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sustainable energy for everyone

UNIVERSITY OF CAMBRIDGE

25 YEARS PROGRAMME FOR SUSTAINABILITY LEADERSHIP

Wedging the Gap

Defining the next steps to implementation

Final report

Preface

- This project was originally conceived in Mar-2013 to address work package 1.1 and 3.1 of the initial overall Wedging the Gap Draft Phase 1:
  - **1. A refined concept of initial key wedges**
    - **1.1 Analysis of the feasibility of all initiatives**
    - 1.2 Quantitative assessment of impact
    - 1.3 In depth analysis for 3-4 selected wedges
  - **2. An engagement process with high level stakeholders**
    - 2.1 Outreach to stakeholders
    - 2.2 Organisation of roundtables
  - **3. Establishment of institutional governance structure**
    - **3.1 Establishment of the initial project management organisation**
    - 3.2 Full agreement and implementation of governance structure
- Funding was awarded in Nov-2013 by which time the project had evolved considerably, especially around the aspect of organisational design (3.1)
- The focus of this final report was therefore redefined as follows
  - Overview of the **developments** of the Wedging the Gap project since inception up until Jan-2014
  - **Analysis** of the feasibility of initiatives across the most promising thematic areas
  - **Options for organisational design** based on inputs from initiatives themselves
  - Options to **take the concept forward**

- Funded by the Ministry for Infrastructure and the Environment, Netherlands
- Authors:
  - Ecofys: Yvonne Deng, Nadine Braun, Niklas Höhne, Kornelis Blok
  - CPSL: Nicolette Bartlett

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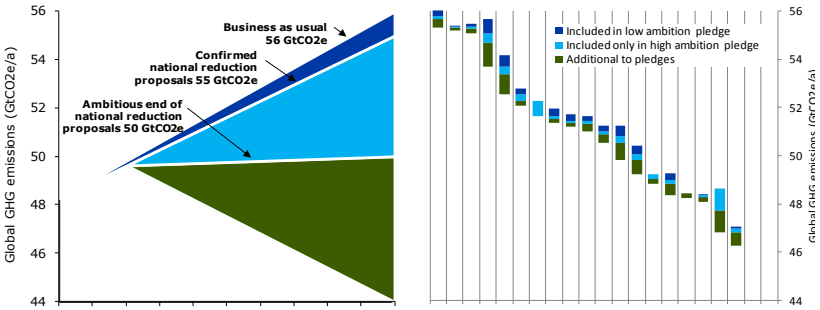
Executive Summary (1/2)

> The journey so far

- Wedging the Gap stipulates that the looming emissions gap between existing commitments and the path required for a 2 °C limit could be bridged by bottom-up initiatives in 21 '*wedges*' (= thematic areas)
- Over the past two years, this concept has gained significant traction in the international community



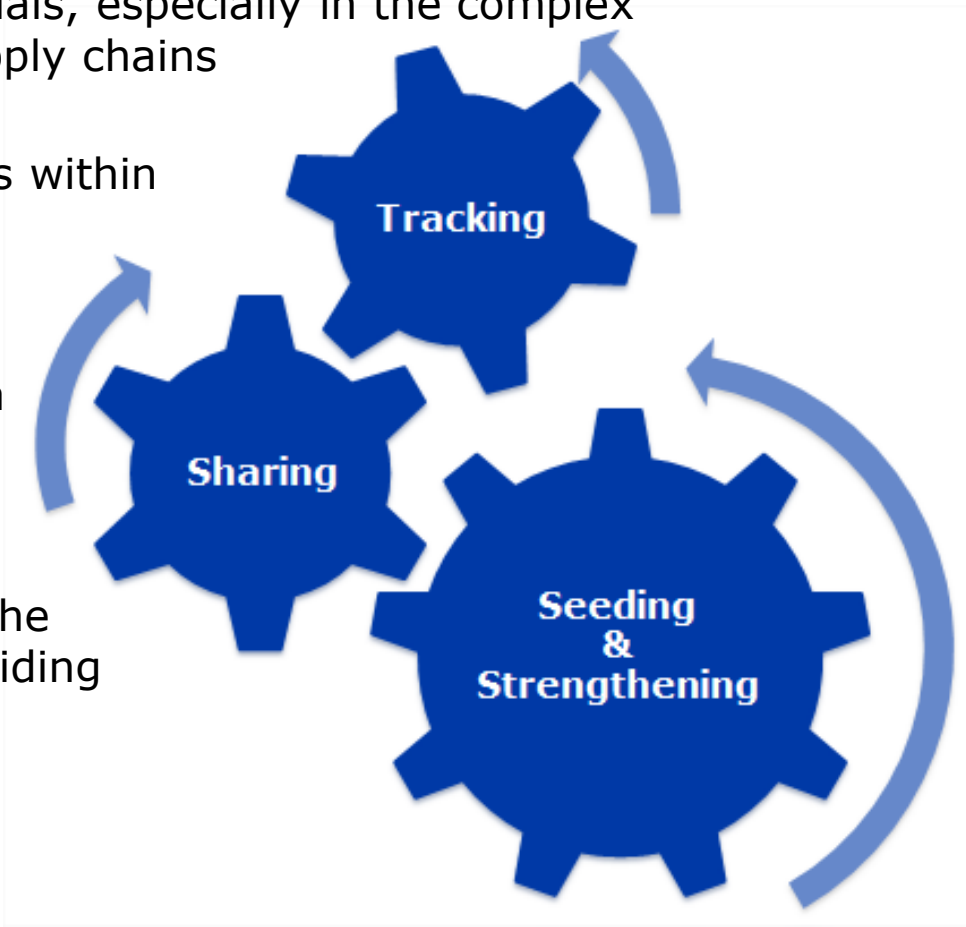
> Different strategies are required

- There is significant overlap between thematic areas, but they vary considerably in terms of potential and number of initiatives
- Therefore, different ***strategies*** are needed for different thematic areas going forward, these include:
  a) Targeted support
  b) Policy setting
  c) Scaling up / target setting
- Three ***activities*** are required going forward
  1. Tracking; 2. Sharing; 3. Strengthening

Executive Summary (2/2)

> **Immediate next steps to take the concept forward**

- **Tracking** of the progress of initiatives
- In-depth analysis on potentials, especially in the complex areas of agriculture and supply chains
- **Seeding** initiatives and/or **strengthening** of initiatives within certain areas
- Laying the foundation for knowledge exchange, e.g. an online presence as a launch platform for ***Sharing*** as well as for ***Tracking***.
  - [An online platform has the additional benefit of providing transparency about Wedging the Gap itself]



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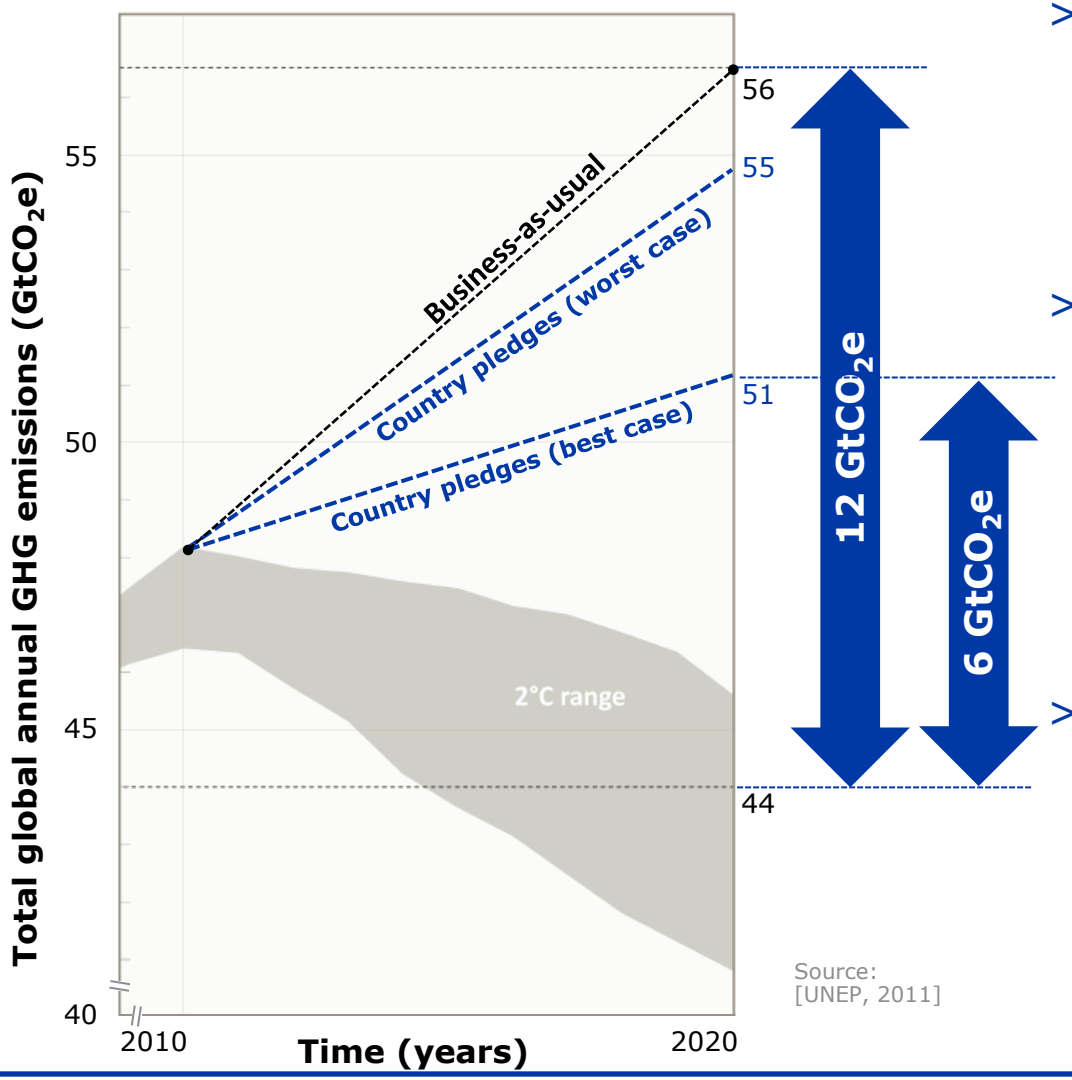
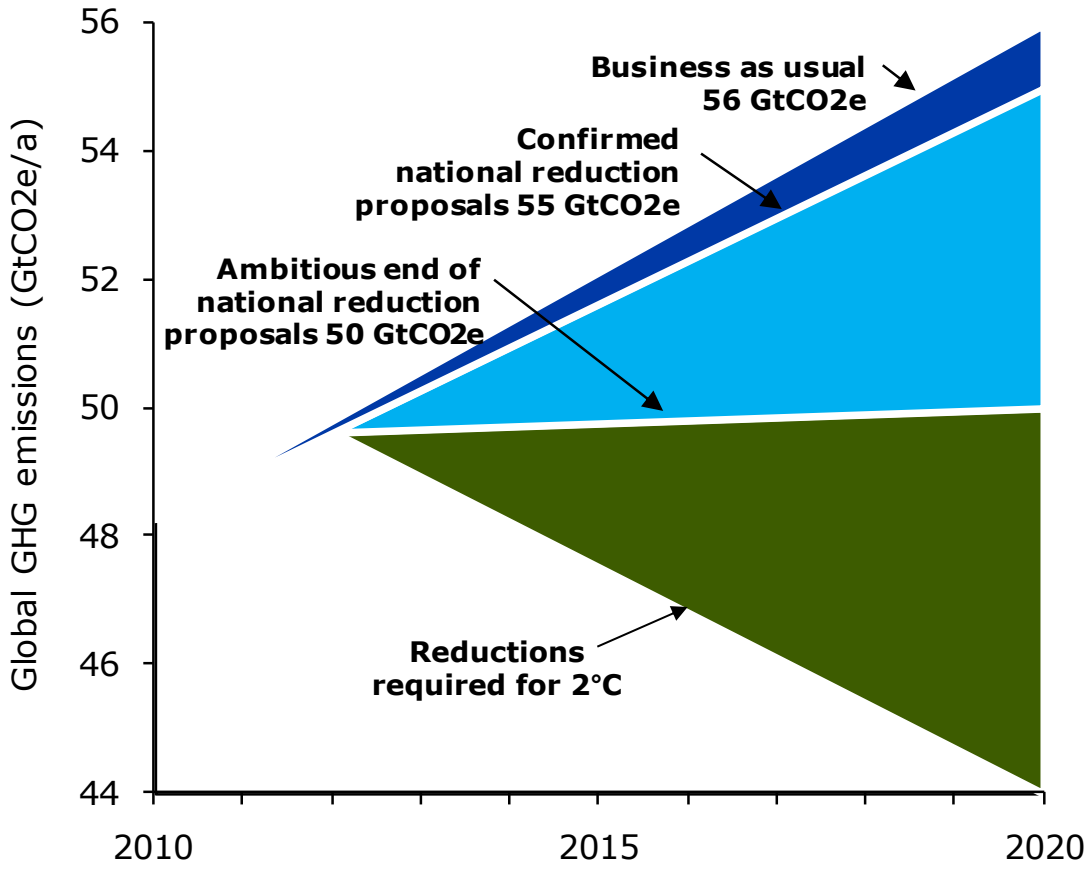
The UNEP Emission Gap in 2011 found that national pledges fall short of the pathway to 2°C by ~12 $GtCO_2e$



