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United Nations Framework Convention on Climate Change
Climate Change Secretariat
c/o secretariat@unfccc.int

25 January 2017

RE: Subsidiary Body for Implementation's (SBI) Review of the Technology Mechanism

Dear Sir/Madam

I am writing to you as the Chief Executive Officer of the Global CCS Institute (Institute). The Institute is a fact-based advocacy and knowledge sharing organisation, which has as its mission to accelerate the development and deployment of carbon capture and storage (CCS) globally in order to help tackle climate change and provide energy security.

The Institute is pleased to submit its views, contained in Appendix 1 of this document, relating to the scope and modalities for the periodic assessment of the Technology Mechanism in relation to supporting the implementation of the Paris Agreement (FCCC/SBI/2016/8, paragraph 96). It is proud to be a long-time accredited observer to the UNFCCC, the Intergovernmental Panel on Climate Change (IPCC), the Green Climate Fund (GCF); a Network member to the UNFCCC's Climate Technology Centre, as well as a member of the UN Global Compact.

What has been noticeably missing with the Technology Mechanism to date is any meaningful support for the promotion and showcasing of large-scale and high mitigating fossil resource use technologies, such as CCS. The IPCC strongly recognises CCS technologies as having very high mitigation potentials in which to control and avoid CO₂ and non-CO₂ pollutants going to atmosphere, and for having extensive and diverse applications within the power generation and industrial sectors. The IPCC confirms that CCS is a least cost mitigation solution for the very deep emissions reductions required. It can be incontrovertibly argued that CCS, among other alternate large-scale technologies such as concentrated solar thermal with energy storage, have the most to contribute to the achievement of the Convention's and the Paris Agreement's climate goals (short, medium and long-term).

There is a very limited window of opportunity available to mitigate the emissions from unabated fossil energy assets – both existing and those already approved in the investment pipeline – to avoid exceeding the remaining finite carbon budget. The scaling up and economy-wide deployment of environmentally sound mitigation technologies like CCS should clearly be among the most pressing priorities of the Technology Mechanism going forward.

The Institute also believes that the Technology Mechanism and its two independent bodies might better deliver on their objectives if they transparently developed and collectively implemented a suite of criteria to help better prioritise what the future subject matter should be for their respective formal discussions (such as in the Technical Expert Meetings and high-level event thematics which are often hosted at the UNFCCC's mid-year and end of year conferences) and rolling work programs.

Please do not hesitate to contact my staff should you have any follow-up questions or additional requirements (John Scowcroft (john.scowcroft@globalccsinstitute.com), Mark Bonner (mark.bonner@globalccsinstitute.com)).

Yours sincerely

Brad Page

Chief Executive Officer



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APPENDIX 1

SUBMISSION TO

THE UNITED NATIONS FRAMEWORK CONVENTION
ON CLIMATE CHANGE (UNFCCC) SUBSIDIARY
BODY FOR IMPLEMENTATION (SBI)

Scope and modalities for the periodic assessment
of the Technology Mechanism in relation to
supporting the implementation of the Paris
Agreement (FCCC/SBI/2016/8, paragraph 96)

The comments contained in this paper are independent to the Institute, and do not necessarily represent the collective views of its Membership; nor does it pre-empt the decisions of its Membership on any related matter.

25 January 2017

1. THE INSTITUTE

The Global Carbon Capture and Storage Institute (the Institute) is pleased to submit its views on the scope and modalities for the periodic assessment of the Technology Mechanism (FCCC/SBI/2016/8, paragraph 96), as requested by the Subsidiary Body for Implementation (SBI).

As a not-for-profit international membership organisation, the Institute brings together the public and private sectors to build and share the know-how and expertise necessary to ensure that carbon capture and storage (CCS) can make a significant impact on reducing the world's greenhouse gas emissions. The Institute also connects various parties around the world to solve problems, address issues and learn from each other to accelerate the deployment of CCS projects by:

- Sharing knowledge (collecting information to create a central repository for CCS knowledge; and creating and sharing information to fill knowledge gaps and build capacity);
- Fact based advocacy (informing and shaping domestic and international low carbon energy policies; increasing the awareness of the benefits of CCS and the role it plays within a portfolio of low carbon technologies); and
- Assisting projects (tackling specific barriers, particularly amongst early movers; bridging knowledge gaps between demonstration efforts).

