WORLD GREEN BUILDING COUNCIL

ADVANCING NET ZERO

Status Report May 2019

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Report Sponsor

Foster + Partners

Foreword

Cristina Gamboa, CEO, World Green Building Council

Buildings are responsible for 39% of global energy-related carbon emissions, with 28% coming from the "in-use" phase – to heat, power and cool them. If we can eliminate these emissions, buildings represent one of the greatest – and most achievable – ways to respond to the climate emergency facing us.

In May 2017, the World Green Building Council released a call to action report compelling business, governments and NGOs to take urgent and coordinated action towards achieving 100% net zero carbon buildings by 2050. The response from industry in these two years has been inspiring, at a scale of action desperately needed to secure a below 1.5°C future.

Green Building Councils and partners across our global network have been developing industry capacity to deliver more net zero buildings, faster. We are delighted to feature some of the leading industry action facilitating the transition within this, our inaugural Advancing Net Zero Status Report 2019. This includes signatories of WorldGBC's Net Zero Carbon Buildings Commitment – an unprecedented statement of collective action towards decarbonisation of the built environment. I look forward to seeing the early leadership of the current signatories echoed by many more organisations and governments over the coming years.

Whilst our focus has so far been on operational emissions and how buildings actually perform in-use, in order to decarbonise our sector we must also tackle embodied emissions from the entire building lifecycle. Our upcoming call to action report in September 2019 seeks to address this challenge.

Better buildings can be a huge part of the solution to improving our health, reducing global energy consumption, and eliminating reliance on fossil fuels. I invite you to be part of the solution: act for change, take climate action, and above all, act now.

Chris Trott, Partner, Head of Sustainability, Foster + Partners

We welcome the Advancing Net Zero Status Report 2019 by the World Green Building Council, as they help to shape our built environment to be low carbon, economically future-proofed and socially inclusive. Amid continuing transformation, these initiatives frame the transition to take building emissions to net zero and avoid dangerous levels of climate change. We plan, through our projects and our own efforts in-house, to lead this transition. We hope you will join us.

ADVANCING NET ZERO

WORLD GREEN BUILDING COUNCIL

Contents

About WorldGBC

The World Green Building Council is a global network of Green Building Councils in almost 70 countries. Collectively, our goal is to achieve the following by 2050: limit global temperature rises to 1.5 degrees Celsius; reduce the building and construction sector's CO_2 emissions by 84 gigatonnes, and ensure all buildings are net zero emissions.

These goals will help deliver on the ambition of the Paris Agreement. We are building a better future, and are committed to green buildings for everyone, everywhere.

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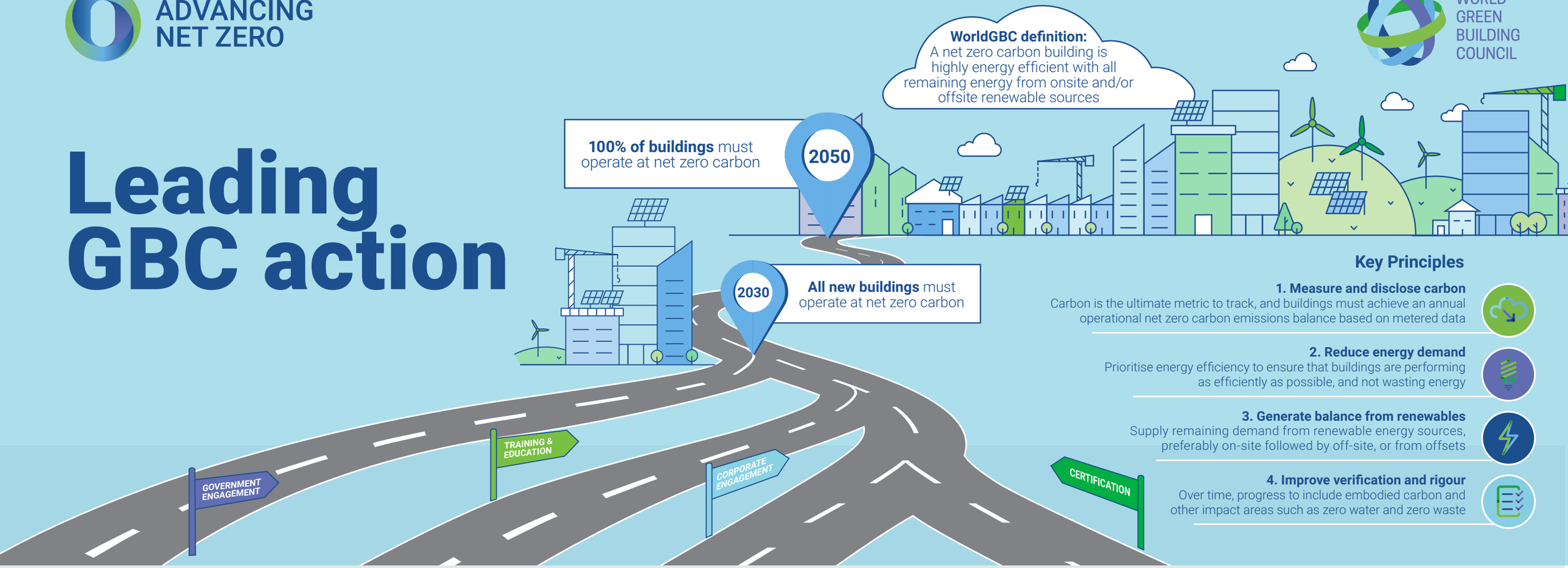
The World Green Building Council is calling for 100% net zero carbon buildings by 2050.

We are pleased to share in this report recent action by our Green Building Councils and partners towards this goal.

ADVANCING NET ZERO

WORLD GREEN BUILDING COUNCIL

Leading GBC action



Key Principles

1. Measure and disclose carbon
Carbon is the ultimate metric to track, and buildings must achieve an annual operational net zero carbon emissions balance based on metered data

2. Reduce energy demand
Prioritise energy efficiency to ensure that buildings are performing as efficiently as possible, and not wasting energy

3. Generate balance from renewables
Supply remaining demand from renewable energy sources, preferably on-site followed by off-site, or from offsets

4. Improve verification and rigour
Over time, progress to include embodied carbon and other impact areas such as zero water and zero waste

ADVANCING NET ZERO

Advancing Net Zero is the World Green Building Council's (WorldGBC) global project aiming to accelerate the uptake of net zero carbon buildings to 100% by 2050. This outcome is critical to limiting global temperature rises to 1.5°C by the midpoint of the 21st century.

The project brings together the WorldGBC's global network of Green Building Councils (GBCs) that are actively working to develop programmes, resources and certification tools to develop market capacity towards meeting increased demand and urgency for a fossil fuel free built environment.

Our Theory of Change, as outlined in the report From Thousands to Billions published in May 2017, states that we can reach our goal through coordinated action of businesses, government and NGOs. Our GBCs have been actively responding to this call to action, developing mechanisms and initiatives to facilitate mass market transformation and to lead the way, inspiring businesses and governments to follow.

The Advancing Net Zero infographic highlights the key concepts including target dates, a definition for net zero carbon buildings, the action pathways being taken by our GBCs, and the key principles that are guiding their actions. These principles ensure alignment and commonality across global markets, whilst enabling specific market applications.

The infographic, shown above, introduces the project framework to develop tools to promote and recognise buildings that meet aligned performance standards, whilst responding to specific local context and requirements, such as other key priority sustainability areas and market conditions. This creates a consistent benchmark performance standard across the network of GBCs, shifting focus to performance standards and establishing net zero as a best practice indicator.

WorldGBC recognises that in most situations, net zero energy buildings – ie buildings that generate 100% of their energy needs onsite – are not feasible. Therefore, net zero carbon buildings that are energy efficient and supply energy needs from renewable sources onsite and/or offsite, are a more appropriate target for the mass scale action required to achieve Paris Agreement levels of global emission reductions.

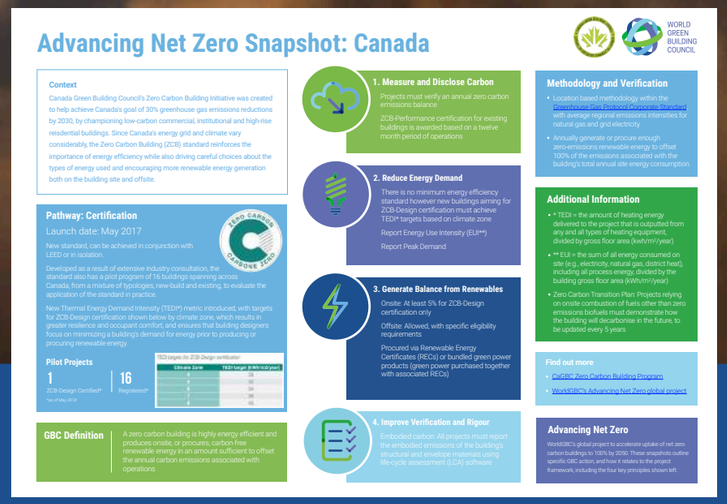
THE FOUR GREEN BUILDING COUNCIL ACTION PATHWAYS

CERTIFICATION WorldGBC recognises the value that rating tools, certification schemes and standards have across different markets to encourage increased performance standards beyond local regulatory minimum. They quantify reduced impacts and encourage industries to consider wider sustainability impacts. Some GBCs are developing net zero carbon building certification schemes, and as of May 2019 a total of nine new schemes have been released, with several more in development

CORPORATE ENGAGEMENT GBCs collectively have over 37,000 member organisations. Through engagement with their members, GBCs can identify ways to support their own transition towards a net zero carbon portfolio, and collaboration opportunities. Some GBCs have developed specific framework programmes to support this approach, such as DutchGBC and UKGBC.

