

# The Solar Economy Club: Implementing a leadership club approach to international climate policy

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*A short study commissioned by the Green Party Parliamentary Group in the German Bundestag (Bundestagsfraktion Bündnis 90/Die Grünen)*

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<sup>1</sup> The World Resources Institute (WRI) is a global environmental and development think tank that goes beyond research to create practical ways to protect the Earth and improve people's lives. This paper contains preliminary research, analysis, findings, and recommendations. It has not been subject to internal and external peer review and should not be considered an official WRI publication. All the interpretation and findings set forth in this paper are those of the authors.

## Acronyms

CEM	Clean Energy Ministerial
EU	European Union
ETS	Emissions trading scheme
FIT	Feed-in tariff
GHG	Greenhouse gas
GW	Gigawatt
ISO	International Organization for Standardization
MRV	Measurement, reporting and verification
RE	Renewable energy
REEEP	Renewable Energy and Energy Efficiency Partnership
REN21	Renewable Energy Policy Network for the 21 <sup>st</sup> Century
UNFCCC	United Nations Framework Convention on Climate Change
WTO	World Trade Organization

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## Zusammenfassung

Das internationale Klimaregime ist in den letzten Jahren komplexer geworden, ohne jedoch das erklärte Ziel der Staatengemeinschaft zu erreichen, die globale Erwärmung auf höchstens 2°C zu begrenzen. Die Verhandlungen in der UN-Klimarahmenkonvention, die bis 2015 ein neues internationales Abkommen erreichen sollen, stehen weiterhin im Zentrum. Dazu kommen andere multilaterale Institutionen wie das Montreal-Protokoll oder die International Civil Aviation Organization, die über einzelne klimarelevante Aspekte verhandeln, sowie eine Vielzahl bilateraler und regionaler Initiativen.

Je drastischer die Auswirkungen des Klimawandels zutage treten, desto deutlicher wird, dass erhebliche zusätzliche Anstrengungen beim Klimaschutz erforderlich sind. Die vorliegende Studie untersucht, inwieweit Allianzen von Vorreiterstaaten, sog. „Klima-Clubs“, dazu beitragen können, die internationale Klimapolitik voranzubringen. Vorreiterallianzen sind ein wichtiger Bestandteil des Konzepts einer „Klimapolitik der unterschiedlichen Geschwindigkeiten (KluG)“ der Bundestagsfraktion von Bündnis 90/Die Grünen. In der Literatur und in der Praxis der vergangenen Jahre hat es verschiedene Ansätze von Clubs gegeben. Die Studie zeigt jedoch, dass die bereits bestehende Vielzahl von Clubs, Initiativen und Allianzen bislang keine Veränderungen ausgelöst haben, die ausreichen würden, um das Zwei-Grad-Ziel zu erreichen.

Die Studie entwickelt daher drei Anforderungen an eine neue, wirksame Form von Klima-Club:

- eine **ambitionierte Vision** des Umbaus der Wirtschaft zu einer kohlenstoffarmen Wirtschaftsweise, die zu Emissionsreduzierungen führt, die klar am oberen Ende der Empfehlungen des Intergovernmental Panel on Climate Change (IPCC) liegen;
- klare **Kriterien für eine Mitgliedschaft**, wie beispielsweise Mindestziele für Emissionsreduktionen, Energieeffizienz oder den Ausbau erneuerbarer Energien;
- ein **signifikanter Nutzen für die Mitglieder**, insbesondere im wirtschaftlichen Bereich der exklusiv nur Mitgliedern zukommt.

Ein Klima-Club der Vorreiter im Sinne eines „Clubs der Solaren Ökonomie“ (*solar economy club*) scheint am ehesten geeignet, die notwendige Dynamik zu erzeugen, damit andere Staaten sich nach und nach dem Club anschließen und den fossilen Wirtschaftspfad verlassen. Die Vision dieses Clubs wäre der Übergang zu einer CO<sub>2</sub>-freien Wirtschaftsweise, d.h. der Ersatz fossiler und nuklearer Energieträger durch direkte (Photovoltaik und Solarthermie) und indirekte Sonnenenergie (Wind, Wasser, Biomasse) in allen Sektoren (Elektrizität, Verkehr, Industrie, Landwirtschaft usw.). Zur konkreten Umsetzung eines „Clubs der Solaren Ökonomie“ schlägt die Studie einen dreistufigen Plan vor:

- **Phase 1:** Gründung des „Clubs der Solaren Ökonomie“, gemeinsame Studien zu den erforderlichen Schritten hin zu einer Solaren Weltwirtschaft, gemeinsame Kommunikation über diese Vision und ihre Vorteile, Forschungs- und Demonstrationsprojekte für Zukunftstechnologien (etwa Stromnetze, Speichertechnologien, Mobilität), Erfahrungs- und Meinungsaustausch zu erfolgreichen Politiken, Austauschprogramme zum Capacity Building und Training, Unterstützung von privaten Investitionen in „grünen“ Projekten in den

- Mitgliedsländern, Schaffung der notwendigen Institutionen für den Club und einen Peer Review-Mechanismus, der die Umsetzung der Ziele in den Mitgliedsländern überprüft.
- **Phase 2:** Verstärkte Zusammenarbeit in Forschung und Entwicklung, Technologietransfer und gemeinsame Nutzung von Patenten für gemeinsam entwickelte Technologien, Ausbildungsprogramme für Arbeitnehmer und vereinfachte Arbeitsaufnahme in den Mitgliedsländern in den „grünen“ Sektoren, Entwicklung gemeinsamer Standards, ein Finanzierungsmechanismus der in den Entwicklungsländern, die Club-Mitglieder sind, Einspeisevergütungen und andere Förderinstrumente mitfinanziert, Verpflichtung zu klimafreundlicher öffentlicher Beschaffung.
  - **Phase 3:** Einigung auf verbindliche Effizienzanforderungen, die regelmäßig angepasst werden, Handelserleichterungen für „grüne“ Technologien und benötigte Rohstoffe, Verknüpfung von Emissionshandelssystemen, Ausnahme von Clubmitgliedern aus ggf. eingeführten.

Ein solches solares Konjunktur- und Entwicklungsprogramm kann für eine Vielzahl von Ländern sehr attraktiv sein; durch die Entwicklung neuer Materialien, Werkstoffe und Technologien entstehen neue Märkte für heimische Industrien, vermiedene Rohstoff- und Energieimporte schaffen zunehmend neue Investitionsspielräume. Auch derzeit kriselnde Volkswirtschaften erhalten so die Möglichkeit, Marktführer bei Zukunftstechnologien zu werden und ihre wirtschaftliche Entwicklung langfristig zu entwickeln. Ein erfolgreicher Klima-Club erhöht zunehmend den wirtschaftlichen Druck auf andere Staaten sich anzuschließen. Es kann davon ausgegangen werden, dass ein Klima-Club eine internationale Dynamik auslöst, die die Chance erhöht, in den UN-Verhandlungen zum Erfolg zu kommen.

Die Studie benennt 10 Kriterien für die Mitgliedschaft im „Club der Solaren Ökonomie“. Interessierte Länder müssten davon zunächst drei erfüllen, drei Jahre später vier, fünf Jahre später fünf Kriterien usw. Diese sind z.B. quantifizierte Anforderungen für die Bereiche erneuerbare Energien im Stromsektor, Energieeffizienz, grüne Investitionen, Abbau klimaschädlicher Subventionen, Ausstieg aus fossilen und nuklearen Energieträgern und Emissionsreduzierungen.

Deutschland kommt bei der Schaffung eines „Clubs der Solaren Ökonomie“ eine Schlüsselrolle zu. Dafür muss Deutschland in seiner eigenen Energie- und Klimapolitik zunächst die notwendigen Bedingungen für eine Club-Mitgliedschaft erfüllen, eine Reihe weiterer Partnerländer gewinnen und gemeinsam mit diesen Ländern einen Club ins Leben rufen, der sich zunächst den in Phase 1 beschriebenen Aktivitäten zuwendet.

Der im Juni 2013 vom Bundesumweltminister neu gegründete „Club der Energiewendestaaten“ erfüllt die Kriterien für eine wirkungsvollen Club im Sinne der Studie derzeit noch nicht. Er kann aber zum Ausgangspunkt einer frischen Initiative werden, wenn verbindliche Club-Ziele formuliert werden und Aktivitäten vereinbart werden, die einen zusätzlichen Nutzen für die Mitglieder schaffen. Mittelfristig muss die EU Mitglied des Clubs der Solaren Wirtschaft werden, dafür müsste die Bundesregierung zügig eine Initiative in Richtung anderer EU-Mitgliedsstaaten und der EU- Kommission starten.

# 1. Transformational clubs in international climate policy

## a. Context and scope of the study

The world is currently not on track to avoid dangerous climate change. The emissions reductions countries are currently willing to commit to in the context of the negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) do not add up to the global reductions needed to limit warming to 2, let alone 1.5, degrees Celsius above pre-industrial temperatures.<sup>2</sup> “Increasing ambition”, that is increasing countries’ willingness to commit to higher targets and to reduce their emissions further and sooner, is therefore at the center of current international climate policy debates. It is clear that new approaches are needed to increase ambition enough to close the emissions gap. In this context, we are seeing a renewed interest in “clubs,” smaller groups of countries coming together to act on climate change, complementing the multilateral process under the UNFCCC.