The Institute is well placed to provide advice to the SBI on CCS and other broader policy related matters such as various mitigation approaches due to its extensive project experiences, policy and regulatory expertise, case studies and standardisation efforts, and contributions across a broad range of related scientific, economic and technical matters.

The Institute tracks all CCS related activities globally as updated regularly in its publication titled *Global Status Report on CCS*,¹ and is actively engaged in many government, intergovernmental, pluri- and bilateral initiatives. Such engagements provide the Institute with a deep global reach into CCS policy, program, project and regulatory developments. Please refer to the following website (<http://www.globalccsinstitute.com/institute>) for further information on the Institute.

The Institute is an Accredited Observer to the UNFCCC, to the Intergovernmental Panel on Climate Change (IPCC) and to the Green Climate Fund (GCF) Board; it is also a member of the Climate Technology Centre's Network (CTCN) and to the United Nations Global Compact (UNGC).

2. MANDATED TASK

At the 45th session of SBI (SBI 45) in Marrakech, the SBI agreed that the Parties and observer organisations could submit their views on the scope and modalities of periodic assessment of the Technology Mechanism by 25 January 2017. The secretariat will subsequently prepare a compilation synthesis report of use for consideration at SBI 46 in May (Bonn).

3. OVERVIEW

The Technology Mechanism was established at COP 16 in Cancun (Decision 1/CP.16, Part B) to help promote and enhance national and international cooperative action on the development and transfer of environmentally sound technologies to developing country parties to support action on both mitigation and adaptation. At the time its goal was to help achieve the ultimate objective of the Convention. It must now also serve the implementation of the Paris Agreement to ensure that global temperature rises remain well below 2°C, and in particular, assist the delivery of commitments expressed in the Nationally Determined Contributions (NDCs).²

¹ <https://www.globalccsinstitute.com/publications/global-status-ccs-2016-summary-report>.

² Article 2 of the UNFCCC stipulates that the ultimate objective of this Convention or any legal instrument adopted by the Convention is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. Further, by decision 1/CP.16, Parties agreed on the long-term goal of holding the increase in the global average temperature

The Technology Mechanism consists of two independent bodies; the policy arm of the Technology Executive Committee (TEC), and the implementing arm of the Climate Technology Centre and Network (CTCN). This is an important and relevant structure as there needs to be as much emphasis on the implementation of appropriate enabling environments (policy, finance, access to technology, skills development, and infrastructure requirements) as there is to the actual deployment and operation of machinery and equipment and services in the form of mitigation projects.

The Technology Mechanism also rightly continues to forge closer relationships with the Convention's funding vehicles under the Finance mechanism, consisting of the GCF and the Global Environment Facility (GEF).

4. PRIORITIES FOR THE MECHANISM

The efficiency, relevance, effectiveness, and viability of the Technology Mechanism is dependent on its ability to service competing priorities. Recognising that the Technology Mechanism cannot and does not represent the totality of global technology development and transfer efforts for climate mitigation purposes, it does however have an increasingly influential role in determining how national resources are appropriated and allocated for such purposes – as well as for a much broader suite of co-benefits (including other environment impacts, robust economy and sustainability).

In this regard, any review of its performance must evaluate the extent to which the Technology Mechanism strikes a balance between adequately supporting high mitigation potential technologies (which can often be identified outside of national plans – such as CCS) through the early stages of their technology cycle (which are mostly nationally determined based on localised circumstance and degree of adaptation required); assisting Parties achieve their International mitigation obligations (which are currently insufficient to avoid the catastrophic impacts of climate change); and accelerating and scaling up cost-effective mitigation action to achieve the ultimate objective of the Convention and the climate goals of the Paris Agreement.

