and Measures Database and Scenarios	X	X	X	X	X	
Open Climate Network	X	X		X		X
UNEP Emissions Gap Report	X			X		
<b>COUNTRY EXAMPLES</b>						
Australia   Tracking Progress towards a Low-Carbon Economy		X	X			X
Canada   National Roundtable on the Environment and the Economy		X			X	X
Denmark   CONCITO Annual Climate Outlook		X	X			X
UK   Committee on Climate Change		X			X	X
US   WRI Federal and State Existing Authorities Report		X				X



Table 5 | Tracking Initiatives by Audience and Messenger, continued

INITIATIVE	PRIMARY AUDIENCE			PRIMARY MESSENGER		
	Inter-national Policy-makers	National Governments	Private/Independent	Inter-national Expert	National Government	National Independent
<b>SECTOR EXAMPLES</b>						
Buildings   GBPN Buildings Policy Comparative Tool	X	X		X		X
Industry   IIP Industrial Efficiency Policy Database	X	X		X		X
Power   BNEF New Energy Policy Dashboard and Power Policy Database			X	X		X
Transport   ICCT Global Transportation Roadmap	X	X		X		X

Of the climate policy tracking initiatives we surveyed, the majority target primarily an international audience and international policy “moments,” such as the Conference of the Parties to the UNFCCC. Most of these efforts are undertaken by international independent experts. It is important that this information be made available at the international level, as countries take into account others’ efforts when defining their own targets and actions and when considering the adequacy of international ambition as a whole.<sup>29</sup> These are the needs that most international, multi-country tracking efforts are designed to address.

It is equally important, however, that climate policy tracking become embedded in domestic policy contexts, so that it can more readily influence domestic policy debates. Ideally, both governments and independent experts would contribute to the effort, constructively challenge one another’s assumptions and methods, and make use of the resulting information to improve their own practices and learn from other countries’ experiences. Although a comprehensive review of in-country efforts has not been conducted, it does not appear that this type of robust climate policy tracking culture has yet emerged outside of Europe, the United States, and Australia.<sup>30</sup> Among the factors that contribute to this development are access to data and information—usually facilitated by government reporting—and strong technical capacity in research institutions that are truly independent from the government, as well as in civil society organizations.

In this context, the model pioneered by the UK is particularly interesting. The UK Committee on Climate Change is an independent body established under the Climate Change Act to advise the UK government on GHG emissions targets, and to report to Parliament on progress made in reducing emissions. While the Committee works closely with government, it provides independent scrutiny and makes its methodologies and findings publicly available. This model is being replicated in Australia, which recently established the Climate Change Authority to serve a similar purpose. Unfortunately, not all governments have shown the same appetite for independent scrutiny. Canada, for example, has disbanded a number of government tracking functions and advisory bodies pertaining to climate change in recent years.<sup>31</sup>

## V. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Countries are pursuing a wide variety of policies to mitigate GHG emissions, and a range of tools are needed to monitor and evaluate them as they move through development, past adoption, and into implementation. The field of climate policy tracking will continue to evolve as it experiments with different approaches to meet these needs. Based on a review of the major efforts that have developed over the past several years, as well as many spirited discussions with our peers and colleagues, we offer the following observations regarding the current climate policy tracking landscape.

**The climate policy tracking community has developed a diverse portfolio of methodologies and frameworks to address a range of policy tracking needs.** The portfolio includes both qualitative and quantitative approaches for monitoring and evaluating climate policy through various life-cycle phases (i.e., development, adoption, and implementation) and in comparison to several possible reference points (i.e., pledges, potential, and atmospheric need). A notable exception is tracking co-benefits of climate policies, where we have found less work to date. The methodologies and frameworks are at varying stages of maturity and acceptance, and further evolution and refinement should be expected (and encouraged), but they provide a foundation on which to base further efforts (See Box 1).

