ZERO CARBON BUILDINGS FOR ALL: A UNSG "SUMMITABLE" OUTCOME

INFRASTRUCTURE, CITIES AND LOCAL ACTION TRACK

Executive Summary

The operation of buildings represents 28% of energy-related carbon emissions globally, making them among the largest contributors to climate change. However, improving building operation also offers the biggest, most cost-effective climate mitigation opportunity available. But the rate of building efficiency improvement is not keeping pace with building sector growth, resulting in increased energy demand and carbon emissions. As a result, the global buildings sector is not on track to contribute to limiting warming to 1.5°C.

A dramatic increase in ambition and execution around decarbonizing the world's building stock is necessary. A "zero carbon building" approach that combines deep energy efficiency (the first and most important step) with on- or off-site renewables generation is emerging as a powerful tool for tackling buildings-related carbon emissions.

This UNSG Summit outcome – Zero Carbon Buildings for All – *embodies a strong coalition of national and local actors aligning on enabling policies, roadmaps and NDC commitments that will drive the decarbonization of the global building stock, in high- and low-income countries alike, by mid-century. The initiative also includes strong representation from the private sector and financial institutions, which will encourage these government commitments as clear and essential market signals for upgrading supply chains and mobilizing finance. Zero Carbon Buildings for All targets two major gaps in the development of mainstream markets for net zero carbon buildings – enabling policy frameworks and associated financing – and, in so doing, not only leads to dramatic carbon emissions reductions, but delivers a healthier, more productive environment to billions of people.*

Success in the ten countries targeted for eventual participation would avoid an estimated 432 million tons CO2e annually by 2030—so 5% of today's energy-related CO_2 emissions could be tackled from just 10 countries alone. Additional reductions would be achieved with greater participation.

Zero Carbon Buildings for All has earned the support of the UN Secretary General as a shortlisted initiative for presentation at his seminal Climate Summit (September 2019), and is being promoted to national governments by the UN's Special Envoy for Climate Change. Discussions with national governments are underway, with the ***United Arab Emirates and the UK*** *already committed and* ***Kenya and Turkey*** *indicating their intent to join. Many* ***leading private sector and financial institutions have committed*** *as well, and stand ready to provide expertise and assistance to governments and markets pioneering net zero carbon building policy and marketplace development.*

What are Zero Carbon Buildings (ZCBs)[1]?

Zero Carbon Buildings for All defines a building (or building stock or portfolio) as a "zero carbon building" (ZCB) when net greenhouse gas emissions associated with its annual *operational energy use* is zero (or less than zero).[2] A ZCB is typically *highly energy-efficient* and powered by *on-site and/or off-site renewable energy*

[1] Note: In the interest of clear and simple communications to a wide and diverse audience, the ZCBs for All initiative has opted to employ the term "zero carbon building" (ZCB) rather than the more technically-accurate industry term "net zero carbon building" (NZCB). For the purposes of ZCBs for All, ZCB and NZCB are interchangeable terms.

[2] ZCBs for All recommends that national governments work to decarbonize buildings at the scale most appropriate to their needs, whether it is in building sectors, portfolios, or districts, as well as at the level of individual buildings. This provides flexibility in meeting the commitment.

sources, with any unavoidable greenhouse gases zeroed out by high-quality, certified, and preferably local *offsets*.[3] A more ambitious approach to ZCBs includes minimizing and offsetting the emissions from the materials used in the construction of the building—the "embedded" emissions. ZCBs for All welcomes but does not require addressing embedded emissions in its commitment, simply because it may not be feasible for all countries to take on such a commitment at this stage of adoption of ZCBs globally. Ideally, both operational and embedded emissions would be addressed in the ZCB policies that emerge from this commitment. ZCBs for All will work to facilitate support for countries that choose the more ambitious embedded carbon approach for ZCB implementation.

Zero Carbon Buildings for All strongly recommends that energy efficiency feature prominently in ZCB design, construction and operations, and leading ZCB project certifications such as the International Finance Corporation's EDGE require deep energy efficiency and align with the World Green Building Council's definition.

ZCBs are highly aligned with ambitious efforts around net- or near-zero energy buildings (NZEBs) – this initiative views both approaches as critically valuable, complementary pathways toward a decarbonized energy future – but differ in some notable ways. ZCBs and NZEBs both emphasize deep energy efficiency improvements, but ZCBs require that any remaining energy used is free of greenhouse gases. Also, ZCBs prioritize *carbon* rather than *energy* as the defining metric and in many contexts are more readily achieved than NZEBs by also allowing (I) boundaries defined by developers or other relevant authorities at the portfolio or district scale, not just the individual building, (II) off-site clean energy procurement and (III) where necessary and permitted, high-quality, certified local offsets.[4] Indeed, the relative flexibility by which ZCBs can be achieved is one of the major strengths of ZCBs as a climate mitigation/resiliency solution.

Research conducted by WRI over the past year in Kenya, Mexico, China, and India shows that ZCBs are attainable in varying policy environments and there are multiple policy pathways to operationalize them. They are one of the best near- to midterm solutions we have in the fight against climate change, and align strongly with and should go hand-in-hand with related efforts like power sector decarbonization. What has been missing is appropriate ambition by world leaders, and, as a result, the policy frameworks that unlock market development and investment.

[3] While the need to incorporate offsets into ZCB portfolios may arise in some national market contexts, it is the intention of the ZCBs for All initiative that offsets be considered as "last in the loading order" when it comes to ZCB policy, design and development. Offsets should be third party certified using one of several international offset certification schemes and associated registries.

[4] See: "Advancing Net Zero Status Report 2019" World Green Building Council. (May 2019);
"Accelerating Building Decarbonization: Eight Attainable Pathways to Net Zero Carbon Buildings" World Resources Institute. (September 2019)

Zero Carbon Buildings for All

This Summitable Outcome will **dramatically enhance ambition and action on buildings-related emissions**, and consists of **two intertwined and mutually supportive components** that will be developed in tandem**.**

Component 1 — Drive National Ambition via Enabling Policies for Zero Carbon Buildings

Public commitments by regionally influential national governments to attain Paris-compliant (zero carbon) new buildings by 2030 and existing buildings by 2050, reflected in 2020 climate policies such as NDCs.

At the 2019 Climate Action Summit, leaders will announce their commitment to engage in a focused and sustained processes – to include the input and participation of international and local experts and stakeholders from policy, industry, finance and civil society – to co-create by 2020 policy roadmaps and action plans that will achieve zero carbon new buildings by 2030 and existing buildings by 2050.

Policy roadmaps and action plans, as well as sectoral priorities and approaches, are **expected to differ country-by-country due to local market and political economy realities. These might include a combination of enabling policies and standards, codes, and market-based mechanisms targeted at the building and/or energy sectors**, implemented at the national or local level, as appropriate. This diversity is expected to be a strength, as a given country's first-mover experience in one sector (e.g. high-rise residential) can be applied to countries that might have first prioritized other sectors (e.g. municipal buildings, schools and hospitals). National ZCB policymaking processes will benefit from international experience and peer-to-peer exchanges in buildings sector transformation, such as that reflected by the Clean Energy Ministerial's Global Call for Low-Carbon, Energy-Efficient and Resilient Buildings and regional roadmaps developed through the Global Alliance for Buildings and Construction.