TRAINING AND EDUCATION GBCs can raise awareness through events and resources around the benefits and technical details of net zero carbon buildings, to facilitate greater and faster uptake

GOVERNMENT ENGAGEMENT GBCs can work with local subnational and national governments to call for regulatory mechanisms that are aligned with a zero emissions future, and support policy development



Advancing Net Zero Snapshot: Canada

WORLD GREEN BUILDING COUNCIL

Context

Canada Green Building Council's Zero Carbon Building Initiative was created to help achieve Canada's goal of 30% greenhouse gas emissions reductions by 2030, by championing low-carbon commercial, institutional and high-rise residential buildings. Since Canada's energy grid and climate vary considerably, the Zero Carbon Building (ZCB) standard reinforces the importance of energy efficiency while also driving careful choices about the types of energy used and encouraging more renewable energy generation both on the building site and offsite.

Pathway: Certification

Launch date: May 2017

New standard, can be achieved in conjunction with LEED or in isolation

Developed as a result of extensive industry consultation, the standard also has a pilot program of 16 buildings spanning across Canada, from a mixture of typologies, new-build and existing, to evaluate the application of the standard in practice.

New Thermal Energy Demand Intensity (TEDI*) metric introduced, with targets for ZCB-Design certification shown below by climate zone, which results in greater resilience and occupant comfort, and ensures that building designers focus on minimizing a building's demand for energy prior to producing or procuring renewable energy.

Pilot Projects

1 ZCB-Design Certified*

16 Registered*

*as of May 2018

TED targets for ZCB-Design certification

Climate Zone	TED Target (kWh/m²/year)
1	50
2	55
3	60
4	65
5	70
6	80
7	90
8	105

GBC Definition

A zero carbon building is highly energy efficient and produces onsite, or procures, carbon-free renewable energy in an amount sufficient to offset the annual carbon emissions associated with operations

1. Measure and Disclose Carbon

Projects must verify an annual zero carbon emissions balance

ZCB-Performance certification for existing buildings is awarded based on a twelve month period of operations

2. Reduce Energy Demand

There is no minimum energy efficiency standard however new buildings aiming for ZCB-Design certification must achieve TEDI* targets based on climate zone

Report Energy Use Intensity (EUI**)

Report Peak Demand

3. Generate Balance from Renewables

Onsite: At least 5% for ZCB-Design certification only

Offsite: Allowed, with specific eligibility requirements

Procured via Renewable Energy Certificates (RECs) or bundled green power products (green power purchased together with associated RECs)

4. Improve Verification and Rigour

Embodied carbon: All projects must report the embodied emissions of the building's structural and envelope materials using life-cycle assessment (LCA) software

Methodology and Verification

- Location based methodology within the greenhouse gas inventory boundary, consistent with average regional emissions intensities for natural gas and grid electricity
- Annually generate or procure enough zero-emissions renewable energy to offset 100% of the emissions associated with the building's total annual site energy consumption

Additional Information

- * TEDI = the amount of heating energy delivered to the project that is outputted from any and all types of heating equipment, divided by gross floor area (kwh/m²/year)
- ** EUI = the sum of all energy consumed on site (e.g., electricity, natural gas, district heat), including all process energy, divided by the building gross floor area (kWh/m²/year)
- Zero Carbon Transition Plan: Projects relying on onsite combustion of fuels other than zero emissions biofuels must demonstrate how the building will decarbonise in the future, to be updated every 5 years

Find out more

- CaGBC Zero Carbon Building Program
- WorldGBC's Advancing Net Zero global project

Advancing Net Zero

WorldGBC's global project to accelerate uptake of net zero carbon buildings to 100% by 2050. These snapshots outline specific GBC action, and how it relates to the project framework, including the four key principles shown left.

WorldGBC has prepared a series of snapshots such as the one shown left for Canada Green Building Council, to demonstrate how the project framework is applied by GBCs globally, ensuring commonality across the network whilst also embracing market specific applications to maximise local uptake.

GBC NET ZERO CARBON BUILDINGS SCHEMES AND PROGRAMMES: A COMPARISON

WORLD GREEN BUILDING COUNCIL

The response of GBC certification schemes and programmes to the principles set out in the Advancing Net Zero infographic are shown here:

GBC	Alliance HQE-GBC	DutchGBC	CaGBC	GBC Brasil	GBCA	GBCSA	SwedenGBC	DGNB	IndianGBC	USGBC	UKGBC
COUNTRY	France	Netherlands	Canada	Brazil	Australia	South Africa	Sweden	Germany	India	USA	UK
SCHEME	E+C- (new buildings)	'Paris Proof' concept	Zero Carbon Standard	Zero Energy Standard	Green Star Innovation Challenges	Net Zero & Net Positive labels	NollCO$_2$	Framework for carbon neutral buildings & sites	Zero Energy Standard	LEED Zero	Framework definition
	Based on full lifecycle carbon analysis (LCA)	Annual verified consumption data	Annual verified zero carbon operational emissions balance	Annual verified net zero energy balance	Annual verified consumption data	Zero carbon operational emissions balance, re-certify every 3 years	Annual net zero operational carbon with regular verification	Annual verified net zero carbon balance	Annual verified net zero energy balance	Annual verified net zero carbon emissions from energy consumption and occupant transportation	Annual verified net zero operational energy carbon balance
	Between 5-40% minimum energy reduction, dependent on building type and 2012 French thermal regulation	66% energy consumption reduction compared to the 2015 sector energy intensity averages	Heating energy efficiency targets set (Thermal Energy Demand Intensity) for each climate zone Report Energy Use Intensity; report peak demand	If 100% onsite renewable energy, no additional requirements If using offsite renewable energy, energy efficiency requirements set beyond ASHRAE	30% more energy efficient than baseline building	Energy efficiency prioritised via deemed to satisfy criteria before onsite renewables, offsite renewables or offsets can be considered	40% improvement of energy performance than local code (BREEAM SE) 35% reduction beyond ASHRAE (LEED Gold); or local scheme	Minimum energy requirements by energy code	Reduce Energy Performance Index Ratio against local baseline	Achieve energy performance LEED criteria for targeted performance level	Prioritise energy efficiency and energy use reductions, with energy use intensity targets to be included in future
	Onsite renewable energy requirements for levels Energy 3 >100% energy demand for Energy 4	Onsite renewables included in net-consumption data Offsite renewables to account for remaining 33% demand	At least 5% of energy demand met by onsite renewable energy; offsite allowed with specific eligibility requirements Offsets not permitted	Onsite allowed, commercial buildings can use RECs for maximum 10% of energy demand Offsets not permitted	Onsite and offsite renewable energy allowed Any remaining non-electricity related CO_2 emissions to be offset annually	Offsite renewable energy and CO_2 offsets only allowed if demand reduction requirements are met	Repayment of embedded and annual carbon debt through approved offset policies, e.g. onsite /offsite energy production from renewable energy sources	Generate as much renewable energy onsite as feasible	Meet annual energy demand through both onsite and offsite renewable energy sources	Achieve energy generation LEED criteria for targeted performance level	Prioritise onsite renewables and offsite renewables with additionality Offset remaining carbon
	Certification is based on LCA covering embodied carbon and construction processes in addition to building energy and water	Future revision to include embodied carbon	Report on embodied CO_2 of structural and envelope building materials	Future revision to include embodied carbon	Scope also includes refrigerants, waste-to-landfill and water consumption Embodied carbon also addressed	Additional labels recognise net zero and positive water, waste and ecological impacts	Cap on initial embedded carbon from production of materials and from construction and installation on site	Either operational emissions or operational plus embodied emissions of whole life cycle	Future versions to include waste, waste and carbon	Project must be LEED certified (any level) LEED Zero Water and Waste also available	Embodied carbon included under 'net zero carbon – construction' Future scope for 'net zero carbon – whole life'