The Institute considers that the Technology Mechanism would better service the global climate challenge faced by all nations if it focused on facilitating the highest potential mitigation technologies in the locations they are most needed. Whilst it is important to recognise the nationally determined nature of the UNFCCC, especially as expressed through communication vehicles like the Technology Needs Assessments (TNAs) and Nationally Determined Contributions (NDCs) – which serve a very broad range of stakeholder interests – it is also important to acknowledge the potential shortcomings of such outputs when prioritising Technology Mechanism related discussions, work programs and events. These outputs for example tend to identify national development challenges (needs) and opportunities rather than prioritising and ensuring collective and meaningful mitigation outcomes.

Diagram 1 Diversity of influence on the Technology Mechanism (source GCCSI)

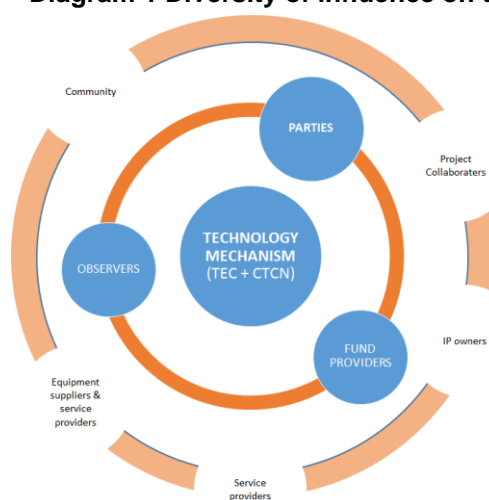


Diagram 1 indicates that the stakeholders with the most influence on the Technology Mechanism's impact to date likely include governments, climate finance providers and UNFCCC advocates/observers. In submitting their NDC mitigation commitments, governments have to simultaneously trade-off many competing policy priorities that not only include climate action (adaptation and mitigation), but also broader environment protection, resource extraction, energy, industry and economy (including jobs) to list a few – with the reality that longer term climate mitigation can often be treated as a lesser priority when compared to the other shorter-term national priorities. The preferences of the UNFCCC's accredited observers (which can often be strongly ideological in influence) and fund providers alike can also be at odds with allowing the potential of the

below two degrees Celsius above pre-industrial levels.

Technology Mechanism to be realised in helping deliver on the climate goals; which clearly requires timely and large scale emissions management and containment.

The findings of the IPCC, as contained in both its 4th and 5th Assessment Report's, should ideally put the deployment necessity of large scale clean energy technologies like CCS front and centre of the Technology Mechanism's agenda; and yet the Technology Mechanism has provided very little focus, momentum or support for technologies like CCS to date. The IPCC highlights that achieving a 2^oC temperature goal, let alone a well below target, is almost impossible to achieve and certainly not at least cost without the wide-scale deployment of CCS in both developed and developing regions.

The global politics of fossil resource use rather than the looming mitigation crisis continues to belie the important role that CCS must be allowed to play within the UNFCCC in helping avoid catastrophic climate change impacts in the short to medium term. There is a resistance within the UN system more broadly (as illustrated by the singular focus of the SE4ALL flagship initiative on renewable energy and energy efficiency), and the Technology Mechanism specifically, to countenance the real and imminent emissions reduction opportunities available from deploying CCS solutions. Only one Technical Expert Meeting (TEM) on CCS has been hosted compared to multiple events for renewables and energy efficiency.

It should be acknowledged that CCS is not a homogenous technology with singular application (as is often cited as a reason not to host further examination); it involves sophisticated chemical and physical processes across three complex components (capture, transport and geological storage) that must be integrated, along with a diverse range of applications in the power generation and industrial sectors as well as non-CO₂ pollution controls. It also depends on strong linkages being formed between governments, regulatory bodies, the private sector and the community more broadly.