Leadership clubs play an important role in the concept of climate policy of differing speeds (Klimapolitik der unterschiedlichen Geschwindigkeiten, KluG) that was developed by the Green party parliamentary group in the German Bundestag, following the UNFCCC’s 15<sup>th</sup> Conference of the Parties (COP 15) in Copenhagen in 2009. The concept, contained in a draft resolution submitted to the Bundestag in 2010, describes an approach where the UNFCCC remains the core of the global climate regime and calls for its strengthening. At the same time, it calls for the formation of smaller groups of leadership countries moving forward faster further, not allowing countries that are not willing or, for internal political reasons, not able to commit to ambitious emissions reductions, to hold up progress any more.<sup>3</sup> Hermann E. Ott, the group’s spokesman for climate policy summarizes the approach as follows:

“[... A] global climate agreement can only be reached if certain countries move forward and show those that are still hesitant that climate protection makes sense both ecologically and economically. Therefore we need a climate policy of different speeds in order to reach a new, legally binding treaty as soon as possible, without losing sight of the ultimate goal of a global agreement.”<sup>4</sup>

In a decision from February 2011, the Green group provides more details on the concept and formulates a number of demands on the federal government, including an explicit call for the formation of leadership clubs:

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<sup>2</sup> United Nations Environment Programme (UNEP), *Bridging the Emissions Gap. A UNEP Synthesis Report* (UNEP, 2011)

<sup>3</sup> Bundestagsfraktion Bündnis 90/Die Grünen, ‘Internationaler Klimaschutz vor Cancún – Mit unterschiedlichen Geschwindigkeiten zum Ziel’, Antrag, Bundestagsdrucksache 17/1406, 01 December 2010,

<sup>4</sup> H.E. Ott, ‘Changing course in international climate policy, reaching a global agreement with different speeds’, FACET Commentary No. 27, February 2011, at 2

“We call on the federal government [...] to forge additional alliances with committed industrialized, emerging and developing countries for an ecological modernization that can be the starting point for new global initiatives that can be joined by more and more countries”<sup>5</sup>

The Green group has since worked to define this approach further, commissioning a study on the legal options to implement a climate policy of differing speeds<sup>6</sup> and convening a workshop to discuss options in November 2012. The group has also commissioned this study. Its objective is to answer the question of how such clubs could be designed and implemented, placing a particular emphasis on the role a German federal government could play in driving forward such a club.

It should be noted that there are also a number of clubs that extend beyond national governments, bringing together sub-national entities at the regional or city level, civil society groups or businesses. Such multi-stakeholder groups, city alliances or business coalitions can all make valuable contributions. However, they are beyond the scope of this study, which only considers clubs in which national governments are the primary actors.

## **b. Clubs in the literature and in practice**

In the literature, several arguments are advanced in favor of a clubs approach.<sup>7</sup> Biermann and colleagues review the existing literature and outline four aspects – speed, ambition, participation, and equity – that are frequently mentioned as to why clubs may be effective mechanisms for change.<sup>8</sup> Regarding speed, a smaller set of countries may be faster negotiators and more able to advance contentious issues without backlogs of negotiations. With regard to ambition, cooperation theory posits that smaller groups can be ‘narrow-but-deep’, reaching substantial policy goals that would not have been reached in a ‘broad-but-shallow’ regime that has more participants but less ambition due to the compulsions of placating all signatories.<sup>9</sup> Clubs are also thought to be more easily able to experiment and demonstrate innovative approaches on subsets of climate issues such as measurement, reporting, and verification (MRV) and land-use and forestry, and thus serve to raise the overall level of capacity and ambition in the international arena.<sup>10</sup> Participation and equity are linked by the idea that a smaller club could have fewer barriers to entry for stakeholders and can thus allow for tailored solutions for less influential countries, which previously would have been subsumed in a larger process more dominated by bigger

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<sup>5</sup> Bundestagsfraktion Bündnis 90/Die Grünen, ‘Internationale Klimapolitik: Mit einer Politik der unterschiedlichen Geschwindigkeiten den Klimaschutz voranbringen’, Fraktionsbeschluss, 22 February 2011, at 1. Author’s translation

<sup>6</sup> N. Meyer-Ohlendorf, *Möglichkeiten der völkerrechtlichen Umsetzung einer Klimapolitik der unterschiedlichen Geschwindigkeiten (KluG)*, September 2012

<sup>7</sup> This section is based on L. Weischer, J. Morgan, and M. Patel, ‘Climate clubs: Can small groups of countries make a big difference in addressing climate change?’ 21:3 *Review of European Community and International Environmental Law* (2012), 177, at 178.

<sup>8</sup> F. Biermann, P. Pattberg, H. van Asselt and F. Zelli, ‘The Fragmentation of Global Governance Architectures: A Framework for Analysis’, 9:1 *Global Environmental Politics* (2009), 14, at 25

<sup>9</sup> J.E. Aldy, S. Barrett and R.N. Stavins, ‘Thirteen Plus One: A Comparison of Global Climate Policy Architectures’, 3:4 *Climate Policy* (2003), 373, at 378

<sup>10</sup> R.O. Keohane and D.G. Victor, ‘The Regime Complex for Climate Change’, 9:1 *Perspectives on Politics* (2011), 7, at 18

players.<sup>11</sup> In 2012, the World Resources Institute analyzed 17 existing clubs that deal with climate change – either exclusively or as one of several issues.<sup>12</sup> We found that all of them can be grouped into one of two categories: dialogue forums, where member countries exchange information and gain a better understanding of each other’s positions, and implementation groups, which collectively implement strategies, programs, or projects.

These dialogue forums and implementation groups make important contributions to addressing climate change, as they enable a better understanding of country positions and catalyze a number of activities in specific fields that help reduce emissions. However, these clubs have delivered incremental rather than transformational change. There are several reasons for this: The agreements concluded in clubs are often worded in a vague fashion without defining clear next steps that countries would take, going beyond business as usual. In many forums, the incentives are too weak to turn the more ambitious ideas contained in declarations and actions plans into real action. For many dialogue forums, such an emphasis on implementation would be considered beyond the club’s mandate. The implementation groups do catalyze a number of activities in specific fields that help reduce emissions, but their focus is often very narrow. They help solve pieces of the bigger puzzle, but those do not result in the broader, transformational changes necessary for emissions reductions at the necessary scale. An additional factor that limits the effectiveness of some implementation clubs is that often they provide a government to present what it is already doing, but provide little incentive to take additional steps. Lack of resources can also hinder a club’s effectiveness. Implementation clubs with a strong North-South funding component might lead to significant changes in the developing member countries that would otherwise not have been possible, yet they do not lead to transformational change in the developed member countries.

The crucial point is that none of the existing dialogue and implementation clubs has an explicitly stated goal of enabling and encouraging significantly increased ambition among its members, reducing emissions at the scale and speed required to keep global temperature rise below 2 degrees. Therefore, if the international community’s goal is to close the emissions gap, a new kind of club is needed, with a different mandate and a different setup. We refer to these new clubs as leadership clubs or transformational clubs.

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<sup>11</sup> See F. Biermann *et al.*, n. 10 above, at 29.

<sup>12</sup> See L. Weischer *et al.*, n. 9 above. The clubs analyzed included the IEA Multilateral Technology Initiatives (Implementing Agreements), the G8, the G20, the Renewable Energy & Energy Efficiency Partnership (REEEP), the Carbon Sequestration Leadership Forum (CSLF), REN 21, the Asia-Pacific Partnership on Clean Development and Climate (APP), the Global Bioenergy Partnership, the Major Economies Forum on Energy and Climate (MEF) and its predecessor the Major Economies Meeting on Energy Security and Climate Change (MEM), the Clean Energy Ministerial (CEM), the REDD + Partnership, the Global Methane Initiative (GMI), the Global Green Growth Institute (GGGI), the International Partnership on Mitigation and MRV, the Low Emissions Development Strategies (LEDS) Global Partnership, the International Energy and Climate Initiative – Energy+, and the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC).



### **c. Defining “transformational” clubs**

As discussed above, a new kind of club is needed in order to go beyond incremental improvements and achieve the transformational change needed in order to reach the two degree target.<sup>13</sup> But what exactly do we mean by “transformational clubs”?

In this paper, transformational change refers to fundamental changes in core sectors of the global economy that would lead to emissions reductions in line with limiting global warming to two degrees Celsius above pre-industrial levels. This includes both immediate emissions reductions in the short run and structural changes to set us on a long-term low-carbon path. Thus, we will consider as transformational those clubs that catalyze such change in participating countries.

Whether a club is “transformational” cannot be simply measured by the amount of gigatonnes of greenhouse gases (GHG) that are being reduced directly. Climate change is a global problem and therefore requires transformational change in most countries, including in all major emitting countries. A small group of countries united in a club will most likely not close the emissions gap on its own. But it can nonetheless be transformational, by setting a successful example of a low to zero-carbon development pathway, catalyzing an expansion of the club and replication in other countries that ultimately lead to the necessary global emissions reductions. Club expansion refers to other countries wanting to join the club, in order to enjoy the attractive benefits that come with club membership, and therefore doing what is needed to be allowed in, i.e. implementing the transformational changes that are required from club members. Replication happens when the successful approaches that have been tested in the club are taken up by other countries, individually or in their own club. This can occur when cooperation in the club has driven down the cost of certain technologies and has demonstrated the viability of certain approaches and development pathways.

In order for this theory of change to work in practice, transformational clubs working on climate need to bring together three elements:

#### **1) An ambitious vision**

Club members should come together around a vision that is commensurate with what climate science suggests is needed to avoid dangerous climate change. This vision could be framed around emissions reductions, targets for energy efficiency or renewable energy (RE) deployment, or other goals. It needs to be a goal that represents the ambition required to adequately address climate change, going significantly beyond business as usual and existing commitments.

#### **2) Clear conditions for membership**

Club membership should be exclusive and open only to those countries that meet clear criteria consistent with the vision. Criteria could include the track record of potential members, their targets for

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<sup>13</sup> The two degree target was formally adopted by the international community at the 16<sup>th</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change. See Decision 1/CP.16, The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (UN Doc. FCCC/CP/2010/7/Add.1, 15 March 2011), Section I, paragraph 4.

the future, and the existence of national strategies and policies. The criteria need to be specific and measurable.

