

INPUTS TO THE TALANOA DIALOGUE

Provided by the GLOBAL ALLINAC EFOR BUILDINGS AND CONSTRUCTION

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1. Where are we?

The commitment (planned and/or announced) as well as the actions taken so far that are in line with aims of Paris Agreement, the 1.5/2 degrees' goal and the transition towards a net-zero emission society by this mid-century [Maximum 300 words]

Accounting for 36% of global final energy use and 39% of energy related carbon dioxide emissions, the **Building and Construction sector is a high impact sector for climate mitigation**.

132 NDCs explicitly mention the buildings sector. Among them, 101 pointed to energy-efficiency opportunities to meet mitigation targets. 49 countries committed to use renewable sources of energy in buildings to improve access to clean energy and endorse adoption of low-carbon energy assets. 87 of the buildings-specific NDCs mention key technologies that would improve buildings sector energy-efficiency and carbon intensity.

The Global Alliance for Buildings and Construction (GABC) is a voluntary partnership of national and local governments, inter-governmental organizations, businesses, associations, networks and think tanks committed to the GABC's motto: "**Towards a zero-emission, efficient and resilient buildings and construction sector**". Launched at COP21, the global network currently includes over 100 partners, working together to **increase speed and scale of action** through global advocacy, catalyzing action, leveraging finance and keeping progress under review.

Progress made so far against the above commitments, including success stories, case studies and gaps [Maximum 300 words]

Building sector energy use per m² is improving at an annual average rate of around 1.5%. However, in light of growing urbanization and the qualitative and quantitative housing deficit that many countries are faced with, as well as rising energy demand, particularly for heating, cooling and electricity, the present rate of improvements is outpaced by demand increases. For example, global floor area grew again by about 2.3% last year; building final energy demand increased by 5EJ from 2010 to 2016 globally. To be on track to meet global climate ambitions set forth in the Paris Agreement the energy intensity per square meter of the global buildings sector needs to improve on average by 30% by 2030 (compared to 2015). Furthermore, improving resilience of buildings is critical, to achieve health and livelihoods benefits, as well as reduction of embedded energy and resource use (construction materials).

NDC potential & opportunities: Despite progress, NDCs fall short of tapping into the 4.9 GtCO₂ of potential annual emissions abatement that could be achieved if countries were to pursue strategic low-carbon and energy-efficient buildings technology deployment. Globally, current policies cover roughly 47% of buildings-related CO₂ emissions. If NDC pledges are achieved in addition to those

existing policies, coverage would only likely be extended to about 60%, meaning buildings-related NDCs only cover less than 15% of buildings sector emissions beyond existing country policies.

Case study*: In late 2016, the Swedish government introduced a support programme of roughly EUR 100 million for building renovations and energy efficiency measures. The energy consumption of the building must be reduced (and verified) by at least 20% in order to receive the support. A Centre for Sustainable Construction was created to promote energy efficient renovations and the use of sustainable materials through knowledge gathering and dissemination.

**The Global Status Report of the GABC features more examples. The report is issued annually and provides a snapshot of the sector.*

Quantitative impact so far with respect to mitigation, adaptation, resilience and/or finance [Maximum 300 words]

- **Emissions, carbon intensity, and energy use:** As of 2017, buildings and construction account for 36% of global final energy use and 39% of energy-related CO₂ emissions. Nearly two-thirds of global buildings sector energy consumption is supplied by fossil fuels for direct use or for upstream power generation. Current buildings energy-carbon intensities are far from the 20 tonnes CO₂ per TJ or less needed by 2050 to meet ambitions for a 2°C world or below.
- **Floor area growth:** Growth of the building and construction sector is currently at 2.3% additional floor space per annum – floor space is expected to double by 2060. Over the next 20 years, more than half of new buildings expected in 2060 will be constructed. This provides a unique window of opportunity to climate-proof investments over the next fifteen years of fast urbanization.
- **Resilience:** In light of increasing frequency of extreme weather events, building design and construction materials and techniques need to change. While some features mirror what has been proposed for increased energy efficiency, resilience also requires a certain level of redundancy, which comes with a toll on embedded emissions and material use. Insurance and reinsurance industries have started incentivizing the adoption of resilience standards, as costs of recovery are on the rise.
- **Finance:** Energy efficiency investments in the buildings sector have continued to increase steadily in recent years, growing by 12% in 2016. However, total spending on energy efficiency in the global buildings sector was less than 9% of the more than USD 4.5 trillion spent on buildings and construction (including renovation globally). In general the buildings and construction sector it is the single biggest economic sector but it is slow with adapting innovation. In recent years energy efficiency increased the innovation capacity within the sector. However the potential for innovation and thus for energy efficiency is still huge and digitalization in the sector is a catalyzer and will bring further improvements for more energy efficiency. Large scale financing that is strongly linked to energy efficiency targets forces the building and construction sector to increase its pace for innovation. In emerging countries – where a massive growth of floor area will take place in the next 20 years - the combination of energy efficiency financing with technical assistance for the construction industry is of utmost importance.