World Green Building Week 2017

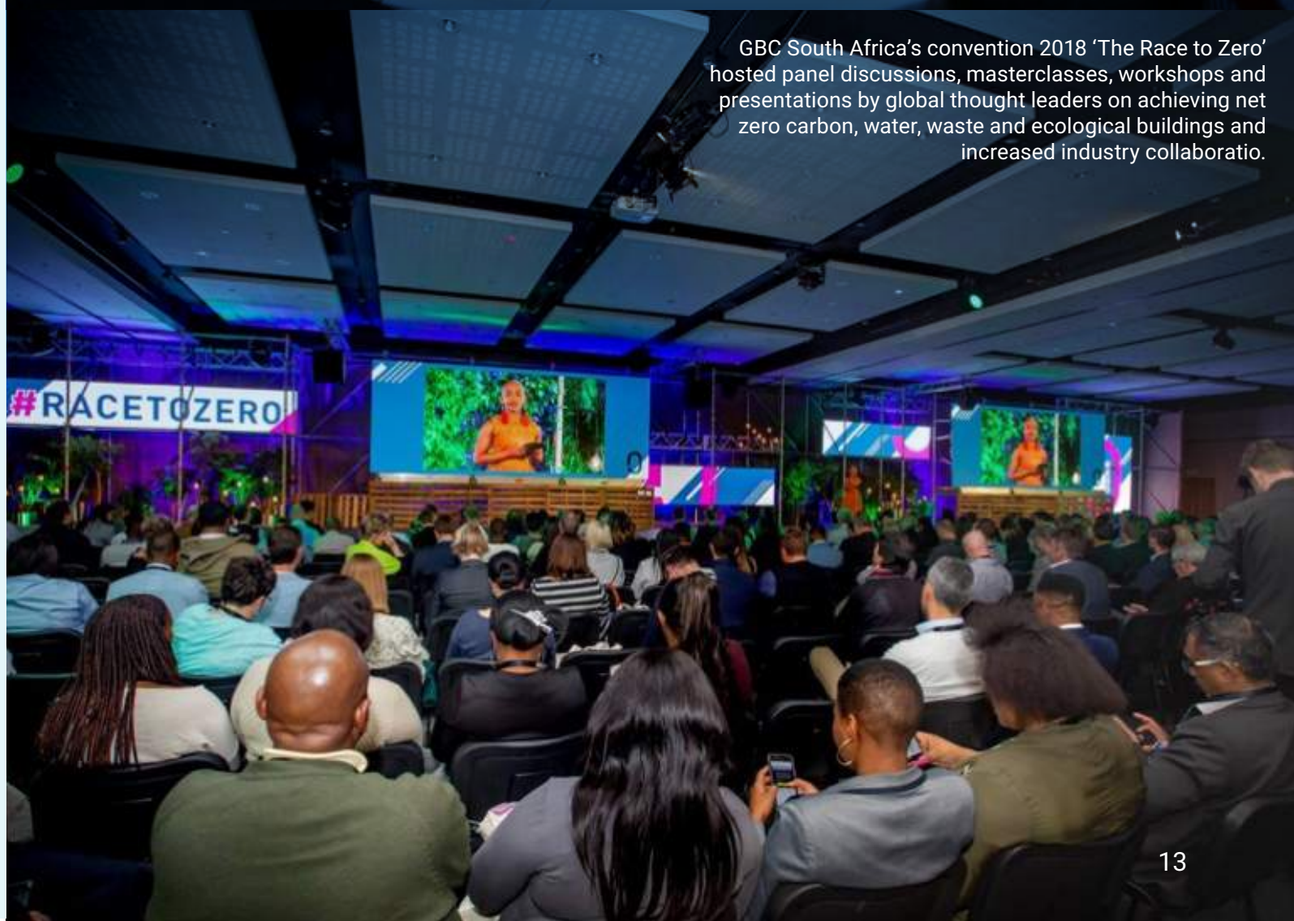
In 2017 the theme of our annual flagship World Green Building Week campaign was Our Hero Is Zero. This communicated how net zero carbon buildings are essential in the fight against climate change, bringing personality, emotion and inspiration to a technical subject.

Campaign resources were developed and used extensively by GBCs and their members across social media, on their websites, and at events, reaching over 24 million people from the green building community and beyond. Overall, nearly 250 events and activities were held by GBCs and companies across 46 countries to promote the need to make all buildings net zero carbon by 2050, and the global influence of WorldGBC.

Cartoon strip from Hong Kong GBC

Poster showcasing local climate hero buildings in France

EmiratesGBC's Congress 2018 'Targeting Zero: a vision for future cities' led discussions to take immediate steps to transition to net zero cities in the UAE within the coming decade in order to curb the damaging effects of carbon emissions



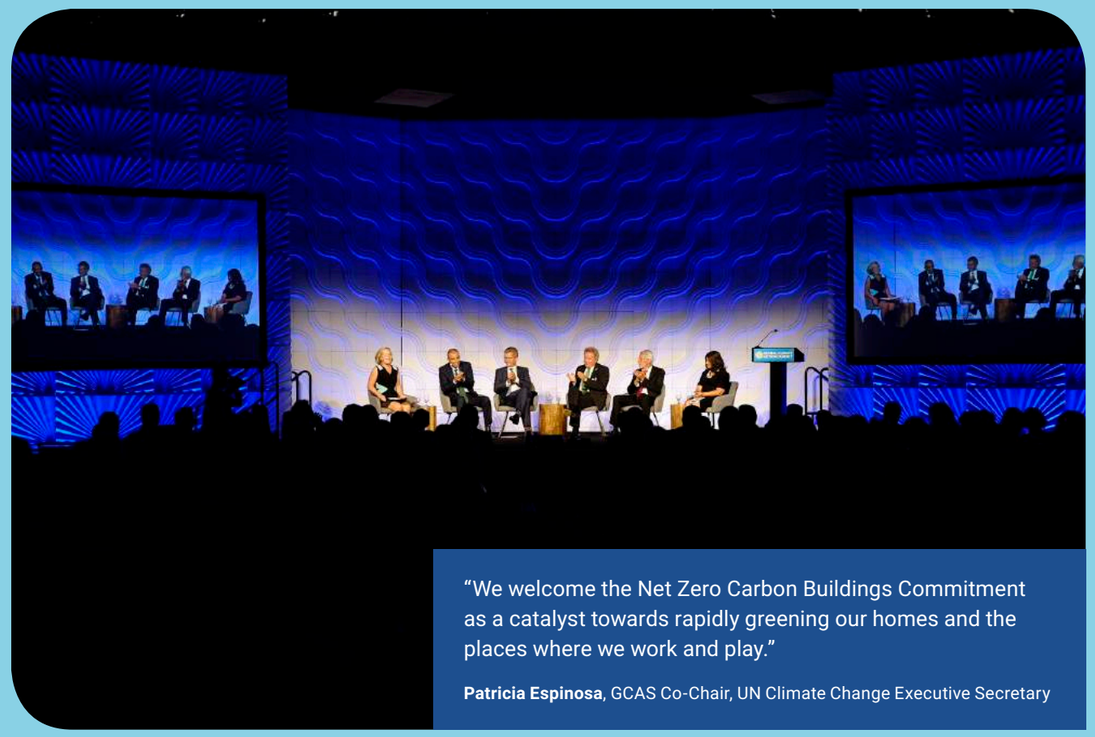
GBC South Africa's convention 2018 'The Race to Zero' hosted panel discussions, masterclasses, workshops and presentations by global thought leaders on achieving net zero carbon, water, waste and ecological buildings and increased industry collaboratio.

Net Zero Carbon
BUILDINGS COMMITMENT

WorldGBC's Net Zero Carbon Buildings Commitment (the Commitment) was launched at the historic Global Climate Action Summit (GCAS) in San Francisco in September 2018. The Commitment challenges companies, cities, states and regions to reach net zero operating emissions in their global portfolios by 2030, and to advocate for all buildings to operate at net zero by 2050.

The Commitment is outcome focused and action oriented, building on the project framework to provide best practice guidance to develop globally ambitious yet locally relevant, flexible and universally viable solutions to reduce energy demand and eliminate carbon emissions from buildings. It promotes leadership action at scale, in recognition of the technological advances enabling net zero carbon buildings.

The action plans of each signatory are published on the Commitment's webpage. These outline how signatories intend to deliver genuine change; verify building performance using, for example, green building certification schemes; and report on progress towards decarbonisation goals. In addition, as industry leaders, signatories will utilise their business activities and supply chains to increase the support for and development of net zero carbon buildings.



"We welcome the Net Zero Carbon Buildings Commitment as a catalyst towards rapidly greening our homes and the places where we work and play."

Patricia Espinosa, GCAS Co-Chair, UN Climate Change Executive Secretary

Signatories to the Commitment pledge to:

COMMIT

COMMIT to an advanced trajectory for all new and existing buildings within direct control of the organisation to operate at net zero carbon by 2030; regulate and/or advocate for all buildings to operate at net zero by 2050

DISCLOSE

DISCLOSE and assess annual asset and portfolio energy demand and carbon emissions

ACT

ACT to reduce emissions by developing and implementing a decarbonisation roadmap outlining key actions and milestones towards energy efficiency and renewable energy

VERIFY

VERIFY enhanced energy performance, reduced carbon emissions and progress towards net zero carbon assets and portfolio

ADVOCATE

ADVOCATE for wider emissions reduction by acting as a catalyst through core organisation activities for further action within respective supply chains

For businesses, the Commitment is one of three pathways available to join EP100 an initiative by The Climate Group in partnership with Alliance to Save Energy. It brings together energy-smart companies committed to using energy more productively, to lower greenhouse gas emissions (GHGs) and accelerate a clean economy.

EP 100 °C

Find out more at worldgbc.org/thecommitment.

GBC ACTION TIMELINE

June 2016 WorldGBC launch Advancing Net Zero project

May 2017 Canada GBC launch Zero Carbon Building Program and Standard

Canada's first green building programme to make carbon emissions the key indicator for building performance.