Another critical element to success is **synchronizing national and local actions to jointly drive NDC enhancements.** National climate policies, including NDCs, can build on the ambitious, concrete action that local authorities often drive at the municipal, county, provincial, or state level. The actions required at various levels will be facilitated by the implementing partners of ZCBs for All, who have diverse expertise working with national and local governments and the private and financial sectors.

Committed governments can expect to receive sustained support from local and international non-governmental organizations, development banks and finance institutions, and multilateral organizations like the United Nations, who will provide input and guidance on technical, policy and financial best practice. An implementation framework that will facilitate provision of support, sharing of best practices and lessons learned, and regional and international collaboration is being developed, and related funding is being secured. The Global Environment Facility (GEF) has invited a $2m proposal and additional funding and co-financing has been identified. An illustrative overview of that implementation framework is provided in Appendix C. Details on the roles of partners and stakeholders in supporting country commitments and local action can be found in Appendix E.

Zero Carbon Buildings for All will be led by a cross-section of developing and industrialized countries, with an initial target cohort of **United Arab Emirates**, **Turkey,**[5] **Kenya**, **Singapore, India,**[6] **Mexico, Colombia,**[7] **Argentina**, **Germany** and **Denmark.**[8] The **United Arab Emirates and the UK** have already committed and **Kenya and Turkey** have indicated their intent to join. Other national commitments are expected soon. Buildings-related emissions represent an average of 42% of total emissions across these ten countries, and yet to date only Turkey and Mexico's NDCs make specific reference to buildings-related reductions.[9] Recruitment of additional national governments is ongoing.

Component 2 —Drive Action Through $1Trillion+ in ZCB Financing by 2030

Commitments by leaders in industry and finance to participate in and advise country-by-country policy roadmapping processes, and to quickly and decisively align investment and market activity with outcomes.

At the 2019 Climate Action Summit, leaders in industry (e.g. real estate developers, architects, builders, investors) and private and public finance (e.g. national banks, multilateral development finance institutions) will announce plans to engage in and advise upon the country-by-country policy roadmapping processes defined by Component 1. These leaders will be expected to support the policy roadmapping processes as needed and appropriate, advising policymakers on how best to set and implement the standards, codes, incentives, credits and other policies that will unlock sustained and sweeping ZCB market development.

The goal of Zero Carbon Buildings for All is that – as a direct result of these nationally determined policies – at least **$1 trillion** (*only 5% of the buildings-related investment expected in the developing world by 2030*) **of public and private sector investment** be directed toward ZCBs. These investments can be expected to be at least as varied as the approaches that emerge from the policy roadmapping processes, but might include seed capital for project and pipeline development, new or modified investment windows, onlending to regional/local banks, preferential loan conditions, guarantees or backstops, first-loss debt capital, innovative project bundling mechanisms, and other derisking approaches that will crowd-in direct commercial investment.

While innovations in buildings finance may be developed in the execution Zero Carbon Buildings for All, it is anticipated that many existing financing mechanisms and models are readily applicable. Thorough analysis of applicable financial mechanisms will be needed as an input to policy making processes, and providing such analysis to all participating stakeholders will be an early implementation priority. Appendix D illustrates several interesting financing approaches that hold potential for ZCB financing.

Serious action will naturally entail approaching the real estate market with respect to different building typologies and/or market segments (e.g. residential, high- and low-density, commercial, MUSH, industrial). In

[5] Turkey has a strong track record on building efficiency at the local and national level, so this would build upon their National Energy Efficiency Action Plan and new national regulations and financial incentives to increase renewable energy.

[6] India is experiencing massive real estate growth heavily reliant on fossil fuels, has shown commitments at the state level to decarbonize energy supplied for real estate, and needs an impetus to ensure implementation of its Energy Conservation Building Code.

[7] Mexico and Colombia are trendsetters for Latin America, recently updated their national building energy codes, and have numerous policy pathways available to them to spur net zero carbon buildings growth.

[8] As EU members do not have individual NDCs, Germany and Denmark would commit via national legislation by recommending EU Directives.

[9] Turkey's current NDC commits specifically to compliance with the new national Energy Performance of Buildings regulations and to efforts to spread pursuit of energy conservation certifications as well as passive-house and zero-energy house design standards. India's NDC references implementation of the Energy Conservation Building Code (ECBC) and aspires to strengthen the code to promote construction of net-zero buildings. The United Arab Emirates' NDC references the importance of building and efficiency standards as a critical action to reducing resource demand, and highlights strategies including green building regulations, efficiency standards, retrofit programs and support structures for energy service companies. This proposal would provide implementation pathways for these three NDCs. The current NDCs of Mexico, Colombia, Kenya, Singapore, Argentina, Denmark, and Germany do not make specific commitments regarding mitigation in the building sector, instead making broad commitments to emissions or emissions intensity reductions against BAU. Source: NDC documentation

any given country market, segments will differ in terms of technical/workforce readiness and political/market feasibility; further, financing instruments, channel (direct to developer or via government) and attractiveness to the private banks will differ (e.g. social housing vs. luxury apartments vs. municipal offices). While it is clear that *all* buildings globally must be zero carbon by 2050 to meet 1.5°C, it is a strength of Zero Carbon Buildings for All that each national market will be in a position to pioneer solutions to zero carbon buildings based on its own political, technical and market resources. This, along with the support framework to be provided by NGOs and multilateral institutions, will yield faster development and dispersion of innovations. We also expect a strong need for intermediaries like local banks in order to improve transaction efficiency for the regional and global banks. Regardless of the segment, it is clear that the enabling policies from Component 1 are essential to success in financing in Component 2, and vice versa.

Several leading international finance institutions have already indicated their support for Zero Carbon Buildings for All and committed to engage following the Climate Summit, including the **African Development Bank (AfDB), the European Investment Bank (EIB), the International Finance Corporation (IFC)**, t**he Danish Investment Fund for Developing Countries**, among others. Recruitment of international finance institutions and local financial interests is ongoing.

Leading private sector and buildings industry leaders have also indicated their support, including buildings technology firms **Rockwool, Saint-Gobain,** and **Danfoss** and the world's largest architecture firm, **Gensler.** Recruitment of select industry leaders is ongoing.

Committing to Zero Carbon Buildings for All

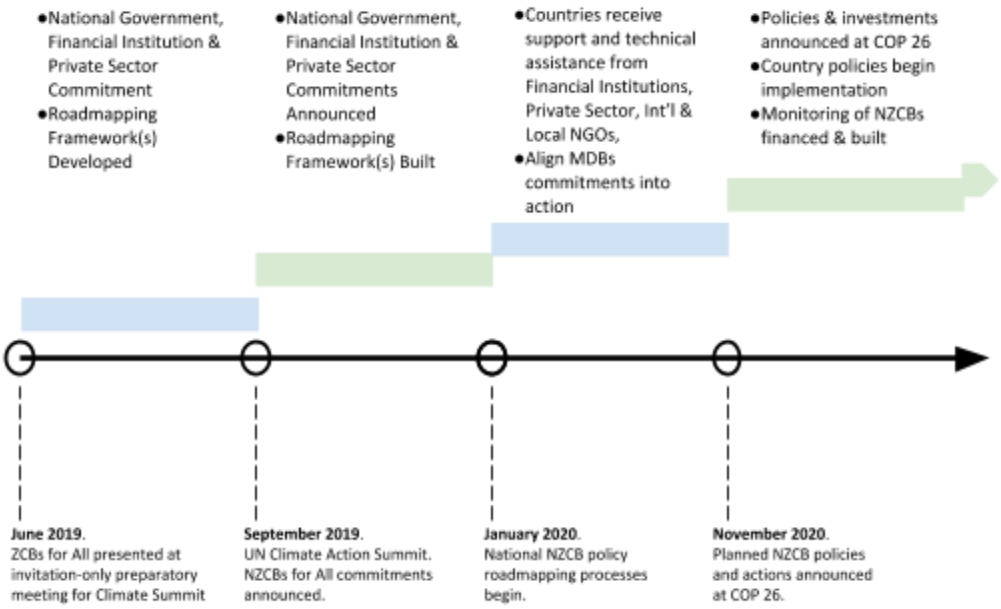
Zero Carbon Buildings for All seeks to dramatically raise the level of ambition of policymakers, financiers, and the private sector as relates to buildings-related climate mitigation and resilience. The initiative also seeks to create and sustain technically rigorous, accountable frameworks for action.

