

SHORT-TERM MITIGATION AMBITION PRE-2020

OPPORTUNITIES TO CLOSE THE EMISSIONS GAP

– SECOND EDITION –

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Summary

At the UN climate negotiations in Durban (2011), UNFCCC Parties essentially agreed to negotiate a legally binding framework until 2015, including emissions mitigation obligations for all countries from 2020 onwards. In addition, they agreed to keep global temperature rise below 2°C and to close the ambition gap before 2020. Hence it is not enough to concentrate on post-2020 action.

In its important “The Emissions Gap Report”, UNEP showed that the current national mitigation pledges in the UNFCCC context are necessary to reduce the gap between business-as-usual emissions and what is needed by 2020 to stay below 2°C, but will not suffice. Therefore, a “Workplan” on enhancing mitigation ambition to identify options for Parties to close the ambition gap was launched in Durban and procedural steps until the year 2015 concretized in Doha (2012). Short-term mitigation action needs to be enhanced at all levels between now and 2015 in order to ensure that the gap is closed. In September 2014, Heads of State and Government as well as groups of countries are supposed to meet at the envisaged World Leaders’ Summit of UN secretary general Ban Ki-moon, which provides an important milestone. At that occasion, they should come forward with concrete plans for higher ambition and additional action. These enhanced efforts of states, alliances, as well as other actors should then be formalized under UNFCCC and other international fora.

This paper provides an overview of the variety of options available at all three dimensions (multilateral negotiating, national acting, and alliances between states and/or non-state actors) to close the emissions gap and thus highlights the possibility of complying with the 2°C limit. Ultimately, whether we can keep global warming at a level that avoids the worst for humanity and our planet depends on political will.

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1 Endorsing the 2°C Limit

During the UN climate negotiations in Cancún (2010), the global community formally agreed to limit global temperature rise to below 2°C above pre-industrial levels for the first time. Furthermore, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) agreed to consider an even stronger limit of 1.5°C in an overall review process (the “2013-2015 review”¹) launched at Doha (2012). Scientists expect a strong increase of climate change-related risks if the global temperature will rise beyond 1.5-2.5°C.²

At the UN climate negotiations in Durban (2011), the 1.5-2°C limit was not only confirmed, but Parties to UNFCCC also noted with grave concern the significant gap between the aggregate effect of the national mitigation pledges by 2020 and emission trajectories compatible with this limit (“ambition gap”, “emissions gap”, or “mitigation gap”). Therefore, a Workplan on enhancing mitigation ambition to identify options for Parties to close the ambition gap was launched.³ In 2012, the 1.5-2°C limit was confirmed at the Head of State and Government level at the Rio+20 Conference. In their final declaration, they, too, noted with grave concern the 2020 emissions gap.⁴

Despite this, the UN climate negotiations in Doha (2012) once again demonstrated a lack of political will of its Parties to increase their mitigation pledges to levels compatible with the 1.5-2°C limit. The adopted decision on enhanced action lacks any reference that industrialized countries should increase their pledges by 2020.⁵ (So far, only industrialised countries that participate in the second commitment period of the Kyoto Protocol have accepted this challenge. They are supposed to lock in a more ambitious target in 2014.) Only a few countries made new pledges in Doha, namely the Dominican Republic, Lebanon and Monaco.⁶

¹ see decision 1/CP.18, par. 79 – 91, available at <http://unfccc.int/resource/docs/2012/cop18/eng/08a01.pdf>

² see for example the World Bank 2012: Turn Down the Heat – Why a 4°C Warmer World Must be Avoided, available at

http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf

³ see decision -/CP.17, CP7, available at

http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durbanplatform.pdf

⁴ cf. “The Future We Want” – Outcome Document of Rio+20, Para 191, available at

<http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf>

⁵ see decision 2/CP.18, available <http://unfccc.int/resource/docs/2012/cop18/eng/08a01.pdf>

⁶ cf. Climate Action Tracker 2012: “Warnings of climate science – again – written in Doha sand”, available at <http://de.scribd.com/doc/116408201/Climate-Action-Tracker-final-press-release-on-the-COP-18>

2 The 2020 Emissions Gap

The 2020 emissions gap was quantified by a study of leading expert groups from around the world convened by the UN Environmental Programme (UNEP) in 2010⁷ and updated in late 2011⁸ and 2012⁹. Their calculations show that aggregate global annual emissions must not exceed 44 Gt CO₂e¹⁰ by 2020 in order to have a likely¹¹ chance of complying with the 2°C limit.¹² However, the voluntary mitigation pledges for 2020 associated with the Copenhagen Accord would result in global emissions of around 52 Gt CO₂e assuming the non-legally binding pledges are met in full, which is regarded as optimistic. The emissions would even grow to around 57 Gt CO₂e if only the least ambitious pledges were to be implemented – in the case of the EU, 20 percent instead of 30 percent reduction by 2020 based on 1990 emissions levels. **This means that with no additional action taken, the emissions gap in 2020 would be between 8 Gt CO₂e (highest ambition level) and 13 Gt CO₂e (lowest ambition level).**¹³ The lowest ambition level is hardly better than business-as-usual, which is expected to result in a gap of about 14 Gt CO₂e compared to what is needed for the 2°C limit in 2020.¹⁴ Thus, even if all countries move to the upper ranges of their mitigation pledges, less than 50 percent of the global emissions reduction required would be reached by 2020. In view of the above, additional reduction potential must be urgently realized to close the gap and bring us to a sustainable pathway to stay as far below 2°C as possible. UNEP concludes that from a technical standpoint, there is an estimated potential of bringing global emissions down by 14-20 Gt CO₂e by 2020¹⁵. This finding is supported by other leading experts in energy and climate politics such as the International Energy Agency (IEA) and the consultancy Ecofys.¹⁶ It is important to note that experts concurrently point to the massive green growth potential and thus win-win opportunities that these reduction opportunities hold.¹⁷ However, the latest UNEP Emissions Gap report also indicates that current investment in buildings, transportation systems (including aviation)

⁷ UNEP 2010: The Emissions Gap Report, available at www.unep.org/publications/ebooks/emissionsgapreport/pdfs/GAP_REPORT_SUNDAY_SINGLES_LOWRES.pdf

⁸ UNEP 2011b: Bridging the Emissions Gap, available at http://www.unep.org/pdf/UNEP_bridging_gap.pdf

⁹ UNEP 2012: The Emissions Gap Report 2012, available at <http://www.unep.org/pdf/2012gapreport.pdf>

¹⁰ Emissions in the UNEP “Bridging the Emissions Gap Report” refer to gigatonnes or billion tonnes of carbon dioxide equivalent – the global warming potential-weighted sum of the greenhouse gases covered by the Kyoto Protocol, that is CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, including emissions from land use, land-use change and forestry (LULUCF), cf. UNEP 2011b, p. 15

¹¹ A “likely” chance is defined as being greater than 66 percent. A likely chance to stay below 2°C is about the same as a “medium” (50-66 percent) or lower chance of meeting the 1.5°C limit; cf. UNEP 2011b, pp.8-9

¹² cf. UNEP 2012, p. viii

¹³ cf. *ibid.*, p. 1

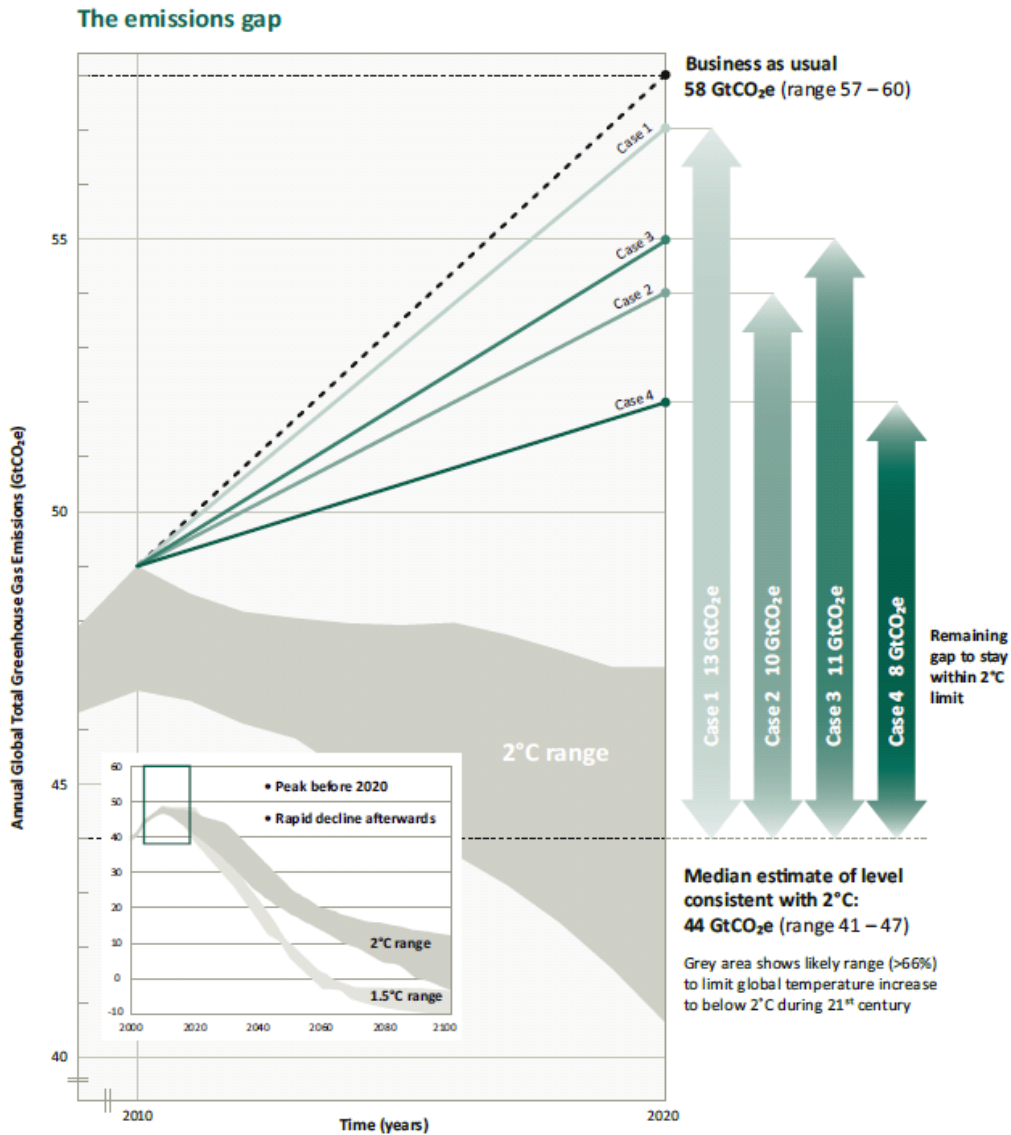
¹⁴ cf. *ibid.*

¹⁵ cf. UNEP 2012, p. 4

¹⁶ cf. Ecofys 2012: Wedging the Gap, available at:

http://www.ecofys.com/files/files/ecofys_2012_wedging%20the%20gap.pdf / cf. IEA 2011: World Energy Outlook 2011, available at: <http://www.worldenergyoutlook.org/publications/weo-2011/>

and other infrastructure are “locking in” high energy use patterns and resulting emissions, thereby limiting future options for reducing emissions.¹⁸ This underlines the urgent need for accelerated policy reforms in order to realize the reduction potential.



Source: UNEP 2012, p.6

Note: Case 1 refers to “unconditional pledges, lenient rules¹⁹”; case 2 to “unconditional pledges, strict rules”; case 3 to “conditional pledges, lenient rules”; and case 4 to “conditional pledges, strict rules”.

¹⁷ see, for example, Ecofys 2012, p. 27; CAN 2012b: Doha Milestones and Action, p. 3, available at: http://climatenetwork.org/sites/default/files/doha_final_web.pdf; UNEP 2012, p. viii

¹⁸ cf. UNEP 2012, p. viii

¹⁹ “Lenient Rules” refer to pledge cases with maximum Annex I “lenient LULUCF credits” and surplus emissions units, UNEP 2012 p. vi

This paper seeks to give an overview of important additional²⁰ short-term emissions reduction opportunities – namely those becoming effective by not later than 2020 – identified by various experts including political decision-makers, scientists and NGOs, as well as additional or supporting²¹ actions already undertaken unilaterally by countries or by alliances between countries and/or non-state actors. Thus, it highlights a variety of economically and technically feasible options to stay on a path coherent with the 2°C limit by 2020. Implementing these options in a way that creates additional opportunities is ultimately a question of political will.

3 Closing the Gap – Negotiating, Acting and Alliances

International negotiations on climate change issues take place at UN climate negotiations including the annual Conferences of the Parties (COPs) of the UN Framework Convention on Climate Change (UNFCCC). The latter is indispensable for dealing with climate change as it regularly brings the global community together to collectively tackle this global problem and come up with new international law. It puts climate change on the political agenda worldwide. Furthermore, UNFCCC is the only climate forum where the voices of the poorest and most vulnerable countries are heard, and also provides the landing site for bi- and multilateral initiatives beyond the UN framework. On the other hand, UN climate negotiations are organised in a way that does not maximise the chances of coming to an ambitious agreement.

Past experience has shown a growing inability or unwillingness of leading actors (e.g. the USA, Canada, and also some actors in the EU and China) to accept binding and ambitious international agreements. Thus, UN climate negotiations alone cannot tackle climate change and produce the required emissions reductions – the remaining emissions gap being strong evidence thereof. Rather, we must view the following three tools as important building blocks for climate change mitigation: a) **international negotiations**, including in non-UNFCCC fora, b) ambitious **unilateral action** and c) the building of **pioneer alliances**.

Countries that unilaterally implement transformative climate and energy strategies in a way that simultaneously promotes prosperity give important impetus for other countries and the international climate regime as a whole.

²⁰ Additional with regard to the accumulative submitted national mitigation pledges associated with the Copenhagen Accord.

²¹ Supporting the achievement of mitigation pledges associated with the Copenhagen Accord.

Alliances of pioneer states that go ahead together reinforce such impetus. Alliances that include the most vulnerable countries have a strong moral weight and are hence highly relevant – both for the people in those countries and in the international political arena. And alliances that involve the emission-wise most relevant states might in some cases pursue less ambitious actions, but are no less important since they send strong political signals. Notably, alliances can also be formed between other actors such as sub-states, civil society or the private sector, and likewise give new impetus for international negotiations and unilateral as well as multilateral acting. The 2015 international climate deal should find ways to make use of such commitments.

We need the synergy of all three mutually-reinforcing dimensions – negotiating, acting, and alliances – in order to realize the existent emissions reduction potential.

3.1 Negotiating

Technical negotiating with regards to raising mitigation ambition mainly takes place at the UN climate negotiations. At COP 18 in Doha, UN secretary general Ban Ki-moon invited Heads of State and Government to a World Leaders' Summit on Climate Change in September 2014.²² This meeting should become a major milestone in raising pre-2020 ambition. World leaders should commit to higher ambition of individual states, as well as to collective action in groups and different fora. Additionally, in Doha, Parties to the Kyoto Protocol agreed on a process to consider increasing their (insufficient) 2020 targets for the second commitment period, which should ideally happen in the first half of 2014. An extra ministerial meeting is also planned for the June 2014 UNFCCC session in Bonn.

Importantly, a strategy of developed countries to build a bridge from fast-start financing (2009-2012) to long-term financing (from 2020 onwards) is the backbone of the necessary increased short-term mitigation ambition by developing countries in the UNFCCC context. This is important both in order to keep the financing promise made by developed countries in Copenhagen and thus in terms of trust-building, as well with respect to fairness. For this to be realized, it is essential that developed countries tap innovative finance sources for international climate financing such as in the international aviation and shipping sectors, regarding auction revenues from emissions trading systems, and through the financial transaction tax in order to be able to financially support developing countries in times of the financial crisis.

Furthermore – as suggested by several UNFCCC Parties such as AOSIS, EU and Norway – it is important to engage other relevant national ministries and interna-

²² see decision 2/CP.18, para 8

tional institutions, particularly of the finance sector, in the UN climate negotiations.²³ This is essential to ensuring national implementation and mainstreaming of climate action.

Besides UNFCCC, there are other international fora to deal with different aspects of mitigation action, such as the G 20, G 8, the Major Economies Forum on Energy and Climate Change (MEF), the Montreal Protocol, the International Maritime Organization (IMO), and the International Civil Aviation Organization (ICAO). Synergies between UNFCCC and these organisations to close the gap should be fully exploited [*For an overview of adequate non-UNFCCC international fora to deal with different short-term mitigation options, see Annex, p. 28*].

Whereas it is beyond question that the first step to close the emissions gap must be that countries move to the upper end of their mitigation pledges²⁴, and relevant emerging economies that have not yet done so submit pledges, additional action to increase short-term ambition can hardly be brought into a ranking order. All of the options cited below will contribute to closing the 2020 emissions gap and must be taken on **by 2015** in order to become relevant **before 2020**. This is underlined by the fact that global emissions must peak by 2015 to have a likely chance and still before 2020 to have a medium chance of staying below 2°C.²⁵

- *Developed countries' commitments and pledges:* All developed countries (Annex I countries) should adopt a 2020 mitigation commitment or pledge at least in the 25-40 percent range (below 1990 levels) which is necessary to stay below 2°C.²⁶ As aforementioned, the respective Kyoto Protocol (KP) decision adopted in Doha established that KP Parties should revisit their (insufficient) commitments for the second commitment period (2013-2020) to bring them into the 25-40% range by no later than 2014.²⁷ Likewise, non-KP developed countries should adopt quantified emissions reductions in the same required range and level of transparency as KP members.²⁸ Together, implementing the highest (conditional) pledges of An-

²³ cf. AOSIS Non-Paper for ADP Workstream 2, May 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_workstream2_aosis_02052013_.pdf; cf. UNFCCC negotiations on ADP2 in Bonn, 30 April – 3 May 2013

²⁴ Note that most countries indicated their Copenhagen pledges in a range, with “unconditional” pledges comprising the lower end and “conditional” pledges comprising the upper end of the range. For example, in the case of the EU, the lower end is the current, unconditional target of -20% emissions reduction by 2020, and the upper end is the -30% target which is conditional on ambitious action of other countries.