Find out more at cagbc.org

September 2017 EmiratesGBC release Defining Nearly Zero Energy Buildings in the UAE report

September 2017 DutchGBC establish 'Paris Proof' concept for buildings

October 2017 GBC Australia launch Green Star innovation challenges for carbon neutrality

The Australian Federal Government's National Carbon Offset Standard for Buildings and Precincts utilises Green Star - Performance and NABERS as pathways to demonstrate compliance, and sets rigorous requirements for achieving carbon neutrality.

Find out more on page 43 and at gbca.org

April 2018 Sweden GBC release draft NollCO_2 certification manual

May 2018 DGNB launch Framework for carbon neutral buildings and sites

Annual certification of requirements for carbon accounting, carbon disclosure and carbon management to achieve a net zero carbon balance for buildings in Germany by 2050, based on trajectories of carbon limit values.

Find out more at dgnb.de

November 2018 USGBC launch LEED Zero

LEED Zero verifies the achievement of net zero goals and signals market leadership in the built environment. Projects can achieve certification for LEED Zero Carbon, recognising buildings or spaces operating with net zero carbon emissions from energy consumption and occupant transport; plus certification options for LEED Zero Energy, LEED Zero Water, and LEED Zero Waste.

Find out more on page 42 and at usgbc.org

February 2019 EmiratesGBC announce partnership with ILFI for Zero Energy and Zero Carbon certifications Find out more on page 45

April 2019 UKGBC launch a framework definition for net zero carbon buildings

The framework was developed by an industry task group formed of over 40 industry representatives from across the construction industry. The definition aims to provide a consistent approach that can be integrated into voluntary reporting initiatives, building rating tools, planning requirements and, over time, into policy and regulation.

Find out more on page 41 and at ukgbc.org

November 2016 Alliance HQE-GBC launch E+C- Bâtiment à Énergie Positive et Réduction Carbone

Launched in conjunction with the Government, to ensure construction sector is part of the strategy to meet the challenge of climate change, the system recognises positive energy buildings (E+) with low GHG emissions on life cycle approach included embodied carbon (C-).

Find out more at hqegbc.org

August 2017 GBC Brasil launch Zero Energy Standard

Designed to complement existing local and international green building rating schemes, and recognises buildings that are "self-sufficient" in energy.

Find our more at gbcbrasil.org

October 2017 GBC South Africa launch Net Zero / Positive labels

Projects are able to achieve Net Zero or Net Positive ratings for carbon, water, waste and ecology. This recognises buildings that completely neutralise or positively redress their carbon emissions, water consumption, solid waste to landfill and/or negative ecological impacts.

Find out more at gbcsa.org

January 2018 EmiratesGBC establish Net Zero Centre of Excellence

A platform for government, academia, civil society and the private sector to learn and share knowledge to support future regulations and industry capacity towards decarbonisation of the building sector by 2050, offering tools and resources to advance the net zero movement in the UAE.

Find out more at emiratesgbc.org

June 2018 GBC Australia launch Carbon Positive Roadmap

August 2018 UKGBC launch Advancing Net Zero programme

November 2018 Indian GBC launch Net Zero Energy Standard

February 2019 Canada GBC release Making the Case for Building to Zero Carbon report

The report demonstrates definitively that Zero Carbon Buildings offer meaningful greenhouse gas reductions and positive financial returns in Canada. Specifically, the study shows that Zero Carbon Buildings provide a positive financial return over a 25-year life-cycle, inclusive of carbon pollution pricing, and requiring only a modest capital cost premium.

Find out more at cagbc.org

February 2019 New Zealand GBC launch consultation for Net Zero carbon standard

May 2019 GBC España launch BUILD UPON 2

GBCe in Spain is the Project Coordinator for the newly launched BUILD UPON 2 project, a Horizon 2020 project focused on developing deep renovation strategies at a national level across Europe.

Toll-Nike warehouse in Melbourne, the first building in Australia to be certified carbon neutral using Green Star Performance from the Green Building Council of Australia

100 Murray Street in Ottowa achieved Canada's first Zero Carbon Buildings - Performance certification under the Zero Carbon Standard from Canada Green Building Council

Plant - 13 Annexe Building, Vikhroli campus, Mumbai for Godrej Group is the first net zero energy building to be certified under Indian Green Building Council's Net Zero Energy Rating

Sebrae Centre for Sustainability in Cuiabá, Brazil, the first building to be certified under the Green Building Council Brasil's Zero Energy Standard

Advancing Net Zero in numbers

May 2019

ADVANCING NET ZERO

24

Green Building Councils participating in the project, actively working to advance net zero carbon buildings

9

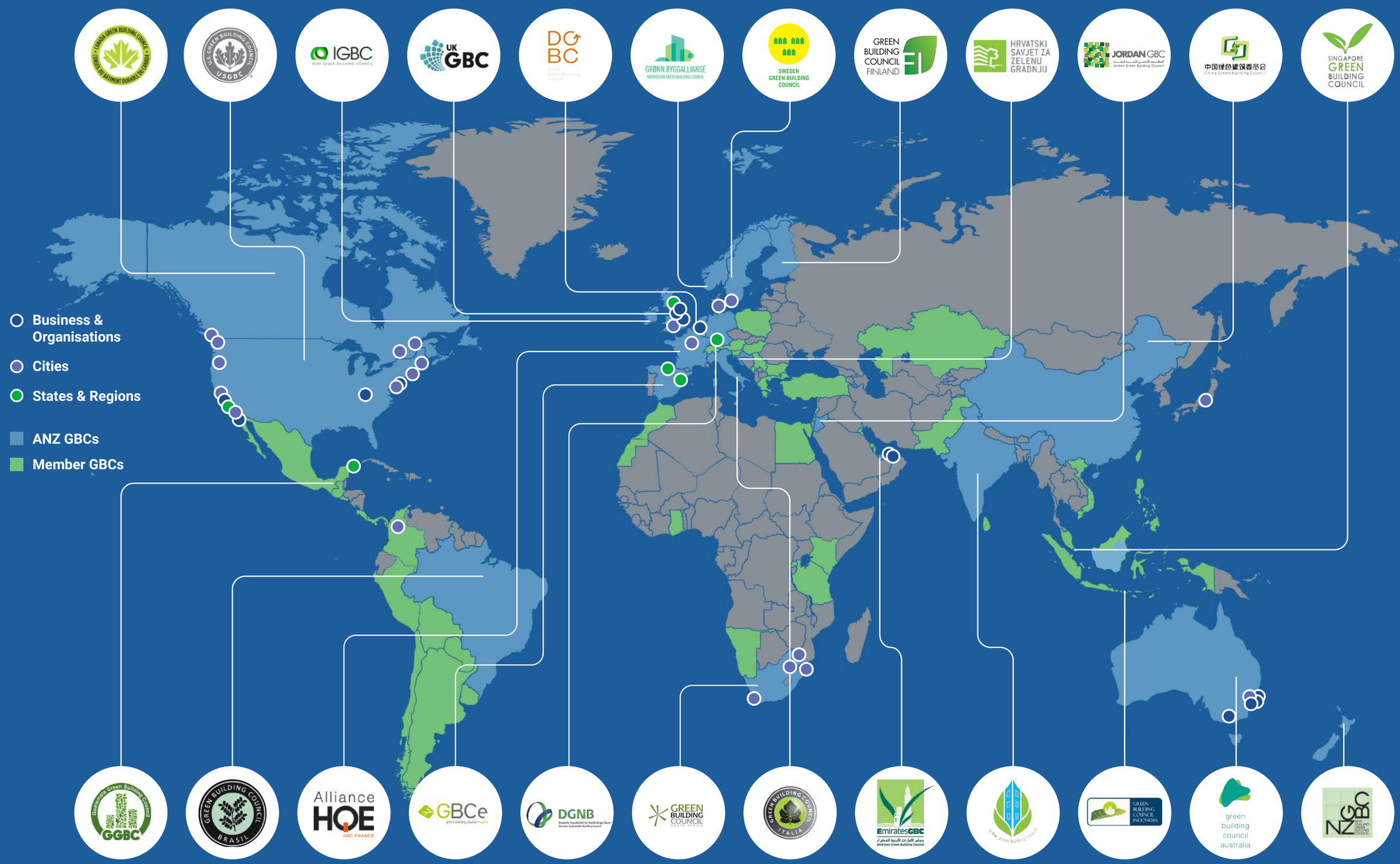
Green Building Council net zero carbon building certification schemes launched

388

Buildings certified net zero through Green Building Council schemes

51

Net Zero Carbon Buildings Commitment signatories (full list on page 33)


Business & Organisations
Cities
States & Regions
ANZ GBCs
Member GBCs

Business action

Businesses play an important role in challenging industry and governments to step up ambition levels and take climate leadership action, accelerating the transition to a prosperous zero carbon economy.

The Ambition Loop paper, produced by We Mean Business, UN Global Compact, and the World Resources Institute (WRI) in November 2018 includes powerful examples of how public and private sector goals have aligned to create ambition loops.