2. Where do we want to go?

Vision of the future for your organization and/or sector in terms of its possible role in achieving the 1.5/2 degrees' goal and a net-zero emission world by this mid-century [Maximum 300 words]

For the sector:

Achieving the well-below 2 ° C objective of the Paris Agreement requires a major shift in the buildings and construction sector to put buildings globally on a highly energy-efficient and net-zero carbon pathway. In order to harness the investments made over the next 15 years as part of the urbanization trend, national urban policies, urban planning and building codes as well as finance tools need to be performance-based, with goals for new buildings and deep renovation of the existing building stock.

For the Global Alliance for Buildings and Construction (GABC):

The GABC pursues a vision of a zero-emission, efficient, and resilient buildings and construction sector globally. Since its launch in 2015, the GABC has grown to a multi-stakeholder network with over 100 members, including 25 countries. It aims to attract new key members, especially major developing countries and other key players in the buildings and construction and/or reinvigorate member engagement.

The GABC effectively raises awareness with buildings professionals through outreach and tracking progress. The GACB also continually identifies and provides guidance on key challenges, issues, and good practices regarding a zero-emission, efficient, and resilient buildings and construction sector. In particular, the GABC developed a Global Roadmap and is now strengthening the relevance and usability of its Global Roadmap through regional Roundtables, emphasizing regional priorities and facilitating peer-to-peer learning / sharing of good practices to facilitate increased climate action in buildings and construction. Country members set up their national alliance to bring together key players along the building and construction value chain to refine and submit strengthened NDCs, device building codes that include energy performance and resilience standards, and apply high performance targets for public buildings. The investor community is increasingly engaged and uses the GABC as reliable source of information and outreach to other stakeholders. Private sector partners increase their corporate social responsibility commitments towards market transformation.

Possible and potential new commitments and pledges of to achieve the 1.5/2 degrees' goal and a net-zero emission world by this mid-century [Maximum 300 words]

Governments

NDCs feature the buildings sector explicitly, with concrete targets for :

1. *Mandatory, performance-based building codes and certification for both new buildings and existing building stock (resource efficiency and carbon emissions)*
2. *Public buildings and affordable housing, embedding energy and carbon performance targets in public tenders*
3. *Increased implementation capacity at local level*

Private sector companies

Science-based targets to spur market transformation

Finance institutions

Develop new and increase the share of existing finance mechanisms for highly-performing buildings, including the increase of issuance of green bonds and dedicated finance instruments for efficiency retrofits and local energy services.

Foreseen positive impact of these commitments once they are realized, including contributions to the sustainable development agenda [Maximum 300 words]

- SDGs 7 and 13 -- through significantly lower emissions from the buildings and construction sector. E.g. renovating existing building envelopes alone represents a savings potential more than all the final energy consumed by the G20 countries in 2015
- SDG 7 and 1 -- through lower energy consumption and resulting lower energy bills addressing energy poverty
- SDG 11 -- through zero-emission, efficient, and resilient buildings adequate housing provision and by connecting buildings with energy, transport and other critical infrastructure, making cities more sustainable
- SDG 8 and 9 – through innovation in the building and construction sector produces more green jobs. The building and construction sector employs 7% of the world's working age population plus millions of informal construction workers, and is a key industry for any country's economy with USD 10 trillion spent on construction-related goods and services. The market for energy efficiency in buildings is estimated at \$ 120 billion. Innovation such as 3D printing will have profound impact on the sector.
- SDG12 – through new and improved building design and practices achieve increased material efficiency, with a particular emphasis on building materials, use of waste or by-products from different value chains towards a circular economy. The building and construction sector to date consumes about 40% of the materials entering the global economy.

3. How do we get there?

Ways in which the UN Climate Change process can help you achieve your vision and goals, and how your actions can help in expediting sustainable transitions to climate neutral societies [Maximum 300 words]

The GABC has developed a Global Roadmap with key recommendations and actions for a zero-emission, efficient, and resilient buildings and construction sector. The Global Roadmap is further refined through Regional Roundtables, to address regional priorities and challenges:

1. URBAN PLANNING POLICIES FOR ENERGY EFFICIENCY AND RENEWABLES: Use urban planning policies to impact the form and compactness of buildings to enable reduced energy demand and increased renewable energy capacity.

2. IMPROVE THE PERFORMANCE OF EXISTING BUILDINGS:

Increase the rate of building energy renovation and increase the level of energy efficiency in existing buildings.

3. ACHIEVE NET-ZERO OPERATING EMISSIONS: Increase uptake of net-zero operating emissions for new and existing buildings, including through system-level solutions such as zero-carbon district energy.

4. IMPROVE ENERGY MANAGEMENT OF ALL BUILDINGS

Reduce the operating energy and emissions through improved energy management tools and operational capacity building.

5. DECARBONISE BUILDING ENERGY

Integrate renewable energy and reduce the carbon footprint of energy demand in buildings.

6. REDUCE EMBODIED ENERGY AND EMISSIONS

Reduce the environmental impact of materials and equipment in the buildings & construction value chain by taking a life-cycle approach and in the context of waste valorization and circular economy.

