

Under the patronage of

UNITED ARAB EMIRATES  
MINISTRY OF CLIMATE CHANGE  
& ENVIRONMENT



الإمارات العربية المتحدة  
وزارة التغير المناخي  
والبيئة



## Event Brief

7th Annual EmiratesGBC Congress

Targeting Zero: A Vision for Future Cities

9 October 2018



Venue Sponsor



ماجد الفطيم  
MAJID AL FUTTAIM



On October 9th, 2018 Emirates Green Building Council (EmiratesGBC) held its 7th Annual Congress under the theme 'Targeting Zero: A Vision for Future Cities' at Pullman Dubai Creek City Centre. It was held under the patronage of the UAE Ministry of Climate Change & Environment for the second consecutive year and supported by Majid Al Futtaim as the venue sponsor. Supporting Associations included Clean Energy Business Council, Council on Tall Buildings and Urban Habitat, Emirates Environmental Group, Energy Institute, Emirates Nature-WWF, Middle East Facility Management Association and Royal Institution of Chartered Surveyors.

The Congress took inspiration from the Year of Zayed which celebrates the vision of the late Sheikh Zayed bin Sultan Al Nahyan's for human development and his belief in investing in infrastructure to improve the UAE's social and economic outcomes and quality of life for its people.

With a wide line up of international and national speakers and experts in the field playing a focal role in enriching the discussion on Net Zero, the Congress explored progress of the Net Zero building movement globally and how the approach can be scaled up to create net zero cities within the UAE. It constituted of presentations and panel discussions where the speakers and the audience shared expertise on how to approach Net Zero Energy in new and existing buildings while taking into account sustainable waste and water management.

The full day event opened with an in house welcome by Saeed Al Abbar, Chair of Emirates Green Building Council, and two key government opening addresses by H.E. Ahmed Muhairbi, Secretary General of the Dubai Supreme Council of Energy, and Eng. Hussain Hassan Khansaheb, Director of Partnerships & Special Projects of the Ministry of Climate Change & Environment. A video address was also given by Terri Wills, CEO of the World Green Building Council. Each welcome address helped set the tone of the day and created a sense of urgency for not only establishing net zero buildings as a new standard but also expanding the focus to net zero cities.

Sanjay Sridhar, Regional Director for South and West Asia at C40 Cities, began the Zero Carbon Cities session by praising Dubai for being a part of the C40 Steering Committee, and for its commitment to both the Deadline 2020 Plan and the Zero Waste Declaration. He shared examples of actions that C40 cities around the world are undertaking to achieve climate goals, such as demand side management, clean electrification of grids and reducing emissions from both the transport and buildings sectors by deploying electric buses and planning low carbon emission districts. The benefits cities will reap from being Net Zero were highlighted, such as an increase in social security and the life expectancy of their residents, along with increased energy and water savings, increased property values as well as a reduced heat island effect.

### Approaches to achieving Net Zero Buildings and Cities

The first segment of the Congress saw Ed Garrod, Principal at Elementa Consulting + Integral Group, emphasizing that a system transformation where transport, waste, and water are included is needed to achieve Net Zero, and that looking at the energy aspect alone is not enough. He also noted that cities should have their own unique method of reaching Net Zero, but they should all include tracking, measurements and transparency of policies and data.

George Barbari, Author of '*Energy Budget*' and CEO of DC Pro Engineering, followed by voicing that he believes thermal storage and district heating and/or cooling are key to reaching the Carbon Neutral target. He also pointed out that each consumer should be responsible for their own energy budget instead of using as much as they want and then paying for their consumption. Dr B'kayrat, Managing



Director of Clean Energy Business Council, stressed on that point and suggested that before any renewable energy systems be installed, a process of reducing energy demand and increasing energy efficiency should come first. In regard to Dubai and renewable energy generation, he said that Dubai has its own target for renewable energy generation and it has to rapidly ramp up production to meet these targets. He added that for the target to keep climate change to under 1.5°C, each country should keep its own specific carbon budget.

### Panel: Net Zero Movement and Scaling up for Sustainable Cities

**Moderator:** Saeed Al Abbar, Chair, Emirates Green Building Council. **Panellists:** Ed Garrod (Integral Group), Sanjay Sridhar (C40), and Dr Raed B'kayrat (CEBC).

In response to the challenges cities face in tackling climate change, panellists highlighted that each city is unique and has its own legislative instruments to develop policies, which can result in vast differences between cities' building codes and regulations. When asked whether building codes and regulations should be completely revamped instead of implementing amendments and new clauses, panellists agreed that making new legislation is very slow, and therefore it is easier to create amendments while making sure to leave room for future improvements. Further discussion led to addressing the challenges the district renewable energy generation sector face, and it was mentioned that because renewable energy generation is being led by the utilities in the region, then connecting building developers with the utilities will aid in better understanding the feasibility of renewable energy. The panellists also spoke about difficulties in the financing available for renewable energy projects; while some banks have started getting involved in rooftop solar development, there are still few financing mechanisms for the energy performance contracting market (ESCOs). The last discussion topic before the session wrapped up was regarding the importance of creating a demand for sustainability, which garnered the agreement that the way to do this is through demonstrating to end-users the benefits of sustainability; by showing the public that their lifestyle significantly affects their health, it will influence actions that will, in turn, create demand for better environmental policies and regulations.

### Case Studies: Implementing Net Zero Buildings

Following the conclusion of the Congress's first panel, a number of case studies were presented to highlight local projects that are striving to achieve Net Zero.

Eng. Mohammad AlShamsi, Vice President of the Civil Projects Engineering & Water Maintenance department in DEWA, shared with the audience the design features of the Al Shera'a building, DEWA's new headquarters, which will be the world's tallest and smartest government building with zero carbon emissions.