²⁵ cf. UNEP 2011b p. 19, cf. CAN 2012 p. 3, see EU submission to UNFCCC 2012, p. 14, available at <http://unfccc.int/resource/docs/2012/adp1/eng/misc01.pdf>

²⁶ Notably, this is just one step on the way to the more than 40 percent emissions reductions needed from developed countries by 2020 to stay below 2°C, see CAN 2012 b, p.3

²⁷ see decision 1/CMP.8, para 7, available at <http://unfccc.int/resource/docs/2012/cmp8/eng/109.pdf>

²⁸ see CAN calculations for how much the most relevant Annex I countries should increase their mitigation by 2020, CAN 2012b, pp.24-26

nex I and Non-Annex I (developing) countries would reduce the emissions gap in 2020 by **2 Gt CO₂e**.²⁹

- *Developing countries' pledges*: Those countries that have not yet submitted pledges are estimated to account for 28 percent of projected global emissions in 2020, and notably comprises some rapidly growing emerging economies.³⁰ Therefore, relevant emerging countries that have above-average per-capita emissions³¹ or cause more than 1 percent of global emissions (e.g. Malaysia, Qatar, Saudi Arabia, Kuwait, United Arab Emirates) should submit quantified mitigation pledges by no later than 2014. If all Parties not yet included did so, **0.2-2 Gt CO₂e** could be saved in 2020 (again, depending on the ambition level).³² Those countries which already have submitted mitigation pledges, and are in a position to do so, should look for ways to increase their ambition (e.g. China, India, South Africa, Brazil, South Korea, Iran).³³ For example, solar power in China is developing faster than pledged. Why not correct the pledge upwards?
- *Nationally Appropriate Mitigation Actions (NAMAs)*: Additional NAMAs are another important option which developing countries should use to raise ambition. Developing countries should provide detailed information as to what extent they require additional support from developed countries in order to increase their mitigation ambition. Developed countries should make a clear commitment to co-finance transformative policy approaches in terms of NAMAs and low-carbon development plans. As aforementioned, a climate finance roadmap for the period 2013-2020 is a tipping point to facilitate increased mitigation action by developing countries.³⁴ It is also important for the equity debate in general, which will play a decisive role in the run-up to the 2015 climate agreement. Mitigation measures through NAMAs should support, not undermine, the expansion of access to affordable, sustainable energy and the realisation of the right to food.
- *Abolish loopholes in the Kyoto Protocol*: So far, the most effective UNFCCC measure to limit the emissions gap since Copenhagen has been the decision in Doha to limit the carry-over of surplus emissions allow-

²⁹ cf. UNEP 2012, p. 4

³⁰ see EU submission to UNFCCC 2012, p. 14

³¹ The seven countries with the highest per-capita emissions are all emerging economies (Qatar, 44.02 t; Trinidad and Tobago, 35.75 t; Kuwait, 30.30 t; Brunei Darussalam, 23.68 t; United Arab Emirates, 22.60 t; Aruba, 21.53 t; Bahrain, 20.70 t; as of 2009), cf. World Bank data on CO₂ emissions, available at <http://data.worldbank.org/indicator/EN.ATM.CO2E.PC>

³² cf. Climate Analytics and Ecofys 2012b: Governments still set on 3°C warming track, some progress, but many playing with numbers, p.3, available at

http://climateactiontracker.org/assets/publications/briefing_papers/2012-09-04_Briefing_paper_Bangkok.pff.pdf

³³ see CAN calculations for how much the most relevant Non-Annex I countries should increase their mitigation ambition by 2020, CAN 2012b, pp.26-29

³⁴ cf. CAN 2012b, p. 6

ances from the first commitment period (2008-2012).³⁵ This narrows the gap by between **0.1** and **0.3 Gt CO₂e**.³⁶ Furthermore, minimizing “lenient”³⁷ LULUCF (land use, land-use change and forestry) credits³⁸ and surplus emissions credits would bring emissions down by around **3 Gt CO₂e**.³⁹ Finally, avoiding double-counting and non-additionality of Clean Development Mechanism (CDM) offsets would reduce the emissions gap by up to **1.5 Gt CO₂e**.⁴⁰

- *Phase out Hydrofluorocarbons (HFCs)*:⁴¹ HFCs are greenhouse gases with a very high warming potential – much higher than that of CO₂.⁴² Also, they are the fastest growing set of greenhouse gas (GHG) emissions, well on track to double within a decade.⁴³ Phasing out HFCs can thus significantly contribute to closing the emissions gap – by up to **0.3 Gt CO₂e** in 2020.⁴⁴ Furthermore, it is technically feasible, and highly cost-efficient, to replace HFCs with other gases.⁴⁵ UNFCCC Parties should enhance synergies between UNFCCC and the Montreal Protocol on Substances that Deplete the Ozone Layer. In this regard, it was very significant that the USA and China moved forward bilaterally and agreed to phase down the consumption and production of HFCs using the expertise and institutions of the Montreal Protocol.⁴⁶ Building on this, UNFCCC Parties should adopt a decision at COP 19 in Warsaw to call on Montreal Protocol Parties to immediately implement measures to phase out HFC production and con-

³⁵ see decision 1/CMP.8, VI, available at <http://unfccc.int/resource/docs/2012/cmp8/eng/13a01.pdf>

³⁶ cf. Vieweg, Marion et al (Climate Analytics, PIK, Ecofys) 2013: Climate Shuffle – Climate Action Tracker Update, 12 June 2013, p.5, available at http://www.climateanalytics.org/sites/default/files/attachments/news/CAT%20Bonn%20update%202013%2006%2012_final.pdf

³⁷ “lenient” credits are such that could be used toward the emission reduction of a country, cf. UNEP 2012, p. 12

³⁸ see submission of Bolivia to UNFCCC 2012, p.5; joint submissions of Cameroon, Costa Rica, Dominica, Dominican Republic, Gabon, Guyana, Honduras, Kenya, Nigeria, Papua New Guinea, Republic of Congo, Uganda to UNFCCC 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_submission_by_13_countries_workstream_1_and_2_20130313.pdf

³⁹ cf. UNEP 2012, p. 4

⁴⁰ cf. *ibid*; Note: These numbers are not directly additive.

⁴¹ see AOSIS, EU, Norway, Switzerland, US submissions to UNFCCC 2012; EU submission to UNFCCC 2013, Least Developed Countries (LDCs) submission to UNFCCC 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_ldc_group_workstream_2_20130303.pdf; Norway, US submissions to UNFCCC 2013; general reference to action on Short-Lived Climate Pollutants see: Canada submission to UNFCCC 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_canada_workstream_1_and_2_en_20130412.pdf, EIG, Japan, New Zealand submissions to UNFCCC 2013

⁴² cf. CAN 2012a, p. 4

⁴³ cf. Environmental and Energy Study Institute 2013: Fact Sheet: Short-Lived Climate Pollutants: Why Are They Important? Available at <http://www.eesi.org/fact-sheet-short-lived-climate-pollutants-why-are-they-important-19-feb-2013>

⁴⁴ cf. Vieweg, Marion et al (Climate Analytics, PIK, Ecofys) 2013, p. 3

⁴⁵ see Norway submission to UNFCCC, p. 59

⁴⁶ cf. The White House 2013: United States and China Agree to Work Together to Phase Down HFCs, available at <http://www.whitehouse.gov/the-press-office/2013/06/08/united-states-and-china-agree-work-together-phase-down-hfcs>

sumption. No other single mitigation opportunity has been mentioned as often during the UN climate negotiations on pre-2020 ambition as phasing down HFCs, so that it is one of the greatest areas of potential consensus and cooperation (e.g. AOSIS, Australia, Costa Rica, EU, New Zealand, Norway; with even more countries citing it in their official submissions such as Canada, Japan, LDCs and USA). It should be noted that mitigating HFCs production simultaneously holds multiple Green Economy benefits – for example improved air quality and reduced crop damage.⁴⁷

- *Limit emissions from international aviation and shipping:*⁴⁸ As the “international” emissions from these sectors are not attributable to a particular country, they have not been included in mitigation pledges. Without any mitigation action, emissions from aviation would amount to up to 1.2 Gt CO₂e and that for shipping up to 1.3 Gt CO₂e in 2020. Together, these two sectors have an emissions reduction potential in 2020 of about **0.3-0.5 Gt CO₂e** through options such as improving fuel efficiency, reducing speeds⁴⁹ or cruising altitude. UNFCCC Parties as well as G 8 and G 20 should push IMO and ICAO to develop appropriate mechanisms to address bunker fuels, as it is unlikely that UNFCCC will do so.⁵⁰ International aviation and shipping should also contribute to international climate financing. The money raised in developed countries should go to the Green Climate Fund. At least until 2020, the money raised from developing and emerging countries should remain in these countries and be reserved for climate purposes. The agreement to create an ICAO framework on tackling emissions and the EU’s concession to suspend part of its EU Emissions Trading System (ETS) on aviation should be seen as a key incentive to reach significant progress – if possible by autumn 2013, when the ICAO General Assembly gathers. Failure of the assembly to act would automatically trigger the reinstatement of the full provisions of the EU ETS.⁵¹ *Application of a GWP metric with a 20-years horizon (see following excursus) for non-CO₂ emissions from international aviation should be*

⁴⁷ cf. UNEP 2011b, p. 7

⁴⁸ see AOSIS, EU, LDCs, Norway, Switzerland, USA submissions to UNFCCC 2012; joint submission of Cameroon, Costa Rica, Dominica, Dominican Republic, Gabon, Guyana, Honduras, Kenya, Nigeria, Papua New Guinea, Republic of Congo, Uganda submission to UNFCCC 2013; Environmental Integrity Group (Liechtenstein, Mexico, Monaco and Switzerland) submission to UNFCCC 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_liechtenstein_mexico_monaco_and_switzerland_workstream_2_20130309.pdf; EU submission to UNFCCC 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_eu_workstream_2_20130301.pdf; Japan submission to UNFCCC 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_japan_workstream_2_20130312.pdf

⁴⁹ cf. UNEP 2011b, p. 11

⁵⁰ cf. CAN 2012a, p. 7; see EU submission to UNFCCC 2012, p. 10

⁵¹ cf. [transportandenvironment.org](http://www.transportenvironment.org) 2013: “ICAO and aviation emissions – the clock is ticking”, available at <http://www.transportandenvironment.org/publications/icao-and-aviation-emissions-clock-ticking>

discussed. CO₂ emissions would come (or stay) within the GWP metric with a 100-years horizon.

Excursus: *An additional GWP emissions metric with a 20-year horizon for short-term mitigation actions only?*

The overarching goal of international climate policy is and needs to remain the long-term stabilization of GHG in the atmosphere with the goal of staying as far as possible below 2°C. However, due to the need to limit the temperature peak, and thus the risk of passing tipping points, short-lived climate pollutants (SLCP) such as black carbon and tropospheric ozone, which have a relatively short atmospheric lifetime (days to decade-and-a-half) in contrast to long-lived pollutants such as CO₂ (multiple decades to millennia)⁵², also come into focus.