Emerging business leadership and commitment from around the world in zero carbon electric power, zero carbon vehicle fleets, and zero deforestation is increasing commercial demand and business investment in climate solutions. This provides governments with a strong vote of confidence in support of their efforts to advance more ambitious policies that provide companies with clear and predictable regulatory frameworks, and timelines to accelerate further business action, opening up new market opportunities. This is the "ambition loop" - a positive feedback loop in which bold government policies and private sector leadership reinforce each other. Together they take climate action to the next level, to achieve economic development and emissions reduction goals faster.

"WorldGBC's Net Zero Carbon Buildings Commitment is a clear signal from business, organisations, cities, states and regions that they are willing and ready to harness the opportunity to transition the built environment to a zero carbon future. They recognise the potential to transform the entire buildings landscape, from the way buildings are planned, used, powered and dismantled. Policymakers can help accelerate that shift by setting a clear, long-term direction that builds confidence, which is critical to driving action across the private sector and providing the right incentives to move all companies forwards."

Nigel Topping, CEO, We Mean Business

Government Climate Policy

- Clear, ambitious targets and policy
- Predictable regulatory environment
- Incentives and infrastructure
- Long-term market signals
- Support for research, development, and deployment
- Clear plans and timelines for full transition to a zero-carbon economy

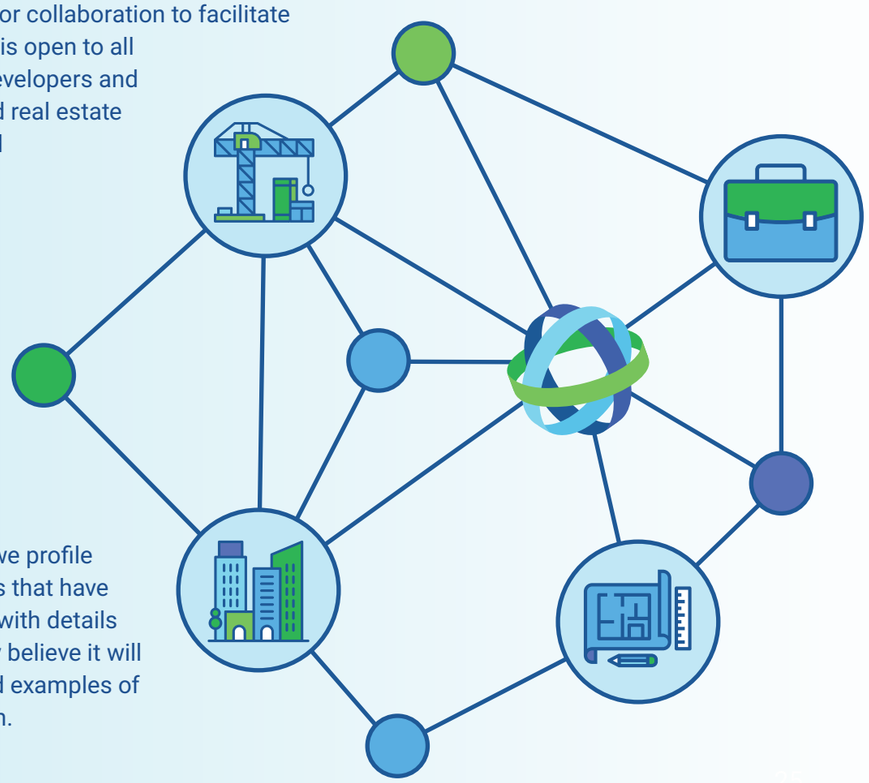
Business Climate Action

- Ambitious, science-based targets
- Public updates on progress
- Investments and growth strategies aligned with a zero-carbon future
- Commercial demand for zero-carbon energy, zero-carbon transportation and zero-carbon land use
- Responsible policy engagement (individually and through trade associations)

WorldGBC's Net Zero Carbon Buildings Commitment is both a platform to demonstrate business and government action, and a framework for collaboration to facilitate market transformation. It is open to all types of organisations: developers and contractors, investors and real estate clients, tenants, cities and governments.

It is supported through the GBC network and by industry partners to develop implementation strategies and deliver against the Commitment, identify tools and solutions to achieve the goals and report against progress.

Over the next few pages we profile some of the organisations that have signed the Commitment, with details of their strategy, how they believe it will benefit wider industry and examples of action already being taken.



Investor

The real estate investor community is increasingly acting on its responsibilities to mitigate climate risk through ensuring longevity in providing attractive and fit-for-purpose assets.

Kilroy Realty – In September 2018, Kilroy Realty, a US based developer of premium office buildings on the West Coast and San Francisco's second largest office landlord, set an ambitious goal of establishing carbon neutral operations by the end of 2020. The company is using a three pronged approach to reach the goal: reduce energy use, generate energy onsite using solar panels and pay for offsite production of renewable energy. Within the last several years, Kilroy Realty has renovated existing buildings and developed new buildings to achieve LEED, the popular green building certification from USGBC.

In April 2019, Kilroy Realty received the first Climate Bonds Certification for a green bond issued for an office building in the US that has received LEED Platinum certification.

Read more about Kilroy Realty's commitment to sustainability here and action plan for the Net Zero Carbon Buildings Commitment here.

"We are a long-term owner. We do what we think is best for our company and community. Our tenants are demanding it. Some of the big tenants are showing increasing leadership on carbon reductions. That is going to extend to real estate."

Sara Neff, Senior Vice President, Sustainability, Kilroy Realty

The value proposition for investors in embracing net zero carbon buildings includes:

- **SECURE** assets for the future: increased asset value and desirability, to minimise the risk of stranded assets as clients and tenants demand more sustainable spaces
- **UPHOLD** fiduciary duties to shareholders to mitigate climate risk and demonstrate resilience against changing market demand. On 28 November 2018, the Swedish Parliament approved major reforms requiring the four main national pension funds to become "exemplary" in the field of sustainable investment
- **DEMONSTRATE** corporate social responsibility. Environmental, Social and Governance (ESG) issues are driving sustainable investment strategies and are increasingly a top priority for investment firms. The number of investment companies committed via the UN-backed Principles for Responsible Investment (PRI) to incorporate ESG issues into investment decisions has increased from 63 in 2006 with $6.5 trillion in assets under management (AUM) to 2,372 as of May 2019 with $86.3 trillion AUM
- **PREPARE** for future regulations by taking the step to get to net zero and protect against regulatory uncertainty

Owner, occupier, developer

"Majid Al Futtaim owns and operates spaces where people across the Middle East, Africa and Asia work, rest, shop and play. Yet it is also a region that faces huge challenges around water scarcity and energy consumption. We have a responsibility to our stakeholders and our communities to take decisive action in greening our shared spaces. That's why we are proud to be one of the first signatories to the Net Zero Carbon Buildings Commitment and we are confident that where we lead, others will follow."

Ibrahim Al-Zu'bi, Chief Sustainability Officer, Majid Al Futtaim

The value proposition for developers adopting net zero carbon buildings includes:

- **OPTIMISE** performance of assets to attract buyers and tenants, with reduced operating costs and higher quality assets
- **REVITALISE** poor performing existing buildings by improving energy efficiency measures and refurbishing existing buildings in lieu of constructing new assets
- **IMPROVE** quality of occupied space by reducing energy wastage and optimising internal comfort conditions
- **ATTRACT** and retain talent through strong sustainability policies and net zero strategies that are aligned with social value

Businesses that own, occupy and develop portfolios of buildings are well positioned to implement changes to the way their buildings perform. By influencing design, specification and maintenance decisions, they can ensure assets perform optimally and are futureproofed against the effects of climate change.

Majid Al Futtaim – In 2017, Majid Al Futtaim released their pioneering Net Positive strategy, the first real estate developer and operator in the Middle East to commit to net positive operations in carbon and water by 2040. A WorldGBC Corporate Advisory Board member and MENA Regional Partner, Majid al Futtaim recognises the value in leadership in the green building market. It champions efforts to embed net positive into all business operations and ensures they have a positive impact on the world. The company measures its current carbon and water footprints, and is implementing reduction measures through its projects focussed on decreasing carbon emissions and water consumption for all of its regional assets.

Find out more about Majid Al Futtaim's Net Positive strategy here and action plan for the Net Zero Carbon Buildings Commitment here.

Tenant

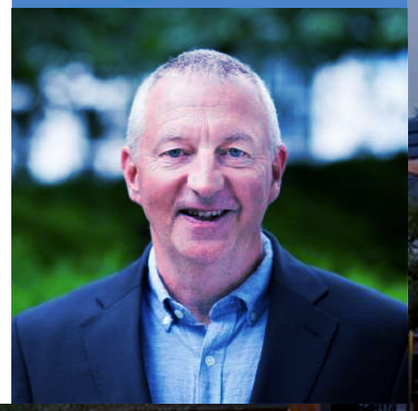
Organisations that do not own properties but occupy space within buildings under tenancy arrangements can be major influencers for improving building performance towards net zero.