Meaningful mitigation outcomes will only be achieved by ensuring that the most cost-effective, scalable and environmentally dependable mitigation technologies reach the right communities and applications on a timely basis. This is especially relevant in developing countries given that around 65% of current global emissions are generated by these regions.³

This does not mean however that the mitigation challenge is a developing country issue. The engagement and collaboration of developed countries to continue technology innovation (which can be slow and iterative), provide access to proven and affordable solutions and assist the flow of global capital is clearly critical. This is an important effort that must be better supported by the Technology Mechanism through creating and facilitating opportunities to do so.

5. THREE FUNDAMENTAL ASPECTS TO THE REVIEW

To appropriately evaluate the Technology Mechanism, three main questions need to be considered:

1. Is the Technology Mechanism delivering on its objectives?
2. Is the TEC delivering on its objectives?
3. Is the CTCN delivering on its objectives?

All three objectives referred to above are well articulated in the original decision (Decision 1/CP.16). To summarise these objectives:

- The Technology Mechanism is to enhance action on technology development and transfer (both mitigation and adaptation) in order to achieve the full implementation of the Convention [and the climate goals of the Paris Agreement].⁴
- The TEC is to accelerate mitigation and adaptation actions by better understanding, advising (recommending) and promoting international collaboration (state and non-state actors) on the technological and policy needs of relevant technologies (endogenous capacities, research, development and demonstrations, public and private investments).⁵

³ <http://www.cgdev.org/media/developing-countries-are-responsible-63-percent-current-carbon-emissions>

⁴ FCCC/CP/2010/7/Add.1 paragraphs 113 to 115

⁵ FCCC/CP/2010/7/Add.1 paragraph 120 to 121

- The CTCN is to support the technology and implementation needs of developing countries as requested.⁶

The Institute seeks the SBI's consideration of the following framework to guide and provide deeper context to the suggested questions posed above:

- A. Examine the external environment/s of the Technology Mechanism, the TEC, and the CTCN;
- B. Evaluate the organisational performance/s of the TEC, and the CTCN; and
- C. Gauge the organisational capacities of the TEC, and the CTCN.

A list of detailed (but not exhaustive) questions has been developed in [Appendix 2](#) to guide the respective evaluations of each element in the above framework (ie. A, B, C).

6. CONCLUSION

The current climate situation requires the instilling (and/or compelling) in nations a high degree of global urgency to undertake mitigation action. The climate mitigation challenge is much more complex and urgent than is currently being addressed by the Technology Mechanism or represented by the current suite of INDCs and NDCs.

Mitigation action in the pre-2020 period is critical, however, the Institute believes that efforts in this period are more critical for establishing the technological capacity in the pre-2025 and pre-2030 periods to scale up high mitigating solutions like CCS and contain emissions within the global carbon budget of a well below 2 degrees Celsius (2°C) goal. This will only be the case if future UNFCCC discussions acknowledge that at the current and expected future global emissions levels, including the mitigation commitments contained in the NDCs,⁷ the 1.5°C carbon budget could be consumed in about a decade and the 2°C in possibly 15 to 20 years.

The Institute considers essential the UNFCCC's operational acceptance of CCS mitigation, especially within the Technology Mechanism agenda, as an essential mitigation technology and an eligible emissions offsetting and CO₂-e avoidance activity. The manner in which the Technology Mechanism (including the TEC and the CTCN) supports the high mitigation potential of CCS over the next couple of years will be critical not only for the timely scaling up of mitigation outcomes by Parties, but also for the effectiveness of broader national carbon policies such as market based instruments that need to be well designed regardless of whether they:

- Fall under UNFCCC compliance arrangements or not;
- Currently exist or are to be established;
- Implemented unilaterally or multilaterally linked; and/or
- Aim to promote mitigation co-benefits including sustainable development (SD) outcomes.

CCS mitigation is already accepted as an environmentally sound and SD friendly solution within the UNFCCC (noting its explicit recognition in the Kyoto Protocol (Article 2.a.iv), the CDM and the GCF). The extent to which all countries take seriously the control of their emissions signatures arising from existing and future fossil assets in the pre- and post-2020 periods, in both the power and industrial sectors, will determine whether a carbon budget consistent with a well below average 2°C rise in warming can be managed. While the share of renewables should and will continue to rise strongly, the expectant new capacity will likely only meet the growth in demand and in reality can do very little to displace the fossil emissions already embedded in the production systems.