### **3) Significant benefits provided to members**

The club needs to offer strong incentives for joining so that countries will accept the ambitious conditions for membership. This is important to both sustain and grow the level of ambition. Therefore, the club has to create real benefits that should be attractive for all members and should not be available to those outside the club. These benefits need to go beyond reduced emissions, as a stable climate is a global public good and therefore cannot be made exclusive to club members. Additional club benefits need to be tangible, including security and economic benefits. For example, economic benefits might be generated through cooperation in the following areas: Linking of emissions trading or other carbon pricing schemes, trade in low-carbon or climate-friendly goods, trade in services, access to resources, facilitated movement of persons, public procurement, harmonization and mutual recognition of labels, standards and certification, joint investment projects, joint research and development and sharing of intellectual property rights, facilitated access to public climate finance, exemption from border carbon adjustment, or agreement on the acceptable level and form of support for green industries.

These three elements are all equally important to ensure a club can have a transformational impact: Without a vision that guides the membership criteria and ensures that they are in line with ambitious actions needed to avoid the worst impacts of climate change, a club will likely miss the target. Without strong benefits, a club will not attract many members and therefore fail to catalyze the necessary global emissions reductions. Without clear membership criteria, a club might attract many members, but cannot ensure they actually act in line with the vision.

#### **d. Relationship to the multilateral UNFCCC process**

Some authors that argue in favor of a clubs approach suggest that many of the flaws in global bodies such as the UNFCCC can be addressed at smaller scales.<sup>14</sup> From this perspective, smaller groupings could become more relevant than the UNFCCC, potentially replacing it.<sup>15</sup> But while smaller groupings are important to make progress, they cannot replace agreement within the UNFCCC.<sup>16</sup>

As climate change is caused by the cumulative effects of all global emissions, all major emitters need to be brought into an agreement to avoid free rider problems that would undermine the effectiveness of any solution. Furthermore, the impacts of climate change are affecting all countries, especially the poorest and most vulnerable, so they need to have a voice in the decision-making process to ensure an

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<sup>14</sup> See R.O. Keohane and D.G. Victor, n. 12 above, at 9.

<sup>15</sup> S.O. Ladislav, *A Post-Copenhagen Pathway* (Center for Strategic & International Studies, January 2010), found at: <[http://csis.org/files/publication/100111\\_Ladislav\\_Post\\_copenhagen.pdf](http://csis.org/files/publication/100111_Ladislav_Post_copenhagen.pdf)>, at 5.

<sup>16</sup> J. Depledge and F. Yamin, 'The Global Climate-change Regime: A Defence', in: D. Helm and C. Hepburn (eds.), *The Economics and Politics of Climate Change* (Oxford University Press: 2009), 433; H. Winkler and J. Beaumont, 'Fair and Effective Multilateralism in the Post-Copenhagen Climate Negotiations', 10:6 *Climate Policy* (2010), 638, at 641.

ambitious outcome that will be accepted as legitimate.<sup>17</sup> The most vulnerable, as well as civil society, can also exert more pressure on the larger global stage. In addition, the politics that plague the UNFCCC can be mirrored in other smaller forums, such as the G20, and therefore simply moving from one large group to a smaller group with the same interests represented may not ensure progress.<sup>18</sup> The UNFCCC is the only platform where global ambition and equity can be discussed and potentially agreed upon. It is the only global institution on climate change that is widely accepted as legitimate. In addition, it has a complex set of institutions and rules that have been created over many years. It would be difficult and take time to create a parallel set of institutions and be rather short-sighted to discard institutions which have achieved results.

This study therefore does not consider clubs as a potential replacement of the UNFCCC, but asks how they could complement and strengthen the multilateral process.<sup>19</sup> Indeed, the international climate regime is becoming more complex, with the UNFCCC at its core, but other institutions playing a larger role as well. Other multi-lateral agreements such as the Montreal Protocol and the International Civil Aviation Organization are negotiating relevant climate provisions, countries include climate actions in bi-lateral relations and a number of new partnerships are underway. While we recommend that pioneers cooperate and go further faster within clubs, eventually all countries, including the high-emitting, non-acting countries, need to be brought together to agree on some steps all of them will take. Leadership countries can generate additional ambition through clubs and their successful example will help shift more and more countries onto a low-carbon pathway.

In this scenario – where climate action is increasingly debated in several fora and additional ambition driven by clubs – the multilateral UN climate regime will still be needed for four reasons. First, the UNFCCC needs to decide the appropriate level of global collective action, by defining goals such as limiting global warming to 2 or 1.5 degrees above pre-industrial levels. It remains the most legitimate forum to take this decision, as there is no other forum in the world which has global participation and includes the most vulnerable countries in the world. Second, the UNFCCC can provide transparency regarding the actions of all countries to reduce emissions, thereby creating confidence that competitors are acting as well. Through the reporting of emissions reductions the UNFCCC can compile the commitments that emerge from different fora and assess whether they all add up to reaching the global goal. Third, the UNFCCC can bring together all countries and capture their ambition in a legally binding, comparable form. Fourth, the UNFCCC can create formal mechanisms and timeframes to revisit and increase ambition regularly over time.

The dynamic of the multilateral negotiations might lead to countries ‘topping up’ their existing ambition and committing to more than they otherwise would have. However, the positions with which countries come to the negotiating table are the most important factor for determining the level of ambition of an eventual agreement. If all countries come with low or no ambition, an ambitious international

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<sup>17</sup> See H. Winkler and J. Beaumont, n. 23 above, at 649.

<sup>18</sup> See J. Depledge and F. Yamin, n. 23 above, at 451; and R. Eckersley, ‘Moving Forward in the Climate Negotiations: Multilateralism or Minilateralism?’, 12:2 *Global Environmental Politics* (2012), 24

<sup>19</sup> For a review of options to integrate leadership clubs into the UNFCCC, see also Meyer-Ohlendorf, n. 7 above

agreement becomes virtually impossible. The actions committed to in clubs could influence that dynamic, driving up ambition in some key countries, so they can also be more ambitious in the multilateral process. At first, some countries might be reluctant to put their most ambitious “stretch goals” into a binding international agreement as they have no full certainty of reaching that goal. Clubs can provide a less formal international forum to set those ambitious goals at first and help countries become more and more confident about their being reachable and therefore becoming willing to formalize them at the global level at a later point in time. This is crucial, as in the end, it will be necessary to have all actions reported upon formally so that the global community can have an understanding of how it is doing in meeting a global goal or whether much greater action is needed.

The UNFCCC actively encourages international complementary initiatives, such as clubs. The Convention’s preamble states that “the global nature of climate change calls for the widest possible cooperation by all countries”. Article 3.3 confirms: “Efforts to address climate change may be carried out cooperatively by interested Parties”. Article 7.2 states that “To this end, [the Conference of the Parties] shall: ... Seek and utilize, where appropriate, the services and cooperation of, and information provided by, competent international organizations and intergovernmental and non-governmental bodies ....” In the current negotiations in the Ad hoc working group on the Durban Platform (ADP) in fact, the role that “international cooperative initiatives” could play in raising ambition in the short-term has emerged as an important issue.<sup>20</sup>

Currently, there are neither formal nor practical informal links between the UNFCCC and any of these cooperative initiatives. Therefore, negotiators are considering the role of such initiatives, and whether the emissions reductions from such initiatives should be tracked or captured in the UNFCCC system. The efforts under formal treaties and organizations, such as the International Maritime Organization or the Montreal Protocol, can be more easily quantified and accounted for than those of more informal clubs, which do not have formal reporting structures. If another treaty agrees specific actions, it could report formally to the UNFCCC.

The ambition catalyzed through more informal clubs would predominantly be captured, however, within future national pledges or commitments. For these informal clubs, the UNFCCC might provide a general platform and recognition for efforts. Such initiatives would also catalyze emissions reductions which would then be reported through the national inventories and projections of countries. Therefore it would not require a specific new accounting methodology to assess actions within the clubs. Similarly, if clubs lead to additional flows of public climate finance, these could be included in the MRV of climate finance. For example, if a group of countries collectively agrees to reduce the carbon intensity of foreign direct investment and therefore shift funds to low carbon development, those institutions could report on those shifts utilizing a common format within the UNFCCC.

With a view to the longer term development of the climate regime, Parties would need to decide whether the types of commitments in some of the clubs are going to be “counted” in the UNFCCC. For

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<sup>20</sup> See, for instance, UNFCCC Secretariat, *Compilation of information on mitigation benefits of actions, initiatives and options to enhance mitigation ambition. Technical paper* (UN Doc. FCCC/TP/2013/4, 28 May 2013).

example, if the architecture evolves so that countries can “count” renewables targets as “commitments” and countries are part of a renewables club where they have pledged such targets, the UNFCCC could formalize those commitments. If this approach was to be pursued, new accounting methodologies would be needed to account for the emissions reductions from club commitments. The architecture of the agreement could also allow groupings of countries to move forward together. These are new ideas that could be brought into the ongoing UNFCCC negotiations.

### e. The role of Germany

Transformational clubs need to be started by national governments that are willing to take a leadership role. We assume that a club would likely be started by two or three governments at first. They would develop on a club concept and organize the first meeting of the club together, inviting other governments to join them.

Germany is in a good position to play such a role, together with one or two partner countries. Germany has played a leading role in the past on international climate policy and its domestic policies have placed it in a leadership role regarding renewable energies. Globally, Germany has a reputation for being a leader in renewable energy and other “green” technologies.<sup>21</sup>

It is clear that one needs to be a leader to be able to drive a leadership club forward. But currently Germany risks losing leadership, with a recent rise in GHG emissions of 1.6 percent in 2012,<sup>22</sup> including an 4.0 percent increase in emissions from coal fired power plants.<sup>23</sup> Germany therefore needs to take up a more driving role in order to both benefit from the policies it has already put in place and to catalyze greater action from other countries. The policy positions a German government takes domestically and within the European Union (EU) need to be consistent with this leadership role and reflect a clear commitment to ambitious emissions reductions. This remains an important task for any future German government.