Source: [UNEP, 2011]

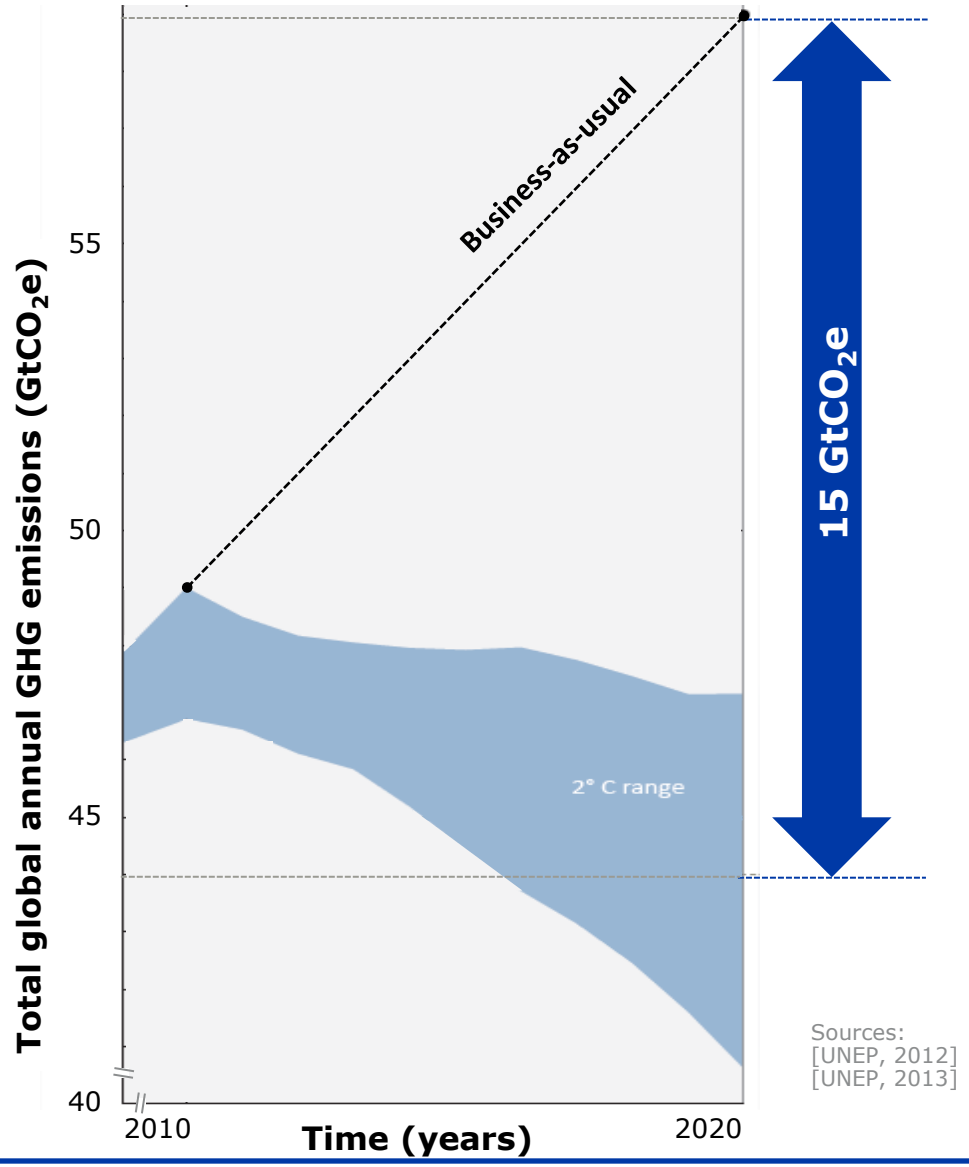
- The "emissions gap" between Business-as-Usual and a 2 °C trajectory was estimated in 2011 at around **12 billion tonnes** of CO_2e by 2020
- At best **half** of this gap would have been covered by *Copenhagen* and *Cancún* **pledges**. This already assumed substantial progress on stricter rules, improved pledges and supported NAMAs
- Governments expressed **grave concern** at the conclusion of the report that we are currently **far away** from keeping to the 2 °C trajectory [COP, 2011]

At COP18 in Durban options for additional emission reductions outside existing national pledges were voiced



How do we bridge the gap?

Subsequent Emission Gap reports showed that the gap had widened even further to 15 $GtCO_2e$



Sources:
[UNEP, 2012]
[UNEP, 2013]

- By 2013 the "emissions gap" between Business-as-Usual and a 2 °C trajectory had grown to around **15 billion tonnes** of CO_2e by 2020
- Less than **half** of this gap will be covered by *Copenhagen* and *Cancún* **pledges** *if* substantial progress on stricter rules, improved pledges and supported NAMAs is made.
- A *global treaty* is not expected before the end of 2015. After elaboration, ratification and national implementation, a significant impact by 2020 is not likely.

How can we move forward to bridge the emission gap?

- **Break the problem into smaller pieces**
  - **Work with those** that want to act
  - **Find co-benefits** in addition to reducing emissions
  - **Amplify** what the **frontrunners** are doing
  - **Show** potential impact on a **global scale**
  - Publicise to **increase awareness** of these activities

- **Identify initiatives by players other than national governments:**


Citizens


Companies


Cities


Sectors


Sub-national governments

Build confidence and motivate by showing that individual actions add up to a meaningful contribution on a global scale, supporting the UNFCCC process

Bottom-up initiatives were included in the original Wedging the Gap approach if they met four criteria

ALREADY MOVING	**Activity should be based on ongoing action by frontrunners, major scaling up before 2020 should be possible.**
WIN-WIN	**Significant additional benefits next to reduction of greenhouse gas emissions .**
LEADERSHIP	**There are organisations that can lead global action.**
IMPACT / AMBITION	**Each thematic area should have the potential to reach an emission reduction of around 0.5 billion tonnes of CO_2-equivalent by 2020.**

Wedging the gap identified 21 thematic areas which may be able to bridge the gap

Companies' emissions

- Top-1000 companies emission reduction
- Supply chain emission reduction
- Green financial institutions
- Voluntary offsets companies

Energy efficiency

- Low-carbon building heating and cooling
- Phasing out incandescent lamps
- Driving towards efficient electric appliances
- Efficient and low-carbon cars and trucks

Special sectors

- Reduce aviation and maritime emissions
- Reduce emissions of fluorinated gases
- Reduce deforestation
- Reduce emissions from agriculture

Other actors

- Voluntary offsets consumers
- Major cities emission reduction
- Sub-national government action

Energy supply

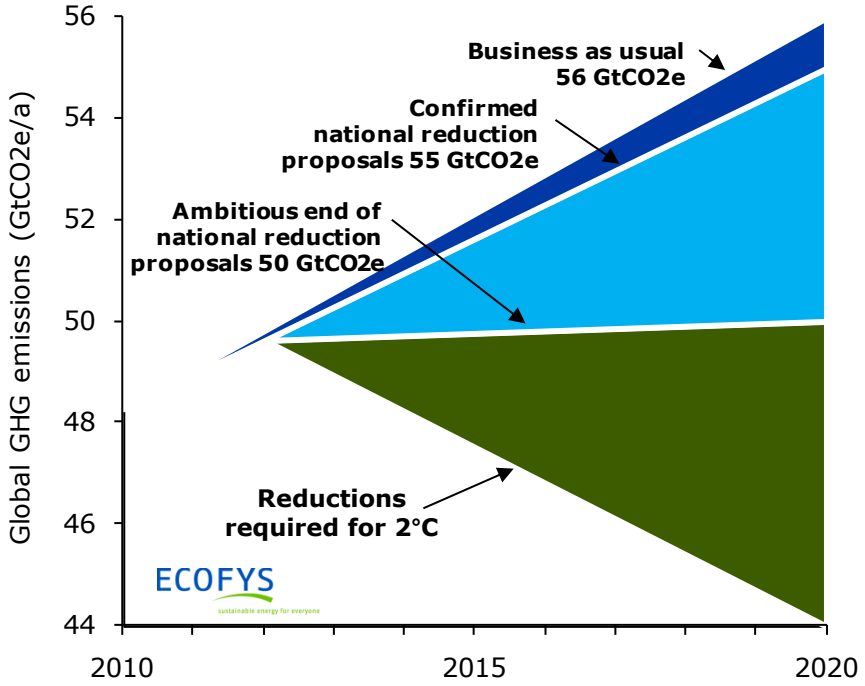
- Boost solar photovoltaic energy
- Boost wind energy
- Energy access through low emission options
- Reform fossil fuel subsidies

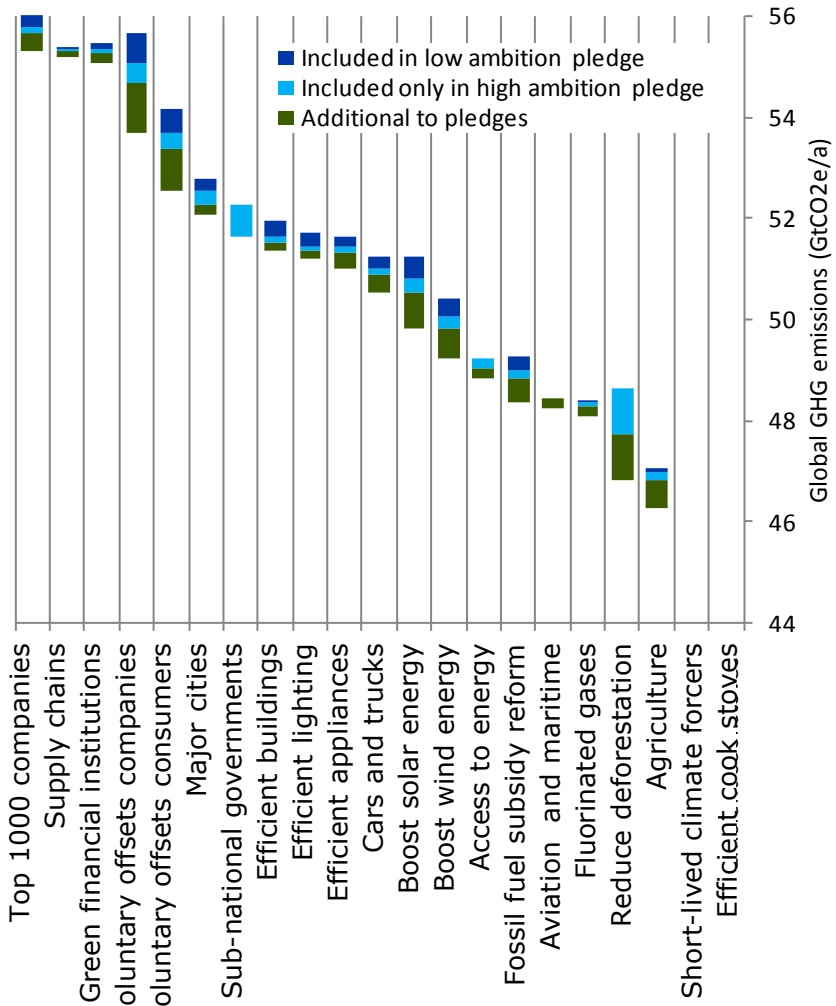
Short-lived climate forcers

- Reduce impact of short-lived climate forcers
- Scale up efficient cook stove use

[Blok, 2012]

Efforts in the 21 thematic areas could achieve significant emission reductions





[Blok, 2012]