7. REDUCE ENERGY DEMAND FROM APPLIANCES

Collaborate with global initiatives to reduce the energy demand from appliances, lighting, cooking and IT.

8. UPGRADE ADAPTATION

Reduce climate-change related risks of buildings by adapting building design and improving resilience.

9. INCREASE AWARENESS

Support training and capacity building including educational and informative tools to make the case for sustainable buildings and construction.

Concrete solutions that have been realized while implementing your commitments, including lessons learnt from success stories and challenges, and case studies that are in line with the 1.5/2 degrees' goal and can support the Parties in achieving their NDC goals, enable higher ambition and inspire engagement of other non-state actors [Maximum 300 words]

Sierra Crest development in California: The Sierra Crest development in Fontana, California has constructed 20 residential buildings that integrate high-efficiency building construction with solar generation to achieve the first zero net energy community in California, in support of the State's 2020 policy target for all newly constructed low-rise residential buildings to be net zero energy. The project is intended to provide evidence of the economics to consumers and developers, with additional mortgage costs for the measures more than offset by utility bill savings

Palm Tree eco-development in Hanoi: The Palm Tree residential housing development in Hanoi has been designed as an energy-efficient ecopark development. The buildings have been designed with passive design strategies to take advantage of daylighting and natural ventilation while avoiding the need for mechanical air-conditioning.

Collaboration models with other stakeholders and, in particular, between non-Party stakeholders, national governments and the UN Climate Change process that have been successful in helping you, or can help you, achieve your commitments [Maximum 300 words]

The Global Alliance for Buildings and Construction (GABC) with its diverse membership structure (open for new members) and its modus operandi, it is in itself a collaboration model, connecting country members with local government members, private sector members, NGOs, and research.

Through its annual Assembly that gathers all members, regional Roundtables that facilitate context specific peer-to-peer exchange and concrete collaboration in five work areas (Awareness and Education, Public Policies, Market Transformation, Finance and Measurement, Building measurement, data and information.), the GABC forges common key messages and collaboration to increase scale and speed of the sector's transition. The annual Global Status Report of the GABC addresses directly the Talanoa Dialogue question 'where do we stand', and through its Global Roadmap, complemented by regional dialogues, the GABC directly addresses question three 'how do we get there'.

Cast Study: Sparked by work carried out in the GABC under its public policy work area, two members, France and Germany, joined forces to address a gap that had been identified. The Programme for Energy Efficiency in Buildings (PEEB) was launched at the end of 2017 and combines financial support with technical assistance on a large scale, with a focus on emerging countries. In order to achieve much higher energy efficiency of buildings, the large scale financing is connected to energy saving targets and combined with advice on policy measures and capacity building for the construction sector. It is essential bring quality and improved energy efficiency standards to the investments that will be done any the construction sector anyhow in the next decades. Furthermore the programme also supports the governments to monitor the energy reductions in the building sector. The monitoring will help to set the database for each partner country's NDCs.

Opportunities to further scale up action and means to address barriers that can enable even further action by non-Party stakeholders based on the actions you have taken to implement your commitments. ("We've made progress and have made new commitments as described above. This is what I need from national governments, other non-Party stakeholders and the UN Climate Change process to take even further action...") [Maximum 200 words for each item below]:

- *Policy levers*

- Stringent energy efficiency and resilience performance standards and mandatory, performance-based building codes and certifications for all buildings, globally.
- NDCs capturing the breadth of elements critical to achieving the transition to sustainable buildings, including building codes, certification and high-efficiency technologies.
- Better cross-sector connections between building and basic infrastructure sectors, particularly in energy services and the buildings sector's contribution to increasing local, low-carbon energy supply.

• *Collaboration/cooperation opportunities*

The GABC has made significant progress in raising awareness and catalyzing initiatives. To realize our potential we need support from national governments in particular by countries becoming actively participating members exchanging best practices with other members, and applying the GABC Global Roadmap recommendations.

Support by the Champions to increase the visibility of the buildings sector, with its relevance in other thematic areas of the Marrakesh Partnership Global Climate Action (industry, energy, transport, resilience as well as the place-based approach through human settlements).

• *Lessons learned based on the experience and progress so far*

The right policy framework is critical for progress in the buildings and construction sector – NDCs present an opportunity to push the buildings and construction policy agenda forward, but we need to ensure that NDCs are meaningful i.e. that they include concrete measures, targets, and milestones for zero-emission, efficient, and resilient buildings and construction.

• *Public and private financing models*

Total spending on energy efficiency in the global buildings sector was less than 9% of the more than USD 4.6 trillion spent on buildings and construction (including renovations) globally. We need better integration of public and private finance that allows balancing the higher upfront investment of some of the technologies with lower operating cost. Private sector finance to include energy efficiency, low-carbon energy and resilience criteria in their lending and investment portfolios. Step up energy-efficient mortgages programmes, dedicated finance streams and instruments for distributed energy, and green bonds.

- *Impact on non-Party stakeholders if these actions by national level governments and the UN Climate Change process and other opportunities are implemented and how much further they could go*

Through measures listed above achieve a profound transformation of the buildings and construction sector globally, transforming markets and making the sector a front runner in climate change mitigation and resilience.