The GWP metric, which has been designed for long-lived GHG,⁵³ can be used to estimate the relative potential future impact of emissions of a given gas on the climate system.⁵⁴ Technically, the metric integrates the radiative forcing produced by a given mass of a given gas, after its pulse emission over a chosen time horizon and compares this to an equal mass of CO₂ emissions.⁵⁵ Hence, the atmospheric life time of a gas influences the assessment of its climate forcing.⁵⁶ For example, methane will have a large radiative forcing effect if a short-term period is considered (GWP of 72 over 20 years relative to CO₂), but becomes less important over a longer period (GWP of 25 over 100 years and only 7.1 over 500 years).⁵⁷ The radiative forcing effect of black carbon more than triples relative to CO₂ when one considers a 20-years span as opposed to a 100-year period (GWP of 2,200 over 20 years; GWP of 680 over 100 years).⁵⁸

Against this background, the introduction of an additional GWP metric with a time horizon of only 20 years to prevent e.g. feedback mechanisms from kicking in, should be contemplated. The GWP 20 metric would send a signal to not forget those actions which have the quickest effect on temperature rise. But they must not be discounted against the GWP 100 metric used for long-lived GHG. This is the more fundamental metric to prevent dangerous climate change. On the other hand, only focusing on GWP 100 would create a high risk that the effect of short-term mitigation of SLCP would become “ironed out” in a long term perspective.

⁵² cf. Zaelke, Durwood; Andersen, Stephen O.; Borgford-Parnell, Nathan 2012: Strengthening Ambition for Climate Mitigation: The Role of the Montreal Protocol in Reducing Short-lived Climate Pollutants, in: RE-CIEL 21 (3) 2012, p. 231

⁵³ cf. Grassl, Hartmut; Brockhagen, Dietrich 2007: Climate forcing of aviation emissions in high altitudes and comparison of metrics, pp. 1-2

⁵⁴ cf. IPCC Third Assessment Report – Climate Change 2001: Chapter 6.12 Global Warming Potentials, available at http://www.grida.no/publications/other/ipcc_tar/?src=/climate/ipcc_tar/wg1/247.htm

⁵⁵ cf. Grassl, Hartmut; Brockhagen, Dietrich 2007

⁵⁶ cf. IPCC Third Assessment Report – Climate Change 2001

⁵⁷ cf. IPCC AR4 Working Group 1 Report: Changes in Atmospheric Constituents and in Radiative Forcing (Chapter 2), p. 212, available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter2.pdf>

⁵⁸ cf. Atlantic Consulting 2009: Black Carbon and Global Warming: A Scientific Review p. 7, available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter2.pdf>

This means that the GWP 20 metric would be an additional metric to create an incentive to quickly address factors with a relevant short-term potential. It should also be restricted to actions made in addition to pledges or commitments in the context of the Kyoto Protocol, Copenhagen or the new 2015 climate regime. Country commitments have to reflect the single most important goal of long-term GHG stabilization in the atmosphere.

In brief, the two metrics would represent two different political goals: whereas the more fundamental GWP 100 metric reflects the objective of long-term GHG stabilization, the greenhouse-relevant factors under a GWP 20 metric would reflect the need to limit the temperature peak and hence reduce the risk of tipping points. SLCP should not be combined in a market system with long-term gases. But they should be drastically reduced to mitigate their proven negative effects on health, agriculture production and key ecosystems such as forests and freshwater. In this regard, the mitigation of climate change is only a wanted co-benefit.⁵⁹ Early implementation of mitigation action will thus also help countries meet international challenges such as the achievement of the UN Millennium Development Goals.⁶⁰

- *Phase out fossil fuel subsidies:*⁶¹ Fossil fuel subsidies (FFS) contribute to greenhouse gas emissions and should be phased out, as generally agreed upon by the G 20⁶² and G 8. Significantly reducing FFS could potentially save **2 Gt CO₂e** by 2020.⁶³ Therefore, a COP 19 decision should strongly encourage UNFCCC Parties to immediately implement the phasing-out of FFS.⁶⁴ This should also include “indirect” subsidies, i.e. the mispricing of fossil fuels through inappropriate taxing that does not take into account negative externalities. The International Monetary Fund (IMF) estimates that these post-tax subsidies make up for nearly two thirds of the total 1.9 trillion USD p.a. in FFS.⁶⁵ The momentum created by the well-

⁵⁹ cf. UNEP 2011a: Integrated Assessment of Black Carbon and Tropospheric Ozone – Summary for Decision Makers, p. ii, available at http://www.unep.org/dewa/Portals/67/pdf/Black_Carbon.pdf

⁶⁰ cf. *ibid.*

⁶¹ see AOSIS, EU, Norway, USA submissions to UNFCCC 2012; joint submission of Cameroon, Costa Rica, Dominica, Dominican Republic, Gabon, Guyana, Honduras, Kenya, Nigeria, Papua New Guinea, Republic of Congo, Uganda to UNFCCC 2013; EIG, EU and Japan submissions to UNFCCC 2013, New Zealand submission to UNFCCC 2013, available at

http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_new_zealand_workstream_2_2013_0312.pdf, Norway submission to UNFCCC 2013, US submission to UNFCCC 2013, available at

http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_usa_workstream_2_20130312.pdf

⁶² cf. G 20 Leaders Statement The Pittsburgh Summit 2009, para 29; available at

<http://www.g20.utoronto.ca/2009/2009communiqué0925.html>

⁶³ cf. IEA 2010, p. 569; see AOSIS submission to UNFCCC 2012 p. 46, Norway submission to UNFCCC 2012, p. 58

⁶⁴ cf. CAN 2012a: Views on Options and Ways to Further Increase the Level of Ambition, p. 7, available at: http://climatenetwork.org/sites/default/files/CAN_ambition_submission_28Feb2012_version2.pdf

⁶⁵ cf. IMF 2013: Energy Subsidy Reform – Lessons and Implication, available at

<http://www.imf.org/external/np/pp/eng/2013/012813.pdf>

⁶⁵ cf. Buckle, Elise 2009: Fossil Fuel subsidies and government support in 24 OECD countries – summary for decision-makers, p. 5, available at http://www.iisd.org/gsi/sites/default/files/ffs_report_sustain_energy.pdf

received study by the IMF (January 2013) should be utilized by progressive Parties to push for a decision at COP 19 in Warsaw (both developing and developed Parties have called for phasing out FFS during UN negotiations, e.g. AOSIS, EU and USA). The study concludes that, while FFS are aimed at protecting consumers, they actually do the opposite by aggravating fiscal imbalances, crowding-out priority public spending, and depressing private investment.⁶⁶ The phasing out of fossil fuel subsidies, especially in developing countries, has to be organised in a way that does not conflict with sustainable and affordable access to energy. Where necessary, NAMAs should be internationally supported. Another option would be that progressive governments could create a club of pioneer states that are willing to phase out FFS (see “Alliances”, 3.2).

- *Enhance action on REDD+ (Reducing Emissions from Deforestation and Forest Degradation):*⁶⁷ Deforestation alone is responsible for 17 percent of global emissions.⁶⁸ REDD+ could make a critical contribution to increasing ambition well before 2020 – there is potential to cut emissions by **1.3-4.2 Gt CO₂e** in forestry in 2020.⁶⁹ In its submission for the Workplan on enhancing mitigation ambition (2012), Norway suggested that a global value (price signal) should be put on forest carbon in order to correct the market failure that drives deforestation and that private finance should be redirected towards sustainable use and preservation of forests.⁷⁰ But there are different reasons – regarding both the consequences for the forest and people depending on it, as well as for the integrity of the carbon market – why market mechanisms are very problematic in the case of REDD+. There are more and more proposals to organize REDD+ in a different way. In 2012, Bolivia presented a proposal to the UNFCCC involving a non-market based, integrative mitigation and adaptation approach for the integral and sustainable management of forests, which includes, amongst others, appropriate institutional conditions that ensure proprietary rights to forest owners.⁷¹

⁶⁶ cf. *ibid.*

⁶⁷ see EU, Norway submissions to UNFCCC 2012; joint submission of Cameroon, Costa Rica, Dominica, Dominican Republic, Gabon, Guyana, Honduras, Kenya, Nigeria, Papua New Guinea, Republic of Congo, Uganda to UNFCCC 2013; EIG, EU submissions to UNFCCC 2013; Norway submission to UNFCCC 2013, available at http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_norway_workstream_2_20130308.pdf

⁶⁸ cf. CAN 2012b, p. 5

⁶⁹ cf. UNEP 2012, p. 7

⁷⁰ see Norway submission to UNFCCC 2012

⁷¹ cf. The Plurinational State of Bolivia 2012: The Joint Mitigation and Adaptation Mechanism for the Integral and Sustainable Management to Forests, available at <http://www.redd-monitor.org/wordpress/wp-content/uploads/2012/10/JOINT-MITIGATION-2.pdf>

- *Enhance action in the agriculture sector:*⁷² According to an ACT Alliance study (2011), agriculture directly accounts for 10-15 percent of global emissions.⁷³ However, the huge potential to reduce emissions from agriculture has not yet been tapped by UNFCCC. And indeed, there are good reasons to be very careful. The right to food and the empowerment of a large number of undernourished people living on the country side must be in the centre of a strategy to address the agriculture sector, which often will mean prioritizing the adaptation needs of the poorest. Thus, all attempts to include the agriculture sector into the carbon market create a wrong and potentially dangerous incentive structure. Nevertheless, reduced emissions can be a welcome co-benefit of such a strategy to strengthen the right to food, food security and sovereignty and to increase soil productivity. Notably, there are relatively cost-effective options in the agriculture sector to reap these climate co-benefits in the short-term.⁷⁴ UNEP estimates that there is global mitigation potential of **1.1-4.3 Gt CO₂e** per year through changes in cropland and livestock management that reduce non-CO₂ emissions and enhance soil carbon.⁷⁵
- *Accelerate action on black carbon:*⁷⁶ Recent science has shown that black carbon, which is an air pollutant and as such not included in the Kyoto Protocol, substantially contributes to global warming.⁷⁷ Reducing black carbon emissions, particularly from fossil fuels, will lead to slower or lower short-term warming and is essential to allow us to stay below 2°C.⁷⁸ One option that would immediately reap results, and simultaneously has the largest black carbon emissions reduction potential, would be the increased use of diesel particle filters for vehicles⁷⁹, or a general shift away from diesel as practised e.g. in some Indian cities. Notably, addressing black carbon could deliver multiple co-benefits with regards to improving health and food security.⁸⁰ Black carbon is a primary contributor to both indoor and outdoor pollution, which together cause more than three mil-