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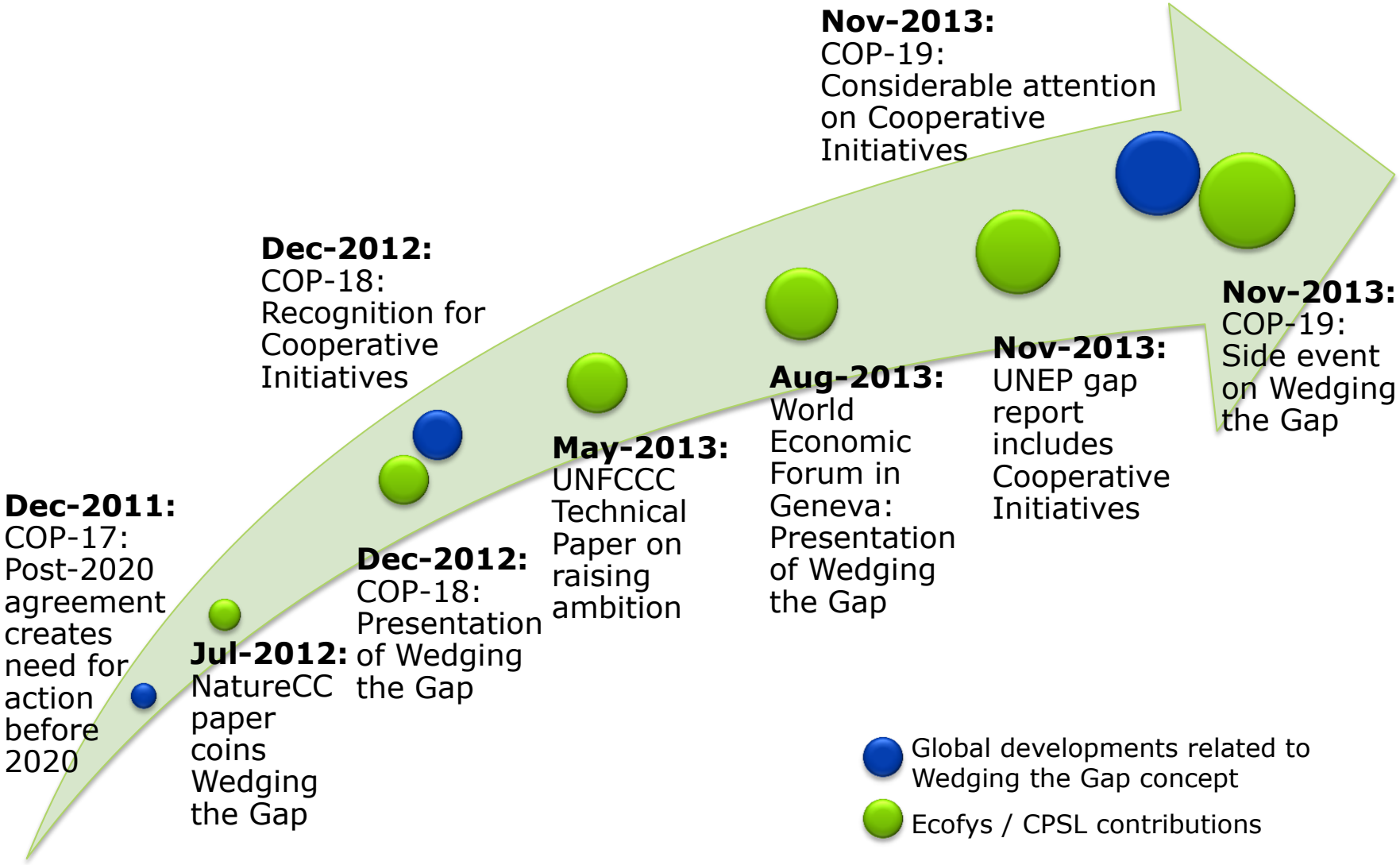
The concept of Cooperative Initiatives and Wedging the Gap have gained traction over the past year



Dec-2011: COP-17 in Durban: Definition of Cooperative Initiatives

- **Launch of the UNEP Bridging the Emissions Gap (BtG) Report with contributions by Ecofys at COP-17 in Durban**
- **The new agreement applicable after 2020 creates need for action before 2020**
- **In the wake of BtG Report and the new agreement the concept of Cooperative Initiatives takes on form during discussions in Durban**

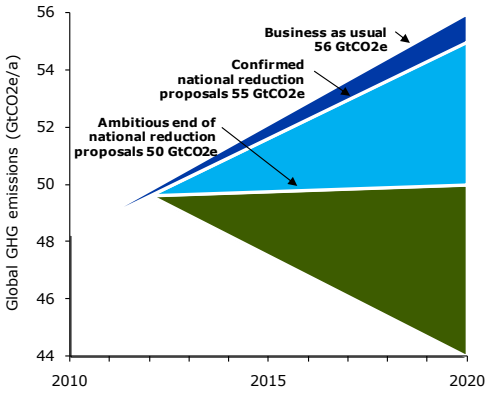
Dec-2011: COP-17: Post-2020 agreement creates need for action before 2020

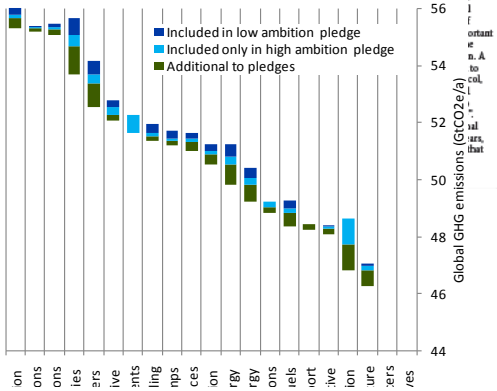
COP17/CMP7
UNITED NATIONS
CLIMATE CHANGE CONFERENCE 2011
DURBAN, SOUTH AFRICA

Jul-2012: Nature climate change paper coins Wedging the Gap

- **Ecofys coins the concept of Wedging the Gap in 2012**
  - They find that twenty-one coherent major initiatives could together stimulate sufficient reductions by 2020 to bridge the global greenhouse-gas emissions gap

Jul-2012: NatureCC paper coins Wedging the Gap





opinion & comment

COMMENTARY:

Bridging the greenhouse-gas emissions gap

Kornelis Blok, Niklas Höhne, Kees van der Leun and Nicholas Harrison

Twenty-one coherent major initiatives could together stimulate sufficient reductions by 2020 to bridge the global greenhouse-gas emissions gap.

We propose a new approach — which we call 'wedging the gap' — consisting of 21 coherent major initiatives that together would trigger greenhouse-gas emission reductions of around 10 gigatonnes of carbon dioxide equivalent (Gt CO_2e) by 2020, plus the benefits of enhanced reductions in air-pollutant emissions. This supports and goes substantially beyond the emission reductions proposed by national governments under the United Nations Framework Convention on Climate Change (UNFCCC). The approach would play a significant part in bridging the gap between current emission trends and what is necessary to put the world on a path that would limit global temperature increase to 2 °C above pre-industrial levels. The proposed initiatives build on actions that promise numerous benefits to the organizations and individuals undertaking them, and front-runners are already demonstrating that such benefits are real. These initiatives aim to take these benefits to the mainstream, drastically amplifying their impacts and showing all organizations involved that together they can play a leading role in solving the climate challenge. Many of the initiatives also generate significant 'green growth' benefits, stimulating economic

governments under the UNFCCC alone are at present insufficient to limit global average temperature increase to 2 °C above pre-industrial levels — a limit agreed by the international community in Copenhagen in 2009 and in Cancún in 2010. A report published by United Nations Environment Programme (UNEP) in November 2011 called *Bridging the Emissions Gap* synthesized major scientific studies on this subject[1,2]. The report shows that for the year 2020 there is an emissions gap of approximately 12 Gt CO_2e between business-as-usual development and pathways compatible with a maximum temperature rise of 2 °C.

After the UN climate conference in Copenhagen in 2009, all major governments provided pledges on emissions reduction and limitation (see, for example, ref. 3). The UNEP synthesis concluded that altogether these pledges from national governments will lead to at most an emission reduction of 6 Gt CO_2e. Many of the pledges are conditional on each other or on financial support. The exact rules of their implementation are also largely unclear. Hence, the currently confirmed value of all the pledges together is even smaller — less than 3 Gt CO_2e.

countries will raise their ambition for the period before 2020 without any positive external input. The Durban decisions alone essentially postpone a discussion on ambition. This means that at the most only half of the 12 Gt gap is covered by the action of national governments under the UNFCCC, although a greater emission-reduction potential is available. Sector-by-sector analysis[3] shows that the emission-reduction potential is 17±3 Gt CO_2e by 2020.

So, in principle, it is possible to bridge the emissions gap. The question is whether there are other ways to realize this potential, in addition to the pledges and actions from national governments under the UNFCCC. We therefore suggest an approach driven by 21 additional initiatives to reduce greenhouse-gas emissions before 2020: wedging the gap (using the term 'wedges' coined by Pacala and Socolow[4] in this context).

Driving emission reductions

With the UNFCCC agreed in 1992 and the Kyoto Protocol in 1997, it has been the widespread belief that global climate change is a global commons problem that can only be solved at the global level by sharing the effort (see, for example, ref. 6). Many assumed the following sequence of events: sovereign national governments agree under the UNFCCC on emission reductions; they subsequently introduce in their jurisdiction the right incentives for emission reductions; and finally, companies, municipalities, other organizations and individual citizens take measures to reduce their greenhouse-gas emissions.

Then in 2009, the UN climate conference in Copenhagen fell behind high expectations. Agreements in the following years in Cancún and Durban revived the international process, but were not able to generate more ambition. As it

Dec-2012: COP-18 in Doha: Presentation of Wedging the Gap and wide recognition for Cooperative Initiatives

Presentations

> **ADP special event:** audience of 400 plus webcast
> **EU side event** with Connie Hedegaard on the panel
> Presentation at **IRENA side event**

Dec-2012:
COP-18:
Recognition for Cooperative Initiatives

Discussions with

> **Governments:** Netherlands, EU, Germany, Sweden, UK, Denmark, Austria, USA
> **Foundations and potential partners**

Dec-2012:
COP-18:
Presentation of Wedging the Gap

May-2013: UNFCCC Technical Paper on raising ambition

> **The Technical Paper**
  - identifies the main focus areas for Cooperative Initiatives
  - Provides a list of initial initiatives (50)
  - Offers a compilation of information on mitigation benefits and current barriers faced by countries to implement their pledges and how Cooperative Initiatives can help over come them

May-2013: UNFCCC Technical Paper on raising ambition

United Nations
Framework Convention on Climate Change

FCCC/TP/2013/4

Distr.: General
28 May 2013

English only

Compilation of information on mitigation benefits of actions, initiatives and options to enhance mitigation ambition

Technical paper

Summary

This technical paper compiles information on the mitigation benefits of actions, initiatives and options to enhance mitigation ambition identified in the submissions by Parties and accredited observer organizations submitted to the secretariat under the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) workstream 2, on pre-2020 ambition. In their submissions, Parties highlighted their efforts in implementing emission reduction pledges by 2020, national actions and their mitigation and adaptation benefits, incentives, and barriers to actions and ways to overcome them. For developing countries, the provision of financial, technological and capacity-building support is deemed essential for the implementation of their pledges. Cooperative initiatives that bring together different stakeholder groups across a number of thematic areas can contribute to enhancing Parties' efforts towards the implementation of the pledges. In their submissions, Parties referred to a number of thematic areas with a high mitigation potential in which further action by 2020 could help to narrow the emissions gap. They acknowledged the role that the ADP can play in assisting Parties in enhancing ambition through technical work and work at the political level by 2015, with a focus on 2013.