As the IPCC 5th Assessment report indicates, CCS remains the single largest and most cost-effective mitigation option currently available that can materially address the fossil energy mitigation challenge. Much more focus in the Technology Mechanism should be afforded to ensuring its wide-scale

⁶ FCCC/CP/2010/7/Add.1 paragraphs 123

⁷ http://www.unep.org/publications/ebooks/emissionsgapreport/pdfs/EMISSIONS_GAP_TECHNICAL_SUMMARY.pdf page 2

application to coal, gas and bioenergy fired power plants (to drive negative emissions) as well as industrial plants – along with alternate large-scale mitigation technologies.

It is evident that the current energy related discussions within the Technology Mechanism are too power sector focused, with a definite leaning towards positioning renewables (mostly small-scale) as a cure-all solution to decarbonising complex energy systems. Very little attention has been afforded to alternate sectors such as the industrial sector, which generates about 25% of global emissions (and for which there are very few if any mitigation substitutes to CCS), and alternate highly credentialed technologies including CCS.

As far as organising future high-level events, the Institute believes that a stronger focus must be allocated to enhancing the ability of countries to scale-up high-potential mitigation technologies. The Institute believes the scaling-up issues should be a core focus for a high-level event at COP 23. This would afford key decision-makers such as politicians, civil society leaders and C-level business executives alike, with a formal platform in which they could better understand and identify significant mitigation opportunities.

To transparently identify these sorts of priority discussions that can substantively advance the cause of the Technology Mechanism, a suite of criteria could be developed and collectively implemented by both the TEC and CTCN to guide their discussions and work programs (including those of the GCF and GEF).

It would also be very timely for the bodies supporting the Technology Mechanism to propose and host another CCS TEM in the 2017-18 period; especially given that two TEMs and multiple follow-up sessions have been hosted for renewables and energy efficiency. As a suggestion, this could take the form of a CCS specific TEM and/or adopt a broader remit to explore a portfolio of high-mitigation potential and large-scale clean energy solutions including CCS. It is clear that CCS, large scale renewables and economy-wide energy efficiency improvements must converge soon to complement each other as a formidable clean energy tripartite.

Finally, the Institute advocates that the modalities for the upcoming Technology Mechanism review be developed in such a manner that seeks to balance the assurances needing to be provided by Parties to non-state actors (private sector and civil society) that the Technology Mechanism is being operated in an effective manner, that is both technology neutral and efficiently beneficial to achieving the climate goals; and not simply serving the interests of influential stakeholders (internal and external) that may be deeply extended into the UNFCCC decision-making processes.

The Institute would be pleased to engage in any subsequent discussion or submission process organised by the UNFCCC to further discuss this issue if required. For more information, please contact John Scowcroft (john.scowcroft@globalccsinstitute.com) or Mark Bonner, Program Lead – International Climate Change (mark.bonner@globalccsinstitute.com).

APPENDIX 2 – PROPOSED EVALUATION FRAMEWORK

To appropriately evaluate the Technology Mechanism, three main questions need to be considered:

1. Is the Technology Mechanism delivering on its objectives?
2. Is the TEC delivering on its objectives?
3. Is the CTCN delivering on its objectives?

The following framework aims to guide and provide deeper context to the suggested questions posed above:

- A. **Examine** the external environment/s of the Technology Mechanism, the TEC, and the CTCN;
- B. **Evaluate** the organisational performances of the TEC, and the CTCN; and
- C. **Gauge** the organisational capacities of the TEC, and the CTCN.

The following list of detailed (but not exhaustive) questions have been developed to guide the respective evaluations of each element above (A, B, C).