- **National Governments** can commit to Zero Carbon Buildings for All by drafting and signing *a statement of intent* (see example in Appendix A), publicly announcing their commitment at the *2019 UN Climate Action Summit*, planning and *executing multi-stakeholder ZCB policy roadmapping processes*, and sharing *updates on the outcomes of those processes by UNFCCC COP 26* in November 2020. The regional and national policy roadmapping processes will unlock a range of implementation options for national governments, supported by technical assistance from implementing partners.

- **Financial Institutions** can commit by *providing expert input and technical assistance* to the policy roadmaps to ensure that they unlock flows of finance sufficient to ensure that governments and the private sector can achieve ZCB goals, and by *aligning investment pipelines and strategies* accordingly. (See example commitment statement in Appendix B).

- **The private sector** can commit by providing expert input to the policy roadmaps to ensure they create effective frameworks for cost-effective industry activity, and by *aligning business activities and pipelines* accordingly. (See Appendix B). Companies can also demonstrate their leadership through signing on to the WorldGBC Net Zero Carbon Buildings Commitment or the Science Based Targets initiative.

Zero Carbon Buildings for All | Illustrative Timeline



Buildings & the Climate Crisis

The buildings sector presents perhaps the world's best climate mitigation opportunity, but is showing insufficient progress toward 2020 milestones that would put the world on the path towards remaining under 1.5°C warming.[10] Buildings are not only off track to meet the 1.5°C target, they are heading in the wrong direction. Emissions from buildings have risen for two years in a row, creeping back to their 2013 peak.[11]

- Building operation accounts for 28% of energy-related carbon emissions globally, with construction adding another 11%; taken together, these make buildings the single largest sector contributing to these emissions.[12] Though there has been significant progress on building efficiency by leading countries, cities, and developers, that progress has been more than offset by population growth, urbanization trends, and increases in the overall size and numbers of buildings, thereby increasing final energy demand from buildings.[13] The global building stock is set to double by 2060—without dramatic energy efficiency improvements and decarbonization of the energy used in buildings globally, building energy demand will continue to drive massive absolute increases in carbon emissions.
- The climate challenge posed by buildings is made more challenging still by a slowdown in the rate of energy efficiency investment as a share of total investment in building construction and renovation.[14] In 2018, buildings-related energy efficiency investment declined by 2% to $140B globally, marking the third consecutive year in which the improvement rate for overall energy efficiency slowed.[15]
- The climate challenge posed by inefficient, carbon-intensive buildings is growing, just as overall investment and attention to it is decreasing. The problem is not that the technologies and knowledge we need to succeed do not exist—quite the contrary, they exist, they are cost-effective, and they make buildings and cities healthier and more habitable. The problem is that the clear and compelling policy signals that the private sector needs to help shape its investments are lacking.

Buildings as a Climate Policy "Blindspot"

To meet Paris Agreement goals, the world's building stock must be carbon neutral by 2050—success here will require an alignment of policy, investment, development and private sector action. And buildings present cost-effective solutions to the climate crisis, while offering unparalleled societal co-benefits. However, the world's policymakers are by and large not pursuing the massive opportunity that buildings present. Much greater ambition around buildings policy will be needed to create the frameworks and send the signals that will inspire private sector action.

[10] Tracking Progress of the 2020 Climate Turning Point, 2019, World Resources Institute
[11] IEA "Tracking Clean Energy Progress" 2019 https://www.iea.org/tcep/buildings/
[12] 2018 Global Status Report: Towards a zero-emission, efficient and resilient buildings and construction sector. International Energy Agency and United Nations Environment Programme, 2018.
[13] *Ibid.*
[14] IEA and United Nations Environment Programme, (2018): 2018 Global Status Report: Towards a zero-emission, efficient and resilient buildings and construction sector.
[15] 2019 World Energy Investment, International Energy Agency, https://www.iea.org/wei2019/end-use/

- While roughly 70% of NDCs mention buildings, only 46 NDCs call out buildings-related policies as part of their commitment.[16] Indeed, the current scope and ambition of building sector commitments are insufficient to meet Paris Agreement goals, making it a rich area for increased NDC ambition.[17]
- Less than ⅓ (one third) of countries have mandatory building energy codes or certifications and only 18 countries have codes targeting existing buildings.[18]
- Because of the costs and timescales involved, buildings-related investment and development depends on clear, reliable policy like standards, codes, incentives and credits. The private sector has the technology and know-how to deliver on zero carbon buildings (in new buildings and through retrofits, in all buildings sub-sectors) and wants to make progress on ZCBs – for example, in June 2019 the American Institute of Architects voted "overwhelmingly" to call on its 94,000 global members to "exponentially accelerate the decarbonization of buildings, the building sector, and the built environment" – but it needs clear and compelling signals from policymakers that will unlock finance and catalyze scaled market activity.

Buildings as a Critical Climate Solution

Decarbonizing the global building stock is cost-effective, technically achievable, and politically feasible. Moreover, it's urgently needed and overdue. We cannot meet climate goals without deep commitment and action to decarbonize the building sector.

- Not only are buildings among the largest sources of carbon emissions, improving their energy performance is the cheapest way we have to reduce emissions globally.[19] Crucially, improved buildings deliver substantial societal co-benefits, many of which are key to UN Sustainable Development Goals: health, cost of living, economic development, cost of public service provision, and more.[20] Efficient buildings powered by clean energy tend to enhance urban resilience through design features such as cool or green roofs, which reduce urban heat islands and surface water runoff.[21] Yet, despite the extraordinary potential for improved buildings to drive climate solutions and a more sustainable future, 80% of economically viable energy savings in buildings remain untapped.[22]
- With today's technology, energy efficiency alone could contribute more than 40% of the global emissions reductions needed to reach global climate goals.[23] Breakthroughs in on- and off-site clean energy production (e.g. a 60% reduction in average photovoltaic prices), storage (e.g. 80% reductions in battery prices), and energy management also make a shift to clean electricity possible for nearly all buildings. Buildings can now generate and store their own carbon-free electricity onsite, or they can procure cheap off-site production and act as a driver of local clean power markets. Buildings can aggregate their clean energy efforts to enable economies of scale for energy generation and storage. These technological and operational innovations optimize building energy loads by time-of-day, offering policy makers and utilities a powerful tool to better manage power sector operations, add more renewables to the grid, and provide safer and more reliable service.
- Increased building efficiency decreases energy demand and buys time for the power sector to decarbonize, while pairing deep efficiency improvements with on- or off-site renewables offers an even greater opportunity for accelerating carbon reductions. By putting the emphasis on *carbon reductions* rather than a specific technology or approach, zero carbon buildings better target the most important