Germany is already active in a number of clubs, including 14 of the 17 clubs analyzed in the WRI review of existing clubs.<sup>24</sup> In June 2013, environment minister Altmaier also launched a renewable energy club with ministers from 9 other countries. This club is currently designed to be a high-level political dialogue forum among countries that are particularly committed to increase the share of renewable energies in their energy mix, focused on communicating the benefits of renewable energy internationally and supporting the work in other fora, particularly the International Renewable Energy Agency (IRENA). While the club members share the overall vision of doubling the global share of renewable energies, no

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<sup>21</sup> Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ), *Germany in the Eyes of the World*

*Key findings of the GIZ survey ‘Germany viewed from abroad – the implications for international cooperation’* (GIZ:2013), at 22

<sup>22</sup> [http://www.umweltbundesamt.de/uba-info-presse-e/2013/pe13-009\\_greenhouse\\_gas\\_emissions\\_up\\_by\\_1\\_6\\_percent\\_in\\_year\\_2012.htm](http://www.umweltbundesamt.de/uba-info-presse-e/2013/pe13-009_greenhouse_gas_emissions_up_by_1_6_percent_in_year_2012.htm)

<sup>23</sup> [http://www.umweltbundesamt.de/uba-info-presse-e/2013/pe13-015\\_emissions\\_trading\\_co2\\_emissions\\_in\\_2012\\_slightly\\_higher\\_than\\_2011.htm](http://www.umweltbundesamt.de/uba-info-presse-e/2013/pe13-015_emissions_trading_co2_emissions_in_2012_slightly_higher_than_2011.htm)

<sup>24</sup> Weischer *et al.*, n. 9 above, at 184

clear criteria for membership have been set. It also remains to be seen which activities the club members will agree on and whether they can provide significant additional benefits. Applying the definition developed above, the club would therefore currently not be considered a transformational club.<sup>25</sup> The club can be a starting point to develop a transformational club, however. As the group has already been formed, with countries following Germany's lead, it will be vital that the next German federal government build off of this initiative and strengthen it, optimally along the lines suggested in this paper.

## **f. Challenges when operationalizing clubs**

There is a convincing case for transformational climate clubs. However, putting this idea into practice is not easy and poses a set of challenges that policymakers need to consider when designing and creating a new transformational club:

### **1) Agreeing on a vision and determining entry criteria**

A transformational club needs a clear vision that is shared by all members. An important consideration is whether to select an all-encompassing vision such as "low-carbon development" or a more discrete vision for a particular sector, such as "achieving an additional 1000 gigawatt (GW) of RE in the electricity sector by 2020". Such a sector-specific vision would be more concrete and easier to translate into targets and activities, but it might also be less transformational. Furthermore, it might make it harder to provide benefits for all participating members, while a club that reaches across several sectors could probably offer something for everyone.

Once the vision has been agreed on, relevant entry criteria for the club need to be defined. These criteria need to be clearly spelled out and measurable. They should be ambitious and could refer to current achievements or goals for the future. There is a pragmatic decision to be made to achieve the right balance between setting ambitious targets and allowing in a critical mass of members. This may influence the way criteria are formulated. For instance, if the entry criterion for a club would be a high percentage of renewable energy in the power mix, smaller countries with large existing hydro power capacity might be allowed in, while large emerging economies, even if they have very ambitious RE targets in absolute terms, might have to stay out. The latter group would be allowed in if the goal was formulated in term of gigawatt, while this would preclude the participation of many smaller countries. In such cases, it might be useful to consider alternative criteria, i.e. either a certain share *or* a certain absolute capacity needs to be reached. Likewise, a broad low-carbon economy club could work with a list of for instance five criteria, of which three need to be fulfilled.

### **2) Selecting members**

The simplest answer to the question of who should be a member is that any country fulfilling the membership criteria can become a member. But in reality, it will be more complicated than that. Certain

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<sup>25</sup> Deutscher Bundestag, Antwort der Bundesregierung auf die Kleine Anfrage ‚Club der Energiewendestaaten‘, Bundestagsdrucksache 17/4315, 03 July 2012.

countries' participation in the club might be crucial for a club's success. It will be necessary to proactively reach out to these countries and involve them in the club design. A club cannot be driven by one country alone, so it will be important to ensure there is a strong sense of ownership generated within a few countries' governments by involving them early on, before the club is publicly presented and launched. . Having several governments act as drivers will be crucial for the club's long-term success and will make it less dependent on one signal country that may change intentions due to elections or changing national circumstances.

A club needs to involve a critical mass of relevant countries, with two or three taking a leadership role. A club that includes a few of the world's largest economies will receive more attention and be more attractive to join, because the benefits it can promise will be larger. But trying to attract a set of 'relevant countries' does not imply an exclusive focus on large emitters, as there are other factors that could make a country 'relevant'. For example, countries can be relevant a) politically or strategically, because they are important allies or a leading voice within a given region or country group; b) economically, because of a large gross domestic product or because they are a major producer or consumer of certain goods; or c) symbolically, because they are for instance an island nation that is existentially threatened by climate change and can provide a strong signal for low-carbon development. Again, a pragmatic balance needs to be found between having heavy weights and true pioneers in the club.

### **3) Creating exclusive benefits for all members**

As discussed above, it will be important to provide benefits, whether security, economic, or social development, to club members. The club will be successful at raising global ambition if it demonstrates that a low carbon development pathway exists, and it is feasible and more attractive than other pathways. This needs to be the case for all club members, so a mutually beneficial mix of activities and commitments needs to be found. For example, a club that focuses on opening international markets for renewable energy technologies might be quite attractive for Germany and China, as two of the leading manufacturers of such technologies, but not necessarily for other countries in the club; therefore trade liberalization would need to be complemented by other benefits, for instance related to technology sharing, capacity building etc.

It is quite likely that some of the most promising benefits would need longer negotiations and more complicated policy processes to be implemented, for instance if they are related to trade or common standards. It would be ideal if a club could provide both significant "quick wins" and longer term larger benefits.

### **4) The right balance between informal approaches and necessary institutions**

In the fight against climate change, time is of the essence. It is therefore important to set up clubs in a way that enables them to start to act soon. Complex commitments in a club that would need to be negotiated over years are problematic. The same goes for commitments that first require agreement within the EU or World Trade Organization (WTO) or even changes to their rules. They should not be ruled out as a longer-term goal, but the club should be designed in a way that it can start sooner and

easier, because it is important to create a dynamic and begin to increase ambition now. Experience sharing, joint research or exchange programs can for instance be implemented quickly. Nonetheless, the club might need some institutions, such as a small secretariat, to ensure the joint activities of the members are carried out, meetings are prepared etc. The scope of commitments and activities under the club should determine which institutions are needed. One consideration here is whether existing institutions and clubs could be used, building on them to make them more transformational and use synergies. There would likely need to be significant changes made if existing institutions were to transition to more transformational initiatives.

**5) Building a club step by step, acknowledging political realities**

WRI research suggests that a club with a broad ambitious vision, criteria ranging across several sectors of the low-carbon economy and significant benefits in areas such as trade and investment would be most effective. However, the realities of policymaking in most countries make it hard to start such a club from scratch. This club would reach across the jurisdictions of several government agencies and levels of government, including in the case of Germany—the European Union. It would require political leadership and commitment at the highest level from all participating countries, while in reality there are always competing priorities or upcoming elections that impede the ability of some of the club members’ leaders to focus on the club. It is therefore important to not lose sight of the broad vision, but to develop a step by step approach, where the club can start with steps that are within the purview of a driving government agency and that can be implemented quickly. If the club has been set up with the clear understanding that those are first steps, but there is a larger vision, it can build on first successes and expand its scope and ambition over time.

**g. Potential starting points for a transformational club**

Several focus areas are possible for launching a transformational club. In the Annex, we provide an overview of six of them, which are not necessarily mutually exclusive. Using the elements of transformational clubs outlined above (vision, criteria, benefits) and the practical questions of how much interest there might be among potential members, we try to identify the likely impact and pros and cons to consider when trying to choose ideas to pursue first. The pros and cons are summarized in the table below.

**Table: Potential starting points and their advantages and disadvantages (see Annex for more details)**

<i>Club</i>	<i>Pros</i>	<i>Cons</i>	<i>Questions</i>
<b>Renewable Energy Club</b>	Economically interesting, clear club benefits, clear emissions reductions	Many existing clubs	How to generate <i>exclusive</i> benefits?
<b>Energy Efficiency Club</b>	Economically interesting, clear club benefits	Emissions reductions less clear	Are large consumer/producer countries interested?



<b>Phasing Out Fossil Fuel Subsidies Club</b>	Economically interesting	Limited interest among potential members	What is the club benefit (beyond communications)?
<b>Phasing Out Fossil Fuels Club</b>	Emissions reductions	Unclear club benefits, small number of potential members	Who could become interested in membership?
<b>Carbon Pricing Club</b>	Clear club benefits	Less interesting for developing countries	Current efforts for ETS linking as an opportunity?
<b>Emissions Reduction Frontrunner Club</b>	Clear emissions reductions	Appropriate level of commitment contentious, club benefits less clear	How to generate more club benefits?

For some of these options, it is difficult to imagine a mix of benefits that would be interesting to a large number of potential members. We therefore recommend consideration of a club that combines several of these options and reaches across several sectors, including energy, industry, transport, etc. in a way that would enable the club to bring together a broader membership. Such a “Solar Economy Club” would be a promising approach to provide an attractive mix of significant benefits and attract sufficient participation. It is explored in further detail below.