**Nevertheless, information about climate policies remains patchy.** Several organizations and initiatives—including the Climate Action Tracker, GLOBE, and the IEA—monitor climate policies as they are adopted by countries. As a result, information on policy adoption has improved significantly over the past two to three years. Nonetheless, significant gaps remain regarding information on policy development and implementation. Certain geographies (both national and subnational) are less well covered, and challenges remain regarding quantitative information on GHG impact and projected national GHG emissions. Our assessment identified the following gaps:

- Limited information is available on policies under development (i.e., policies under consideration that have not yet been adopted), including on robustness of their design and likelihood of adoption and implementation.
- Once climate policies have been adopted, implementation is not necessarily well monitored. This can be particularly important in developing countries, where capacity and institutional barriers can prevent adopted policies from delivering on their potential.
- Geographical coverage is uneven. Countries like Russia and South Korea, for example, are poorly represented by international tracking efforts despite their status as major emitters. However, even countries that are addressed by all of the international initiatives are subject to the limitations described above. Information on subnational policies, as well, is lacking for a range of countries.
- Estimates of the GHG effect of policy interventions are limited. Where available, the methodologies used to derive them are often neither consistent nor transparent.

- Projections of national GHG emissions under different climate policy scenarios vary widely by country. The Climate Action Tracker and the IEA provide a critical resource in this regard, but are limited in the policies and assumptions they can consider compared to country-specific efforts, which are inconsistent.

**Many climate policy tracking efforts target the needs of an international audience, though some good examples exist at the country level.** Our landscape assessment found that most major climate policy tracking efforts—particularly independent ones—target international audiences, venues, and influence opportunities. While this is valuable, robust and independent policy monitoring is essential at the national level as well to more effectively target and influence domestic policy debates. This function can be provided by independent authorities established by the government, as in the examples of Australia and the United Kingdom, as well as by NGOs. In either case, it is made possible by human resource capacity—that is, a “deep bench” of technical experts, by access to data and information, and by institutional arrangements that promote independent research, commentary, and policy recommendations.

**Technical abatement potential serves as a useful goalpost but lacks political and policy context.** Theoretical estimates of what could and should be possible, given currently available technology and assumptions around future economic indicators and growth trajectories, are vital for setting goals and targets. Even the most sophisticated modeling of technical abatement potential, however, will not address many other relevant characteristics such as institutional effectiveness, political economy, and competing national and business priorities. Governments and private industry can apply more sophisticated context to these types of analyses, but often have an inherent incentive to underestimate what is theoretically possible. Events that defy prediction can also lead to broader, transformative change that previously would have seemed impossible.

## Recommendations

The landscape described above will change as the climate policy tracking community gains experience—and further review of country-level and sector-specific tracking efforts may also shed new light on these conclusions. At present, we recommend that practitioners, funders, and governments consider the following actions to strengthen policy tracking in the near term.

**Deepen tracking of policy implementation and of policies under development.** As noted above, monitoring of policy development and implementation remains relatively weak in comparison to monitoring of policy adoption. As a result, opportunities to strengthen policy design and implementation can be obscured, and estimates of policy impact or projections of progress toward future climate mitigation goals can rest on incorrect assumptions. Efforts to enhance this information can draw on several resources:

- The Open Climate Network’s policy landscape assessment series identifies policies under development for a number of key countries. These could be prioritized for further monitoring and evaluation in a coordinated manner.
- The Climate Action Tracker identifies the “top three” new climate policies for a range of countries in terms of potential GHG impact, while the IEA compiles many emerging and existing policies into their “New Policies” and “Current Policies” scenarios. These lists of policies could be reviewed by national experts to select priority policies for tracking development and implementation.
- The ClimateWorks Campaign Expected Path framework, the Open Climate Network Policy Implementation Toolkit, the GHG Protocol Policy Accounting Standard, and the UK Committee on Climate Change all provide tools that can be adopted or adapted to enhance monitoring of policies in these stages.