[16] 2018 Global Status Report: Towards a zero-emission, efficient and resilient buildings and construction sector. International Energy Agency and United Nations Environment Programme, 2018.
[17] United Nations Environment Programme (2018): A guide for incorporating buildings actions in NDCs.
[18] International Energy Agency 2018
[19] Global GHG Cost Curve V2.1 beyond BAU – 2030 by McKinsey & Company
[20] WorldGBC, PRP, Skanska, Grosvenor, Estidama "The Business Case for Green Buildings", 2013
[21] Green and low-carbon buildings even help manage mitigation-adaptation tradeoffs, especially in rapidly growing cities. Urban density, for instance, increases the efficiency of urban energy use and thus reduces power related GHG emissions, but simultaneously worsens urban heat island effects and surface runoff conditions (Gill et al. 2007).
[22] World Bank Energy Sector Management Assistance Program 2019
[23] Energy Efficiency 2018: Analysis and Outlooks to 2040. International Energy Agency, 2018

climate objective and allow policymakers and industry significant flexibility in achieving that objective. Efficiency and renewables are all too often silo-ed, but in zero carbon buildings they align to create a uniquely powerful decarbonization opportunity.

- Lastly, every sector on earth has buildings among their largest assets. The strong business case for improved buildings – lower operational costs, resiliency, improved inhabitant/employee health and cognition[24] – can inspire change from within even the most skeptical and intransigent sectors.

Zero Carbon Buildings for All | An Achievable, Necessary Climate Solution

- **It's clear that the building stock must be zero carbon by 2050 to meet the goals of the Paris Agreement, but fewer than 1% of buildings are zero carbon today**. The World Green Building Council estimated that 2,500 such buildings existed worldwide as of 2017.[25] By way of contrast, New York City alone has roughly 1 million buildings. To meet our shared climate goals, the world needs radically enhanced ambition and action around zero carbon buildings.
- **Zero carbon buildings are cost-effective and achievable in nearly all sectors and economies.** Near Zero Energy Buildings (NZEBs) – which are mandated in California by 2020, in the EU by 2021, and in Canada by 2030 – are a result of ambitious energy efficiency policies that provide a strong proof of concept for ZCBs; and ZCBs for All views NZEBs as another crucial pathway toward deep decarbonization. However, in many national contexts, ZCBs can be more flexibly achieved than NZEBs.[26] Recent research demonstrates that "a decarbonized building stock is technically attainable and politically feasible in all jurisdictions" and that many countries – including Kenya**,** Mexico, and India – already have the policy frameworks needed to move toward broad roll-out of ZCBs.[27] Further, six countries (Argentina, Mexico, Germany, France, Morocco and Switzerland) have already committed to the GlobalABC's Global Call to develop national strategies to decarbonize their buildings and construction sector.[28]
- **ZCBs put the emphasis on carbon and provide policymakers, utility sectors, buildings developers and investors a flexible, cost-effective toolkit** that includes deep efficiency, on- and off-site clean energy, high quality local offsets, and district and portfolio planning.

Zero Carbon Buildings for All | Collaborative National & Local Action

- ZCBs are attainable with widely available technology and commonly understood architectural techniques like integrated or passive design. What's been missing is an **injection of national policy ambition** (through targets, roadmaps, and enabling policies) and the **strong financial and private sector commitments** that build off policy.
- Cities represent the majority of current and future building stock and have proven to be excellent testing grounds for policy ambition. Ambitious action often takes place in cities but is often not recognized or enabled by national commitments and action plans. For example, for the past four years, WRI and its Building Efficiency Accelerator public-private partners have provided the technical assistance necessary to support 40 cities around the world committed to taking actions to implement building energy codes and initiate building retrofits. The city of Kochi, India is also creating India's first municipal zero carbon buildings roadmap, further raising the ceiling for city ambition and proving out ZCB policy models.

[24] https://green.harvard.edu/tools-resources/research-highlight/impact-green-buildings-cognitive-function
[25] From Thousands to Billions: Coordinated Action towards 100% Net Zero Carbon Buildings By 2050. World Green Building Council, 2017.
[26] Zero Energy Building Definitions and Policy Activity: An International Review. International Partnership for Energy Efficiency Cooperation Building Energy Efficiency Taskgroup, 2018.
[27] Accelerating Building Decarbonization: Eight Attainable Pathways to Net Zero Carbon Buildings. (Forthcoming). World Resources Institute
[28] Global Call for Low-carbon, Energy-efficient and Resilient Buildings. Clean Energy Ministerial and Global Alliance for Buildings and Construction, 2018.

- Time and again, **barriers to city-level implementation stem from the absence of national enabling policies and financing.** WRI has worked with cities like Bogotá, Colombia (case study), Mexico City, Mexico (case study), and Eskişehir, Turkey (case study) to urge their national governments to upgrade national policies on building energy performance. These national actions can then create virtuous feedback loops and ripple effects, with cities ratcheting up their ambition. We witnessed this in action with Yucatan, Mexico signing on to the World Green Building Council-led "Net Zero Carbon Buildings Commitment" for local governments and businesses.
- At the national level, Zero Carbon Buildings for All will avail itself of the Global Alliance for Buildings and Construction's regional and national roadmaps (in process) for energy efficient buildings as well as their national dialogue series. This will be informed by the city- and private-sector work to ensure that national policies support and amplify local leadership. Further, the initiative will create pathways for national and local leaders to showcase their leadership and innovations and share best practices.

Appendix A: Statement of Intent by National Governments

Recognizing the urgent need for deep and sustained action on climate change, and the central and critical role that buildings can and must play as a climate solution, [_____] commits to the Zero Carbon Buildings for All initiative.

Immediately following the 2019 UN Climate Action Summit, [_____] will engage in a policy roadmapping process focused on determining our nation's best pathways toward zero carbon new buildings by 2030 and existing buildings by 2050.

To the extent possible, this roadmapping process will involve and incorporate input from local and international experts and leaders in finance and industry. [_____] will aim to announce the outcomes of our efforts at COP 26 in November 2020.

Alternate Appendix A: Statement of Intent by National Governments signed onto the Global Call

Recognizing the urgent need for deep and sustained action on climate change, and the central and critical role that buildings can and must play as a climate solution, [_____] commits to the Zero Carbon Buildings for All initiative. This builds on the momentum of [_____]'s national commitment under the Global Call for Low-carbon, Energy-efficient and Resilient Buildings issued at the 8th Clean Energy Ministerial in 2018.

Immediately following the 2019 UN Climate Action Summit, [_____] will engage in a policy roadmapping process focused on determining our nation's best pathways toward zero carbon new buildings by 2030 and existing buildings by 2050.

To the extent possible, this roadmapping process will involve and incorporate input from local and international experts and leaders in finance and industry. [_____] will aim to announce the outcomes of our efforts at COP 26 in November 2020.

Appendix B: Statement of Intent by Private Industry & Financial Institutions

Recognizing the urgent need for deep and sustained action on climate change, and the central and critical role that buildings can and must play as a climate solution, [_____] commits to the Zero Carbon Buildings for All initiative.