## 2. Exploring a Solar Economy Club

This chapter explores one concrete model for a club that could be pursued by a German government, in partnership with others. We suggest that such a club would be structured around a positive vision for an economic development pathway that is consistent with the two degree target, combining several of the “starting points” discussed above. While the ultimate outcome of this club would be significant emissions reductions, it should not be framed around reductions, but around the economic, development and security benefits that come with choosing this pathway. Several names for this club would be possible, including low- carbon or zero-carbon economy club, energy autonomy club, clean energy economy club, renewable energy economy club, new energy economy club or solar economy club. The latter would apply the term “solar economy” in the sense popularized by Hermann Scheer in 2004 who uses it to refer to an economy powered exclusively by the sun, directly through photovoltaic, concentrated solar power, and solar heat, or indirectly, through hydro power, wind power or bioenergy.<sup>26</sup>

Each of these possible names would come with certain connotations and a slightly different focus. For the remainder of this study, this club is going to be referred to the “Solar Economy Club”. The advantage of this club name would be that it communicates a bold, positive vision. Unlike “low-carbon economy” or “green growth” the name is not already “taken” by other clubs promoting more incremental changes. Instead “solar economy” could be associated exclusively with a new ambitious and transformational club. In addition, it focuses on the central importance of renewable energies, but goes beyond just deploying renewable energy in the electricity sector, by considering the entire economy. Energy efficiency, phasing out fossil and nuclear fuels and new models for the transportation, building, industrial and agricultural sectors are thus all part of this concept. Germany is seen as a world leader in renewable energy and this framing focused on energy will likely lead to much interest from potential partner countries.<sup>27</sup>

This club is very different from existing clubs and has much broader reach. This carries certain risks, such as making it more difficult to focus and to agree on activities among club members. However, the main advantages are that this broad and ambitious club has the potential to create a sufficiently attractive package of benefits to attract participation from a larger number of countries and to lead to change at a scale that actually transforms the economy and leads onto a development pathway consistent with reaching the two degrees target.

### a. Vision

The vision is an economy where fossil fuels and nuclear energy are entirely replaced by renewable energy in all sectors, including electricity, transport, building, industry and agriculture. This transition would happen in a way that is beneficial for the economy, by reducing dependence on expensive

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<sup>26</sup> H. Scheer, *The Solar Economy: Renewable Energy for a Sustainable Global Future* (Earthscan: 2004)

<sup>27</sup> GIZ, n. 28 above, at 22

imports and by providing reliable and affordable solutions for all consumers that currently use fossil-fuel based energy or lack access to modern energy services.

Club members would aim to realize the potential presented by emerging cost parity for renewable energy technologies. Their goal could be formulated as follows: “We aim to develop an energy system based fully on renewable energies that provides affordable, stable, predictable energy prices and reduces risks due to rising and volatile fossil fuel prices and potential fuel supply disruptions.”

This vision entails a transition onto a development pathway that reduces emissions to levels commensurate with the science of staying below two degrees and that provides economic development opportunities and good living conditions for all. While the vision is not formulated principally in carbon emission reduction terms, it would imply an eventual full decarbonization of the participating economies, proving that this is feasible and economically beneficial.

In order to make this vision concrete, it would need to be supplemented with specific goals, for instance on renewable energy deployment and energy efficiency, transforming the transportation sector, emissions intensity and absolute emissions.

### **b. Membership criteria**

The Solar Economy Club would be one that spans several of the areas explored in the final section of chapter 1. Club membership could be contingent on meeting at least three out of a list of criteria like the one suggested below. The club could then become more and more ambitious over time, by increasing this number of criteria club members would need to meet. For instance, three years from now, it might be required to reach four criteria, five years from now, five criteria and so on.

Each of the criteria would need to be defined further. For instance, it needs to be clarified that if criteria describe targets, meeting those criteria implies not just having target, but the necessary strategies, policies and mechanisms in place that make it credible that the target will be achieved. In addition, safeguards should be formulated to ensure that criteria are not being met in ways that lead to unintended negative social or environmental consequences. Suggested preliminary criteria include those noted below, but the national circumstances, particularly of developing countries need to be taken into account:

- Target of reaching a renewable energy share in the electricity sector of at least 40% by 2030 and 100% by 2050
- Installed renewable energy capacity of at least 10 GW, with targets that imply at least 3 GW of annual capacity additions
- Target of reducing the energy intensity of their economies (energy use per dollar GDP) by 80 percent or more by 2050 or target to reduce the (absolute) energy use of the economy
- Specific targets for energy efficiency in industrial applications, automobiles or appliances that go significantly beyond business as usual or apply a top-runner approach.

- Binding plans to spend at least \$ x bn/year or x% of GDP on investments in green infrastructure, including sustainable urbanization, rail transport, electricity grids etc.
- Binding plan to phase out all consumption and production subsidies for fossil fuels and nuclear energy by 2017
- Strategy to phase out fossil fuel extraction by 2025
- Strategy to phase out coal use and nuclear power by 2035
- Binding GHG emissions reduction targets in line with what the science suggest is necessary to avoid dangerous global warming, for example for developed country club members to reduce emissions by at least 40 percent by 2020 and 95 percent by 2050 and for developing country members to deviate substantially from their baseline emissions.
- A carbon pricing mechanism in place – whether it is an ETS, carbon tax or hybrid model – that meets certain safeguard to ensure environmental integrity and a minimum price level.

At least 118 countries now have official renewable energy targets and many have emission reduction targets and efficiency targets as well. Not all of them are potential members of this club which would bring together only those leadership countries that aim to make renewable energy the dominant source of energy and rapidly decarbonize their economies within a relatively short timeframe. These might include: Germany, Denmark, the UK, France, Sweden, Switzerland, Spain, Italy, Japan, India, China, South Korea, South Africa, Thailand, Philippines, Sri Lanka, Vietnam, Costa Rica, Chile, Kenya, Ghana, Uganda, Mongolia, many small island states and some individual U.S. States or German states. It can be demonstrated that one of the main goals is making renewable energy affordable and that cooperation within the club will make that goal significantly easier to reach, it could become interesting for additional countries, particularly in the developing world.

### **c. Club activities**

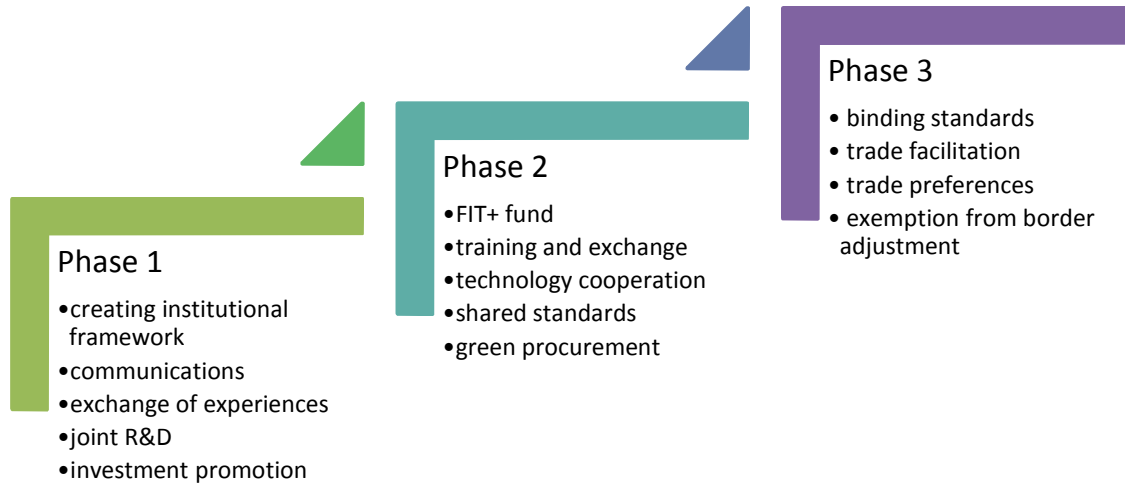
Some suggested commitments and activities that could be required from club members are explored in this section. As discussed in the previous chapter, a staged approach can help achieve quick wins soon and allow the club to expand in scope over time. The three suggested phases are summarized in the figure below.

The club will need to be designed in a way that reduces duplication and enhances synergies with the many existing clubs working on renewable energy: IRENA, the Renewable Energy Policy Network for the 21<sup>st</sup> century (REN21), the Renewable Energy and Energy Efficiency Partnership (REEEP), the Clean Energy Ministerial (CEM) etc. If some of the benefits are to be made exclusive, cooperation with club members in some areas might have to be prioritized over cooperation in these existing groups. Once the club begins to address issues related to standards or trade it will need to clarify the relationship with the WTO, the International Organization for Standardization (ISO) etc.

Members will also need to develop an institutional structure for the club that supports negotiations and continuous work on these issues. The club needs engagement both at the highest levels of government and on a working level. Dedicated resources and staff will be needed in all participating countries in

order to ensure meaningful participation. Developed country club members have to be prepared to provide funding to developing country club members to support their participation.

**Figure: Three Phases of the Solar Economy Club**



### **First phase: Communications, learning, joint projects and investment promotion**

One of the first steps after the establishment of the club and laying out the vision should be a study that is conducted jointly by researchers and institutions from the member countries to explore pathways towards the solar economy, achieving cost parity for renewable energy-based systems and making sure the related benefits are actually captured and markets transformed. The study should identify the contributions individual club members can make and the joint activities that will allow them to reach their objectives faster. Based on this, an action program needs to be developed. This exercise should be repeated regularly, with a focus on a different sector or technology each time.

The action program for the first phase of the club will focus on the members' sharing of experiences and best practices for energy policy, infrastructure planning, fossil fuel subsidy reform and other areas that are of importance to the club.

An important area for dialogue will be support policies for renewable energy. Currently, there are significant trade tensions around some policies, such as domestic content requirements designed to favour domestic renewable energy industries. On the one hand, countries have made a commitment to open trade and a global market for clean energy technologies is likely to lead to lower prices. On the other hand, all governments would like to ensure that their commitment to clean energy also results in domestic industry and job creation. The club could provide members with a forum to agree on what forms and amounts of support to domestic industries are acceptable. They could furthermore agree not to launch trade complaints against each other over support to green industries, as long as the support follows the principles agreed in that dialogue, which would create a clear benefit of club membership.

Beyond dialogue and exchange of experiences, club members should also agree on joint research and development on key areas, such as grid, storage and market design, in this first phase. Additional areas for common activities are joint demonstration, capacity building and training projects.

Companies from the member countries should be encouraged to cooperate and seize the benefits of an accelerated transition to the solar economy. In the context of the club, initiatives by the private sector can be encouraged and publicly announced. Trade fairs, exchange programs and similar activities can promote investment in the key areas of the solar economy between member countries. Support that is available to domestic investors, including grants, access to financing, cooperation with research institutes, etc. should also be available to those from other member countries. Lack of information on this support available is often the first barrier to foreign investment and through databases and investment promotion agencies, this information should be made more transparent. Investment promotion measures would most likely benefit any investor and it would be difficult to make this benefit exclusive to investors from member countries of the club. Granting companies from member states exclusive access to dedicated information portals or special investment promotion services could, however, be considered.

