



COMPARABILITY OF EFFORT IN INTERNATIONAL CLIMATE POLICY ARCHITECTURE

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Overview

The ability to compare the aspirations and effectiveness of domestic actions to mitigate global climate change is vital to the success of international climate agreements. The current research explores a variety of potential metrics that might facilitate comparison of mitigation effort—and how transparency in policy design can contribute to comparability, accountability, and hence the effectiveness of an international agreement.

Background

The Copenhagen Accord (December 2009) and subsequent international climate change agreements are characterized by voluntary, unilateral mitigation commitments by national governments that vary widely in their ambition, sectoral scope, baseline (reduction from an absolute or relative level of emissions), and type of policy used. The agreement to be concluded in late 2015—also under the auspices of the UNFCCC—will likely be of the same character. Such variability in mitigation commitments has arisen largely in the course of encouraging greater participation on the part of developing countries, which may not be prepared to pursue quantified, absolute, economy-wide emissions-reduction targets. Techniques for comparing effort—along with procedures for ensuring transparency (for example, of how baselines are defined) and for reviewing proposed commitments (and, later, progress toward fulfilling these commitments)—are essential, given this type of “bottom up” agreement.

The current research proposes four principles for evaluating possible metrics. First, an ideal metric should be *comprehensive*, capturing the entire effort undertaken by a country to achieve its mitigation commitment. Second, a metric should focus on *observable*—and preferably quantifiable—characteristics of effort. Third, individual countries or stakeholders should be able to *reproduce* a metric given (a) the inputs used by analysts, and (b) available public information. Finally, given the global nature of climate change, a metric should be *universal*, constructible by and applicable to as broad a set of countries as possible.

These principles are discussed in relation to several metrics, which the authors propose based on an extensive compilation of historical data on metrics for nearly 200 countries (presented in appendix tables in the full paper). Emission-related metrics are the historical precedent. Emission levels and emissions intensities are easy to measure and replicate, but can result in erroneous assessments of effort, as many non-policy factors also influence emissions. Emissions abatement and abatement costs are the metrics that probably best represent effort, but they are challenging to implement, given that they require sophisticated modeling tools and subjective choices of assumptions. As a result, credible but varying modeling assumptions could produce different comparison outcomes.

Price-based metrics, including carbon prices or energy prices and taxes, are measurable, replicable, and provide some information about effort, primarily in the energy sectors. Energy prices and taxes are also universal, although data-collection protocols could be improved. Carbon prices are challenging because there are not many explicit carbon-

pricing policies around the world, and constructing estimates of implicit carbon price metrics requires detailed economic analysis.

Key Findings and Recommendations

No single metric is comprehensive or independently ideal. Rather, it is recommended that a suite of metrics be used to evaluate and compare countries' mitigation programs, akin to how the health of our macro-economy is assessed using multiple economic statistics.

1. **Comparability measures can facilitate participation and compliance in international climate agreements if they can show that all parties are doing their fair share.** However, the relative importance of various principles and features will depend on the particular agreement, perhaps leading to preferences for different metrics in different situations.
2. **Comparability metrics can inform the bilateral linking of domestic cap-and-trade programs or explicit coordination of carbon taxes or other policies, in a manner akin to how nations negotiate lowering trade barriers in trade policy.**
3. **Evaluating effort using comparable measures can affect the decision to implement and, if necessary, the stringency of unilateral border measures (for example a border tax).** Some countries pursuing more serious mitigation activities may take actions, including border measures, on those viewed as making insufficient action, warranted or not, in order to protect their domestic industries. This primarily unilateral effort demands some objective measure of whether countries are doing “enough.”
4. **A richer characterization of effort requires a well-functioning policy surveillance regime focused on evaluating a suite of metrics.** Effectively comparing mitigation efforts requires a professional, regular, and independent assessment of countries' policies, actions, and emissions that can inform periodic rounds of international climate negotiations.

Conclusions

Measures to compare climate change actions across countries are increasingly relevant as we transition to unilateral pledges of domestic action and policy within international negotiations. A professional, transparent, and legitimate mechanism will be required for developing metrics and benchmarks, compiling data and related information in light of these metrics, and reporting the results of the assessments. The identification of benchmarks will inherently reflect value judgments, and could involve extensive negotiations among countries.

In the meantime, an array of metrics, such as those discussed in this research, could be developed and combined with existing data collected by international organizations. This could facilitate comparisons in advance of any official policy surveillance or benchmarking. Feedback on the feasibility, integrity, and precision of various metrics could be solicited to enable refinement of metrics and to inform the deliberations over metrics and benchmarks going forward.

Full paper available at: <http://belfercenter.hks.harvard.edu/publication/23828>

About the Project

Established in 2007, the goal of the Harvard Project on Climate Agreements is to help identify and advance scientifically sound, economically rational, and politically pragmatic public policy options for addressing global climate change. Drawing upon leading thinkers in Argentina, Australia, China, Europe, India, Japan, and the United States, the Project conducts research on policy architecture, key design elements, and institutional dimensions of international and domestic climate policy.

HEEP: www.hks.harvard.edu/m-rcbg/heap

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