The value proposition for tenants to demand net zero carbon buildings includes:

- **ENHANCE** organisational productivity and sustainability performance
- **INCREASE** awareness of the energy consumption of occupied spaces and resulting carbon emissions
- **ADVOCATE** to building owners for access to energy consumption data to take greater control over consumption and improvements, and energy supply contracts
- **EXPLORE** the opportunities through core business activities to further reduce emissions and increase impact, to demonstrate climate leadership

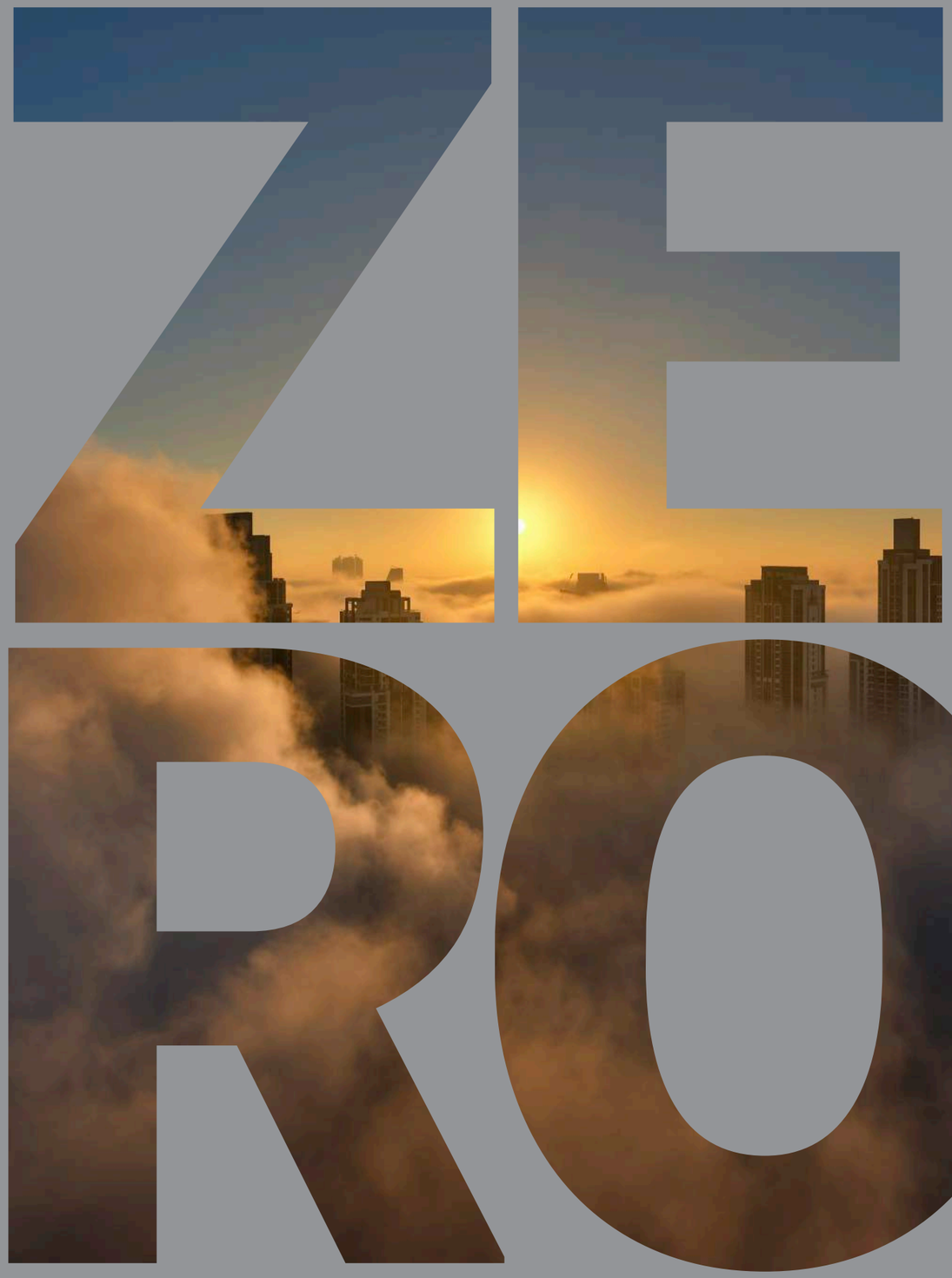
"We believe that there are two key ingredients to designing net zero buildings: positive people and simple engineering. We have been able to design over 100 net zero projects – several of which have been independently certified as such, verifying that they produce more renewable energy than they consume – so we know it can be done. Signing up to the Net Zero Carbon Buildings Commitment is a natural next step for us in our drive to build high performance buildings that respect and enrich the earth."

Kevin Hydes, CEO, Integral Group



Integral Group – A global firm of design professionals collaborating on deep green engineering projects and solutions, specialising in net zero projects. In 2018, Integral Group published its first ever Corporate Social & Environmental Responsibility (CSER) report, which includes an evaluation of greenhouse gas emissions by office location, in order to identify areas for improvement. This demonstrates implementation of the "Disclosure" component of the Commitment, of which Integral Group were one of the first signatories in June 2018. In addition to evaluating how to ensure its portfolio of 16 tenanted spaces achieves net zero carbon, the firm is committed to designing net zero options for all projects undertaken from 2020, in order to educate clients on the achievability of net zero across all building typologies and locations.

Find out more about Integral Group's CSER report here and action plan for the Net Zero Carbon Buildings Commitment here.



List of signatories to WorldGBC's Net Zero Carbon Buildings Commitment

May 2019

Businesses & Organisations

AESG - Dubai, UAE
AMP Capital Wholesale Office Fund - Sydney, Australia
Armstrong Fluid Technologies - Toronto, Canada
Berkeley Group - London, UK
Bruntwood - Manchester, United Kingdom
Cbus Property - Melbourne, Australia
Cundall - Newcastle, UK
Dexus - Sydney, Australia
Foster + Partners - London, UK
Frasers Property Australia - Sydney, Australia
GPT Wholesale Office Fund - Sydney, Australia
Integral Group - Oakland, California
Kilroy Realty Corporation - Los Angeles, California
Local Government Super - Sydney, Australia
Majid Al Futtaim - Dubai, UAE
Natural Resource Defense Council - New York, New York
Nightingale Housing - Melbourne, Australia
Salesforce - San Francisco, California
Shaw Contract - Dalton, Georgia
Signify - Amsterdam, Netherlands
Stockland - Sydney, Australia
Sydney Opera House - Sydney, Australia

Cities

Copenhagen, Denmark
Cape Town, Durban, Johannesburg & Tshwane, South Africa
London, UK
Los Angeles, New York City, Newburyport, Portland, San Francisco, San Jose, Santa Monica, Seattle & Washington DC, United States
Medellín, Colombia
Montreal, Toronto & Vancouver, Canada
Paris, France
Stockholm, Sweden
Sydney, Australia
Tokyo, Japan

States & Regions

Baden-Württemberg, Germany
California, USA
Yucatan, Mexico
Navarra & Catalonia, Spain
Scotland, United Kingdom

Each organisation has developed an action plan detailing their strategy to achieving their targets. View all of the Commmitment signatory profiles here.

Government action

We welcome the leadership action from governments that have already committed to net zero carbon buildings. Through our partnerships with key organisations such as C40, The Climate Group as secretariat to the Under2 Coalition and WRI (see page 46) we are seeing bold commitments being made at both a municipal and government building level, and for implementing regulation to mandate net zero carbon buildings and setting policy roadmaps for future direction. Action from leading cities, states and regions can inspire wider and deeper commitments from other subnational and national governments, in order to meet climate change obligations.

Cities

As of May 2019, 23 C40 city mayors have signed the **Net Zero Carbon Buildings Declaration** developed as part of WorldGBC's Net Zero Carbon Buildings Commitment, as a signal of the level of action needed to improve buildings across their jurisdictions and the benefits it will bring to their citizens. The Declaration states:

"...Net zero carbon buildings are green and healthy buildings. They use energy ultra-efficiently and are supplied by renewables. They are comfortable homes where money isn't wasted on energy bills, productive workplaces insulated from extreme temperatures, and healthy schools free from dirty air.

Action is needed today, because most buildings will be standing for generations to come. Missing this opportunity locks in the problem for our children and grandchildren, but delivering on this commitment will provide benefits for our citizens to enjoy long into the future. From lower energy bills for all, including our most vulnerable citizens, to reduced greenhouse gas emissions and cleaner air, the positive impacts of action are undeniable..."

"By mid-century all buildings must be operating at zero carbon emissions, a radical shift from the situation today where 39% of global emissions are generated by construction and buildings. In cities, this figure is often much higher. Investors, developers and businesses will need to be prepared for the standards being put in place by city halls around the world."

Zoe Sprigings, Programme Director, Energy and Buildings, C40

Vancouver, Canada - Vancouver's Renewable City Action Plan establishes a high level roadmap for all buildings to achieve zero emissions by 2050. This includes requiring zero emissions in all new buildings by 2030, as well as setting energy and emission reduction targets for existing buildings.

The Zero Emissions Building Plan introduced in 2016 is a phased approach introducing greenhouse gas emission limits through building codes, updated in five-year increments to require zero emissions from all new construction by 2030.

The city has been carbon neutral in operations for all buildings owned and occupied since 2012. The Renewable Energy Strategy for City Owned Buildings introduced in 2016 requires all city-owned buildings to be zero emissions in their operations before 2040, eliminating offsets.