Immediately following the 2019 UN Climate Action Summit, [_____] will make itself available to and engage in the relevant policy roadmapping processes of nations that have committed to Zero Carbon Buildings for All. Our goal throughout these processes will be to provide expert input and assistance wherever possible, and to be a voice for appropriately high levels of ambition.

Further, to the extent possible and pending national policy outcomes, [_____] will seek to align its investment strategies and/or project pipelines to the goal of achieving zero carbon new buildings by 2030 and existing buildings by 2050.

Appendix C: Post-Climate Action Summit Implementation Framework
(PENDING DISCUSSION/SCOPING; FOR ILLUSTRATIVE PURPOSES ONLY)

The goal of the Zero Carbon Buildings for All initiative is to dramatically raise global ambition related to climate mitigation and resiliency in the buildings sector and to turn that ambition into action. Public statements of commitment are valuable and necessary, and they must be quickly followed by timely, rigorous policy and market actions that decarbonize the global building stock. As such, Zero Carbon Buildings for All has been developed with post-Climate Action Summit implementation in mind.

There will be no one-size-fits-all approach to building sector decarbonization – nor should there be – as each country must navigate their own on-the-ground political economy and market reality. Success will require committed, innovative leadership at national and local levels along with collaboration among local, national, and international stakeholders to share resources and best practice.

International technical, policy and financial experts stand ready to advise upon and support ambitious action. Well-established, effective networks and platforms like the Building Efficiency Accelerator (BEA), the World Green Building Council (and its network of national building councils), the International Finance Corporation's EDGE Program, the Global Alliance for Buildings and Construction, the Programme for Energy Efficiency in Buildings (PEEB), and others exist to provide support and technical assistance to building sector stakeholders, at the city and national level, around the world.

Zero Carbon Buildings for All will leverage the credibility, know-how and capacity of these entities and others to deliver a collaborative policymaking and knowledge-sharing framework that

I. Prioritizes and resources national and local leadership
II. Engages and strengthens the best technical expertise across relevant topics from throughout the entire buildings value chain, locally, nationally, and internationally,
III. Encourages peer-to-peer sharing of successes and lessons among participating governments to accelerate success, and
IV. Quickly and effectively communicates good practice to participating governments, institutions and the public, as appropriate.

Envisioned Implementation Structure

Pending in-depth scoping and resourcing discussions with participating countries and stakeholders, Zero Carbon Buildings for All's implementation and engagement structure is envisioned as follows:

1. **National Commitments and Roadmaps for Policymaking**
   Supported by a network of local and international experts, an international coordinating effort, and (resources permitting) on-the-ground expert staff, each participating country will establish its own policy roadmaps and action plans to realize a decarbonized building sector.

   Each country-specific approach will be driven by stakeholder engagement and dialogue, developing, relying upon, and continually strengthening collaboration among relevant national government ministries, local governments, utilities, the investment community, private sector, and civil society. This will create a framework for the development of roadmaps and action plans that are best suited to specific national contexts, including pathways for scaling by local governments. Interested industry partners, civil society organizations, and financial institutions will provide technical

assistance and expert input, working with the stakeholder coalition to maintain and promote an appropriately high level of national ambition.

2. **Local Implementation towards Zero Carbon Buildings for All**
   Also supported by a network of local and international experts, an international coordinating effort, and (resources permitting) on-the-ground expert staff, participating local governments will develop long-term roadmaps for building decarbonization and implementation of plans, policies and projects that align with national roadmaps and commitments.

   As with the national approaches, each local engagement will be driven by a local stakeholder coalition to ensure that actions undertaken are best suited to the local context with strong buy-in from a broad and varied set of stakeholders.

3. **International Coordinating Effort**
   The initiative will be implemented through existing platforms, including those mentioned above, with partners collaborating on knowledge sharing, resource coordination, high-level communications, reporting and other administrative functions. ZCBs for All will build on existing partnerships and the already-strong coordination among existing platforms, catering to their strengths. What is envisioned is a network of existing networks and frameworks, each contributing its relative strengths to bold new efforts. Approaches and leadership roles to ensure this coordination will be determined based on agreement among the partners.

   Global, regional and local engagement will flow through the coordinating effort and partner stakeholders in regional leadership roles. The coordinating effort and Regional Leads will direct resources and expertise to specific national and local efforts as appropriate. For example, a multilateral development bank with activities and infrastructure in several participating countries could coordinate with the coordinating effort and relevant Regional Lead in directing activity toward country-specific or city-specific action in order to maintain alignment with overall program activities and goals. Similarly, leadership of a multinational corporation might engage with the coordinating effort to ensure that the actions of national staff in markets of interest are aligned with country-specific stakeholder coalitions.

   The coordinating effort will lead knowledge sharing through online and in-person activities such as an online knowledge sharing hub for all partners (countries, cities, organizations), webinar series, and regional thematic trainings and capacity building workshops. The coordinating effort may establish working groups to focus on specific areas of interest or need (e.g., design and development of tools and resources for core topics, the role of specific types of financial actors or mechanisms).

To be clear – though support and technical and financial resources are expected from the coordinating effort, international institutions, and private sector actors – each national policy roadmapping and implementation effort will be led by that nation, and driven forward by the engagement of local constituencies.

Leveraging & Scaling Up the Building Efficiency Accelerator Framework in Support of ZCBs for All

To support Zero Carbon Buildings for All and participating countries, the Global Environment Facility (GEF) has invited a proposal for an **initial US$ 2M of funding to support implementation** based on the success of the Building Efficiency Accelerator, which the GEF supports. Additional funds from other sources have been identified and are being secured by WRI.

Implementation will be accomplished via coordinated action by the partners listed in this document, and others, including, but not limited to:

- Global Alliance for Buildings and Construction
  - Regional roadmaps, high-level convenings, national recruitment through its Global Call
- World Green Building Council
  - Private sector, cities, states and regions recruitment through its Net Zero Carbon Buildings Commitment
- International Finance Corporation
  - ZCB project certification through EDGE, finance and investment TA
- Program on Energy Efficiency in Buildings
  - National engagements
- WRI
  - Partner recruitment, sub-national and national engagements, project implementation

Points of Engagement for Partners & Stakeholders

The structure of the initiative and related work will undoubtedly evolve as it scales up globally to meet the ambitious targets associated with 1.5ºC scenarios. As such, there will be countless opportunities for local and international stakeholders of all kinds to engage, influence and act—many of which are difficult to define at this early stage. However, the table below is a sketch of how institutions and constituencies might engage and coordinate with Zero Carbon Buildings for All in the near term.