Countries could also explore agreements around important natural resources as part of this club. Resource scarcity is currently a major driver for many countries policies domestically and internationally. Finding ways to collaborate in this field could provide another key benefit for membership.

An international communications effort will also be part of the first phase. Joint international communication is not enough to make a club transformational, but it will be an important part of the puzzle. To encourage club expansion and replication, it is important that the club members jointly communicate their ambitious targets and the tangible benefits they are already seeing.

Finally, members need to create the legal and institutional framework for the club. From a legal point of view, Meyer-Ohlendorf recommends a separate treaty among nations to formalize this alliance<sup>28</sup>. In order to get the club started without long negotiations and ratification procedures, the first phase could however begin with less formal instruments that still provide some form of written agreement between the club members about their vision, commitments and common activities, for instance in a declaration or memorandum of understanding. This agreement could then be formalized further while first-phase club activities are already ongoing. Members need to agree on how they will organize their work together and what the procedures will be to accept new members into the club. In order to coordinate the activities in this first phase, the club would need a small secretariat and the resources and commitment from all members to hold regular working group meetings at an expert level as well as high-level political meetings.

The working arrangements should also include mechanisms that create accountability, to ensure members actually meet the criteria for membership and work towards achieving their targets. Members should regularly report on their progress and a peer review process should be created. The club should

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<sup>28</sup> Meyer-Ohlendorf, n. 7 above.

also find ways of engaging civil society representatives from member countries in order to increase transparency and hold member governments accountable.

### **Second phase: Support for market creation in developing countries, training and exchange, technology cooperation, shared standards and green procurement**

The second phase will require more coordination among different domestic agencies within the member countries, for instance ministries of the environment, energy, economics, and research, as well as a larger commitment of resources. This phase will need a few years to prepare, but it should be made clear from the beginning of the first phase that the club aspires to move in this direction. Activities in the second and third phase are important for achieving the vision and making the club transformational; they should be included in the action plans developed in the first phase.

The joint research and development activities will be expanded in this phase. Club members should agree to share the intellectual property that is a result of those activities and develop new models to do so effectively, particularly when IPR is a major barrier to deployment. Member governments could also agree to pool intellectual property rights they already own as a result of earlier public research and support other forms of technology transfer to some of the developing country member countries.

In addition, members should set up training and exchange programs to develop the workforce skills necessary for the solar economy. They could also explore opening up their respective labor markets for experts in related fields, by making it easier to get work permits for renewable energy engineers, low-carbon city planners etc.

The club should also create a financing mechanism for the transition to the solar economy in the poorer developing countries among its members. This could include organizing pooled finance for large projects, providing risk guarantees and financial support for support schemes for renewable energy. Feed-in-tariffs (FITs) have been shown to be a very effective policy to develop a market for renewable energy technologies. Even though with declining technology costs, FITs are becoming less expensive, they are difficult for developing countries to finance on their own. Sharing the cost of FITs and similar policies through a fund replenished by some of the better-off club members could allow for more ambitious and just FITs.<sup>29</sup> Furthermore, the involvement of international partners in the scheme will likely increase investors' confidence. Growing the markets for low-carbon technologies in developing countries is also in the interest of the developed country and emerging economy club members and can be an important contribution to addressing some of the existing trade tensions. For example, the solar industry both in Germany and China is suffering from a global oversupply situation. In addition to the

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<sup>29</sup> Such a fund has been suggested by several organizations; see for instance World Future Council, *Unleashing renewable energy power in developing countries. Proposal for a global Renewable Energy Policy Fund*, November 2009; Deutsche Bank Climate Change Advisors, *GET FiT Program. Global Energy Transfer Feed-in Tariffs for Developing Countries*, April 2010; Germany Advisory Council on Global Change (WBGU), *World in Transition: A Social Contract for Sustainability* (WBGU, 2011), at 290; and presentations from the WRI-ADB Fair FIT workshop held 21-23 February 2012, available at <http://www.wri.org/event/2012/02/wri-adb-fair-fit-workshop>



dialogue on appropriate support policies begun in phase one, supporting additional demand in third countries could help mitigate this crisis.

A financing mechanism could also be used to fund other measures, including support for energy efficiency or transition assistance for those impacted by the decommissioning of old fossil-fuel based generation facilities or industries.

Developed countries have made a commitment to provide finance to developing countries to assist them in the transition to low-emissions development. In order to meet that commitment, the amounts dedicated to climate mitigation will have to be increased significantly over the next few years and developed country club members could use some of that additional funding to support such a fund or other activities in developing country club members.

Labels, standards and certification are often an important condition for market access. They are also an important policy tool, particularly for energy efficiency. Members of the club could work to harmonize and mutually recognize their standards and certification procedures. Furthermore, they can cooperate in drafting new standards. Assuming that all or most club members will be WTO members, they would need to respect the principles set out in the Agreement on Technical Barriers to Trade.<sup>30</sup>

Governments are important buyers of a range of goods and services. The Solar Economy Club members could agree to use environmental criteria in their procurement, including low lifecycle emissions. Government procurement is exempt from the principal WTO rules regarding goods and services, with the exception of those WTO members who have signed the Agreement on Government Procurement (GPA), a plurilateral agreement to which 14 countries plus the European Union with its 27 Member States are a party. Provided that certain standards regarding transparency and non-discrimination are respected, preferences for the procurement of climate-friendly goods and services would likely be possible, also for GPA members. On the other hand, according explicit procurement preferences to companies located in solar economy club member countries would likely be found a violation of GPA rules. A potential indirect connection to club membership would be to focus procurement on products meeting certain standards or labelling requirements and to develop those standards and requirements jointly by the club members. The participation of their respective governments in the standard setting process and harmonization and mutual recognition agreements, might make it relatively easy for companies from club member countries to meet the requirements without excluding competitors from third countries.

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<sup>30</sup> The agreement explicitly recognizes countries' right to use regulations and standards to achieve legitimate policy objectives, including the protection of the environment, but calls for transparency, non-discrimination and a preference for international standards. It also provides a code of best practice for standard-setting.

### **Third phase: trade facilitation, trade preferences, exception from border measures, binding standards**

The activities in the third phase will need more complex preparation before they can be implemented. First, they will likely require more detailed negotiations between the club members, which also implies that the institutional structure of the club will have to be strengthened to support these talks. Second, in the case where this club is catalyzed by the German government, it will not be able to implement them alone as they touch areas that are under the jurisdiction of the EU. From this phase on at the latest, the EU as a whole will therefore need to be a member of the club. In many cases, WTO rules are also concerned, which means that coordination and convincing is necessary first among the EU members, because the EU represents its member states at the WTO, and then among WTO members.

The members should strive to coordinate their standards more closely in this phase. This would include agreeing on binding efficiency standards that will be similar or identical in the participating countries and that will be tightened regularly, in a coordinated fashion. This does imply restricting market access for those products that do not meet the agreed standards because they are not energy efficient enough or because too many GHGs were emitted during their production.

Another issue to be addressed in this phase are trade barriers. Reducing or eliminating tariffs on sustainable energy products could make them more competitive with high-carbon alternatives. From the perspective of equipment producers, this could create new export markets. The issue of reducing barriers to trade in environmental goods and services, including climate-friendly goods, has been under negotiation in the Doha Round since 2001, although countries have not been able to reach agreement on the multilateral level. The main areas of disagreement include defining the goods that should qualify and the fact that not all countries are convinced that a reduction of tariffs would be beneficial for them. The estimates as to the potential of emission reductions from trade liberalization in this area vary, and some analysts have pointed out that trade tariffs are a very small share of the costs in solar or wind power projects, if they are not already at zero. However, this issue remains a priority for many governments and industries, and could be included in the larger, carefully balanced package of measures a club agrees on. Likewise, trade preferences could be negotiated for the resources necessary for the solar economy and for products produced with low-carbon inputs or with low emissions over their entire lifecycle. Beyond tariffs, other measures can create barriers to the trade in goods. Analysis by the World Resources Institute and the Peterson Institute for International Economics suggests that those barriers – including difficult customs procedures, divergent standards and certification rules, peculiar technical requirements, among others – are more significant than tariffs.<sup>31</sup> While these ‘non-tariff barriers’ have proven to be difficult to address in multilateral negotiations, as they are harder to define and quantify, a smaller group of like-minded countries could agree to address them.

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<sup>31</sup> J. Funk Kirkegaard, T. Hanemann and L. Weischer, *It Should Be a Breeze: Harnessing the Potential of Open Trade and Investment Flows in the Wind Energy Industry* (Peterson Institute for International Economics and WRI, December 2009); and J. Funk Kirkegaard, T. Hanemann, L. Weischer and M. Miller, *Toward a Sunny Future? Global Integration in the Solar PV Industry* (Peterson Institute for International Economics and WRI, May 2010)

Careful design of the measures is necessary to be able to accord preferential access to other solar economy club members without extending it to all WTO members, as there is an inherent tension with the most-favoured nation treatment required in world trade law.

If the club members use emissions trading systems, these could be linked so that certificates from one system are recognized in another. This would increase the size of the market, making it more efficient. From the perspective of those who are able to reduce emissions and generate certificates, this would increase the number of potential buyers, while from the point of view of emitters needing certificates, this would increase their options to buy (in many cases, cheaper) certificates. It would also lead to harmonized carbon prices, reducing competitiveness concerns between participating countries. The lower price could also assist in driving up the level of ambition.

In a world of diverging levels of ambitions and diverging carbon prices, it is possible that countries might resort to a border carbon adjustment: imposing a carbon tax or requiring the purchase of emissions certificates at the border for certain imports from countries that do not have comparable pricing in place. If Solar Economy Club members apply comparable policies to limit GHG emissions, it would be possible that they agree to exempt each other from any border measures they might impose against third countries.<sup>32</sup>

#### **d. Benefits**

The benefits from the club would be manifold. First, there is an important symbolic benefit that comes from acting together. It can help to counteract domestic opposition to transformational change by being able to show that others, including competitors, are acting as well and are moving in the same direction. For example, the economic benefits of fossil fuel subsidy reform are clear, yet it is politically difficult to implement. The club would help build political support as subsidy removal could be communicated as a common, coordinated undertaking – in particular if major economies participate.