⁷² see EU, LDC submissions to UNFCCC 2012

⁷³ cf. Ekelend, Thomas 2011: World can reduce global emissions from agriculture, ACT Alliance, available at <http://www.actalliance.org/stories/act-world-can-reduce-global-emissions-from-agriculture>

⁷⁴ cf. Murphy, Deborah; McCandless, Matthews; Drexhage, John 2010: Expanding Agriculture's Role in the International Climate Change Regime: Capturing the Opportunities, iisd, p. 3, available at http://www.iisd.org/pdf/2010/expanding_agri_role.pdf

⁷⁵ cf. UNEP 2012, p. 7

⁷⁶ For general reference to action on Short-Lived Climate Pollutants see Canada, EIG, Japan, New Zealand, Norway submissions to UNFCCC 2013

⁷⁷ cf. CAN 2012a, p. 7; cf. UNEP 2011a, p.6

⁷⁸ cf. Climate Analytics and Ecofys 2012a: Closing the 2020 emissions gap – Issues, options and strategies, p. 4, available at

http://www.ecofys.com/files/files/ecofys_2012_closing%20the%202020%20emissions%20gap.pdf; see Norway submission to UNFCCC 2012, p. 59

⁷⁹ cf. UNEP 2011a, pp. 2, 10

⁸⁰ cf. CAN 2012b, p. 6; cf. UNEP 2011b, p. 7

lion deaths each year.⁸¹ To reap the co-benefits, it is crucial to embed black carbon reduction activities into a strategy developed together with local stakeholders to improve e.g. cooking stoves. This is also important because there is already a multi-decade experience with improved cooking stoves in developing countries, including success stories but also many failures. A new “push” through a climate change perspective must learn from this experience. This is why the Climate Action Network (CAN) suggests that some of the black carbon sources might best be dealt with in fora that address access to clean and sustainable energy for all.⁸² Since strong mitigation action on black carbon was already assumed in calculating the emissions gap through underlying emission scenarios compatible with the 2°C limit, implementing mitigation actions on black carbon will not reduce the gap – but inaction will increase it.⁸³

- *Prohibit double-counting of international emissions offsets:*⁸⁴ Avoiding the double-counting of international emissions offsets (e.g. using the Clean Development Mechanism) could reduce the gap by up to **1.5 Gt CO₂e**.⁸⁵ For example, some developed countries achieve their emissions reduction targets partly by purchasing carbon credits from developing countries, which in turn will achieve their pledges partly by enacting measures that result in the sale of carbon credits to developed countries.⁸⁶ As these reductions that only occur once are accounted for twice, the overall ambition level is de facto decreased. Actually, the ambition level of the country selling the credits would now have to be corrected upwards – but no rules on how to treat such double counting have been agreed upon.⁸⁷ Thus, double-counting of offsets should be prohibited.

3.2 Acting

Energy efficiency and Renewable Energy are not only central pillars of a successful climate strategy, but also key for energy security and strategies to enhance competitiveness. Therefore, more and more states are ready to move forward on this front – even if international climate progress is low. These states may not only contribute to reducing the emissions gap, but also represent a model for other countries. The aforementioned UNEP report shows that there is a variety of options available for going forward: Global emission reductions of around **2.2-**

⁸¹ ⁸¹ cf. Environmental and Energy Study Institute 2013

⁸² cf. CAN 2012b, p. 6

⁸³ cf. Climate Analytics and Ecofys, 2012a, p. 16

⁸⁴ see Submission of Bolivia to UNFCCC 2012, p. 5

⁸⁵ cf. UNEP 2012, p. 13

⁸⁶ cf. UNEP 2011b, p. 23

3.9 Gt CO₂e could be achieved in the electricity sector by 2020 through e.g. more efficient power plants and renewable energies. Also, in this same time frame, reductions of **1.4-2.9 Gt CO₂e** could be achieved in the buildings sector through efficiency improvements in e.g. heating and cooling, and in the transportation sector reductions of around **1.4-2.0 Gt CO₂e** (excluding aviation and shipping) could be realized through e.g. increased fuel efficiency.⁸⁸

A number of states – developed, emerging, developing and even least developed countries – have begun tapping into some of this reduction potential. Some striking examples that go beyond the Copenhagen pledges are summarized in the following.

Developed Countries

- *Germany – Energy Transition (Energiewende)*. The German energy transition towards a renewable energies era started in 2000, when the German Government agreed for the first time to phase out nuclear energy. This has been increasingly compensated for by renewable energy and energy efficiency improvements in the electricity sector. Already in 2010, the Government introduced an energy concept that included a renewable energy target of a 35 percent share in gross electricity consumption by 2020 – which can now be expected to be at least 40 percent⁸⁹, a target of 2.1 percent increase in energy productivity p.a., and an emissions reduction target of 40 percent by 2020 based on 1990 levels⁹⁰.⁹¹ After the nuclear disaster in Fukushima, the present German Government decided to retract the lifetime extension of nuclear power plants that it also had adopted in 2010 and agreed to shut down the last nuclear reactor in 2022.⁹² The energy transition provides a unique chance for Germany to demonstrate to the world that competitiveness and sustainability can be reconciled in completely industrialized country. In 2014, a new electricity market design in Germany can be expected. This, together with the future EU emissions reduction, renewable energy and energy efficiency targets, and the urgently needed reform of the EU Emission Trading Scheme, will determine the relevance of the German model.

⁸⁷ cf. UNEP 2012, p. 12

⁸⁸ cf. *ibid.*, p. 10

⁸⁹ cf. Altmayer, Peter 2012: 10-Punkte-Programm für eine Energie- und Umweltpolitik mit Ambition und Augenmaß, available at http://www.bmu.de/files/pdfs/allgemein/application/pdf/10_punkte_programm_bf.pdf

⁹⁰ It should be noted, however, that the ambitious German 40 percent reduction target is difficult to be achieved if the EU refrains from moving to its conditional 30 percent mitigation pledge, as EU ETS emission certificates for the German industry are distributed based on the EU mitigation pledge. An EU 30 percent goal for 2020 is thus important to close the emissions gap.

⁹¹ cf. BMU 2011a: Das Energiekonzept und seine beschleunigte Umsetzung, available at: http://www.bmu.de/energiewende/beschluesse_und_massnahmen/doc/47892.php

⁹² cf. BMU 2011b: Kurzinfo Energiewende, available at: <http://www.bmu.de/energiewende/kurzinfo/doc/47889.php>

- *United Kingdom – Climate Change Act.* In 2008, the UK introduced the world's first long-term binding framework in an industrialized country to tackle climate change. The Climate Change Act stipulates a legally binding target of at least 80% emissions reduction by 2050 based on 1990 levels, and a carbon budgeting system that caps emissions over five-year periods.⁹³

Emerging economies

- *Mexico – Climate Law.* In 2012, Mexico was the second country, and first emerging country, to pass climate legislation with legally binding emissions goals, requiring the government to cut emissions by 30 percent below business-as-usual levels by 2020, and by 50 percent below 2000 levels by 2050. Furthermore, it stipulated that the share of renewable energy in the electricity sector should be increased to 35 percent by 2024, and obliges the country's largest polluters to report their emissions. It also encourages the development of a carbon trading scheme.⁹⁴
- *China – Non-Fossil Fuel Target.* According to recent studies, China is likely to outperform its Copenhagen pledge of a 15 percent share of non-fossil fuels in primary energy consumption by 2020 through implementing domestic policies.⁹⁵ Back in 2012, China increased its solar power target by 40 percent from 15 (originally announced in the 12th Five-Year Plan in 2011) to 21 GW by 2015.⁹⁶ Other 2015 non-fossil energy targets included in the 12th Five-Year Plan involve wind power capacity (100 GW), hydro-power capacity (290 GW), biomass power capacity (13 GW), geothermal and tidal power capacity (110-120 MW) and ocean power capacity (50 MW).⁹⁷

Developing Countries

- *Morocco – Solar Plan.* In 2009, Morocco set up an ambitious solar plan that aims at both improving energy security and mitigating climate change. It foresees the installation of 2 GW of solar capacity by 2020. The solar plan is the cornerstone of the country's renewable energy and climate

⁹³ cf. UK Department of Energy and Climate Change: Climate Change Act 2008, available at http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx

⁹⁴ cf. Vance, Erik 2012: Mexico passes climate change law, Nature, available at <http://www.nature.com/news/mexico-passes-climate-change-law-1.10496>

⁹⁵ cf. Ecofys and PBL 2012: Greenhouse gas emission reduction proposals and national climate policies of major economies, p. 11, available at http://www.ecofys.com/files/files/ecofys_pbl_iiasa_2012_analysis_of_domestic_climate_change_policies_new.pdf

⁹⁶ cf. Reuters 2012: China hikes 2012 solar power target by 40 pct, available at:

<http://in.reuters.com/article/2012/08/08/china-power-renewables-idINL4E8J80J120120808>

⁹⁷ cf. *ibid.*; cf. Industrial Efficiency Policy Database 2013: Energy Development Plan of the 12th Fifth Year Plan

change mitigation strategy, which targets a renewable energy share of 42 percent of installed power plant capacity in the country by 2020.⁹⁸