**Strengthen climate policy tracking at the country level, while maintaining internationally focused efforts.** Efforts to strengthen country-level tracking efforts can benefit from engagement by a range of actors, and should recognize and build on the diversity of policy environments, governance structures, and capacities at the country level. Important roles and functions may include:

- In-country practitioners: Identify key policy decision points, information needs, and data and information resources; develop and implement tracking frameworks
- International practitioners: Share methodologies and lessons learned; incorporate country-level information into international tracking efforts as appropriate
- Governments: Make data, information, and assumptions transparent and publicly available; consider possible benefits of establishing an independent policy tracking authority

**Enhance coordination and collaboration among climate policy tracking practitioners.** Many synergies between climate policy tracking initiatives have yet to be fully exploited. For example, information collected by initiatives that monitor climate policy adoption can feed into the monitoring of implementation and effect. Aggregated information on implementation and effect can inform future scenarios on which GHG projections are based. When policy evaluations uncover critical factors in policy effectiveness, these factors can then be incorporated into monitoring efforts and define key performance metrics. Dialogues such as the Practitioners’ Workshop on Climate Policy Tracking, as well as stakeholder collaborations like the GHG Protocol, the LEADS Global Partnership,<sup>32</sup> the Mitigation Action Plans & Scenarios Programme,<sup>33</sup> the Measurement and Performance Tracking Project,<sup>34</sup> and the Open Climate Network<sup>35</sup> can provide constructive fora for collaboration. These groups might consider further efforts at:

- Co-developing, testing, reviewing, and standardizing technical approaches for quantifying outcomes and effects (e.g., through the GHG Protocol pilot testing period)
- Improving links and synergies between “stages” of policy tracking—from early groundwork to policy development, adoption, implementation, and effect
- Enhancing international understanding of countries’ reported figures and projections
- Considering communications in a national context to inform policy debates and reviews
- Coordinating timing and publishing of future reports or evaluations with policy windows
- Learning from additional efforts to supplement this analysis with new areas of expertise

We have established a practitioners’ listserv to facilitate this coordination and collaboration, and invite interested practitioners to join by contacting us at [openclimate@wri.org](mailto:openclimate@wri.org).

**Conduct further scoping on emerging issues.** This paper represents an initial effort to describe the climate policy tracking landscape, and the recommendations above reflect near-term priorities to strengthen this landscape. However, some additional questions that surfaced in our review also deserve consideration by practitioners. These include:

- In addition to the independent, multi-country efforts that are the focus of this report, what initiatives are being undertaken by national and subnational governments, sector-specific organizations, and/or organizations focused on issues pertinent to climate policy co-benefits that could contribute valuable data or methodologies to climate policy tracking?
- How might independent climate policy tracking efforts contribute to or intersect with biennial reports, biennial update reports, and other climate policy reporting under the UNFCCC?
- How can we arrive at a more nuanced understanding of abatement potential that can inform ambitious yet feasible goals and against which we can track policy progress?

Further consideration of these questions may identify future priorities for climate policy tracking.

The last five years have seen broad and deep advancements in national policies to reduce GHG emissions. Monitoring over the next five years will be instrumental in ensuring that these policies are implemented as planned and create sustained change to achieve gigatonne-scale GHG reductions, and laying the foundation for countries to move ahead with ever more ambitious approaches to reduce GHG emissions and limit the dangers and costs of a changing climate.

## ACRONYMS

ACO	Annual Climate Outlook
BASIC	Brazil, South Africa, India, and China
BAU	Business As Usual
BNEF	Bloomberg New Energy Finance
CAT	Climate Action Tracker
CPI	Climate Policy Initiative
CPT	Climate Policy Tracker
CWF	ClimateWorks Foundation
EEA	European Environment Agency
GBPN	Global Buildings Performance Network
GHG	Greenhouse Gas
GLOBE	Global Legislators Organisation
ICCT	The International Council for Clean Transportation
IEA	International Energy Agency
IIP	Institute for Industrial Productivity
MRV	Measurement, Reporting, and Verification
NGO	Non-governmental Organization
NRT	National Roundtable
OCN	Open Climate Network
SEI	Stockholm Environment Institute
UKCCC	United Kingdom Committee on Climate Change
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WRI	World Resources Institute