Potential for Stakeholder Engagement (Illustrative; Non-Exhaustive)

	National Engagements e.g. Defining & Implementing National ZCB Policy Roadmaps	**Local Engagements** e.g. City & Local-Level Policies and Programs Aligned with National Roadmaps	**Int'l & Regional Engagements** e.g. Major Events, Conferences & Workshops	**International Coordinating Effort** e.g. Knowledge-Sharing, Resource Coordination, Reporting & Communications
MDBs & MFIs; Public Investors	• Advising policymaking processes on innovations & best practice • Aligned financing commitments • Direct technical assistance	• Concessionary finance to crowd in private investment • Direct technical assistance & advisory services	• Enhanced commitments • Recruitment of other financial actors • Pressing for increasing ambition • Hosting; Sponsorship	• Sharing case studies & other knowledge products • Financial support • Working groups & steering committees
Private Financial Institutions	• Advising policymaking processes on market dynamics & policy impacts • Aligned financing commitments	• Investment in ZCBs • Development of innovative financial instruments • Advisory services	• Showcasing investment leadership • Sharing on-the-ground perspective, needs & opportunities	• Sharing case studies & other knowledge products • Showcasing investment leadership • Sharing on-the-ground perspective
Large Corporates / Multi-Nationals	• Advising policymaking processes on innovations & best practice • Aligned financing / project commitments	• Project leadership & investment • Development of innovative designs & approaches	• Showcasing technical & investment leadership • Enhanced commitments • Pressing for increasing ambition • Hosting; Sponsorship	• Sharing case studies & other knowledge products • Working groups & steering committees

Local & Regional Builders	● Advising policymaking processes on market dynamics & policy impacts	● Develop & build ZCBs ● Technical & business model innovations	● Showcasing technical & investment leadership ● Sharing on-the-ground perspective, needs & opportunities ● Attract int'l investment	● Showcasing leadership ● Sharing on-the-ground perspective
Int'l NGOs / CSOs	● Advising policymaking processes on innovations & best practice ● Direct technical assistance	● Direct technical assistance	● Enhanced commitments ● Pressing for increasing ambition ● Hosting; Sponsorship	● Co-Management of Coordinating Effort ● Sharing case studies & other knowledge products ● Financial support ● Working groups & steering committees
Local NGOs / CSOs	● Local constituency representation ● Advising policymaking processes	● Local constituency representation	● Sharing on-the-ground perspective, needs & opportunities	● Working groups & steering committees ● Sharing case studies & other knowledge products

Appendix D: Potentially Applicable Financing Mechanisms & Models

While, there is relatively little experience in developing and financing ZCBs, lessons and **experience from financing highly energy-efficient buildings and procuring renewable energy is instructive if not directly applicable**.

Preliminary analysis by WRI points to the following examples of policies and/or financing mechanisms that could be leveraged to speed ZCB development:

Enabling Environment & Market Ecosystem Measures

- *Modifying mortgage lending requirements to allow for green investments:* For example, the Romanian Green Building Council (RoGBC) created a program that changed commercial consumer credit requirements to include future cost savings from energy efficiency improvements as "income." This change has allowed potential homeowners to obtain favorable financing terms offered through private banks, such as Raifeisen Romania.
- *Modifying contractual terms for large energy consumers:* The Government of Argentina revised market rules to allow large consumers to obtain renewable power for their buildings through direct supply contracts with private generators.
- *Imposing restrictions for equity sales:* Due to the tendency of contractors to sell equity immediately upon completion, a potential banking sector regulation could require builders to retain equity ownership of new buildings for 3 to 5 years or until the capital costs related to energy efficiency improvements are certified.
- *Contract standardization for EE improvements and retrofits:* Standardization reduces transaction costs, allowing lenders to better manage risks, and encouraging pooling of loans and bonds.
- *Certification of Energy Efficiency Improvements:* An important issue for lenders is that the necessary framework must be in place to measure, report, and verify energy efficiency improvement and the resulting cost savings. Monetized cost savings have not only been used to secure debt, but also provides the underpinning for Energy Service Company (ESCO) models, Energy Service Agreements (ESAs) and similar contracting models. In this manner, establishing the framework for verification and certification provides greater comfort to lenders and supports de-risking, thereby expanding access to financing.

New Revenue & Contracting Models

- *Pay-As-You-Save (PAYS)* models: PAYS models based on the monetization of cost savings tend to be effective if payback periods match debt maturities, e.g. 5 to 7 years. Longer payback periods likely require an additional financial partner or credit enhancements. Local utilities are often the key intermediaries for the monetization of cost savings.
- *Green leases:* National or local governments can mandate or incentivize the inclusion of provisions in owner-tenant lease agreements to permit building owners to pass on the cost of energy efficiency improvements to tenants in line with national standards.
- *Tax credits:* Tax credits can incentivize investment toward energy retrofits by reducing overall capital and lifecycle costs. An advantage of tax credits is that energy retrofits do not require debt financing for the benefits to be obtained.

Financing Facilities & Credit Enhancements

- *Direct lending programs for residential buildings:* Existing lending programs to encourage EE in residential buildings have shown considerable success, providing models for replication and expansion. Fannie Mae in the United States launched its Multifamily Green Financing Business which offers advantageous lending terms to owners of multifamily business who commit to 30 percent decreases in energy and 15 percent in water consumption. Fannie Mae also changed its lending policies to include anticipated cost savings from water and energy reductions, allowing borrowers to take on 1 to 2 percent larger loans.
- *Lending programs and credit enhancements for commercial and industrial buildings:* A potential model for mobilizing finance for EE improvements in commercial and industrial buildings is non-profit Energy Efficiency Investment Corporations (EEIC). EEICs are similar to economic development or industrial loan corporations, which offer lower-interest loans and tax credits to improve financing terms. For example, the New York City Energy Efficiency Corporation (NYCEEC) offers several financing products, including direct loans, credit enhancement facilities, and ESA financing. To qualify, property must commit to improvements that result in energy reductions of at least 20 percent. NYCEEC's $50 million in financing has been roughly split between commercial/industrial building and multi-family housing.
- *Secured debt:* Green bonds can be issued by public and private entities with real estate portfolios (e.g. real-estate companies, property developers and real estate investment trusts), holders of loans secured by property assets (e.g. banks with green mortgage portfolios) and manufacturing entities or equipment suppliers (e.g. LED lighting and insulation manufacturers). Covered green bonds are secured against a collateralized pool of assets, while uncovered green bonds are secured against the issuer's "full faith and credit." Asset securitization helps the bonds to obtain better credit ratings along with cheaper financing.

Additional research and analysis related to relevant policy and financing models is underway, and will be made available to participating countries and stakeholders at the earliest opportunity.

Appendix E. Select Partners & Stakeholders

Zero Carbon Buildings for All will be supported by partners across civil society, government, and the private sector, leveraging existing efforts to make them more than the sum of their parts. This team is also primed to deliver implementation support to signatory countries post-Summit to help write and implement their policy roadmaps between 2020-2025 (budget estimate available upon request). WRI has secured verbal support for significant funding for implementation of this proposal post-Summit. That will provide funding for technical assistance, both global and local, to the countries that make the commitment, starting with the lowest income ones.

Component 1 ("National Ambition") Partners

a. **National Governments:**
   - The Global Alliance on Buildings and Construction (GlobalABC) is comprised of 29 countries and 94 non-state organizations. GlobalABC will support at the national level in drafting NDC and national policy language for buildings. GlobalABC published a global roadmap towards zero emission, efficient and resilient buildings which is being regionalized upon three major regions (Africa, Asia, and Latin America), and a Guide for Incorporating Buildings Actions in NDCs. Each year, GlobalABC publishes the Global Status Report on the buildings sector climate transition. (confirmed).
   - **NDC Partnership**, hosted at World Resources Institute, can support crafting of NDC language for the countries it supports, which include Kenya, Colombia, and Mexico.
   - Long-time partners **World Resources Institute and** World Green Building Council already plan to host dialogues throughout 2019 between national and local governments in at least four of the ten countries to develop vertically-integrated work plans to replace barriers to implementation with enabling policies.