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Aug-2013: World Economic Forum in Geneva: Presentation of Wedging the Gap

> **Niklas Höhne invited to present the Wedging the Gap approach at a High-Level Workshop by the World Economic Forum**
  - Panel discussion with:
    - Fatih Birol, Chief Economist, IEA
    - Christiana Figueres, Executive Secretary, UNFCCC
    - Klaus Schwab, Founder and Executive Chairman, World Economic Forum
    - Peter Bakker, President, WBCSD

Aug-2013: World Economic Forum in Geneva: Presentation of Wedging the Gap

> **Workshop outcomes**
  - Wide recognition of the approach
  - Second invitation to the World Economic Forum Annual Meeting 2014 in Davos
  - WEF is facilitating establishment of pledges ahead of the UN Secretary General's Climate Summit in Sep 2014

High-level Workshop on Climate Change Cooperation Geneva, Switzerland 28-29 August 2013

WORLD ECONOMIC FORUM
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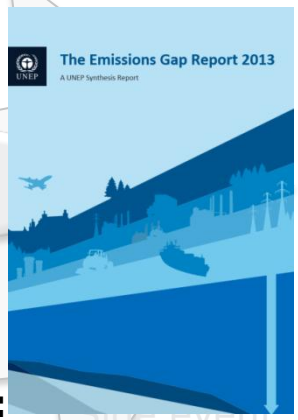
Nov-2013: UNEP gap report includes Cooperative Initiatives

- **Ecofys contributes again to 2013 UNEP Emissions Gap Report**
  - Cooperative Initiatives recognised as important options for bridging the emissions gap
  - Potential contribution estimated to be several $GtCO_2e$ in 2020
  - Dedicated chapter on Cooperative Initiatives
  - List of current initiatives
  - Overview of promising areas for initiatives, estimates of reduction potentials and ways to making initiatives effective in closing the gap



Nov-2013: UNEP gap report includes Cooperative Initiatives

Table 5.1 Promising areas for international cooperative initiatives and three estimates of associated reduction potential

Mitigation measures and areas		Reduction Potential			Initiatives
		Wedging the gap (Blok *et al.*, 2012) $GtCO_2e$ per year in 2020	UNFCCC technical paper (UNFCCC, 2013) $GtCO_2e$ per year in 2020	IEA energy/ climate map (IEA, 2013) $GtCO_2e$ per year in 2020	Approximate number
Energy efficiency	Buildings' heating and cooling	0.6	2	0.5	25
	Ban of incandescent lamps	0.5		0.5	
	Electric appliances	0.6			
	Industrial motor systems			0.4	
	Car- and truck-emission reduction	0.7		0.2	
Renewable energy	Boost solar photovoltaic energy	1.4	1–2.5		17
	Boost wind energy	1.2			
	Access energy through low- emission options	0.4			
Limiting inefficient coal use in electricity generation				0.7	None
Methane and other short-lived climate pollutants	Reducing methane emissions from fossil-fuel production	*	1.1	0.6	7
	Other methane and other short-lived climate pollutants				
	Efficient cook stoves	*			
Fluorinated greenhouse gases		0.3	0.5		3
Fossil-fuel subsidy reform		0.9	1.5–2	0.4	1
International transport		0.2	0.3–0.5		4
Agriculture		0.8	1.3–4.2		1
Reduce deforestation		1.8	1.1–4.3		15
Waste			0.8		1
Reduce emissions from companies	Top-1 000 company emission reduction	0.7			4
	Supply chain emission reduction	0.2			1
	Green financial institutions	0.4			1
	Voluntary offset companies	2.0			None
Voluntary offsets by consumers		1.6			None
Major cities initiative		0.7			3
Sub-national governments		0.6			2
Total		9.7**	Not added because of ranges	3.3 ***	

*not estimated, **accounting for overlaps, *** total does not add up because of roundings
Notes: The reduction potential is not strictly comparable. The UNFCCC technical paper (UNFCCC, 2013) presents mitigation potentials for entire sectors. Blok *et al.* (2012) estimate the potential of an initiative assuming that it can realize only a fraction of the theoretical potential. IEA (2013) reports model estimates. The numbers of initiatives are approximations based on the annex, which includes only a selection of initiatives.

Nov-2013: COP-19: Side event on Wedging the Gap and considerable attention on Cooperative Initiatives

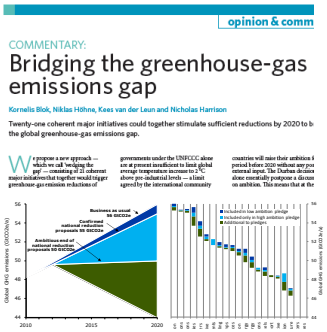
> **International attention on Cooperative Initiatives:**
  - Launch of Cooperative Initiatives database available under the UNFCCC
  - Further discussions with governments and potential funders

Nov-2013:
COP-19:
Considerable attention on Cooperative Initiatives

Nov-2013:
COP-19:
Side event on Wedging the Gap

> **'Wedging' the pre-2020 Emissions Gap official side event**
  - International high-level speakers from the Dutch Delegation, the Nordic Council of Ministers (NOAK), the Climate and Clean Air Coalition (CCAC), the World Business Council for Sustainable Development, (WBCSD), next to Ecofys and CPSL

Several publications have covered Cooperative Initiatives and Wedging the Gap


opinion & comm

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2012: Nature paper

- Cooperative Initiatives provide additional emission reductions
- 21 areas together may bridge the gap to 2020

2012: Report for CIFF

- Additional detail on existing initiatives


Closing the 2020 emissions gap: Issues, options and strategies

Closing the 2020 emissions gap: Issues, options and strategies

Authors:

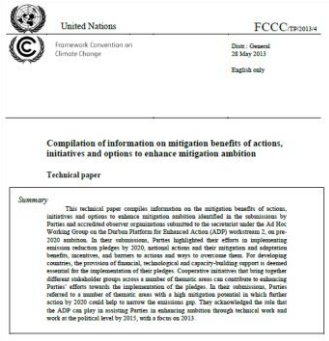
Bill Hare, Michiel Schaeffer, Marcia Rocha, Joeri Rogelj (Climate analytics)

Niklas Höhne, Kornelis Blok, Kees van der Leun, Nicholas Harrison (Ecofys)

Date: 03 August 2012

2013: UNFCCC technical papers

- Identification of focus areas
- List of initiatives (50)


United Nations

FCCC/TP/2013/4

Framework Convention on Climate Change

Date: General 28 May 2013

English only

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Enhancing ambition through International Cooperative Initiatives

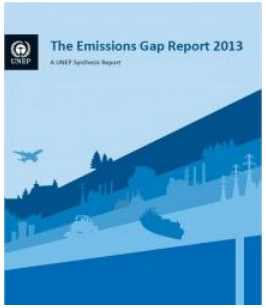
Draft report

[2013]: Report for NOAK

- Initiatives vary in progress and needs
- Factors to ensure additionality

2013: UNEP gap report

- Cooperative initiatives can play a key role in narrowing / closing the gap
- Focus areas: energy efficiency, fossil fuel subsidy reform, short lived climate pollutants and renewable energy



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We have presented the concept of Wedging the Gap in several international fora

2012: COP-18 Doha

- ADP special event
- EU side event with Connie Hedegaard
- Presentation at IRENA side event

EU2013.LT

2013: Informal Climate Change Workshop of the EU Council

- Invited presentation on "Bridging the Gap" Informal Climate Change Workshop of the EU Council Working Party on International Environmental Issues
- "State of play" on the gap analysis and capacity of initiatives to help close the gap were addressed

2013: WEF Geneva

- Presentation at WEF summer session
- Podium shared with several high-level officials incl. Christiana Figueres

WORLD ECONOMIC FORUM

2013: COP-19 Warsaw

- Side event: "Raising ambition: the role of international Cooperative Initiatives
- Considerable international attention on Cooperative Initiatives

2014: WEF Davos

- Wedging the Gap invited to present at WEF Annual Meeting on "The Reshaping of the World: Consequences for Society, Politics and Business

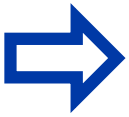
Cooperative Initiatives have been catalogued but now need to be analysed

- The **importance** of Cooperative Initiatives is **recognised** in the international climate community

- There are good and fairly **comprehensive overviews** of the global initiatives in place, including the objective of each initiative

- We **still have limited knowledge of:**
  - The **emission reductions impact** of the initiatives
  - The **likelihood of success** for all initiatives

- These will tell us:
  - Which initiatives need **support**
  - Which thematic areas need **additional initiatives**



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The UNEP Emissions Gap report 2013 singled out four focus areas based several existing studies

Thematic area	Subtopic	Wedging the gap	UNFCCC technical paper	IEA energy / climate map	Number of initiatives
Energy efficiency	Buildings heating and cooling	0.6	2	0.5	25
	Ban of incandescent lamps	0.5		0.5	
	Electric appliances	0.6			
	Industrial motor systems			0.4	
	Cars and trucks emission reductions	0.7		0.2	
Renewable energy	Boost solar photovoltaic energy	1.4	1 – 2.5		17
	Boost wind energy	1.2			
	Access energy through low emission options	0.4			
Limiting inefficient coal use in electricity generation				0.7	0
Methane and other climate pollutants	Methane from fossil fuel production	*	1.1	0.6	7
	Other methane and other climate pollutants				
	Efficient cook stoves	*			
Fluorinated greenhouse gases		0.3	0.5		3
Fossil fuel subsidy reform		0.9	1.5 – 2	0.4	1
International transport		0.2	0.3 – 0.5		4
Agriculture		0.8	1.3 – 4.2		1
Reduce deforestation		1.8	1.1 – 4.3		15
Waste			0.8		1
Companies	Top-1000 companies emission reduction	0.7			4
	Supply chain emission reductions	0.2			1
	Green financial institutions	0.4			1
	Voluntary offset companies	2.0			0
Voluntary offsets consumers		1.6			0
Major cities initiative		0.7			3
Sub-national governments		0.6			2
Total		9.7**	Not added	3.1	

= Thematic areas which were identified as focus areas in all three studies

We are performing a feasibility analysis on 12 of the 21 thematic areas (1/2)

Companies' emissions

- Top-1000 companies emission reduction
- Supply chain emission reduction
- Green financial institutions
- Voluntary offsets companies

Energy efficiency

- Low-carbon building heating and cooling
- Phasing out incandescent lamps
- Driving towards efficient electric appliances
- Efficient and low-carbon cars and trucks

Special sectors

- Reduce aviation and maritime emissions
- Reduce emissions of fluorinated gases
- Reduce deforestation
- Reduce emissions from agriculture

Other actors

- Voluntary offsets consumers
- Major cities emission reduction
- Sub-national government action

Energy supply

- Boost solar photovoltaic energy
- Boost wind energy
- Energy access through low emission options
- Reform fossil fuel subsidies

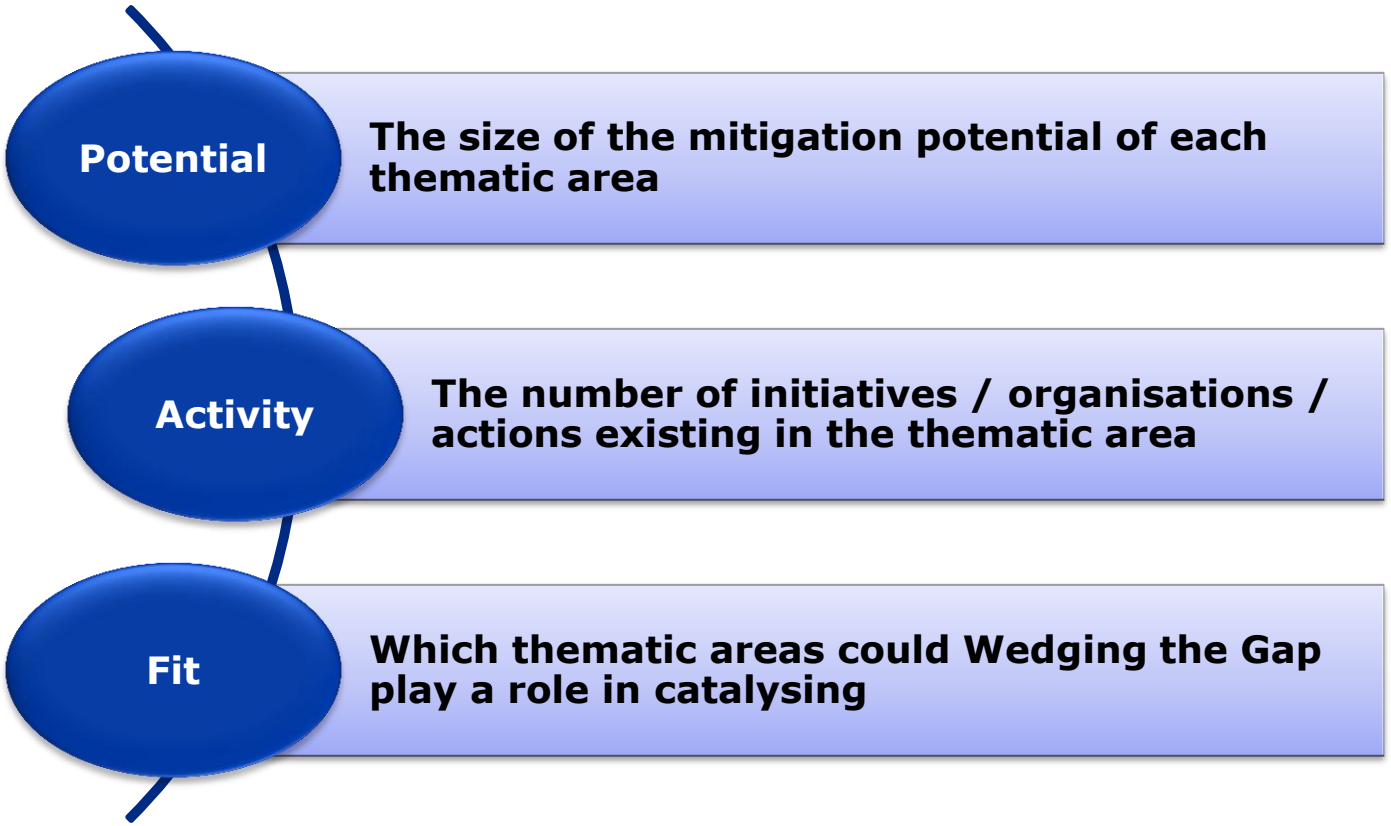
Short-lived climate forcers

- Reduce impact of short-lived climate forcers
- Scale up efficient cook stove use

[Blok, 2012]

We are performing a feasibility analysis on 12 of the 21 thematic areas (2/2)

We chose the 12 focus thematic areas for this study based on three factors:



12 focus areas: Layout of the following pages

> 12 thematic areas are explored in more depth on slides the following pages

> For each thematic area, the following subjects are covered:

- An **overview** of the initiatives working in that thematic area
- Information gleaned about their **success in achieving their targets**
- An estimation of their **potential contribution** towards closing the emissions gap, expressed in Mt CO_2e
- For some thematic areas, an example initiative is described for additional context

1st page

- **Benefits** of taking action in this thematic area
- **Barriers** to taking action in this thematic area
- **Options for scaling up** activities in this thematic area
- **Need for additional support** to enable this scale up

2nd page

Significant voluntary commitments across over 200 companies show a large reduction potential

- Top-1000 emitting companies are responsible for over 10 000 $MtCO_2e$ emissions
- There are many organisations in which companies work together towards higher sustainability and GHG emission reduction, with a total of over 200 of the Top-1000 emitters involved. Only a few of these require setting GHG emission reduction targets.
- A first inventory [1] shows that the majority of these companies have set GHG emission reduction targets for themselves. The total size of these commitments is estimated to be comparable to the total thematic area potential, if continued until 2020.
- No information is available on the actual achievement of these emission reduction targets.