New city-owned developments must be built to Passive House or alternative zero emissions standard from 2018, and as part of capital renewal and maintenance planning, existing buildings are to be identified and scheduled or zero emissions retrofits.

States and Regions

Six states and regions from five countries from the Under2 Coalition have signed up to the Commitment, to either enact regulations for net zero buildings across the entire jurisdiction by 2050, or to address their own government building portfolios.

California, USA - In 2018, Governor Jerry Brown established by Executive Order a goal for California to achieve carbon neutrality by 2045, then achieve and maintain net negative carbon emissions thereafter, building on a long history of climate action from the state. In addition to the historic Senate Bill 100 passed in 2018 which sets a target of 100 percent carbon-free electricity by 2045, California's strategy to achieve decarbonisation is coupled with several initiatives to improve the energy efficiency of new and existing buildings, and onsite energy generation. This covers 16 million buildings across the state, and is estimated to eliminate 147 million tonnes of carbon emissions.

"We are proud to join the WorldGBC's Net Zero Carbon Buildings Commitment as an extension of the commitments made at the Global Climate Action Summit. We look forward to sharing experiences with decarbonisation of buildings at scale, including widespread access to energy efficiency measures and renewable energy sources, to lessen our collective footprint and improve long-term quality of life for all residents of California."

Andrew McAllister, California Energy Commissioner

National

Taking action to reduce emissions from public and private sector buildings provides a cost-effective and economically beneficial means to mitigate the impacts of climate change and achieve Paris Agreement commitments. As per the 2018 Global Status Report from the Global Alliance of Buildings and Construction (GlobalABC), five countries updated their Nationally Determined Contributions (NDCs) in 2017-18 with specific mentions of buildings and construction. Canada in particular revised its NDC with new targets for the buildings sector, including “net zero energy ready” building codes to be adopted by provinces and territories. A total of 136 NDCs now reference the buildings sector, an increase from 132 in 2017. In June 2017, Sweden committed to being carbon neutral by 2045, accelerating the nation’s previous target to become carbon neutral by 2050. The new Climate Act came into force on 1 January 2018.

The value proposition for governments to enable net zero carbon buildings includes:

- **CREATE** a signal to market for transition, and give confidence and assurance to industry about taking action now
- **ENACT** regulation to support the achievement of climate targets supporting the Paris Agreement and 1.5°C scenario
- **ENABLE** action from the private sector by implementing non-regulatory incentives and programs

Jordan - A collaboration in Jordan between the Ministry of Energy and Mineral Resources and the Ministry of Awqaf and Islamic Affairs has initiated the implementation of solar photovoltaic (PV) systems on all 6,000 mosques in Jordan - in some cases covering more than 100% of the building’s energy needs and drastically reducing operating costs that often rely on public donations. Any surplus energy is exported back to the grid thanks to net-metering regulations introduced in 2012. Driven by commercial benefits and optimal climatic conditions, solar and wind farms can be seen across the desert, and roof-mounted photovoltaic panels are visible across the skyline of Amman, the capital city. This leadership was profiled by the World Economic Forum in October 2018.

FEATURE

Global leadership action

Karl Desai, Projects Manager,
Advancing Net Zero, UKGBC

"WorldGBC set the route map to net zero carbon, UKGBC has forged the path and now industry is ready to take up the journey."

This is UKGBC's experience of the Advancing Net Zero campaign, launched by WorldGBC, which has been vital in setting the ambitions for our built environment and inspiring the UK industry. An appropriate analogy is the **heart**, **head** and the **hand** – signifying, respectively, WorldGBC, UKGBC, and the UK construction and property sector.

WorldGBC is the beating **heart** of the Advancing Net Zero (ANZ) programme. The impact of the 2017 'From Thousands to Billions' WorldGBC report cannot be understated in setting a bold and ambitious vision for the future.

The image of the ANZ roadmap infographic alone always triggers keen interest from stakeholders by cutting through the confusion and offering a clear illustration of where we need to be by 2030 and 2050. It's hard to think of a visual trigger that has inspired as much action as this one.

UKGBC is the thinking **head** that has sought to understand what this campaign means in the UK context. We have developed our own multi-stream programme aiming to tackle the UK's most significant challenges to decarbonising our built environment. The combination of clear global ambitions from WorldGBC and growing interest in 'net zero' in the UK industry has transformed ANZ into the biggest programme of work that UKGBC has ever run.

The leading project in the UKGBC's ANZ programme has been to develop a high level definition for net zero carbon buildings. In response, UKGBC led a six-month development process with industry, involving over 50 businesses, 13 industry bodies and a public consultation process to build consensus on a definition.

UKGBC's 'Net Zero Carbon Buildings: A Framework Definition' report was released in April 2019 at the Houses of Parliament to a highly receptive audience of industry and policy makers. The response so far has been overwhelmingly positive – all stakeholders now have the agency to move the agenda forward thanks to the groundwork laid by the framework.

The framework extends the ambitions of WorldGBC's roadmap by tackling embodied carbon in addition to operational energy. This was determined by industry as a critical issue that needed to be addressed, exemplifying the 'head' being able to intelligently interpret larger, bolder ambitions. Included in the framework are two definitions for net zero carbon that can feasibly be tackled today – 'operational energy' and 'construction' – with a view to expanding the framework over time to achieve net zero 'whole life' carbon.

The UK industry are the practical **hands** that will now take up the challenge to deliver on the groundwork set by UKGBC. The framework was specifically developed to give the industry ownership over the issue of net zero carbon and whilst different stakeholders may utilise the framework for their own purposes, it offers a common understanding of how net zero carbon buildings should be defined.

In addition to this, the framework has been delivered as our best-case position right now, with strong indications to areas of future development – that which needs to be tackled, but only with further input. Industry has warmly welcomed this outreach as areas they might be able to bite off and deliver on.

An example of this is the Better Buildings Partnership that are interested in exploring energy use intensity targets for commercial buildings, and the London Energy Transformation Initiative that are interested in developing further guidance on addressing embodied carbon impacts. This organic growth and clear momentum can only be a good thing.

The heart, the head and the hand; all working together to move the body in the right direction – towards net zero carbon.

American leadership on climate action is alive and well – as evidenced by the phenomenal engagement in WorldGBC's Net Zero Carbon Buildings Commitment from the private and subnational sectors. It's inspiring – and meaningful – when leaders from real estate and government step up to decarbonise their buildings, at the portfolio and jurisdictional scales. With the launch taking place at the Global Climate Action Summit in San Francisco, it could have been expected that a few US businesses and governments would step up. But the American response to the Commitment has been overwhelmingly positive, with five companies, eight cities and one state signed on in the first year.

USGBC is supporting this market leadership and in 2018 launched our LEED Zero program. The programme includes four distinct certifications for LEED Zero Carbon, Energy, Water, and Waste. LEED Zero reinforces the ideal of green buildings benefiting both the planet and its occupants, by requiring baseline LEED certification or current LEED O+M registration, along with 12 months' performance data. Importantly, LEED Zero provides a globally available platform for the signatories of the Commitment to verify their net zero carbon goals.

Private sector commitment signatories from the US represent key elements of the building sector: manufacturers, developers, owners, tenants, and professional services. These firms are not only taking action with their own portfolios, but also influencing their peers and clients.

The public sector response has been robust as well with commitments from local jurisdictions with populations totalling over 15 million. The two largest US cities - New York City (NYC) and Los Angeles - joined the Commitment's policy pathway, along with San Francisco and Washington, D.C.

"Following through on this commitment, NYC recently enacted a groundbreaking law to reduce greenhouse gas emissions from the largest existing buildings; and Washington, DC passed a law to establish a minimum building energy performance mandate."

Four additional cities have committed to implement zero carbon strategies in both policy and their own public buildings. For example, San Jose, California is working towards 100% renewable power and developing an electrification strategy, while incorporating LEED into its own portfolio as a key step towards low carbon buildings.

And the most recent US signatory – the State of California – is the fifth largest economy in the world, and representing more than 14% of the US economy. Importantly, the state isn't just making commitments, but has been implementing actions and policies to deliver. Building on a series of state laws, increasing renewable energy targets and energy efficiency targets, California is looking to achieve a 40% reduction in greenhouse gas emissions from buildings by 2030 – and with over 16 million buildings, an integrated suite of policies is called for. Collaborating with key agencies, industries, and private sector advocates is creating new regulatory and technology support. By joining the Commitment, California is signalling to the world that low carbon buildings are achievable at scale and go hand-in-hand with robust economies.

However, it's not enough to achieve net zero on an annual basis if your power demand still hits at the peak hours when fossil fuels are the main fuel on most electric grids. Likewise, adding solar energy to a grid that is already saturated with clean power does not have the same decarbonising impact as adding that solar to a dirty grid, or at times when fossil fuels dominate. USGBC's LEED Zero Carbon certification speaks to this issue, looking for detailed carbon accounting for energy consumed and renewable energy exports.

The impact of the US signatories to the Net Zero Carbon Buildings Commitment is already clear: they are leading the nation's private and government sectors in the essential work of tackling building greenhouse gas emissions through policy and actions.