b. **Industry and Local Governments:**
   - Leading building technology companies Rockwool and Saint-Gobain have committed support (confirmed). With Danfoss, Rockwool is supporting ZCBs for All in part through its own complementary initiative – The 1 Million Buildings Challenges (under development) – which will encourage nations to undertake deep energy efficiency retrofits on 3% of their existing building stock annually by 2025.
   - World Green Building Council brings expertise in recruiting government and private sector commitments to net zero carbon buildings via its network of green building councils composed of real estate developers and construction firms (confirmed).
   - Urban Land Institute, a global association of real estate developers and owners, has offered to help recruit developers, investors, and land-use experts in their key markets (confirmed).
   - The industry partners of the Building Efficiency Accelerator will help encourage government commitments by showcasing the affordability and availability of technology and expertise. Many of the industry partners couple their technology with financing instruments (e.g. pay-as-you-save) that can bring upfront costs to essentially zero (confirmed).
   - With projects in more than 2,500 cities around the globe, Gensler is the world's largest architectural design firm. Gensler is a leader in sustainable design, having designed more than 1,000 existing green buildings -- including San Francisco International Airport's Terminal 2 and the Shanghai Tower -- and with hundreds more in the pipeline. Gensler strongly supports Zero Carbon Buildings for All, and will be offering its considerable design, materials and built environment expertise to national roadmapping dialogues (confirmed).
   - BuroHappold is a global multi-disciplinary engineering and consultancy practice and a leader in creative design, engineering and environmental sustainability. With over 1800 skilled

employees, the firm prides itself in creating transformative and creative solutions for the built environment while ensuring positive contribution to climate, society, culture and the environment. Most recently, BuroHappold led a team of experts to develop the first-ever Countywide Sustainability Plan for Los Angeles that encompasses 88 cities and over 10 million residents. BuroHappold whole-heartedly supports the 'Zero Carbon Buildings for All' initiative and will provide assistance to develop national plans towards a carbon-free future. (confirmed)

- World-class design and engineering firms Arup and NBBJ have indicated potential interest.

c. **Making the Case**: Pacific Northwest National Laboratory will run the quantitative modelling of GHG reductions and co-benefits to make the case for national and financial commitments (confirmed).

Component 2 ("Financing") Partners

a. **Blended**: Germany and France's Programme for Energy Efficiency in Buildings (PEEB), assists governments in the development of investment-friendly policies on energy-efficient buildings in Mexico, among other countries, and endeavours to mobilize new funds through its donor-accredited implementing agencies (confirmed).

b. **Public Capital Providers**: Capitalizing on the leadership positions of EIB and EBRD on energy efficiency lending, and support from the UN Special Envoy where needed, convince members of the International Development Finance Club, with USD $4 trillion in assets, to increase direct sub-sovereign lending and/or local bank capacity building on Paris-compliant real estate projects.[29]

a. **Private Capital Providers**: IFC's EDGE program has offered to recruit multilateral partners and is committed to increasing its own sizeable investment commitment (where roughly ¾ of IFC-funded buildings projects are EDGE certified) to ZCBs. Mayor Bloomberg's new Climate Finance Leadership Initiative, composed of major private sector financial institutions – some of which are major players in real estate – and/or the Institutional Investor Network on Climate Change in order to identify and remove barriers to financing private building stock upgrades. We will take full advantage of the new expectations on capital providers spurred by the Taskforce on Climate-Related Disclosures.

Workplan

	World Resources Institute [Emma Stewart]	**World Green Buildings Council** [Cristina Gamboa]	**Global Alliance for Buildings and Construction, UN Environment** [Martina Otto]	**Pacific Northwest National Laboratory** [Meredydd Evans]	**Programme for EE in Buildings** [Christiana Hageneder]
March	Country and partner consultations & proposal drafting				
April (30 April first list of possible outcomes)	Finalize partner commitments; Finalize country list	Finalize country list	Finalize country list		
May (15 May revised long list)	Represent the Subtrack in UNSG Summit workshop				

[29] We will seek to leverage the new TA Facility for MDBs set up by Denmark with Climate Investment Funds Climate Investment Funds to do country level work on enabling frameworks for investment in clean energy, for which ZCBs could be a good theme.

<table>
<tr><td>June (Abu Dhabi meeting 30 June – 1 July)</td><td colspan="5">● Host national workshops in Turkey, India, Mexico, Colombia
● Refine joint work plan July – September (Phase 0) and two-pronged implementation proposal (Phase 1: September 2019 – 2020 NDC submission deadline, Phase 2: 2020 NDC submission deadline to 2025 NDC submission deadline)
● Fundraise for post-Summit implementation</td></tr>
<tr><td>July</td><td colspan="3">Confirm country commitments, using quantitative analysis and ZCB policy pathways as ‘sales pitch’</td><td colspan="2">Confirm financial institution commitments, using business case, ESCO track record, and shifting policy landscape as ‘sales pitch’</td></tr>
<tr><td>August</td><td>Design “run of show” for Summit presentation</td><td colspan="4">Contribute to “run of show” for Summit presentation</td></tr>
<tr><td>September</td><td colspan="5">Finalize “run of show”, respective roles, logistical details</td></tr>
<tr><td>21-23 September</td><td colspan="5">Climate Action Summit</td></tr>
<tr><td></td><td>Announcement</td><td>Announcement</td><td>Announcement</td><td>Announcement</td><td>Announcement</td></tr>
<tr><td>October
November</td><td colspan="3">Draft NDC and national policy language with each participating country</td><td>Tailor GHG and co-benefits estimates by country’s political priorities; fill in any data gaps</td><td>Draft design of investable windows; evaluate financial instruments of greatest promise to each participating country</td></tr>
<tr><td>December (2-13 COP25)</td><td colspan="3">● Support participating countries’ delegation as they reveal draft 2020 NDC and national policy language for ZCBs
● Invite countries with similar regulatory regimes to adopt</td><td></td><td>Announce country-specific financial assessments</td></tr>
</table>

Appendix F: Why is this Initiative Summitable?

This section describes how the ZCB for All initiative fulfils the criteria for "Summitable" outcomes laid out by the UN:

- **Transformational Impact:** Initial analysis indicates that pursuit of a policy roadmap consistent with these goals in all 10 countries has ***the potential to result in emissions savings of over 432 million tons CO_2e annually by 2030***[30]. We are also undertaking detailed quantitative analysis of the total greenhouse gas abatement potential achievable in 2025 and 2030 across these countries across a range of national policy scenarios and related NDC commitments.
- **Sustainable Development Co-Benefits**: This proposal directly contributes to Sustainable Development Goals #3 (Good Health & Well-Being), #7 (Affordable and Clean Energy), #8 (Decent Work & Economic Growth), #9 (Industry, Innovation & Infrastructure), #11 (Sustainable Cities & Communities), and #13 (Climate Action) while indirectly contributing to #1 (No Poverty), and #10 (Reduced Inequalities). We are also analyzing the social costs and benefits of this initiative to building occupants, neighbours, and the global community.
- **Implementable and Measurable:** This initiative will make a big contribution simply by harmonizing the handful of definitions for "zero carbon buildings", which varies slightly between that of the Green Buildings Councils and IFC, but are reconcilable. We will also raise awareness on the synergy between net zero carbon and net/near zero energy building policies, which are appearing in some locales, and the benefits of drawing boundaries at a district or portfolio-scale, rather than an individual building scale. Both efforts help standardize metrics and therefore measurement.
- **Replicable and Innovative:** One of the requests by national governments we have already engaged are to provide the following key deliverables which will make this highly replicable:
    - Step-by-step guidance on policy and investment implementation, accounting for variation across countries.
    - Sample Paris-compatible public procurement language so governments and commercial owners can easily adopt best practices for their own building stock.
- **Visible and Scalable:** Demonstrating in multiple and diverse countries that aligned national and local policy is attainable, the technology extant, and finance deployable is the first critical step to scalability. But we will also provide the following in order to ensure "positive contagion":
    - An additional pipeline of countries ready to create regional market pull via the regional roadmaps (under development by the International Energy Agency with WRI and WorldGBC on behalf of GlobalABC).
    - Replicable methods for accessing public and private sector climate finance, inspired by an assessment (already underway) of successful projects across IFC, World Bank, EIB, EBRD, ADB, CAF, KFW, and GCF. Today private sector climate finance roughly equals public sector climate finance today but represents a far smaller portion of the available funds[31].