Total 2020 thematic area potential ($Mt CO_2e$) [Blok, 2012]	Up to 700

Initiatives working towards emission reductions in companies

Name	# of members	# of members in Top-1000
Association of Climate Change Officers (ACCO)	>100	>11
Caring for Climate ★	341	72
Cement Sustainability Initiative (CSI) ★	24	4
Business Environmental Leadership Council (BELC) ★	35	29
Haga Initiative ★	12	2
Responsible Care ★	152	45
The Clean Revolution	37	13
Ultra-Low CO_2 Steelmaking (ULCOS)	10	4
World Business Council for Sustainable Development (WBCSD)	192	106
WWF Climate Savers	29	12
Carbon Disclosure Project (Tracker only)	>100 tracked	n.a.

★Organisation requires quantitative GHG target from members

Many benefits; competitiveness concerns can be a barrier, many efforts by individual companies

Benefits of taking action beyond climate impacts	• Cost reductions through efficiency gains • Brand enhancement – positive public profile • Strengthens relationships with suppliers • Innovation in product and processes • Development of in-house skills in anticipation of climate policy
Barriers to taking action	• Competitiveness - low or lack of carbon price and other externalities • Regulation not ambitious and / or uncoordinated • Business model not aligned e.g. based on selling 'more products' not services or centralised energy versus decentralised • Not seen as 'business critical' in many sectors
Options for scaling up	• Voluntary shadow pricing initiative • Scaling up 'value chain' initiatives • Initiate embedded carbon based standards with like-minded companies • Utilise strategic public procurement to create demand for low-carbon goods and services
Need for additional support	• Carbon pricing mechanisms • Mandatory reporting of carbon as well as climate risks • Initiate cross-government dialogue with industry to explore and provide guidance on value chain emission management

Action required on several fronts; potential for independent / private sector bodies to facilitate sectoral initiatives to scale up individual company efforts (similar to WBCSD's Sustainable Cement Initiative)

Small but significant potential exists in supply chain emission reductions; consistent information lacking

- Supply chain emission reduction is an emerging theme [IIP, 2012;CDP, 2012].
- For many companies the indirect emissions (so-called Scope 3 emissions [2]) are much larger than the direct emissions (Scope 1 and 2 [2]).
- Many companies are still in the process of mapping indirect emissions and engaging with suppliers, but there are also a few examples of companies that have already achieved substantial impact on supply chain GHG emissions
- Quantitative information on the overall impact of corporate action is not available yet.

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 200

Initiatives working on supply chain emission reduction

Name	Description
Consumer Goods Forum	Generation and distribution of educational information material for companies and coordination of different topic specific working groups.
Clean by Design	Clean by Design focuses on improving process efficiency to reduce waste and emissions and improve the environment.
Carbon Disclosure Project	The project is tracking and auditing emissions of companies and provides support to companies to improve environmental standards.

Complex area; capacity building, research and standards needed

Benefits of taking action beyond climate impacts	• Reputation: consumers increasingly mindful of CO_2 impact of supply chain practices • Efficiency:organised/concerted practices lead to better management • Cost-cutting: economies of scale through reduced use of resources
Barriers to taking action	• Logistical issues:hard to persuade/change suppliers if economic gain not clear • Complex supply chains: sub-contractors mostly unknown when supply chain long
Options for scaling up	• Sharing of best practices: increase information sharing with other initiatives (esp. forests, textile, food) • Mobilise suppliers: few suppliers (avg 37%) report having targets for emission reduction • Coordination at international level through reputable organisations (e.g. United Nations Global Compact)
Need for additional support	• Invest in training schemes for SMEs: implementing CO_2 reductions • Coordinating and standardising accounting methods for embedded carbon

One option could be a voluntary pledge with embedded carbon reduction targets coordinated by a body such as the Consumer Goods Forum or the UN Global Compact. Potential to explore connecting this area with the 'Top 1000 companies' area

Many initiatives are underway with significant reduction potential and some concrete actions

- There are many initiatives addressing GHG emission reduction of cities and municipalities (see table).
- Many participating cities and municipalities in these initiatives have set emission reduction targets
- Important organisations with members reducing their emissions are the C40 and the Covenant of Mayors. However, the total commitment of cities is much higher (as reported to the cCCR) and is comparable to the thematic area potential.
- No information is available on the actual achievement of these emission reduction targets across the board.
- There is significant overlap in the membership of cities within various initiatives; the Covenant of Mayors represents the largest number of cities

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 700

Initiatives for reducing emissions in cities and municipalities

Name	**# of participants** [Wouters, 2013]
carbonn Cities Climate Registry (cCCR)	302 cities
C40 Cities Climate Leadership Group (C40)	61 cities
Climate Alliance	>1600 cities
Covenant of Mayors	>4748 cities
ICLEI	>1000 cities
Mexico City Pact	268 cities
U.S. Conference of Mayors' Climate Protection Agreement (MCPA)	>500 cities
World Mayors Council on Climate Change (WMCCC)	>80 cities
WWF Earth Hour City Challenge (EHCC)	66 cities

Many significant benefits; split incentives; personal habits and transport management a barrier

Benefits of taking action beyond climate impacts	•Cleaner living: reducing congestion and more liveable cities •Energy efficiency: renewable energy and reduced consumption •Cities's economic growth: divert expenses and cut electricity costs
Barriers to taking action	• Population growth:high impact on infrastructures and transport • Personal mobility habits: cars hard to give up especially in Asia-Latin America • Buildings not owned by cities: resistance to efficiency improvements, water heating and cooling etc.
Options for scaling up	• Ad hoc support for individual initiatives: technical/modelling tools • Peer to peer exchange: info sharing and partnerships with other climate-related international players • Build stronger advocacy among initiatives vis-à vis international institutions
Need for additional support	• Financial incentives for low carbon options and renewable energies • Long-term policy and regulatory frameworks for stable investments • Public procurement clauses favoring green and low carbon projects • International and national support for climate-friendly city objectives

Action taking place across several initiatives already, one option for scaling this up could be an initiative similar to the C40 but bringing together mid-size cities, especially in emerging markets.

Low-carbon building heating and cooling has a large emission reduction potential with several existing players

- Global emissions from buildings make up around 20% of total emissions; the majority of this comes from heating and cooling.
- Energy efficiency for buildings is an area with a huge emission reduction potential [IPCC, 2007], but also the area where progress is most disappointing [IEA, 2013]
- There are several initiatives that address emission reduction for buildings. Targets that are set (if any) have an aspirational character.

Example initiative: SBCI

- Started in 2006
- Mission to present a common voice for building sector stakeholders on sustainable buildings and climate change
- Developed Common Carbon Metric (CMC) for measuring and reporting GHG emissions in buildings

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 600

Initiatives for reducing emissions in the building sector

Name	Description
UNEP Sustainable Buildings & Climate Initiative (SBCI)	The initiative provides buildings stakeholders with a platform for collaboration and collective actions as well as support regarding performance assessment baselines for buildings energy use and GHGs emissions.
WBCSD, Energy Efficiency in Buildings projects	The initiative is working with large building portfolio owners to identify the key barriers in the decision making process for EE measures and how they can be overcome.
World Green Building Council	They support new and emerging Green Building Councils by providing them with the tools and strategies to establish strong organisations and leadership positions in their countries.
Global Buildings Performance Network (GBPN)	Carries out research and distributes the knowledge to diverse key stakeholders in energy performance in buildings to capture the economic, technical potential of energy performance in buildings

Many initiatives; main barrier: industry fragmentation

Benefits of taking action beyond climate impacts	• Overall benefits for buildings' users: reduce fuel and electricity bills, • Increased comfort • Decreased air pollution
Barriers to taking action	• Fragmentation of the building industry • Relatively high upfront investments required • Lack of coordination within and among governments
Options for scaling up	• Develop an integrated approach, to include construction materials and energy generation as well as energy use • Possible voluntary code/target of commercial real estate sector – an organisation such as Urban Land Institute Greenprint Center for Building Performance could lead on something like this
Need for additional support	• Earmark government funding for low-carbon buildings • Government-set energy efficiency targets for building

Catalyse an initiative working with an alliance of commercial real estate sector actors who agree to a code / target in terms of future property investments.
Consolidate building sector and adopt widespread codes and standards, which include energy generation as well as energy use in buildings

This single issue thematic area has one main player but significant potential if it succeeds in transforming lighting

- Replacement of incandescent lamps by CFL or LED light sources can drastically reduce electricity use and GHG emissions for lighting. For that reason many countries have already decide to gradually phase out incandescent lamps.
- En.lighten is the major organisation in this area, focusing on helping more countries to implement policies to phase out incandescent lamps, with 2016 as target year.
- 50 countries have agreed to the phase-out of inefficient incandescent lamps by the end of 2016.

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012; en.lighten, 2013]	200–500

Example initiative: en.lighten

- Established in 2009

- 50 countries as members who have agreed to the phase-out of inefficient incandescent lamps by the end of 2016
- public/private partnership between the UNEP, OSRAM, Philips
- Lighting, National Lighting Test Centre of China, GEF and AusAID.
- Activities have been focused in West Africa (15 countries) and Central America (8) through a regional approach
- By the end of the current project, half of the 50 participating countries will have clear plans in place with the transition well under way, while the other half will still need capacity and funding support to enable this.

Successful initiatives exists; many benefits; awareness and technical capacity needed

Benefits of taking action beyond climate impacts	• Cost savings for users • Decrease in peak electricity demand, resulting in fewer/less frequent blackouts
Barriers to taking action	• Lack of awareness by govenrments and multiateral bodies of efficacy of this policy option • Lack of technical expertise, experience and capacity
Options for scaling up	• Increased funding to expand en.lighten support • Expanding to include industrial/commercial/public lightning • Increased private sector involvement • Utilise platform for additional appliances such as A/C
Need for additional support	• Expanding private sector involvement • Sharing of technical expertise and good practices

Low-hanging fruit, should be prioritised – expanding / merging with appliance initiatives would harness full potential better

There is significant potential in the transition to ultra-efficient appliances, but few initiatives have taken it on

- There is a high potential for energy efficiency of appliances, which can most readily be realised by implementing Minimum Energy Performance Standards [IEA, 2013a]
- There are several networks focusing on knowledge development and exchange (→).
- So far, there is a lack of international targeted action and involvement of industry and consumer organisations in these networks is limited

Example initiative: CLASP

- Founded 1999, seeks to be primary resource and voice for appliance, lighting and equipment energy efficiency worldwide.
- CLASP is a ClimateWorks Best Practice Network (BPN)
- Main focus regions for CLAPS are the United States, China, India and the European Union
- Also operating agent of SEAD since 2011

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 600

Initiatives for reducing emissions through electric appliances

Name	Description
The Collaborative Labelling & Appliance Standards Program (CLASP)	Respond to the assistance needs of Standards and Labelling (S&L) practitioners in targeted countries and regions; Provide technical assistance to national governments; Distribute information on S&L best practice
Super-efficient Equipment and Appliance Deployment (SEAD) Initiative by the Clean Energy Ministerial	Raise the efficiency ceiling" by pulling super-efficient appliances and equipment into the market through cooperation on measures like incentives, procurement, awards, and R&D investments
International Energy Agency's Efficient Electrical End-use Equipment initiative (IAE's 4E)	Promote the most efficient electrical end-use products in the market, focusing on industrial, commercial and household equipment.