Liz Beardsley,
Senior Policy Counsel, USGBC

Jorge Chapa,
Head of Market Transformation,
Green Building Council Australia,

The challenge set out by WorldGBC's Net Zero Carbon Buildings Commitment is clear: all buildings, no emissions, by 2030.

This is what the Australian Property sector is responding to. So far, 11 organisations have committed hundreds of buildings to this target. This represents over 347,000 tonnes of carbon emissions, or more than 73,000 vehicles off the road for a year.

There are many reasons why Australian organisations have shown leadership in adopting the targets of the commitment. From adopting voluntary standards, to market and investor demand, Australian property companies understand that creating a more sustainable property or community will ultimately create a better outcome for both of them, not just as businesses, but more importantly, the communities they build for.

For the past 15 years, the Australian property industry has embraced Green Star as the premier rating system to transform the built environment in Australia into one which is sustainable. Green Star's strong focus on greenhouse gas emission reductions has resulted in new buildings being built to have 46% lower emissions than a typical building. This adoption of voluntary rating systems has normalised the idea that new buildings should have a low energy demand.

Around four years ago, industry began to try to understand what the Paris agreement would mean for the built environment. In particular, a set of agreed actions and targets to aim for was desired. Through a number of initiatives, including GBCA's carbon positive roadmap, industry coalesced around a set of targets and criteria. This meant continued reduction in energy use, broad adoption of renewable electricity, and an increasing focus on eliminating fossil fuels from buildings. These measures are now being adopted in Green Star with clear targets that industry will follow to ensure decarbonisation of buildings by 2030.

Australian businesses see value in taking both ownership of their emissions, and leadership in abating them. As the sector is reliant on international investment, they foresaw the need to set clear targets in an easily communicable manner. The aggressive targets set by GPT, Dexus and others point to a recognition that emissions reduction is no longer just a cost savings measure, rather it is a core strategic concern relevant to the long-term health of an organisation. The Commitment targets help validate their sustainability strategies and ensure execution.

"Australian participants are also becoming increasingly aware of the risk they carry if they do not address emissions."

The rise of frameworks like the Taskforce for Climate Related Disclosures (TCFD) shows their foresight to be proven right. Being able to demonstrate that they are part of a commitment that has robust governance and verification mechanisms reduces this risk.

Australian companies now know that leaders are expected to take early action to encourage broader change across the rest of the sector. Community pressure to act on climate change continues to grow, with corporates, occupants, buyers, and talent looking to leading companies to set the pace. Their social license to operate, or their brand value, is directly related to actions they take on addressing climate change. The Commitment helps fills that void and allows them to communicate that they have a plan, and are measuring themselves against it.

The Commitment is a powerful mechanism that sets clear, powerful goals on the road to ensuring buildings are part of the solution to decarbonising our economies. The next decade is the critical decade, and decisions taken in the next three years will shape it. Join the Commitment.

NGO action

The non-governmental and not for profit sector, including Green Building Councils, is very active in the efforts to decarbonise the built environment. These NGOs are providing thought leadership, direction, education and tools to support the implementation of market transformation. They promote innovation, advocate for change, and foster collaborations across our respective networks to achieve greater impact. Some offer certification schemes that are aligned with the Advancing Net Zero framework, others operate as think tanks or consortiums to bring together expertise and challenge the status quo.

We would like to thank our partners for their continued leadership, and efforts to collectively position buildings as part of the solution to climate change.

Architecture 2030 is a US-based think tank dedicated to rapidly transforming the global built environment from the major contributor of greenhouse gas emissions to a central solution to the climate crisis, by providing leadership and high impact actions needed to achieve a carbon neutral built environment.

- Achieving Zero is a framework of integrated policies for governments to phase out carbon emissions in the built environment by 2050. Its key implementation tools integrate building energy upgrade policies coupled with building intervention points that align with capital improvement and major renovation cycles of existing buildings, as well as zero net carbon building energy codes and standards that apply to all buildings. The framework is structured to deliver energy and emissions reductions, rapid expansion of local renewable energy systems, local jobs, and the development of equitable, resilient and healthy communities.
- The ZERO Code and the ZERO Code for California are building energy standards for new building construction that provide code-adaptable language and integrates cost-effective energy efficiency standards with onsite and/or offsite renewable energy resulting in zero net carbon buildings. They include prescriptive and performance paths for building energy efficiency compliance based on current standards widely used by municipalities and building professionals worldwide.
- The 2030 Palette is an online set of design and planning guides for achieving zero net carbon, adaptable and resilient buildings, neighborhoods, and cities. To address the urgency of embodied carbon reductions, Architecture 2030 has launched the Carbon Smart Materials Palette, identifying key attributes that contribute to the carbon impact of high-impact building materials and offering material-specific and whole-building design guidelines and options that reduce emissions. The Carbon Smart Materials Palette is designed to support and complement Life Cycle Assessments (LCAs) and Environmental Product Declarations (EPDs), while providing highly impactful guidelines for low/no carbon material selections and specifications.

International Living Futures Institute (ILFI) is an international NGO committed to catalysing the transformation toward communities that are socially just, culturally rich and ecologically restorative. Through its flagship Living Building Challenge programme, the organisation has been certifying net positive energy buildings that are free of fossil fuel combustion for over a decade. The ILFI also has stand-alone Zero Energy and Zero Carbon certification schemes, as well as a building energy performance label, 'Reveal'. In May 2018, ILFI launched the Paris Solutions Campaign, a collective of high-profile organisations that take aggressive action to affect buildings' operational and embodied carbon while supporting collective advocacy efforts to scale this work across the building industry.

In February 2019, ILFI and the EmiratesGBC announced the signing of a memorandum of understanding (MOU) to bring ILFI's certification tools to the Emirates. Under the MOU, ILFI and EmiratesGBC will partner on the development of ILFI's Zero Energy and Zero Carbon certifications that will be adapted for the UAE market. EmiratesGBC will act as the exclusive auditor of the two certifications in UAE.

"Our global green building community must collaboratively accelerate the market towards zero carbon solutions to meet the challenges of climate change. With the EmiratesGBC joining ILFI as a partner, we can help catalyse broader carbon leadership on our path to creating a thriving, regenerative future."

Amanda Sturgeon, CEO of ILFI

"Time is short and we must act now to mitigate the potential effects of climate change. WorldGBC's Net Zero Carbon Buildings Commitment provides an immediate and accessible road map to decarbonize the built environment using readily available zero net carbon building codes and standards, design and planning tools and strategies, and government policies. I urge you to make the commitment, meet the targets, and fulfil the responsibility they empower you to take."

Ed Mazria, Founder & CEO, Architecture2030

The Climate Group's mission is to accelerate climate action to achieve a world of no more than 1.5°C of global warming and greater prosperity for all. The international non-profit achieves this by bringing together powerful networks of businesses and governments that shift global markets and policies. It focuses on the greatest global opportunities for change, taking innovation and solutions to scale, and building ambition and pace. In addition to EP100 (see page 15) The Climate Group also leads the global business initiatives EV100, to accelerate the switch to electric transport, and RE100, bringing together the world's most influential businesses committed to 100% renewable power by a specified year. Delivered in partnership with CDP, RE100's purpose is to accelerate change towards zero carbon grids by increasing corporate demand for – and in turn supply of – renewable energy. As of May 2019, 176 companies have made a commitment to go '100% renewable'.

The World Resources Institute (WRI) is a global research organisation working on seven urgent global challenges that must be addressed to reduce poverty, grow economies and protect natural systems: climate, energy, food, forests, water, sustainable cities and the ocean.

The Building Efficiency Accelerator (BEA) led by WRI in collaboration with its delivery partners including WorldGBC, is a public-private collaboration that turns global expertise into action to accelerate local government implementation of building efficiency policies and programmes. As of May 2019, the BEA platform engages 41 cities or subnational governments, each committing to implement at least one building efficiency policy and demonstration project, and to track their progress. To increase ambition and long-term thinking towards a zero emissions future, the BEA is now framing commitments to include an overall vision of zero carbon buildings by 2050.

"Today's buildings sector is charting its course in an increasingly complex world, where rapid urbanization, political shifts and climate change call for a recalibration of strategies. Based on the science, the end goal is increasingly clear: we must deliver buildings that at the individual or portfolio level are constructed and operate at a zero carbon basis."

Emma Stewart, Director, Urban Efficiency & Climate, WRI Ross Center for Sustainable Cities

WORLD GREEN BUILDING COUNCIL

We invite you to join us

WorldGBC invites everyone in the real estate sector, whether an investor, developer, owner, manufacturer, architect, designer or consultant, and representatives of national government, states and cities, to work with their local GBCs, us and our partners to ensure that all our buildings, everywhere, are net zero carbon before 2050. These actions will ensure sustained change towards achieving the targets set out in this report long beyond 2050, in order to realise the full impact.

Contact your local GBC or WorldGBC to join us on this important journey.

With thanks to the following organisations for supporting WorldGBC's Advancing Net Zero project since its inception in 2016:

Blackstone Ranch Institute

Children's Investment Fund Foundation

ClimateWorks Foundation

Foster + Partners

Integral Group

Lendlease

Rockefeller Brothers Fund

Rockwool

We Mean Business