- *Kenya – Climate Change Action Plan.* In 2010, the Kenyan Government formulated a comprehensive National Climate Change Response Strategy (NCCRS) to address climate change challenges in a systematic manner. To operationalize the NCCRS, the Government has developed a National Climate Change Action Plan (KCCAP). The Action Plan includes a long-term national low-carbon development strategy by 2030, a subcomponent of NAMAs, which attempts to identify and prioritize internationally and domestically supported NAMAs as well as priority REDD+ activities. It also seeks to identify and prioritize a subcomponent on finance which is designed to develop an innovative financial mechanism that includes a climate fund, investment strategy, and carbon trading platform.⁹⁹
- *Dominican Republic – National Development Strategy Law.* In 2012, the Dominican Republic was the first developing country to commit to an absolute reduction in emissions, introducing a binding reduction target of 25% by 2030 compared with 2010 through its National Development Strategy law. This is a substantial step for the country, as it requires a reversal of the emissions trend.¹⁰⁰ Notably, the target is unconditional and not dependent on external funding.¹⁰¹ The law requires a review of the reduction targets every five years until 2030.¹⁰²

Least Developed Countries

- *Ethiopia – Climate-Resilient Green Economy Initiative.* In 2011, Ethiopia started its Climate-Resilient Green Economy (CRGE) initiative, recognizing that “climate change also presents the necessity and opportunity to switch to a new, sustainable development model.”¹⁰³ The CRGE follows a sectoral approach and has thus far identified more than 60 initiatives which could help the country achieve its development goals while limiting

⁹⁸ cf. Altmann, Claudia/ Weinkopf, Carolin 2012: A Bright Future for Morocco, GIZ, available at <http://www.giz.de/en/SID-01246B87-49044455/downloads/giz2012-en-akzente02-energy-transition-morocco.pdf>

⁹⁹ cf. Government of Kenya, Ministry of Environment and Mineral Resources: Climate Change Action Plan, available at <http://www.kccap.info/>

¹⁰⁰ cf. Climate Action Tracker 2012

¹⁰¹ cf. Bloomberg 2012: “Dominican Republic Sets 25% Emissions Reduction Goal By 2030”, 7 December 2012, available at

<http://www.bloomberg.com/news/2012-12-07/dominican-republic-sets-25-emission-reduction-goal-by-2030.html>

¹⁰² cf. Dominican Today 2012: “Dominican Republic’s Doha pledge: Emissions cut 25% by 2030”, 7 December 2012, available at <http://www.dominicantoday.com/dr/economy/2012/12/7/46018/Dominican-Republics-Doha-pledge-Emissions-cut-25-by-2030>

¹⁰³ cf. Federal Democratic Republic of Ethiopia: Ethiopia’s Climate-Resilient Green Economy, p. III, available at <http://www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf>

2030 GHG emissions to around today's 150 Mt CO₂e – around 250 Mt CO₂e less than business-as-usual.¹⁰⁴

- *Nepal – Community Forestry*. Nepal has placed community forestry at the heart of its REDD+ and adaptation strategies.¹⁰⁵ That is, the country has given the rights to manage a large part of its forests to communities, thus creating stronger local incentive for sustainable use and conservation of this resource.¹⁰⁶ This is important considering that about 38% (5.5 million hectares) of Nepal's total geographical area is covered by forests.¹⁰⁷ As virtually the entire Nepalese population has been dependent on forests for fuel wood supply, which entails a high pressure on forests, alternative energy programmes are also needed. So far, Nepal has implemented biogas, hydropower, solar energy and alternative stoves programmes to advance this front.¹⁰⁸

3.3 Alliances

Alliances that contribute to achieving the mitigation pledges or increase ambition beyond these pledges by using synergy effects can be formed between actors at all levels – government, regional, private sector etc. While some alliances are already in place, there is still massive unexploited potential considering the countless opportunities available for partners to reduce emissions.

- *“Two Degrees Clubs” – criteria for multilateral alliances*: Regarding multilateral alliances between states, the World Resources Institute (WRI) developed four criteria for “Two Degrees Clubs”, which would effectively contribute to staying below 2°C and therefore make transformational change. The authors argue that existing country groups that address climate change only deliver incremental change, as they are not focused on significantly increasing mitigation ambition. Transformational change through “Two Degrees Clubs” could be realized if the following criteria are met:

- (1) An ambitious vision that is commensurate with what climate science suggests – e.g. emissions reductions and energy efficiency targets.

¹⁰⁴ cf. *ibid.*, p. 2

¹⁰⁵ cf. West, Simon 2012: REDD+ and adaption in Nepal, REDD-net, available at <http://redd-net.org/files/REDD%20Adaptation%20Nepal%20Simon%20West.pdf>

¹⁰⁶ cf. Huq, Saleemul 2013: Why poorest nations can take control of our climate destiny, rtcc.org, available at <http://redd-net.org/files/REDD%20Adaptation%20Nepal%20Simon%20West.pdf>

¹⁰⁷ cf. Rijal, Arun 2010: Climate change mitigation in the forestry sector in Nepal, UNDP, p. 7. available at http://www.undpcc.org/docs/National%20issues%20papers/Forestry%20%28mitigation%29/18_Nepal%20NI_P_forestry%20mitigation.pdf

¹⁰⁸ cf. *ibid.*, p. 11

- (2) Clear conditions for memberships – the club should be an exclusive group only for countries that meet clear criteria.
- (3) Significant benefits provided to members – incentives such as technology sharing need to be offered to accept ambitious membership conditions.
- (4) A pathway to start now and expand over time – the club needs to become operational quickly while still allowing them to address more complex questions, grow in scope, and increase their numbers over time.

This approach diverges from current concepts by arguing that more attention should be paid to what a club does rather than who (of the big emitters) is in it. Its aim is therefore not to close the emissions gap through actions of the member countries alone, but to provide an attractive model that others would follow, thereby complementing the UNFCCC process.¹⁰⁹

Excursus: Plurilateral Two Degrees Clubs under UNFCCC?

- It can be argued that the UNFCCC Parties have accepted the 2°C limit (with a tendency to an even stronger target) to avoid dangerous interference with the climate system (Art. 2 UNFCCC).
- But so far, few countries are on a path coherent with the 2°C limit. Under these circumstances, there seems to be room to negotiate “Two Degrees Clubs” in the context of UNFCCC for those governments who are ready to implement a strategy coherent with that limit for their country or specific sectors.
- The focus of these clubs could be a) to initiate transformational change or leap-frogging activities; and b) to organise an incentive structure that would allow them to implement transformational change in the first place (e.g. market instruments designed to support leap-frogging, technology cooperation, finance or risk-taking arrangements etc.)
- As a result, a number of plurilateral agreements under UNFCCC based on different (sub-)targets, technologies, or instruments could be created.

¹⁰⁹ cf. Morgan, Jennifer/ Weischer, Lutz (WRI) 2012: Two Degrees Clubs – How Small Groups of Countries Can Make a Big Difference On Climate Change, WRI, available at <http://insights.wri.org/news/2012/10/two-degrees-clubs-how-small-groups-countries-can-make-big-difference-climate-change>

- *Example for alliances between states:* Concepts of bi-, pluri- or multilateral alliances could focus on sectors or certain technologies (e.g. renewable energies). It is important that they develop role models for other countries for the necessary transformation. Examples for possible alliances are:
 - Development of more ambitious car standards in the group of the twelve countries with the highest global share in car use and/or production, as suggested by Richard Benedick, the U.S. chief negotiator at the Montreal Protocol negotiations.
 - A pioneer alliance of countries with ambitious targets and action to move the transformation towards renewable energies forward, such as the “Energiewende Club” initiated by German Environment Minister Peter Altmaier.¹¹⁰ So far, the added value of this alliance is not entirely clear. The option to establish it as an exclusive club for actors with high ambition should be further explored.
 - A pioneer alliance to move forward a combined food security and climate strategy regarding the agricultural system: food security plus reduced greenhouse gas reduction plus CO₂ fixation in an improved soil. This alliance could possibly build on the UN mandate in Rio+20 for national reports as a follow-up to the IAASTD-report.¹¹¹
- *Global Coalition of leading organisations in business, governments, NGOs and the international community – “Wedging the Gap” Approach:* Recognizing that the top-down approach under UNFCCC alone cannot deliver the necessary mitigation ambition, Ecofys conceived the “Wedging the Gap” approach. This approach could easily be combined with the “Two Degrees Club” idea. The basis of the “Wedging the Gap” approach is to combine 21 major global mitigation initiatives which involve a variety of actors.¹¹² Ecofys believes that acting as part of a broad coalition that has the potential to bridge the emissions gap will provide confidence and make participation more attractive, whereas acting alone is less attractive due to risks associated with being the first mover. Thus, the key to success for the Wedging the Gap approach is to form and sustain global coalitions.¹¹³ Some of those coalitions with very high climate ambitions could be organised as “Two Degrees Clubs”, if they are formed between states. The combined impact of the initiatives could be as high as a **10 Gt CO₂e**

¹¹⁰ cf. Altmaier, Peter 2012

¹¹¹ cf. “The Future We Want” – Outcome Document of Rio+20, Para 115

¹¹² cf. Ecofys 2012

reduction below business-as-usual in 2020. Roughly 5 Gt CO₂e of the mitigation effect would go beyond what national governments have pledged, plus the effect of enhanced reductions in air-pollutant emissions.¹¹⁴ Examples of the proposed initiatives are provided below.