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## ENDNOTES

1. IEA 2012; European Commission 2011
2. Stern 2007; den Elzen et al. 2010
3. Foti et al. 2008; Gemmill & Bamadele-Izu 2003
4. IPCC 2001, Annex B: Glossary of Terms. "Measures," in turn, are technologies, processes, and practices used to implement policies that, if employed, would reduce GHG emissions below anticipated future levels. GHG abatement may or may not be an explicit or primary objective.
5. The "Examples" column is intended to illustrate each policy type. It is not comprehensive and does not necessarily reflect "best-in-class" policies in all cases.
6. Metrics, in this context, include policy data, indicators, benchmarks, milestones, or other measures used to identify and track policy status and change.
7. Adapted from Spearman and McGray 2011.
8. Ex-ante evaluations are often referred to as formative or developmental evaluations, while retrospective evaluations are more often referred to as outcome or impact evaluations. In the context of GHG accounting, ex-ante evaluations are sometimes referred to as appraisals.
9. For example, the UK Committee on Climate Change tracks progress in relation to the UK's five-year carbon budgets, currently set in legislation out to 2027, according to the way in which the UK has framed its carbon policy.
10. For example, see Dagnet 2012, Ellis et al. 2011, and Falconer et al. 2012.
11. Fransen 2009
12. GHG Protocol 2012
13. This list is a synthesis of key characteristics that were identified by participants at the October 2012 Practitioners' Workshop on Climate Policy Tracking.
14. A comprehensive survey of country- and sector-focused efforts was beyond the scope of this study, but should be considered as a priority for further research.
15. For example, the abatement that could be achieved by deploying best available technologies, or within specific cost or policy constraints
16. Only mapped for those tools and initiatives that model or aggregate policy effects at the sectoral or national level
17. The DB Climate Change Advisors, which produced the Global Climate Change Policy Tracker, disbanded in late 2012 (Wheelan 2012).
18. NRTEE was eliminated in Canada's 2012 budget. See [www.budget.gc.ca/2012/plan/chap5-eng.html](http://www.budget.gc.ca/2012/plan/chap5-eng.html).
19. GLOBE 2013



20. Höhne et al. 2012
21. Makinde 2005; Haug et al. 2007
22. A previous iteration of the CAT (v2.0) also ranked countries' policies against their policy potential and quantified the effect of the existing policy packages.
23. As described throughout this section, however, these approaches are being deployed by a somewhat narrow set of actors and specific points in the policy landscape, so the overall picture is not as comprehensive as suggested by this table.
24. See [www.openclimatenetwork.org/analysis#policy](http://www.openclimatenetwork.org/analysis#policy).
25. Some countries that were not included in the OCN assessments do provide such projections. For example, Canada publishes an annual projection of emission trends to 2020, including assumptions (Environment Canada 2012).
26. European Commission 2011
27. These are the 22 countries with the highest national GHG emissions in 2010 (European Commission 2011). The Democratic Republic of Congo (#9), Iran (#18), the Central African Republic (#19), and Saudi Arabia (#20) are excluded from the table because tracking initiatives are not active there. Bold type indicates the initiative has prepared more detailed analysis for that country.
28. Pledges, not policies
29. For example, UNEP's Emissions Gap report was cited in discussions of global ambition during the UNFCCC negotiations in Durban.
30. For example, see the CONCITO (2012), Bianco et al. (2013), and the work of ClimateWorks Australia and the UK Committee on Climate Change.
31. Canada repealed the Kyoto Protocol Implementation Act and eliminated the National Round Table on Environment and Economy through its 2012 budget. See [www.budget.gc.ca/2012/plan/chap5-eng.html](http://www.budget.gc.ca/2012/plan/chap5-eng.html) and [www.pembina.org/blog/624](http://www.pembina.org/blog/624).
32. See <http://en.openei.org/wiki/LEDSGP>
33. See <http://www.mapsprogramme.org/>
34. See <http://www.wri.org/project/low-carbon-development/measurement-and-performance-tracking>
35. See <http://www.openclimatenetwork.org>

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