A. External environment/s: In delivering on their objectives:

- Does the Technology Mechanism appropriately and adequately support national systems of innovation to deliver on the mitigation needs of the Convention and the Paris Agreement objectives and climate goals?
- Do the outcomes of the TEC and CTCN collectively, consistently and optimally support the Technology Mechanism in its delivery of its objectives?
- Is there a broad and diverse base of UN and non-UN stakeholders that strongly and positively support the mitigation impact potential of the Technology Mechanism?
- Is there a broad and diverse base of UN and non-UN stakeholders that strongly and positively support the work of the TEC and the CTCN?
- How has the mitigation impact of the Technology Mechanism been affected by and/or responded to the external environment affecting the work of TEC and the CTCN?
- How has the mitigation impact of the Technology Mechanism been affected by and/or responded to the internal environment affecting the TEC and CTCN?
- How has the mitigation impact of the Technology Mechanism been affected by and/or responded to the socio-cultural environment (ie. value systems of staff and participating stakeholders) of the TEC and the CTCN specifically, and the Parties more generally?

B. Organisational performances:

- How effective have the TEC and the CTCN been in moving towards and/or delivering on their objectives to optimise the mitigation impacts of the Technology Mechanism?
- How efficient have the TEC and CTCN been in moving towards and/or in delivering on their objectives to optimise the mitigation impacts of the Technology Mechanism?
- How relevant have the TEC and CTCN been in moving towards and/or in delivering on their objectives to optimise the mitigation impacts of the Technology Mechanism?
- How financially sustainable are the TEC and CTCN in moving towards and/or in continuing to deliver on their objectives to optimise the mitigation impacts of the Technology Mechanism?

C. Organisational capacities: In delivering on their objectives:

- To what extent does strategic leadership affect the performance of the TEC and CTCN, and ultimately the mitigation impact of the Technology Mechanism?
- To what extent does strategic planning affect the TEC's and the CTCN's ability to achieve their goals, and ultimately the mitigation impact of the Technology Mechanism?

- To what extent do the TEC and the CTCN appropriately plan their work programs, and what impact has this had on the mitigation impact of the Technology Mechanism?
- To what extent do the TEC and the CTCN appropriately implement their programs, and what impact has this had on the mitigation impact of the Technology Mechanism?
- To what extent do the TEC and CTCN appropriately monitor and evaluate their programs, and what impact has this had on the mitigation impact of the Technology Mechanism?
- Is the performance of the TEC and CTCN effectively supported by their communication systems and strategies, and what impact has this had on the mitigation impact of the Technology Mechanism?
- To what extent do the governance arrangements of the TEC and CTCN affect their performance, and what impact has this had on the mitigation impact of the Technology Mechanism?
- Is organizational structure of the TEC and CTCN facilitating or hindering them in achieving their objectives, and what impact has this had on the mitigation impact of the Technology Mechanism?
- Do the TEC and the CTCN undertake appropriate levels of inwardly (within the UN system) and outwardly (non UN system) focused management consultation to help achieve their objectives, and what impact has this had on the mitigation impact of the Technology Mechanism?
- To what extent does the ability of the TEC and the CTCN to financially plan ahead affect their performance, and what impact has this had on the mitigation impact of the Technology Mechanism??
- To what extent do the TEC and the CTCN have adequate staffing resources to ensure high performance in a continuously and fast changing environment, and what impact has this had on the mitigation impact of the Technology Mechanism?
- To what extent do the TEC and the CTCN have effective relations across a broad and diverse range of stakeholders, including other UNFCCC bodies such as the GCF, and what impact has this had on the mitigation impact of the Technology Mechanism?
- Is the prevailing infrastructure (facilities, digital) adequate to support the TEC and the CTCN's performance, and what impact has this had on the mitigation impact of the Technology Mechanism??
- Has the TEC and CTCN established or pursued adequate and meaningful external linkages to support their performance, and what impact has this had on the mitigation impact of the Technology Mechanism?
- Has the TEC and the CTCN established or pursued adequate electronic linkages to stakeholders to support their performance, and what impact has this had on the mitigation impact of the Technology Mechanism?