But beyond the symbolic dimension, acting together does make it easier to achieve ambitious goals, while creating larger economic benefits. The benefits would include exclusive access to better performing and more affordable technologies that can be the result of cooperation among the club members and more access to affordable and reliable clean energy. Research cooperation on major scientific undertakings, be it the particle accelerators or space exploration has been a practice for many decades, because pooled resources and expertise are more likely to lead to results. The same is true for developing the solutions that will allow the economy to be fully decarbonized. Within the club, member countries can agree to create favorable conditions for innovation for some of the technologies of the future, including storage and grid technologies, next generation photovoltaic technologies, new biomass-based materials and so on. Joint ventures will help reduce the investment needs and countries

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<sup>32</sup>For a discussion of the numerous practical and legal challenges to be considered when introducing border carbon adjustment, see T. Houser *et al.*, *Leveling the Carbon Playing Field: International Competition and U.S. Climate Policy Design* (WRI, 2008) and A. Cosbey *et al.*, *A Guide for the Concerned: Guidance on the elaboration and implementation of border carbon adjustment* (ENTWINED, 2012)

could agree on how to distribute innovation clusters for different technologies across the participating countries. Within the clusters, the resources, talents and knowledge that exist in the different club member countries would be pooled. The result would allow participating countries to claim a leading space in some of the technology markets of the future. As other countries eventually follow onto a low-carbon pathway, this brings significant export opportunities.

Through the club, member countries' economies would also benefit from access to larger markets for domestic industries, due to preferential trade agreements and harmonized standards. Access to resources, technology transfer, exchange of experts and workers, mutual recognition or joint development of standards relevant to the low carbon economy and investment facilitation would provide additional tangible economic benefits. Particularly in those club member states that are impacted by economic crises – in Southern Europe or in some developing countries – an internationally supported shift to a solar pathway would be equivalent to a significant economic stimulus and create much needed jobs. It would also be a promising strategy to reduce energy poverty and provide access to modern energy services for all.

A joint fund would mobilize additional resources, particularly for the developing country members. But because it creates markets and supports innovation, this would not just be assistance the developed country members provide, but a worthwhile investment for them as well.

An additional benefit for those members with an ETS would be the linking of the different markets. Membership in the club would mean access to other members' carbon markets. In the longer term, club members might use border carbon adjustment in order to put a price on the carbon embedded in imports, but would exempt imports from other club members. These would be significant and exclusive benefits that make membership in the club an attractive proposition.

Beyond benefits for its members, the club would also produce global benefits, namely by promoting innovation and price reductions and proving that predominantly renewables-based energy systems are feasible.

### 3. Conclusions

#### a. Additional research needs

This study has explored the idea of a transformational climate club, made up of leadership countries. It has shown that such a club would need to be based on a vision, apply clear conditions for membership and provide significant exclusive benefits to its members. It provided a first assessment of the practical questions that need to be answered when creating a transformational climate club and considered several options to launch such a club. The study provided a more detailed exploration of one of them – the Solar Economy Club. Further research is needed in four areas:

- 1) **Integrating societal and cultural aspects.** This study has focused on the economic benefits a club would bring and the changes it would entail for all sectors of the economy. A shift to a climate-friendly world does entail further societal and cultural changes however. It needs to be studied if and how a transformational club could also contribute to these transformations.
- 2) **Defining the relationship between transformational clubs and the climate regime.** Legal analysis of the different options of integration a clubs approach with the UNFCCC exists and shows that a separate structure outside of the UNFCCC would be easiest to implement. As this study has shown the UNFCCC and one or several transformational clubs would complement each other. Therefore, some linkages are necessary, for example through regular formal or informal reporting. This study has provided some questions and options that negotiators in the UNFCCC might consider when defining the relationship between outside initiatives, including new transformational clubs, and the UNFCCC. Further research, including by legal scholars and international relations experts, is necessary to define these options further and identify their advantages and disadvantages.
- 3) **Exploring the role of sub-national entities.** Climate leadership often takes place at a sub-national level, particularly in federal systems, including Germany, the United States or India. In the case of the latter two, for instance, renewable energy policy is predominantly driven at the state level. While it was beyond the scope of this study, it would therefore be beneficial to explore how such entities could participate in transformational clubs.
- 4) **Assessing the benefits of club activities for individual member countries.** In order to be able to design an attractive club and to convince countries to join a club, a very good understanding of the benefits the club would provide to individual member countries will be necessary. This will require defining a set of club activities, such as the ones suggested in the three phases in chapter two of this study, and then producing country-specific qualitative and quantitative assessments on the benefits.

#### b. Next steps for parliamentarians and civil society

In order to support a transformational club approach, parliamentarians – whether in government or in the opposition – as well as civil society groups in Germany should:

- Critically examine existing and new club proposals and call for them to be truly transformative, by building on a clear vision, setting clear criteria and providing clear benefits;
- Build a coalition of those interested in a truly transformational solar economy club, including the industries and trade unions that are likely to benefit;
- Engage with their counterparts in other countries that are potential club members so they can develop influence strategies for their national contexts. The club cannot be driven by one country alone – it needs to be owned and driven by the governments of several countries.

### **c. Recommendations for a German government**

Any future German government should pursue a transformational climate club approach, complementing and strengthening the other aspects of its international climate policy. In order to launch a Solar Economy Club, a German government should:

- Through its domestic, European and international policy choices, ensure that Germany is a climate leader, so it can credibly call for an ambitious club. This includes creating a national climate law which makes national targets legally binding, further emissions reductions, a renewed commitment to renewable energy and stronger efforts on energy efficiency.
- Reach out to two or three countries that might be interested in driving a club and design a club with them. This should be supported by an analysis of those countries' interest and a targeted proposal that outlines why a club would be beneficial for them. The members of the renewable energy club launched in June 2013 could be amongst those contacted first.
- Convene another meeting of the newly launched renewable energy club to test ideas for more far-reaching common activities and the willingness to expand the club towards a Solar Economy Club.
- Convene a first meeting of the Solar Economy Club, with a concrete action plan, beginning with those that activities are easy to implement and moving towards those that will need more time, as outlined in chapter two.
- Ensure that club membership is criteria-based and communicate the club approach proactively. There will be skepticism and concerns that the club is meant to circumvent the multilateral regime or to benefit some favorite countries. Proactive communication can make it clear that the club is complementary to the UNFCCC and open to all countries wishing to be a pioneer on moving towards a climate-friendly development pathway in an ambitious and rapid way.
- Engage with other EU members to build the case for the club approach and for eventual membership of the EU, allowing the club to act on trade, investment and standardization issues

## Annex: Potential starting points for a transformational club

### Renewable energy deployment

**Vision:** The vision could be framed in different ways, as a percentage share of renewable energy, as an amount of gigawatt to be deployed or a goal to reach certain technological breakthroughs or cost points.

**Criteria:** Members would need to declare that they support the vision and define credible steps they will take to contribute to achieving the vision in a renewable energy strategy. They will need to have an ambitious official target and support policies in place. Steps they have already taken (in other words, their track record and current deployment levels) should also be considered.

**Activities/Benefits:** The clubs would cooperate on promoting innovation and deployment of renewable energy. This could include joint research, development and knowledge sharing on key areas, such as grid, storage and market design, demonstration projects for new technologies, common standards and certification requirements, commitment to certain support policies such as feed-in tariffs (FITs), training and exchange programs, promotion of business and investment partnerships among companies from the member countries and/or reduction of barriers to trade and investment among the club members. The club could develop innovative financing models, including pooled finance for large joint projects and co-financed support schemes (FIT or other) for developing countries. The benefits of this club would include new markets for RE industries and preferential access to those markets as well as the opportunity to develop technology leadership in some of the technologies of the future.

**Potential Members and their Level of Interest:** If the focus of the club is on delivering renewable energy affordably it could become interesting for additional countries, particularly in the developing world. There is large interest in many countries in enhanced cooperation on renewable energy internationally and with Germany in particular. The renewable energy club that was recently launched by the German government could be a starting point, but would need to be reformed in order to become transformational, by setting clear membership criteria, agreeing on activities that provide significant benefits etc.

**Summary:** With renewable energy as a starting point, the club would benefit from the high level of interest many countries are showing in renewable energies and their broader economic benefits. If designed well, the transformational impact would be large. The main risk is that of duplication with the many existing international initiatives on renewable energy. Down the road, there will also be institutional issues with other bodies, such as the WTO, to be solved if the club begins to work on international trade and standards.

### Energy efficiency

**Vision:** The club members would aim to drastically improve their energy efficiency. The vision could also include energy efficiency improvements for specific sectors, such as transportation or industry.

**Criteria:** Club members would need to have official ambitious targets in place. They would also need to have high standards for certain products or sectors – e.g. household appliances, autos, or the building sector – in place and be willing to continuously tighten them, in a harmonized schedule with the other club members, taking into account countries’ varying baselines.

**Activities/Benefits:** The activities of the club would be focused on setting more stringent standards for an agreed set of products. The club members would not only set standards once, but agree to tighten them over time, through agreed schedules or a top-runner approach. Only those products meeting the common standards would be allowed in members’ markets, giving members the benefit that their companies are ready, because they were involved in the development of the standards and the standards that apply on their home market are the same as in many other important markets. It could also include a commitment to switch all public procurement to very energy-efficient goods by a given year.

**Potential Members and their Level of Interest:** If the club is focused on a certain type of product, it should aim to include the main producers and/or the main markets for that product. Some additional countries with a strong interest in energy efficiency might join as well. It is likely that the interest in some other countries would also be high, as policymakers recognize the many positive economic benefits that can come from increased energy efficiency, but are often worried about the competitiveness impacts if they increase their standard while other competitors do not. A club that regroups the main producers would address this concern.