Many benefits; lack of infrastructure; work with private sector to avoid backlash

Benefits of taking action beyond climate impacts	• Reduction of overall energy consumption and local air pollution • Cost savings for users • Decrease in peak electricity demand, reducing need for power plant investment and resulting in fewer/less frequent blackouts
Barriers to taking action	• Lack of expertise and infrastructure, e.g. for testing and compliance • Insufficient funding to invest in needed infrastructure and capacity; also insufficient funding in initiatives to scale up activities
Options for scaling up	• Targeted campaign to transform markets starting in 3 key appliances areas: air conditioning, fridges and water heaters, phasing out inefficient appliances phasing in super-efficient appliances
Need for additional support	• Funding required to form a coalition based on existing platforms to enable this scaling up • Governments & manufacturers should agree to an 'anti-dumping' commitment to ensure inefficient appliances are not shifted to markets which do not have the necessary standards

Pool the unique strengths of SEAD, CLASP and en.lighten to form a targeted coalition to phase in super-efficient appliances and phase out inefficient ones, starting in 3 key areas: air conditioning, fridges and water heaters

Efficient and low-carbon vehicles can contribute to significant emission reductions in the transport sector ★

- The road transport sector is an important and rapidly growing source of greenhouse gas emissions.
- In recent years, regulation and industry efforts have led to significant fuel economy improvements for new cars [IEA, 2013a]
- There is a large number of organisations [3] of different origins (government, private, or combined). Some of them have stated concrete efficiency or emissions targets (→).

Total 2020 thematic area potential ($MtCO_2e$) [Blok, 2012]	Up to 700

Initiatives for reducing emissions from cars and trucks

Name	Initiators	Target
"30 by 30" Resolution	International Road Transport Union (IRU)	Reduce CO_2 emissions by 30% by 2030 from a 2007 baseline calculated as transport performance in tonne-kilometres and person-kilometres
UNEP Partnership for Clean Fuels and Vehicles (PCFV)	UNEP	No targets
Global Fuel Economy Initiative (GFEI)	Fédération Internationale de l'Automobile (FIA) Foundation	Improving average fuel economy of 50% worldwide by 2050. The target for 2020 is a 30% average fuel economy improvement for all new cars in OECD countries

Example initiative: 30 by 30

- IRU founded in 1948 ; 170 members in 74 countries (truck, bus, coaches, taxis). Active members = road transport associations at national level; Associate members include those closely tied to industry such as manufacturers Voluntary commitment by road transport industry
- Work through: investments in innovative engine and latest vehicle technology; driver training; innovative logistic concepts, such as ITS and optimised weights and dimensions of heavy commercial vehicles.

★We exclude traffic management and modal shifts here which are treated in the Cities thematic area

Many benefits; technological barriers & lack of infrastructure; industry resistance

Benefits of taking action beyond climate impacts	• Reducing overall transport costs • Decrease air and noise pollution
Barriers to taking action	• Lack of financing, administration and technology available for heavy duty vehicles • Economic and safety considerations taking precedence over emissions in policy development • Inefficient logistics management in and between cities • Industry resistance
Options for scaling up	• Traffic management schemes in cities / integrated logistics • Test new modular concept for trucking
Need for additional support	• Introduce dynamic vehicle standards • Introduce tax breaks / priority access for efficient vehicles • Fund R&D into new vehicle technologies

Support further research to develop initiatives that could increase the scale of impact and action (e.g. enabling more stringent emissions and fuel quality legislation and cities up traffic management schemes).

Renewable power from solar and wind is beginning to tap into very large global potential for emission reduction

- Electricity production from solar and wind are growing rapidly.
- Cost reductions have made these sources increasingly attractive and ready for massive global roll-out, reaching ~1000 GW each in 2020.
- Many global organisations and initiatives exist [4] (→). In addition, there are numerous regional initiatives.

Example initiative: IRENA

- 3 roles: 1) Global voice for renewables; 2) International hub for cooperation and debate; 3) Advisory resource.
- Established in 2009, HQ in Abu-Dhabi, office in Bonn
- 161 member countries (43 of which in accession)
- 3 divisions: Knowledge, Policy and Finance; Innovation and Technology; Country partnerships
- Works in partnership with member governments to ensure capacity is developed and embedded,
- Project funding facility of USD 350million

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 2600

Initiatives to boost wind and solar energy globally

Name	Description
IRENA (International Renewable Energy Agency)	Is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy
REEEP	Is a non-profit organisation that has a primary focus on scaling up of clean energy business models. It helps to fund small-to-medium scale projects that address barriers to market development, provides internet based information resources and is connecting countries and stakeholder that have developed best practice policies.
SE4ALL	Mobilise action from all sectors in support of three interlinked objectives to be achieved by 2030: providing universal access to modern energy services; doubling the global rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix.
GWEC	Global wind energy trade association. Members are both national wind industry associations and companies working in the industry.

Boost wind: Many benefits; lack of infrastructure and high upfront capital costs major barriers

Benefits of taking action beyond climate impacts	• Energy security and independence • Reduced air pollution and improved public health • Low running costs
Barriers to taking action	• Market distortions, technology limitations and lack of infrastructure • Lack of capacity and expertise • Land policy and planning hurdles • Absence of clear, long-term legislative framework • High upfront capital costs
Options for scaling up	• Better lobbying and advocacy at national/regional level • Incentivise technological innovation (e.g. storage) • Build solid base of concrete data and case studies to support investment • Innovation in financial models for investment
Need for additional support	• Quantifiable target for renewable energy to be established • Eliminate subsidies for fossil energy • Clear policy frameworks which eliminate market distortions and provide certainty • Streamline planning procedures for wind energy

Form a coalition of powerful industry, finance and NGO partners to set ambitious and implementable global targets for installed capacity by 2020

Boost solar: Many benefits; policy important and grid access rules; business model innovation needed

Benefits of taking action beyond climate impacts	• Energy security and independence • Reduced air pollution and improved public health • Low running costs
Barriers to taking action	• Market distortions, technology limitations (storage); grid access issues • Business model clash between distributed and concentrated power • Absence of clear, long-term legislative framework • Limited access to finance (high upfront capital costs for CSP)
Options for scaling up	• Concrete data and case studies to support investment • Incentivise new business model innovation • Better lobbying and advocacy at national/regional level • Technological innovation (for efficiency and storage) • Standardise parts to enable market development
Need for additional support	• Quantifiable target for renewable energy to be established • Clear policy frameworks which eliminate market distortions • Eliminate subsidies for fossil energy • Eliminate trade barriers

Form a coalition of powerful industry, finance and NGO partners to set ambitious and implementable global targets for installed capacity by 2020

The deforestation area is very complex with a large, but highly uncertain, potential

- Reducing deforestation is a major option for GHG emission reduction and has a track record of successful programmes in various countries, e.g. in Brazil.
- The global trend is towards a decrease in the rate of tropical deforestation
- Many initiatives exist (see examples in table), but none of them have formulated clear quantitative commitments. The only exception is the GPFLR that has committed to restore 150 million hectares of lost forests and degraded lands worldwide by 2020
- Several NGOs have formulated a zero-deforestation objective by 2020.

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 1800

Initiatives to reduce deforestation

Name	Description
UN-REDD Programme	The programme supports nationally-led REDD+ processes and promotes involvement of all stakeholders in implementation.
Global Partnership on Forest and Landscape Restoration	The priorities of the GPFLR are to catalyse support for forest and landscape restoration, to map and analyse restoration potential, and to enhance knowledge and networks on forest landscape restoration.
Asia Forest Partnership	Set itself the task of information sharing, dialogue and joint action to promote sustainable forest management in Asia and the Pacific.
Tropical Forest Alliance	Public-private partnership in which partners take voluntary actions to reduce tropical deforestation associated with sourcing of, e.g., palm oil, soy, beef, paper and pulp.
Forest Investment Program (FIP)	The FIP supports developing country efforts to reduce deforestation and forest degradation.
Collaborative Partnership on Forests	Comprising 14 international organizations, institutions and secretariats. CPF's objective is to promote the management, conservation and sustainable development of all types of forests..

Many economic benefits; major barrier is land use management fragmented

Benefits of taking action beyond climate impacts	• Sustainably managed forests support economic development of countries, inlcuding providing millions of jobs • Supports local climate adaptation (decreased flooding etc.)
Barriers to taking action	• Lack of collaboration with the private sector • Land use management fragmented • Poor data • Lack of funding
Options for scaling up	• Focus needs to shift to integrated land use planning and sustainable forest management, focusing on drivers • Increase scope through landscape and forest restoration • Business model innovation
Need for additional support	• Support a regional approach, not just national, for funds such as the Global Environment Facility • Further incentivise REDD readiness processes

More research needed to ascertain ways in which bottom-up activities could decrease drivers and enable sustainable forest management. Widening the focus to an integrated land management approach is also key here, as well as the relatively untapped contribution that landscape and forest restoration could make.

The potential for emission reductions in agriculture, incl. livestock rearing, is large; some action underway

- There is a large potential for emission reduction and carbon sequestration in agriculture, already in the short term [IPCC, 2007]. Concrete action to harvest this potential however is limited.
- Many initiatives exist (see table for examples), but most of them focus on research and development and have not formulated concrete commitments.
- The World Economic Forum's "New Vision for Agriculture" has formulated a target to reduce emissions per tonne of product by 20% in 2020.

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 800

Initiatives for reducing emissions from agriculture

Name	Description
Mitigation of Climate Change in Agriculture (MICCA) Programme led by FAO	Among other activities, the MICCA Programme monitors and assesses GHG emissions and mitigation potential in the agricultural sector and puts climate-smart agriculture into practice in pilot projects.
Sustainable Agriculture Network (SAN)	The SAN aims to establish its sustainable agricultural standards as respected and recognized around globally by all actors along the value chain.
Sustainable Agriculture Initiative (SAI) Platform	The SAI Platform collects and develops knowledge on sustainable agriculture, which it communicates to all interested parties.
Global Bioenergy Partnership led by FAO	Provides a mechanism for partners to organise, coordinate and implement targeted international research, development, demonstration and commercial activities related to biomass for energy, with a focus on developing countries.

Many economic benefits; lack of awareness and standards; land management fragmented

Benefits of taking action beyond climate impacts	• Food security: ensure food sources are safeguarded • Preserve arable land: reduce the impact of extreme weather conditions and CO_2 pollution • Povery eradication: Promote overall growth and economic development in Developing Countries (esp. Africa)
Barriers to taking action	• Outreach: difficult to reach out to small farmers • Existing schemes: CAP and other agriculture framework not conducive to low carbon practices • Training/coaching: lack of tools and experience around climate smart agriculture
Options for scaling up	• Wider standards buy-in by governments and business (regulatory/policy frameworks; industry commitments) • Support low-carbon technology agricultural development (R&D, pilot projects, pilot projects) • Promote standardised methodology to asses GHG Emissions
Need for additional support	• Create incentives and conditions to promote the uptake of sustainable agriculture practices at a larger scale • Increase awareness internationally of benefits • Multilateral exchange of knowledge

Targeted campaign, including governments and civil society, to implement new standards in land management; potential to integrate with land restoration movement

There is considerable potential in reducing the climate impacts from short-lived climate forcers

- Short-lived climate forcers include black carbon, tropospheric ozone and methane ★
- Reduction of emissions that lead to reduced concentrations of short-lived climate forcers have only recently gained broad attention [UNEP, 2011]
- These can lead to important limitations of radiative forcing in the short-term and will provide significant co-benefits through improved air quality
- A global initiative has been formed under the auspices of UNEP: CCAC
- Currently there are no company driven activities or initiatives to address the reduction

Total 2020 thematic area potential (Mt CO_2e) [Blok, 2012]	Up to 1000

Intitiatives to reduce the impact of SLCFs

Name	Description
Climate and Clean Air Coalition To Reduce Short-Lived Climate Pollutants (CCAC)	Aim to raise awareness of short lived climate pollutant impacts and mitigation strategies; Enhancing and developing new national and regional actions, including by identifying and overcoming barriers, enhancing capacity, and mobilizing support and promoting best practices and showcasing successful efforts.
Global methane initiative (GMI)	Reduce global methane emissions and to advance the abatement, recovery and use of methane as a valuable clean energy source.