This initiative is made feasible in the short timeframe by leveraging and scaling up existing activities and partnerships, such as:

1. The United Nations SEforALL Building Efficiency Accelerator, led by **World Resources Institute (WRI)** with support from the GEF and P4G, is the largest global platform on urban building efficiency. It focuses on city-level policy and implementation for buildings improvements, along with effective vertical integration

[30] This estimate assumes that a consistent pathway results in 20% of all existing buildings being net zero by 2030. Source: WRI quantitative analysis, available upon request.
[31] Global Climate Finance: An Updated View, Climate Policy Initiative, 2018

with national governments. This public-private collaboration brings the strength of 15+ international corporations (building technology leader Johnson Controls co-founded the Accelerator and the global association of developers, Urban Land Institute (ULI),[32] sits on the Steering Committee) and 30+ civil society organizations work to spur and support 40+ cities in designing and implementing building energy codes and identifying buildings projects ripe for greater ambition. In just 9 cities, 8.3 million tons CO_2e will be avoided through 2030 from municipal projects alone, saving over USD1bil in energy. In addition, **World Resources Institute's** Buildings team has researched over 150 existing policies across India, Mexico, and Kenya (and another 50 in China) to understand policy pathways for those countries to achieve zero carbon buildings enabling environments. This research has produced a framework that will help make the case to national governments that this high level of ambition is within their grasp. It will also be a lasting methodology for use beyond the immediate term commitments. Lastly, **WRI, World Green Building Council**, and in-country partners are hosting dialogues throughout 2019 with national and local governments in at least four of the shortlisted countries to develop vertically-integrated work plans to replace barriers to implementation with enabling policies.

2. The **World Green Building Council**-led Net Zero Carbon Buildings Commitment for business, organisations, cities, states and regions has already secured aligned commitments from 62 signatories: 31 businesses and organizations, 25 cities, and 6 states or regions. These demonstrate the feasibility of this high level of ambition and can augment national government commitments.
3. The **Program for Energy Efficiency in Buildings (PEEB)**, catalysed by the GlobalABC, works with its five first partner countries Mexico, Morocco, Senegal, Tunisia, and Vietnam to significantly transform the buildings sector by promoting sustainable building design and construction. The aim is to lower energy demand and greenhouse gas emissions to a minimum level. PEEB combines financing for energy efficiency in large-scale projects with technical assistance. It supports partner countries to improve their policies and standards, fosters expertise among professionals in the private and public sector and mobilises innovative financing solutions for large building projects. PEEB supports the development of ambitious building energy codes that include improved building envelopes, as well as minimum energy performance standards (MEPS).
4. With 123 members, including 29 countries, The **Global Alliance for Buildings and Construction (GlobalABC)** is the leading global platform to increase action towards a zero-emission, efficient and resilient buildings and construction sector. **The GlobalABC is hosted by the United Nations Environment Programme (UNEP)** and focuses on raising ambitions to meet the Paris climate goals and mobilizing all actors along the value chain. The GlobalABC's working groups focus among others on public policies and finance. The GlobalABC develops the annual Global Status Report, which keeps track of annual progress and highlights good practice examples and forges pathways towards a zero emission, efficient and resilient buildings and construction sector developed with and four countries in four major regions. The GlobalABC has also developed a Guide for Incorporating Buildings Actions in NDCs with and through member countries' insights on effective NDCs for transforming the buildings and construction sector. The GlobalABC has sparked several national alliances for vertically integrated action transforming the buildings and construction sector, and has led six national governments (**Argentina, France, Germany, Mexico, Morocco, and Switzerland**) to pursue ambitious sector plans and strategies through their Global Call for Low-carbon, Energy Efficient and Resilient Buildings presented at the Clean Energy Ministerial in May 2018. The Global Call includes a pledge to "Develop, within the framework of our Nationally Determined Contributions (NDC), and publish national strategies for buildings and construction in line with the objectives of the Paris Agreement on Climate Change, and aiming at carbon neutrality of this sector."
5. **The International Finance Corporation's** EDGE program – in support of ZCBs for All – will launch a ZCB certification tool at the UN Climate Action Summit that can help committed countries develop and implement their policies. IFC is also demonstrating outstanding leadership on and support for ZCBs for All

[32] Many ULI members have buildings that are on or ahead of schedule for Paris compliance.

by (1) committing to a process of transitioning its ~ $1.5B annual global buildings investment portfolio to ZCBs, and (2) coordinating action and support from other MDBs and private sector actors.

6. **Urban Land Institute's** goal is a 50% improvement in energy efficiency and GHG intensity by 2030 (2008 baseline), a bit more aggressive than Paris. ULI will soon set a 2050 goal of zero carbon, so well-aligned with this initiative. ULI is also encouraging its members to commit to ZCBs for All.
7. **The World Economic Forum** is keen to actively support ZCBs for All. WEF support may include (among other things) drawing high-level private sector and investor attention to ZCBs for All, related policymaking and roadmapping processes, and investment opportunities.

Synergies with other coalitions & subtracks

Leadership for Urban Climate Investments (LUCI): This initiative, also in the Infrastructure, Cities and Local Action track, is highly synergistic with ZCB for All, as it would provide technical assistance for early stage project preparation in cities, which is much needed to convert city real estate project concepts into bankable proposals.

Energy Transition Initiatives: ZCB for All can be a direct contributor to achieving the goal of the 3% Club for Energy Efficiency, which is focused on increasing the rate of global energy efficiency improvement through policy action, finance, and technical support. Building design can also play a key role in decreasing cooling requirements, thereby supporting the goal of the Cool Coalition to ensure that cooling needs are met affordably, efficiently, and sustainably.

Adaptation and Resilience Initiatives: New buildings constructed to be ZCB compliant can also contribute to resilience, in keeping with the LDC Initiative for Effective Adaptation and Resilience and the African Adaptation Initiative, which support regional cooperation on climate-resilient development.

Industry Transition: The hard-to-abate steel and cement sectors are critically intertwined with the construction industry and are being tackled by the manufacturing sector directly. Therefore, this proposal, which covers operational emissions, complements the Industry Transition proposal which tackles emissions "embedded" in the most common construction materials.

Nature-Based Solutions: An additional way of decreasing the carbon content of building materials is through substitution of alternative materials. An initiative on mass timber as a lower carbon alternative to steel and cement is being advanced in the Nature-Based Solutions track. Though embedded carbon is not explicitly considered in ZCB for All, organizations focused on low carbon construction materials could work in parallel with ZCB for All to help inform stakeholders of the options.