**Potential Impact:** The club could transform global markets and lead to important innovation. Energy efficiency is generally an area of climate policy that lags behind others, so this additional dynamic would be a positive development. It needs to be noted that if the club only has targets to increase energy efficiency, but no absolute emissions or energy use reduction targets, there is no guarantee that it would have lasting impacts of global emissions as there might be rebound effects.

**Summary:** The economic benefits of more energy efficiency are very clear, which should make this an attractive club for many countries. The participation of a critical mass of producer and/or consumer countries will be crucial for success. The club would have a large impact on promoting more energy efficient products and practices, but potential rebound effects make the emissions impacts less certain.

### **Phasing out fossil fuel subsidies**

**Vision:** The members would aim to phase out all fossil fuel subsidies by a given date. They would show to the world that a less expensive and cleaner energy system is possible.

**Criteria:** The members would need to agree to phase out all fossil fuel subsidies according to a clear timetable, including production and consumption subsidies. The club could also require that the members spend an agreed share of their savings from fossil fuel subsidy removal on promoting clean energy.



**Activities/Benefits:** The members would share best practices for subsidy removal, success stories and fossil fuel subsidy reform policy designs. Fossil fuel subsidy removal brings large benefits for public budgets and for economies overall. The main benefit of the club would be to provide political “cover” for ambitious subsidy reform, as decision makers will be able to point to other countries doing the same thing. In addition, the savings from subsidy reform could be redirected into a fund that supports renewable energy, energy efficiency and public transport and provides assistance to the poor who would otherwise be hurt by more expensive fuel.

**Potential Members and their Level of Interest:** All G20 members committed to phase out inefficient fossil fuel subsidies and many of them could be interested in joining a club that pioneers the phase out. The members of the Asia-Pacific Economic Cooperation (APEC) have made a similar commitment.<sup>33</sup> In addition, the Non-G20 countries that form the group of “Friends of Fossil Fuel Subsidy Reform” - Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden and Switzerland – could be members of the club. So – why does there need to be a new club – or is this a recommendation to seize the agenda of an existing effort?

**Potential Impact:** Eliminating fossil fuel subsidies could make a large contribution to reducing global GHG emissions. The OECD estimates that it could lead to a 6 percent reduction of global emissions by 2050; the IMF – with a broader definition that includes the failure to tax externalities – even puts that number at 13 percent. If some major emitters were part of the club, the direct emissions impact would be very significant, though not all of it would be additional to existing pledges. Removing support for fossil fuels would also support the transformation towards more renewables and energy efficiency.

**Summary:** The economic benefits of fossil fuel subsidy removal are clear. The main club benefit would be to help build political support as subsidy removal could be communicated as a common, coordinated undertaking – in particular if some major economies participate. It is not clear how much interest in such a club there is in the major economies though.

### Phasing out fossil fuels

**Vision:** The members would share the vision to end the use of fossil fuels, beginning with coal. They could also agree to reduce the extraction of fossil fuels, leaving significant amounts in the ground.

**Criteria:** In order to become a member, countries would need to present a strategy to phase out coal consumption by a given year. Members could also agree to not exploit some of their known fossil fuel reserves.

**Activities/Benefits:** Members would share experiences and strategies for phasing out fossil fuels. If the commitment not to exploit known fossil fuel reserves is undertaken under the auspices of a club, club

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<sup>33</sup> At the APEC Leaders’ Summit in November 2009, it was agreed to “rationalise and phase out over the medium term fossil-fuel subsidies that encourage wasteful consumption, while recognising the importance of providing those in need with essential energy services.”

members could design a financial support mechanism for the developing country members making such commitments (similar to what Ecuador proposed with the Yasuni ITT initiative). The main economic benefits would not come from the phase-out, but from the phase-in of renewable energies and energy efficiency. Therefore, this club would need to include some of the renewables and efficiency club elements discussed above.

**Potential Members and their Level of Interest:** Currently, only Finland and the Canadian province of Ontario have formally committed to phase out coal. Legislative, regulatory and economic factors might lead to a situation where no new coal plants are being built in the United States and a number of European countries – but that would not be sufficient to join this club, unless there is a strategy of how to phase out existing plants. A number of small island states have plans to completely replace their diesel-based power generation with renewable sources. Some international financial institutions, including the World Bank, the European Investment Bank and the United States’ development finance institutions are also ending their support for coal projects. Additional countries would need to be convinced – currently there is probably not enough international interest to launch a club around this idea as a starting point.

**Potential Impact:** The club could have a large transformational impact in the participating countries. It would lead to significant emissions reductions and could provide important examples that a low-carbon energy sector is really possible.

**Summary:** This club could have large transformational impact, but it will be hard to find a critical mass of members for this club. It is more difficult to identify short-term benefits from joining this club. It will need to be supplemented by common activities and commitments in renewable energy and energy efficiency to generate sufficient incentives for participation.

### Carbon pricing

**Vision:** The club members would aim to reduce emissions by putting a price on carbon. They would prove that the low-carbon transformation is feasible and economically beneficial.

**Criteria:** Club members would need to have national emissions reductions targets that are ambitious and in line with what the science suggest is necessary to avoid dangerous global warming. They would announce these targets in the context of the UNFCCC process, playing a front-runner role in the negotiations. In addition, they would have a carbon pricing mechanism to reach the target: emissions trading schemes (ETS), carbon taxes or hybrid models. Opening the club to developing countries without economy-wide targets, but sectoral initiatives that put a price on carbon in limited sectors could be considered as well. There would be certain minimum standards for the design of the tax or ETS to ensure environmental integrity and equity, for instance by reducing the impacts on low-income households through target support.

**Activities/Benefits:** An important benefit of this club would come from the fact that club members might use border carbon adjustment in order to put a price on the carbon embedded in imports, but

would exempt imports from other club members.<sup>34</sup> An additional benefit for those members with an ETS would be the linking of the different markets. Membership in the club would mean access to other member's carbon markets.

**Potential Members and their Level of Interest:** Potential members include the countries that currently price carbon. Additional countries could join as they developed carbon pricing. Many of the countries with ETS are already pursuing international linking of their schemes –mainly with the objective of reducing compliance cost for domestic polluters. As compliance costs fall and efficiencies from linking are gained, countries could increase their ambition by setting higher targets. It would need to be explored whether the countries currently pursuing linking would be open to such an ambition-raising club.

**Potential Impact:** The positive impact on the climate depends on the level of ambition and stringency of rules on the carbon pricing schemes that are in the club. For instance, linking weak ETSs could actually increase emissions if double counting was not curbed. If increasing the level of ambition is a precondition for joining the club and there are clear environmental safeguards, the impact would be transformational. A limiting factor for the overall impact is the limited number of countries that would participate in the short run.

**Summary:** There are a relatively small number of economically relatively important countries that are interested in linking their carbon markets that could form the core of a carbon pricing club. Whether they are also interested in linking within an ambitious club would need to be tested. An advantage of such a club would be that the benefits would be very clear and exclusive.

### **Ambitious emissions reduction targets**

**Vision:** The club members would aim to reduce emissions in line with what the science demands. The vision would be to fully decarbonize their economies (in developed countries) and very significantly reduce the emissions intensity of their economies (in developing countries) by 2050, proving that this is feasible and economically beneficial.

**Criteria:** Club members would need to have national emissions reductions targets that are ambitious, in line with the science and differentiated according to their respective national circumstances. The budget approach proposed by the German Advisory Council on Global Change (WBGU), the Greenhouse Development Rights framework or similar approaches could be used to determine what that nationally appropriate reduction target is. The need to determine which reductions are sufficiently ambitious for a country to be allowed in the club carries the risk that some of the most contentious debates in the UNFCCC spill over into the club. Having a long-term ambitious emissions reduction commitment should not be the only condition for club membership. It should also be required that countries show they have at a plan on how to achieve the target, outlining intermediate targets and concrete measures.

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<sup>34</sup> Leveling the carbon playing field and IISD guidance For a discussion of the numerous practical and legal challenges to be considered when introducing border carbon adjustment, see T. Houser *et al.*, n. 37 above and A. Cosby *et al.*, n. 37 above.

**Activities/Benefits:** Club members would put forward ambitious emission reduction commitments in the UNFCCC. They could exchange experiences and cooperate on capacity building on the low-carbon economy amongst each other; this can be kept exclusive to a certain extent. However, in itself it is unlikely to provide sufficient benefits to make countries want to join this front-runner group. Technology transfer, joint research and development, exchange of experts and workers, mutual recognition or joint development of standards relevant to the low carbon economy, investment facilitation/promotion, and agreeing to switch all public procurement to low-carbon goods could be additional activities that would provide benefits.

**Potential Members and their Level of Interest:** It is not very clear who might join such a club at the moment. While there are a few countries that have more ambitious climate goals than others, many of them are very cautious about keeping the UNFCCC as the central forum for discussions about emissions reduction. A club that is so directly about emissions reductions would have difficulty attracting members in the near term. The interest in joining a club with clear entry criteria will depend on the benefits it can bring. In addition, agreeing on these criteria will not be easy within this group of countries, as it implies defining what appropriate reduction targets would be. Therefore, the club would need to be started by two or three leaders who can agree on their definition, opening participation to everyone else who can fulfill their criteria. Making sure there is a constructive relationship between this club and the broader UNFCCC negotiations will be not easy, but important.

**Potential Impact:** If this were the starting point, the club would go to the core of the problem – with strict criteria and attractive benefits it certainly would be transformational. However, defining attractive benefits that will allow the club to expand because it is attractive to join will be difficult if it focuses just on emissions.

**Summary:** If successful, this club could be very transformational. For this, the right design with attractive benefits would need to be found. Care needs to be taken to ensure the club interacts in a useful way with the UNFCCC negotiations. It is less clear what the short-term benefits would be that would allow the club to get off the ground. Clubs that focus more on low-carbon development or technologies with clear development benefits (e.g. in energy) might have a larger chance of attracting members, particularly from the developing world.