★We exclude short-lived F-gases here, which are treated in the thematic area of F-gases

Many benefits; industry resistance and low stakeholder awareness major barriers

Benefits of taking action beyond climate impacts	• Air quality improvement, resulting in overall health benefits • Supporting development by improving domestic living conditions • Technology ready to go
Barriers to taking action	• Resistance by industry to change industrial processes • Low stakeholder awareness and weak regulation • High technology costs and lack of infrastructure
Options for scaling up	• Wider country participation in the CCAC, resulting in increased support and funding • Ensure reducing SLFCs is mainstreamed across multilateral and other funds
Need for additional support	• Undergo screening process for donor funds re: mainstreaming SLFC reduction • Exchange of information on baselines, benefits, strategies etc. • Enact policy in this area in a sector by sector basis

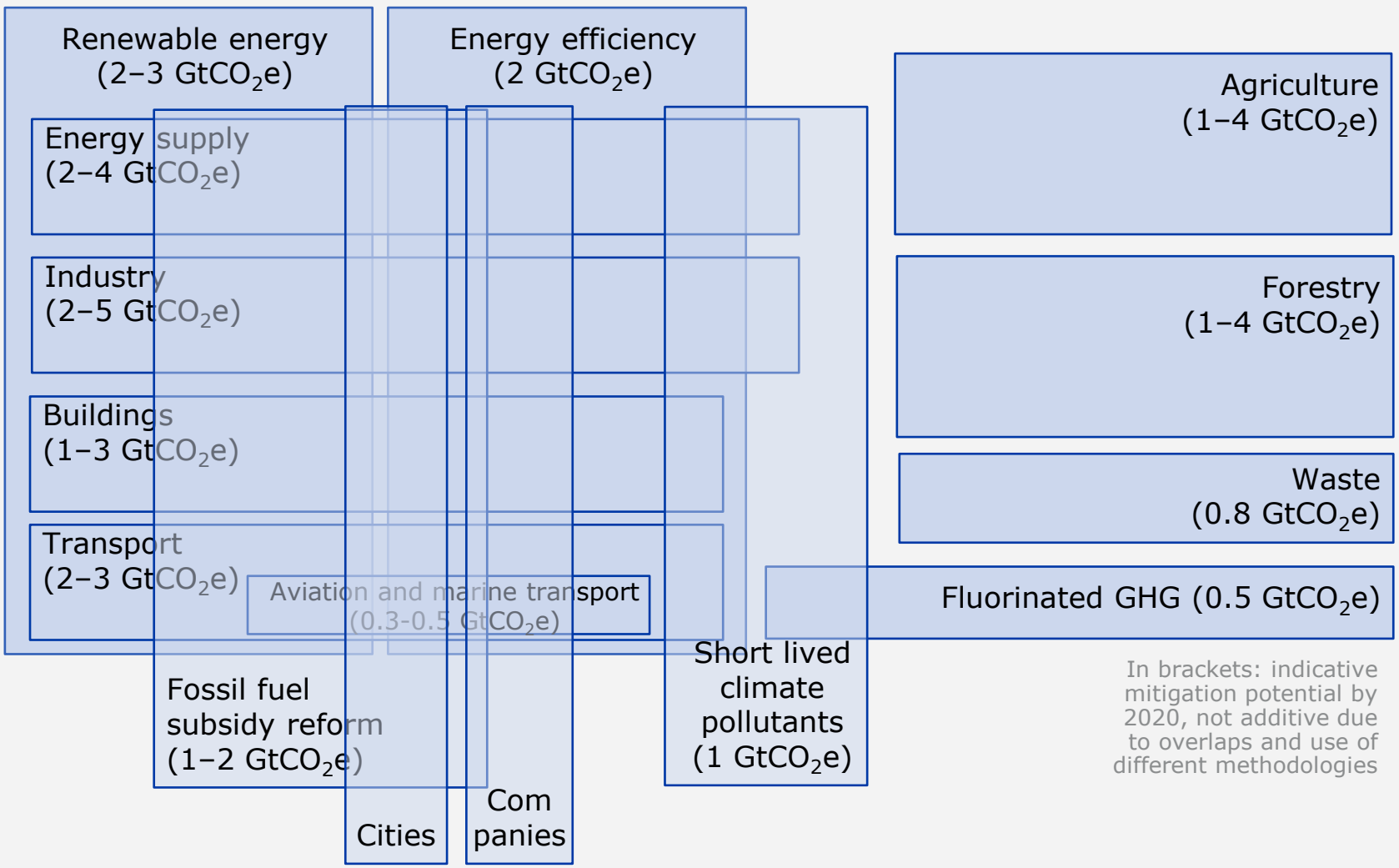
Strengthen resources and support for the CCAC, on condition that effective tracking and ambitious targets are set.
This is an area which should complement rather than replace existing CO_2 emission strategies.

Contents

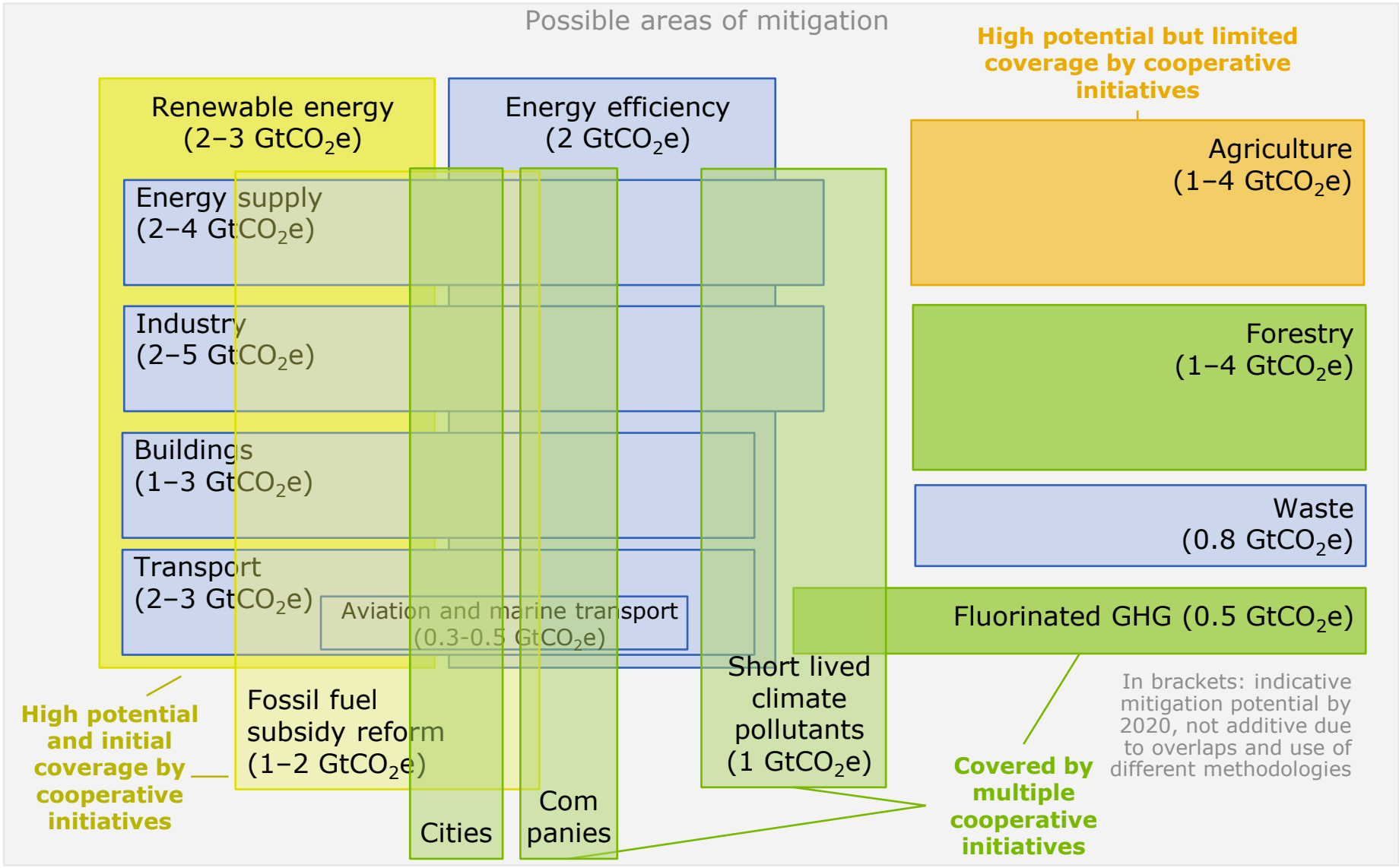
The UNEP Emissions Gap report 2013 showed that thematic areas differ in their potential and activity level

Thematic area	Subtopic	Wedging the gap	UNFCCC technical paper	IEA energy / climate map	Number of initiatives
Energy efficiency	Buildings heating and cooling	0.6	2	0.5	25
	Ban of incandescent lamps	0.5		0.5	
	Electric appliances	0.6			
	Industrial motor systems			0.4	
	Cars and trucks emission reductions	0.7		0.2	
Renewable energy	Boost solar photovoltaic energy	1.4	1 – 2.5		17
	Boost wind energy	1.2			
	Access energy through low emission options	0.4			
Limiting inefficient coal use in electricity generation				0.7	0
Methane and other climate pollutants	Methane from fossil fuel production	*	1.1	0.6	7
	Other methane and other climate pollutants				
	Efficient cook stoves	*			
Fluorinated greenhouse gases		0.3	0.5		3
Fossil fuel subsidy reform		0.9	1.5 – 2	0.4	1
International transport		0.2	0.3 – 0.5		4
Agriculture		0.8	1.3 – 4.2		1
Reduce deforestation		1.8	1.1 – 4.3		15
Waste			0.8		1
Companies	Top-1000 companies emission reduction	0.7			4
	Supply chain emission reductions	0.2			1
	Green financial institutions	0.4			1
	Voluntary offset companies	2.0			0
Voluntary offsets consumers		1.6			0
Major cities initiative		0.7			3
Sub-national governments		0.6			2
Total		9.7**	Not added	3.1	

There is significant overlap between the different thematic areas



Three types of thematic areas are distinguished based on the potential and the coverage by current initiatives



From our research we have distilled 3 different strategies for increasing the impact of bottom-up initiatives

Targeted support	• Several, advanced efforts can be scaled up through additional cooperation and /or funding
Policy setting	• Government action needed for initiatives to succeed
Additional initiatives / target setting	• Lack of initiative, need for incubation, foundation is potentially there

Different strategies will be required to help different thematic areas succeed

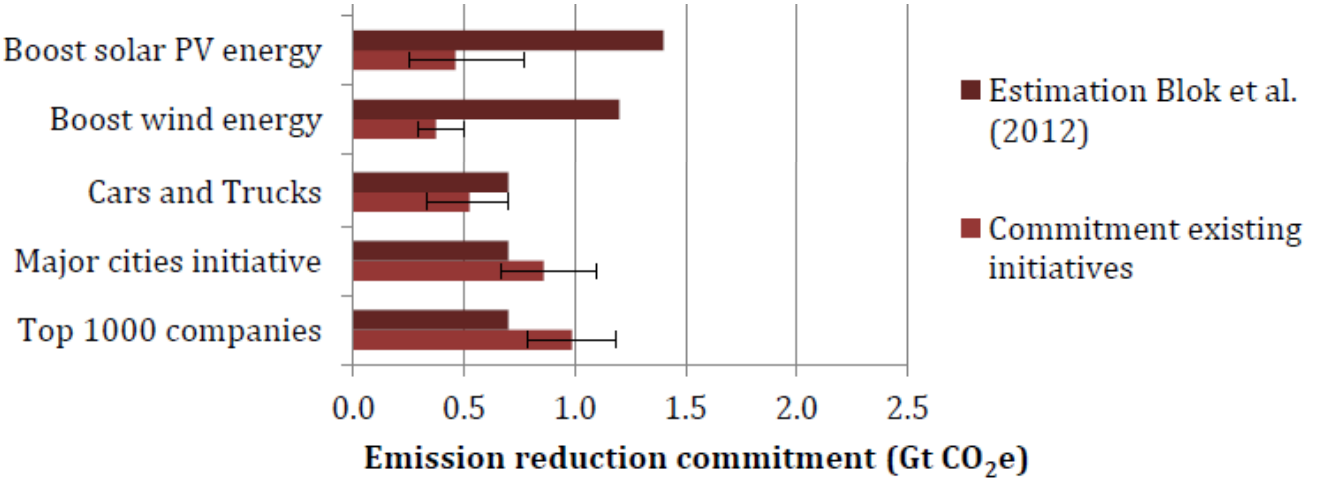
★ **Denotes a priority strategic next step based on our analysis**

Thematic area	Targeted support	Policy setting	Additional initiatives / targets
Top 1000 companies		✓★	✓
Supply chains†			✓★
Major cities	✓★	✓	
Low-carbon heating and cooling		✓	✓★
Efficient lighting	✓★	✓	
Efficient appliances		✓	✓★
Low-carbon cars and trucks	✓	✓★	
Boost solar and wind energy		✓★	✓
Reduce deforestation	✓★	✓	✓
Agriculture		✓	✓★
Short-lived climate forcers		✓★	✓

† More research needed in this area

Preliminary estimates of the impact of stated commitments of existing initiatives look promising

- We have performed a preliminary assessment of the **expected impact** of the stated commitment of already **existing initiatives** within ten of the twenty-one thematic areas.
- The results are promising, but further work is needed to quantify the expected emission reductions
- Note that these expected (or projected) reductions of existing initiatives are not the same as the total potential of the thematic areas



Source: [Wouters, 2013]

Contents

A framework for alignment and acceleration

A framework for alignment and acceleration: Tracking

What

- International tracker systems for initiatives which aggregates impact
  - Provides an overview of initiatives, their actions and overlaps
  - Provides a quantitative analysis of impact
  - Enable a clear understanding of the total global contribution and impact of initiatives to closing the gap
- Can be used as a basis for prioritisation of finance and support

Why

- Need to identify potential gaps / unrealised mitigation potential which could then be further supported or strengthened.