- *Boost Solar Photovoltaic Energy*: A coalition of progressive governments and producers could introduce improved grid access and net metering rules, thereby saving up to **1.4 Gt CO₂e in 2020**.
- *Subnational Governments*: Emulating states such as California, and other ambitious US and Canadian provinces, could adopt an emissions reduction target of 15-20 percent below business-as-usual by 2020, reducing the emissions gap by up to **0.6 Gt CO₂e**.
- *Efficient Cook-Stoves*: Scaling-up the many already existent programmes to eventually replace half or more of the existing cook-stoves could reduce the radiative forcing impact in a manner which is equivalent to an emission reduction of up to **0.6 Gt CO₂e**.¹¹⁵ If done appropriately, such programmes could generate significant health benefits and reduced mortality rates due to less indoor pollution. Increasing support for the most effective existing initiatives should be emphasized in order to help generate these benefits.

It is important that these initiatives contribute to improving the livelihoods of the poor and not merely target emissions reductions in a top-down approach. That said, development goals such as the right to food, health and access to energy should be combined with climate goals. (It is interesting to note that food security is a key criterion in UNFCCC, Art. 29, to qualify dangerous climate change.)

- *South African Renewables Initiative – SARI*: SARI, which represents a concrete example of a plurilateral government alliance, was launched as a partnership of the Government of the Republic of South Africa together with Governments of Denmark, Germany, Norway, the UK and the European Investment Bank (EIB) at COP 17 in Durban. The goal of the initiative is to secure long-term funding for the scaling-up of renewable energy in South Africa.¹¹⁶ Due to funding mobilized by SARI, renewable energies could constitute a share of about 7 percent in 2020 and 13 percent in 2025, compared to 4.6 and 7.5 percent respectively estimated under the country's

¹¹³ cf. Climate Analytics and Ecofys 2012a, p. 27

¹¹⁴ cf. *ibid.*, p. 25

¹¹⁵ cf. Ecofys 2012

¹¹⁶ see SARI Website: <http://sarenewablesinitiative.wordpress.com/>

current Integrated Resource Plan for Electricity scenario.¹¹⁷ However, after a promising start to the initiative it is currently unclear how serious South Africa is about advancing it.

- *Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC)* – The CCAC is an example of a multilateral government-led alliance, focusing on the phase-out of SLCP. It seeks to catalyze new action as well as to support and coordinate existing programmes such as the “Global Alliance for Clean Cookstoves” and the “Global Methane Initiative”.¹¹⁸ Importantly, it emphasizes that its actions are complementary and do not substitute those of the UNFCCC, as only alongside deep cuts in CO₂ phasing out SLCP could reduce warming by 0.5°C by 2050.¹¹⁹ The coalition was founded in February 2012 by the governments of Bangladesh, Canada, Ghana, Mexico, Sweden and the USA, together with the United Nations Environmental Programme (UNEP), and has since then grown to 30 country partners and 29 non-state partners.¹²⁰
- *UK and Germany – Joint G 8 Strategy to phase down FFS and SLCP until 2015*: In last year’s (2012) Camp David G 8 Declaration, G 8 countries acknowledged the “need for increased mitigation ambition in the period to 2020”¹²¹. It particularly stated that they supported (1) phasing out fossil fuel subsidies and (2) reducing short-lived climate pollutants.¹²² Now, these declamatorily addressed options for pre-2020 mitigation need to be transferred into tangible action. Therefore, more progressive countries like the UK and Germany, who hold the G 8 Presidencies in a short interval in 2013 and 2015 respectively, should join forces to create a strategy for the next three years, picking up where leaders left off last year. As the two biggest providers of fossil fuel subsidies in the EU (D: 7.4 bn EUR, UK: 4.5 bn EUR in 2010)¹²³, they also hold a particular responsibility and potential to do so. As part of their strategy, they could initiate a club of pioneer states that are willing to phase out FFS. In this regard, it is unfortunate that climate change is not prominent on the UK’s G 8 agenda. However, the UK Presidency’s priority, the global economy, is closely inter-linked with climate change as the 2013 Global Risks report of the World

¹¹⁷ SARI – Presentation to Energy Portfolio Committee, p. 8, available at http://www.thedti.gov.za/parliament/sari_presentation.pdf

¹¹⁸ cf. CCAC Website, available at <http://www.unep.org/ccac/>

¹¹⁹ cf. CCAC Website; cf. Parnell, John 2013: Climate and Clean Air Coalition can cut warming by 0.5°C by 2050, 25 February 2013, RTCC, available at

<http://www.rtcc.org/climate-and-clean-air-coalition-can-cut-warming-by-0-5c/>

¹²⁰ cf. CCAC Website

¹²¹ The White House 2012: Camp David Declaration:

<http://www.whitehouse.gov/the-press-office/2012/05/19/camp-david-declaration>, para 13

¹²² cf. *ibid.*, paras 14 and 15

¹²³ cf. Buckle, Elise 2009, pp. 15 and 32

Economic Forum points out, citing climate change as one of the main risks to the global economy.¹²⁴ Furthermore, the City of London is particularly threatened by the “carbon bubble”¹²⁵, which poses a systemic risk to financial markets and economic stability.¹²⁶ It is therefore highly recommended that the UK Presidency not ignore climate change, but instead continue its path as a climate leader.

4 Conclusion

After the absolute low at COP 15 in Copenhagen (2009), the formal endorsement of the 2°C limit in Cancún (2010) helped the UNFCCC process recover and return to a more forward-looking track. This was underlined and consolidated by the results of COP 17 in Durban (2011).¹²⁷ There, UNFCCC Parties essentially agreed to negotiate a legally binding framework regarding emissions targets for all countries from 2020 onwards by 2015. However, to bring us on a secure 2°C path, it is not enough to concentrate on post-2020 action. Short-term mitigation action needs to be increased between now and 2015 in order to ensure that emissions peak ideally by 2015, but definitely before 2020, and that the emissions gap will be closed. Therefore, a Workplan on enhancing mitigation ambition to identify options for Parties to close the ambition gap by 2020 was launched in Durban and procedural steps until the year 2015 concretized in Doha (2012). The current mitigation pledges in the UN context are necessary to close the gap, but will not suffice. Short-term mitigation action must be increased – at the UN climate negotiations (and at other international fora), at the national levels, and through forming alliances. The variety of options available shows that it is feasible to limit global warming to a level sufficient to avoid the worst impacts for humanity and our planet. It is time to take action.

¹²⁴ cf. World Economic Forum 2013: Global Risks 2013 – Eighth Edition, available at http://www3.weforum.org/docs/WEF_GlobalRisks_Report_2013.pdf

¹²⁵ The term “carbon bubble” describes the fact that about 2,795 Gt of CO₂ are locked up in the known global proven oil, gas and coal reserves owned by private and public companies and governments – whereas only 565 Gt are left for our carbon budget (i.e. compatible with the 2°C limit) 2011-2050. Thus, up to 80% of the fossil fuel assets in the books are technically unburnable, cf. Carbon Tracker Initiative 2012: Unburnable Carbon – Are the worlds financial markets carrying a carbon bubble?, p. 2, available at <http://www.carbontracker.org/carbonbubble>

¹²⁶ The analysis shows that London currently has 105.5 Gt CO₂ of fossil fuel reserves listed on its exchange, over ten times the UK’s domestic carbon budget for 2011 to 2050, of around 10 Gt CO₂, cf. *ibid.*, p. 15

¹²⁷ cf. Germanwatch 2011: An Insufficient Breakthrough – Summary of the Climate Summit in Durban, available at <http://germanwatch.org/en/download/6414.pdf>

Annex: Non-UNFCCC international fora to deal with short-term mitigation options

Synergies between UNFCCC and the following fora should be exploited to the fullest.

Note that this is not an exhaustive list.

<u>Short-term mitigation option</u>	<u>International Forum</u>
HFCs	<p>Montreal Protocol</p> <p>HFCs (Hydrofluorocarbons) are factory-made substitutes for the ozone-depleting CFCs and HCFCs, which are being phased out under the Montreal Protocol.¹²⁸ As HFCs do not deplete the stratospheric ozone, they were left to the UNFCCC and the Kyoto Protocol (KP) to address. However, the KP focuses on regulating HFCs at the point of emission, but does not control measures for production and consumption, where it is most cost-effective and efficient to reduce emissions.¹²⁹ The Montreal Protocol would be ideally equipped to ensure a phase-out of upstream production and consumption of HFCs because they are in the same family of gases and are used in the same sectors as CFCs and HCFCs.¹³⁰</p> <p><i>The Montreal Protocol on Substances that Deplete the Ozone Layer entered into force in 1989 and has had universal membership of all UN Parties since 2009.¹³¹</i></p>
Fossil Fuel Subsidies	<p>G 8</p> <p>In the 2012 Camp David Declaration, the G 8 countries stated their commitment for increased pre-2020 mitigation ambition in general as well as their support for phasing out fossil fuel subsidies and SLCP in particular.¹³² This now needs to be implemented, and could be facilitated by a common strategy of Germany and the UK within G 8 (see 3.2.).</p> <p><i>The Group of Eight (G 8) is the forum for governments of eight industrialized countries – Canada, Germany, France, Italy, Japan, Russia,</i></p>

¹²⁸ cf. Zaelke, Durwood; Andersen, Stephen O.; Borgford-Parnell, Nathan 2012

¹²⁹ cf. *ibid.*, p.238

¹³⁰ cf. *ibid.*

¹³¹ cf. UNEP – Ozone Secretariat Website, available at http://ozone.unep.org/new_site/en/montreal_protocol.php

