

# Assessing ambition of nationally determined contributions

A key for a successful new international climate agreement by December 2015 will be the collective assessment of ambition of individual proposals by countries on how and how much to reduce their greenhouse gas emissions. We conclude that there is nothing right or wrong in choosing one or several of these approaches to assess the level of ambition of contributions. An approach using several of many methods described can take into account the difference in national circumstances.

DOI: 10.12910/EAI2015-018

■ N. Höhne

## Introduction

The international community has embarked on negotiating a new international climate agreement by December 2015. A key element of the new agreement will be individual proposals by countries on how and how much they are willing to reduce their greenhouse gas emissions. Countries already agreed to “initiate or intensify domestic preparations for their intended nationally determined contributions” (INDCs) so that they can be submitted well in advance of the conference in December 2015 [1].

Such contributions could take various forms:

- National long-term emissions goals (USA: 83%, or Mexico: 50% below 2005 level in 2050)
- National short-term emissions target (EU: 20% below 1990 level in 2020, or South Korea: 30% below business as usual in 2020)

- Sectoral/energy targets (Peru’s renewable energy for 2020)
- Policies and projects (Ethiopia several renewable energy projects)

Once countries have submitted their contributions, all other countries will have to assess the level of ambition of these contributions.

This article provides an overview of the methods that can be used to assess the level of ambition of the contributions.

## Methods to assess the level of ambition of mitigation commitments

A number of different approaches exist for evaluating whether a contribution, or elements of a contribution are ambitious:

- **A comparison to business as usual (BAU)** indicates the degree to which a country plans to deviate from an assumed future overall greenhouse gas emissions trend. Using a BAU as a counterfactual places importance on the credibility of the

■ Contact person: Niklas Höhne  
n.hoehne@newclimate.org

underlying assumptions, including for example the level of policy implementation and the resulting impact, the rate of future economic development, as well as the level of the related modelling capacity. Using the same (old) BAU pathway for comparison over time is well suited for comparing different contribution possibilities for a country, or the strengthening of a contribution over time. BAU's will more and more include currently implemented and planned mitigation measures, so this scenario may not represent a "no effort" scenario.

- **A comparison to "effort sharing"** calculations would assess a contribution in the light of how the future mitigation effort needs to be distributed among countries, based on a) an agreed endpoint or total carbon budget, and b) an effort-sharing methodology. Different effort-sharing methodologies focus on, or combine, elements like historical responsibility, capability (e.g. expressed in GDP/cap) etc. [2]. Given the different focus of the methodologies, the range of possible outcomes is wide. Thus a convincing argument for the chosen effort-sharing approach is necessary. Using an effort-sharing approach consistently among countries' contributions ensures that the overall endpoint (e.g. 2 °C target) is likely to be met.
- **A comparison to mitigation potential** evaluates whether a country's contribution makes use of the mitigation opportunities that are available, and

whether resources for mitigation are spent in a cost-efficient manner. For example, a contribution could be assessed as to whether it captures a) at least all mitigation options with negative costs; b) mitigation options with net-neutral or lower cost when considering co-benefits; c) mitigation options at positive costs based on country capability; d) mitigation options beyond domestic country capacity conditional to receiving international support [3]. Mitigation potential and costs also rely on a comparison to a counterfactual business as usual scenario. Shorter-term mitigation targets can be developed based on mitigation potentials, and therefore this kind of approach can be a good way to evaluate contributions formulated in this way, provided the necessary information exists.

- **A comparison to decarbonisation benchmarks**, for example CO<sub>2</sub> per kilometer travelled, CO<sub>2</sub> per megawatt hour electricity production, or GHG per ton of cement or steel produced, can be made. These indicators are forward looking and do not rely on business as usual or other counterfactuals and their underlying assumptions. Decarbonisation indicators, on the one hand, could compare contributions among countries if these indicators are included as domestic targets. On the other hand, as targets they can also show the ambition of a contribution when they increase in stringency beyond a business-as-usual projection, or at least the

|                                      | Comparison to business as usual (BAU) | Comparison to Effort sharing | Comparison to Mitigation potential | Comparison to Decarbonisation indicators | Comparison to Good practice policy package |
|--------------------------------------|---------------------------------------|------------------------------|------------------------------------|--|--|
| National long term emissions goal    |                                       |                              |                                    |  |  |
| National short term emissions target |                                       |                              |                                    |  |  |
| Sectoral/ energy targets             |                                       |                              |                                    |  |  |
| Policies and projects                |                                       |                              |                                    |  |  |

**TABLE 1** Suitable approaches for evaluating the level of ambition of different national contributions (main approach: dark, secondary: light shading)

national historical trend. Decarbonisation indicators are often formulated in sectoral or technological terms, which renders them particularly useful for evaluating contributions in terms of energy targets and other sectoral mitigation actions.

- **A comparison to a good practice policy package** or a policy menu is possible, which could be agreed upon by Parties or elaborated by technical experts. As a type of white list, policy packages or menus do not rely on BAU scenarios, but rather on the public acceptance of the policies that are included in the packages/menus. Contributions would be seen as ambitious if they include concrete and comprehensive plans for the implementation of nationally appropriate variants of best practice policies for certain sectors, or go beyond these.

## Conclusions

There is nothing right or wrong in choosing one or several of these approaches to assess the level of ambition of an INDC. However, individual approaches lend themselves better to assess and show the level of ambition of certain elements of a contribution (Table 1).

We find that an approach using several of the many methods described can take into account the difference in national circumstances.

**Niklas Höhne**

Environmental Systems Analysis Group, Wageningen University,  
The Netherlands

- [1] Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2013, UNFCCC, 2014, retrieved from <http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf>.
- [2] N. Höhne, M. den Elzen, D. Escalante, Regional greenhouse gas reduction targets based on effort sharing approaches – a comparison of studies, in *Climate Policy*, 2013, retrieved from uw3ldhb1.doc.
- [3] H. Fekete, N. Höhne, M. Hagemann, T. Wehnert, F. Mersmann, M. Vieweg, W. Hare, Emerging economies – potentials, pledges and fair shares of greenhouse gas reductions, Dessau-Roßlau, 2013.