- Important that this is aligned with current process of tracking and reporting from country pledges undertaken by the UNFCCC Secretariat (particularly to avoid overlaps).

Who

- This tracking function could be created quickly by (a) credible independent third party(ies) provided there is buy-in from the wide range of relevant stakeholders, from private initiatives to countries. International organisation such as UNFCCC and UNEP could also play a role.

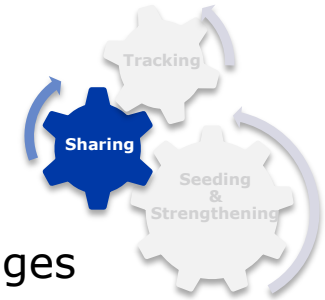
This function provides important information to guide the other two objectives (Sharing and Strengthening).

A framework for alignment and acceleration: Sharing

What

- Creates a forum or several fora through which initiatives can exchange practice and learning
- Enables learning from each other's successes and failures, including capacity building
- Facilitates collaboration with governments to ensure efficiency, unblock obstacles and avoid duplication of effort

Why



- Could play an important developmental role, particularly for initiatives in early stages of development
- Encourages ambition-raising of existing initiatives

Who

- This function could be best performed in close cooperation with a credible international institution or an independent organisation with strong convening power either from the public sector, such as UNEP, or the private sector, such as the WEF

This function draws upon analysis undertaken through the first objective (Tracking) and links closely to the third objective (Strengthening).

A framework for alignment and acceleration: Seeding and strengthening

What

- Multi-faceted activity:
  - Seeding new initiatives where gaps are identified during the analysis
  - Could work with other initiatives and organisations to develop activities or initiatives to address these gaps.
- Incubation or brokerage to increase existing initiatives' impact – connect them to sources of finance and further capacity building support.

Why

- Increase awareness by public and private financiers of initiatives and their activities, or how they may fit their investment criteria and mandate.
- Developing initiatives as channels for public and/or private climate finance might be needed – would involve some processes for managing risk.

Who

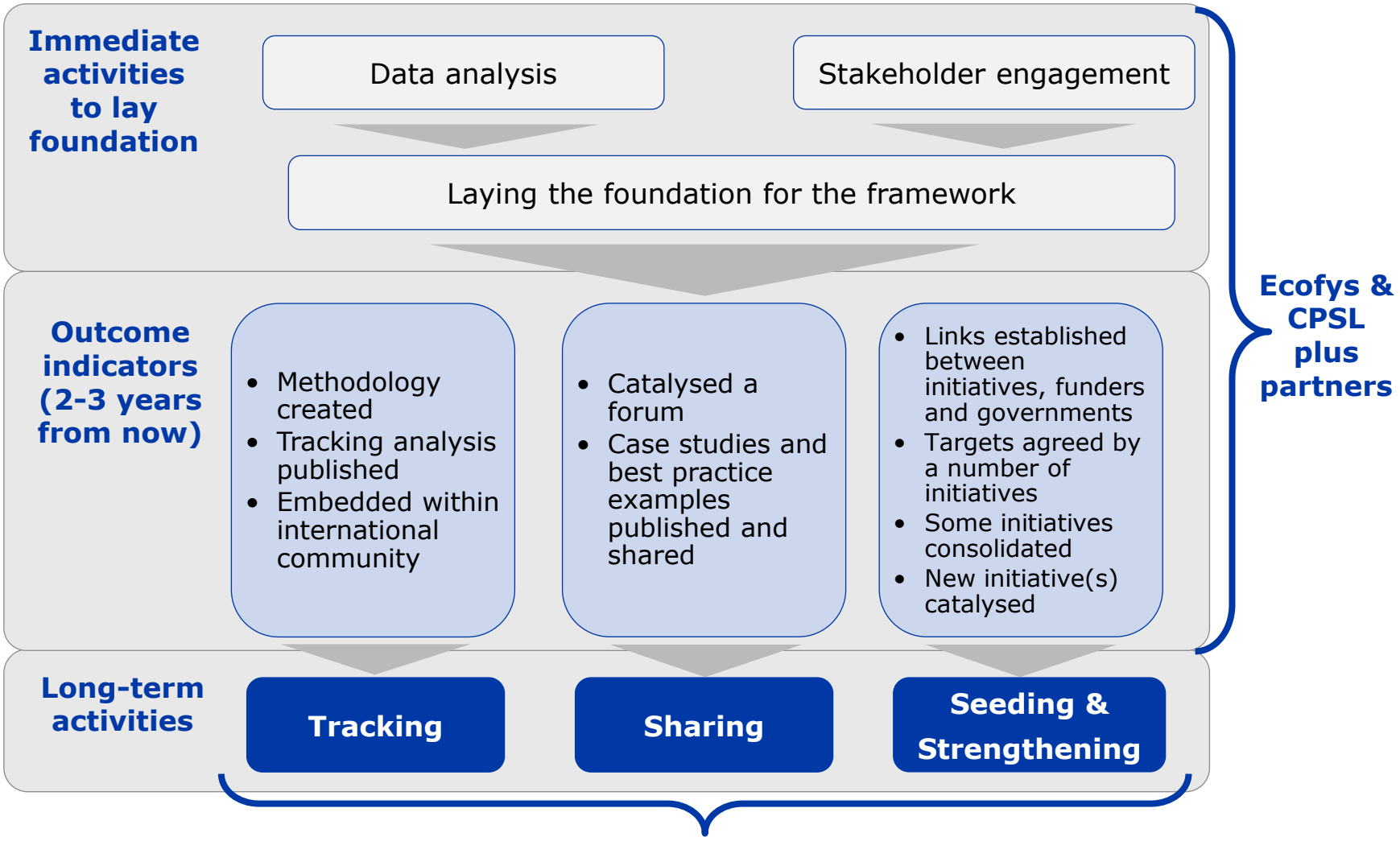
- A credible third party with a track record of facilitating and catalysing collaborative initiatives could facilitate these activities
- It is possible that this function could ultimately be performed by the same organisation(s) involved in the Supporting activity (particularly the brokerage of funding) but it would depend on the area

This function will build on the outcomes of the Tracking and Sharing objectives.

Summary of activities

Objective	Function
Tracking	• Provide overview of initiatives' actions and overlaps • Aggregate global impact of initiative activities • Provide analysis to enable prioritisation for support and or finance
Sharing	• Facilitate knowledge sharing and learning between initiatives • Facilitate initiative and government leaders to collaborate and avoid duplication of effort • Encourage ambition-raising of existing initiatives
Seeding & Strengthening	• Seeding new initiatives where gaps are identified • Incubation/brokerage to increase existing initiatives' impact • Develop initiatives as channel for public and/or private climate finance support

Proposed way forward



Contents

Glossary (1/2)

Acronym	Name
ADP	Ad Hoc Working Group on the Durban Platform for Enhanced Action
BtG	UNEP Bridging the Emissions Gap Report
C40	C40 Cities Climate Leadership Group
CAP	Common Agricultural Policy
CCAC	Climate and Clean Air Coalition
cCCR	carbonn Cities Registry
CFL	Compact fluorescent lamp
CIFF	Children's Investment Fund Foundation
CLASP	The Collaborative Labelling & Appliance Standards Program

Acronym	Name
COP	Conference of the Parties
CPSL	University of Cambridge – Programme for Sustainable Leadership
FAO	Food and Agriculture Organization of the United Nations
FIA Foundation	Fédération Internationale de l'Automobile Foundation
GEF	Global Environment Facility
GHG Emissions	Greenhouse Gas Emissions
GPFLR	Global Partnership on Forest and Landscape Restoration
GWEC	Global Wind Energy Council

Glossary (2/2)

Acronym	Name
ICLEI	Local Governments for Sustainability
IRENA	International Renewable Energy Agency
IRU	International Road Transport Union
LED	Light-Emitting Diode
NAMA	Nationally appropriate Mitigation Action
NOAK	Nordic Council of Ministers
REDD	Reducing Emissions from Deforestation and Degradation
REEEP	Renewable Energy and Energy Efficiency Partnership
SBCI	Sustainable Buildings and Climate Initiative

Acronym	Name
SE4ALL	Sustainable Energy for All
SEAD	Super-efficient Equipment and Appliance Deployment
SLFCs	Short Lived Climate Forcing Pollutants
SME	Small and Medium sized Enterprises
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
WBCSD	World Business Council for Sustainable Development
WEF	World Economic Forum
WWF	World Wide Fund For Nature

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Endnotes (1/2)

- **[1]** Of the 1000 companies worldwide with the largest emissions, 218 are party to one or several emission reduction initiatives. From these a representative sample of 25 companies was analysed for their emission reduction commitment. An average 16% reduction commitment by 2020 compared to baseline was found and applied to the emissions of the 218 companies to estimate the total potential of stated commitments.
- **[2]** The emissions of a company are commonly classified into Scope 1, 2 and 3 emissions:
  - **Scope 1:** Direct GHG emissions: sources are owned/controlled by entity
  - **Scope 2:** Indirect GHG emissions (upstream supply emissions): emissions are consequence of the activities of the entity, but occur at sources owned/controlled by another entity (e.g. purchased electricity, heat or steam)
  - **Scope 3:** Other indirect emissions (down stream product emissions): extraction & production of purchased materials & fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities, outsourced activities, waste disposal etc.

Endnotes (2/2)

- **[3]** 30 by 30" Resolution, 21st Century Truck Partnership, Fleets for Change, Global Fuel Economy Initiative (GFEI), Green Freight Asia Network (GFAN), Green Freight Europe (GFE), Green Truck Partnership (GTP), Lean and Green, Logistics Carbon Reduction Scheme (LCRS), Low Carbon Vehicle Partnership (LowCVP), UNEP Partnership for Clean Fuels and Vehicles (PCFV), Partnership on Sustainable, Low Carbon Transport (SLoCat), SmartWay, U.S Drive, International Organisations of Motor Vehicle Manufacturers (OICA), Major Economies Forum, International Council on Clean Transportation (ICCT)
- **[4]** 300GW/a, Asia Solar Energy Initiative (ASEI) , Global Solar Alliance (GSA), Global Solar Council (GSC), Solar Europe Industry Initiative (SEII), SunShot Initiative, Vote Solar Initiative, Renewable Energy and Energy Efficiency Partnership (REEEP), UN Secretary General's Energy for All Initiative (SE4All), International Renewable Energy Agency (IRENA), International Renewable Energy Alliance (IREA), Major Economies Forum, International Partnership on Mitigation and MRV, Clean Energy Solutions Centre, International Energy and Climate Initiative – Energy+, REN21 (Renewable Energy Policy Network for the 21st Century), European Wind Initiative (EWI), Wind Program, Wind Energy Initiative (WEI), Renewable Energy and Energy Efficiency Partnership (REEEP), UN Secretary General's Energy for All Initiative (SE4All), International Renewable Energy Agency (IRENA), Global Wind Energy Council (GWEC), Major Economies Forum, Clean Energy Ministerial (CEM), International Partnership on Mitigation and MRV, Clean Energy Solutions Centre, International Energy and Climate Initiative – Energy+, REN21 (Renewable Energy Policy Network for the 21st Century)