¹³² cf. The White House 2012

	<p><i>UK and USA – which gather annually in order to agree common positions on global political issues.</i> ¹³³</p> <p>G 20</p> <p>In 2009, the G 20 countries generally agreed to phase out fossil fuel subsidies over the medium-term and take concrete national steps to implement this. ¹³⁴ However, progress to date is lacking if even existent. As of June 2012, Oil Change International was unable to identify one single fossil subsidy reform that was driven by the G 20 commitment. ¹³⁵ Instead, fossil fuel subsidies nearly doubled between 2009 and 2012. ¹³⁶ One important problem that needs to be tackled in this regard is the insufficient self-reporting of countries. ¹³⁷</p> <p><i>The Group of Twenty (G 20) is the main forum for international cooperation on global economic and financial issues. It brings together finance ministers and central bank governors of 19 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, the Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the UK, the USA plus the EU.</i> ¹³⁸</p>
<p>Black Carbon</p>	<p>Gothenburg Protocol</p> <p>In May 2012, the Convention on Long-Range Transboundary Air Pollution (CLRTAP) introduced an amendment to its 1999 Gothenburg Protocol (GP), making it the first international treaty acting on the link between climate change and air pollution. ¹³⁹ The new text of the Protocol includes national emissions reduction commitments for main air pollutants to be achieved by 2020 and beyond, and contains,</p>

¹³³ cf. Die Bundesregierung: Gruppe der Acht, available at <http://www.bundesregierung.de/Content/DE/StatischeSeiten/Breg/G8G20/G8-uebersicht.html>

¹³⁴ cf. G 20 Leaders Statement: The Pittsburgh Summit, para 29

¹³⁵ cf. Kretzmann, Steve 2012, Oil Change International: Report: Phasing Out Fossil Fuel Subsidies in the G 20: A Progress Update, available at

<http://priceofoil.org/2012/06/17/report-phasing-out-fossil-fuel-subsidies-in-the-g20-a-progress-update/>

¹³⁶ cf. Global Renewable Fuels Alliance 2012: G 20 fails as fossil fuel subsidies exceed half a trillion dollars, available at

<http://biodieselmagazine.com/articles/8825/g20-fails-as-fossil-fuel-subsidies-exceed-half-a-trillion-dollars>

¹³⁷ cf. Kretzmann, Steve 2012

¹³⁸ g20.org, available at http://www.g20.org/docs/about/about_G20.html

¹³⁹ cf. IGSD 2012: Major Environmental Treaty Tackles Black Carbon as Climate Pollutant, available at <http://www.igsd.org/documents/IGSDGothenburgPR205pmEST.pdf>

	<p>for the first time ever, reduction targets for particular matter, including black carbon.¹⁴⁰ The revised GP will enter into force when two thirds of its 26 Parties ratify, accede or accept the amendments. EU, Belarus, Croatia, Norway and Switzerland already announced their reduction commitments.¹⁴¹ The USA provisionally indicated a similar level of ambition to that of the EU, which is a 20% reduction in emissions in the case of particular matter by 2020 (from 2005 levels).¹⁴²</p> <p><i>The CLRTAP entered into force in 1983 and was the first international legally binding instrument to fight air pollution on a broad regional basis.¹⁴³ Its Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-Level Ozone sets national emissions reduction commitments for air pollutants.¹⁴⁴</i></p> <p>Sustainable Energy for All Initiative (SE4All)</p> <p>The SE4All initiative seeks to catalyze action on three objectives to be reached by 2030: (1) Universal access to modern energy services, (2) Doubling the global rate of improvement in energy efficiency, (3) Doubling the share of renewable energy in the global energy mix. One of the sectoral action areas to achieve these goals involves “modern cooking appliances and fuels”; inefficient cooking stoves, as a large black carbon source, could be addressed within the initiative. It is regrettable that the initiative, which reconciles climate action and development needs, was not strongly endorsed by governments in the</p>
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¹⁴⁰ cf. Consolidated text of the amended Protocol, available at http://www.unece.org/fileadmin/DAM/env/lrtap/full%20text/Informal_document_no_17_No23_Consolidated_text_checked_DB_10Dec2012_-_YT_-_10.12.2012.pdf; cf. UNECE 2012: Parties to UNECE Air Pollution Convention approve new emission reduction commitments for main air pollutants by 2020, available at <http://www.unece.org/index.php?id=29858>

¹⁴¹ cf. Olendrzynski, Krzysztof, UNECE, 2012: Update on the Activities of the UNECE Convention on Long-Range Transboundary Air Pollution, available at http://www.neaspec.org/documents/tap_jul_2012/Session3-Olendrzynski.pdf

¹⁴² cf. *ibid.*; cf. IISD 2012: UNECE Meeting on Long-Range Transboundary Air Pollution Amends Gothenburg Protocol, available at

<http://climate-iiisd.org/news/unece-meeting-on-long-range-transboundary-air-pollution-amends-gothenburg-protocol/>

¹⁴³ cf. UNECE – The 1979 Geneva Convention on Long-range Transboundary Air Pollution, available at http://www.unece.org/env/lrtap/lrtap_h1.html

¹⁴⁴ cf. UNECE – The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, available at http://www.unece.org/env/lrtap/multi_h1.html

¹⁴⁵ cf. Bals, Christoph 2012, Germanwatch: Eine strategische Analyse des Nachhaltigkeitsgipfels von Rio 2012, pp.5-6, available at <http://germanwatch.org/de/4724>

¹⁴⁶ cf. Taraska, Gwynne 2012: UN’s Sustainable Energy for All Initiative gets a boost at troubled Rio Summit, available at <http://thinkprogress.org/climate/2012/06/22/504886/uns-sustainable-energy-for-all-initiative-gets-a-boost-at-troubled-rio-summit/>

¹⁴⁷ cf. Gomez-Echeverri, Luis 2013: Sustainable Energy For All, Presentation given at UN climate negotiations in Bonn (SBs 38), available at http://unfccc.int/files/meetings/bonn_jun_2013/in-session/application/pdf/adp2-2_workshop_ws2_iii_ws_on_pre-2020_energy_07062013_gomez-echeverri.pdf

¹⁴⁸ cf. Sustainable Energy for All Website, available at <http://www.sustainableenergyforall.org/>

	<p>2012 Rio+20 declaration.¹⁴⁵ However, the Rio+20 summit managed to generate global attention as well as public and private funding for the initiative.¹⁴⁶ To date, 77 countries have formally joined – with more on the way. The implementation phase is to begin mid-2013.¹⁴⁷</p> <p><i>SE4All was launched by the UN Secretary General Ban Ki-moon in 2011 in order to catalyze action on the three abovementioned objectives to be reached by 2030.</i>¹⁴⁸</p>
<p>Emissions from international aviation and shipping</p>	<p>ICAO and IMO</p> <p>UNFCCC has already sent a signal to the predominant international organisations regarding reductions in emissions from international aviation and shipping (“bunker fuels”): Art. 2.2. of the Kyoto Protocol states that Annex I-Parties shall reduce emissions not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO).¹⁴⁹ However, to date, no reduction targets for bunker fuels have been agreed to by these bodies. ICAO Parties have agreed to create a framework on tackling emissions – and a decision regarding whether and how this will be implemented is expected at the ICAO general assembly in autumn 2013. Regarding IMO, very little progress has been made.</p> <p>In May 2013, the IMO Parties agreed on a resolution on technology cooperation, which had been under discussion for two years and had been holding up the debate on tackling emissions within IMO.</p> <p>The EU has announced that it will act unilaterally regarding emissions from planes and ships going to and starting from the EU if other countries remain reluctant to do so. Naturally however, a global solution is preferable.</p> <p><i>ICAO was created in 1944 and is the forum for cooperation in all fields of civil aviation among its 191 Member States. It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection.</i>¹⁵⁰</p> <p><i>IMO was created in 1958 and is the forum for cooperation among Governments (currently 170 Member States) in the field of regulation and practices relating to technical matters affecting international</i></p>

¹⁴⁹ cf. UNFCCC: Emissions from fuel used for international aviation and maritime transport (international bunker fuels), available at http://unfccc.int/methods/emissions_from_intl_transport/items/1057.php

¹⁵⁰ cf. ICAO Website: ICAO in Brief, available at <http://www.icao.int/about-icao/Pages/default.aspx>

	<i>shipping, and to facilitate the adoption of standards with regards to maritime safety, efficiency of navigation and prevention and control of marine pollution from ships.</i> ¹⁵¹
Energy Efficiency – Buildings	<p>MEF</p> <p>In April 2013, leaders’ representatives of the Major Economies Forum on Energy and Climate Change (MEF) agreed that their first initiative would focus on improving the energy performance of buildings, stressing the multiple benefits of enhancing building performance such as emissions reduction, energy security and cost savings. A working group was formed to elaborate on details of the initiative, such as overall goals, modalities for providing technical assistance and its relationship to UNFCCC and ADP. However, so far, it is unclear how the additionality of actions in the building sector could be measured, reported and incentivised. The leaders’ representatives will next meet in summer 2013 to follow-up.¹⁵²</p> <p><i>The MEF was launched in 2009 by U.S. President Obama and is intended to facilitate a dialogue among major developed and developing economies, help generate political leadership and advance the exploration of initiatives that increase the supply of clean energy while cutting GHG emissions. Members are Australia, Brazil, Canada, China, the EU, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, the UK, and the USA.</i>¹⁵³</p>

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¹⁵¹ cf. IMO Website: Introduction to IMO, available at <http://www.imo.org/About/Pages/Default.aspx>

¹⁵² cf. MEF Website: Fifteenth Meeting of the Leaders’ Representatives, 12 April 2013, available at <http://www.majoreconomiesforum.org/past-meetings/fifteenth-meeting-of-the-leaders-representatives.html>

¹⁵³ cf. US Department of State: Major Economies Forum on Energy and Climate, available at <http://www.state.gov/e/oes/climate/mem/index.htm>

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Following the motto "Observing, Analysing, Acting", Germanwatch has been actively promoting global equity and the preservation of livelihoods since 1991. In doing so, we focus on the politics and economics of the North with their worldwide consequences. The situation of marginalised people in the South is the starting point of our work. Together with our members and supporters as well as with other actors in civil society we intend to represent a strong lobby for sustainable development. We endeavour to approach our aims by advocating food security, responsible financial markets, compliance with human rights, and the prevention of dangerous climate change.

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