John Simpson, Senior Associate of Zaha Hadid Architects, presented the fine details in the new Bee'ah headquarters and its unique design that was inspired by the sand dunes in the UAE to make it harmonious with the landscape. He also spoke about the on-site solar parks that will allow the headquarters to fully operate on renewable energy.

Chris Wan, Head of the Design Management department at Masdar, spoke about the Masdar EcoVilla, a project in Abu Dhabi that consumes 76% less electricity and 35% less water than a typical comparably





sized villa. He stressed that it is important to communicate the results of the project to the public to show that it is possible to achieve Net Zero status in the UAE.

Karim El-Jisr, Executive director of SEE Institute, spoke about The Sustainable City and how the special contract they have with DEWA allows them to wheel the excess solar energy generated by the public spaces, such as car parking, and use it to offset the energy consumption in other areas. Karim also informed the audience of The Sustainable City's plans to be the first Net Zero Energy community in the region.

Senior Researcher at DEWA Dr. Edwin Rodriguez-Ubinas gave a brief about the Solar Decathlon Middle East competition as well as an exclusive sneak peek into some of the unique house designs.

Moving from project case studies to broader organizational case studies, Saravanan Pandian, Senior Sustainability Specialist at ENOC, said that despite Enoc being an oil and gas company, sustainability is embedded into their vision, and he evidenced that by talking about ENOC's mission to have operating ozone-free, solar powered petrol stations by 2020.

The last presentation was given by Expo2020's Daniel Render, Director of Sustainability, and Mark Rhoads, Architect, on the highly researched and innovative designs of the tree shaped solar panels and the passive cooling walls and enclosures that will be available in the EXPO 2020 sustainability pavilion.

The case studies formed an important element of the Congress program, bringing to the forefront the ambitious projects that are coming to life and demonstration projects that will be indicators to what is achievable.

### Retrofitting to Net Zero: Building Energy Efficiency and Regulation

Not all net zero projects will be new buildings, and in order to achieve the global climate change targets, it is critical that existing buildings are given equal attention. Retrofitting existing buildings to net zero through energy efficiency measures and with support of policy and regulation will be key. Mr. Harry Verhaar, Head of Global Public and Government Affairs of Signify shared insight on indoor environmental quality and noted that if offices were simply optimized to the most energy efficient standards, operational savings will be achieved from reduced absenteeism and higher productivity. Moving focus from buildings alone to cities, he added that it is vital to develop human-centric cities to show the public the value of efficient design and operations.

Dr. Pablo de Agustín, Senior Researcher at Tecnalia Research & Innovation and representing the Building Efficiency Accelerator (BEA) regional lead, spoke on the role of the BEA in accelerating building efficiency policy efforts. Dubai is the only BEA city in the Middle East, and by signing on to the BEA, as Dr Pablo explained, the city has committed to implementing a policy and a project for building efficiency. Dubai already has a number of existing strategies, such as DIES (Dubai Integrated Energy Strategy) and DSM (Demand Side Management), which complements the objectives of BEA program. Drawing on the DEWA headquarters case study presented earlier, it was emphasized that the Net Zero label has a place for both iconic buildings and standard buildings, such as houses.

Analogies and comparisons often help drive home a message, and Graeme Sims, Executive Director of the Dubai Regulatory & Supervisory Bureau for Water & Electricity, did just that when he drew an interesting comparison of running a marathon to retrofitting to net zero. He listed the four main factors of running a marathon; equipment, fuel, incentives, and measurements. The runner's



equipment is their running shoes while on the retrofitting to Net Zero, the equipment is changing the building's performance. Runners use food as fuel and net zero buildings need to have clean fuel from known sources. Incentives for runners are usually financial benefits and recognition, while for buildings it is building codes, awards, or regulations. And lastly, the measurement criteria in a marathon is the distance, and for buildings it is the amount of reduction of the building's carbon content.

### Panel: Opportunities and Challenges to Retrofitting to Net Zero

**Moderator:** Saeed Al Abbar, Chair, Emirates Green Building Council. **Panellists:** Harry Verhaar (Signify), Graeme Sims (Dubai RSB), Ali Al Jassim (Etihad ESCO), and Dr. Pablo de Agustín (Tecnalia).

The panel began by acknowledging that while it is possible to retrofit to Net Zero, it is a highly challenging endeavour. The moderator directed the conversation to deep retrofits and the actions required to get there. The response placed emphasis on the assignment of leadership to set targets and deadlines to the retrofit projects. Asked how to tackle overcoming barriers or resistance to the changes brought on from the retrofits, the panellists agreed that effective communication is the first step and that it is crucial to change perceptions about retrofitting to Net Zero. By highlighting the benefits of the retrofitting changes, and by making them more tangible and direct, it will become more attractive to the public. Before the panel drew to a close, panellists offered their opinions on the role of regulators and benchmarking. The regulators role, they agreed, is to push the industry to develop innovative business models and advocate for more transparency, while the role of benchmarking is to establish the baselines for buildings in regard to their energy and water usage. Benchmarks will help direct the necessary actions toward the most critical areas for retrofits and policy making decisions.

Following the panel on retrofitting to net zero, EmiratesGBC Board Secretary Sarfraz Dairkee delivered a presentation showcasing that learning from traditional Arab architecture and its use of passive designs is important when designing Net Zero buildings for hot desert climates. Current building practices should take note the lessons from the past.

### Panel: Beyond Energy: Taking a Net Zero Approach to Waste and Water Management

**Moderator:** Habiba Al Marashi, Vice Chair, Treasurer & Co-founder, Emirates Green Building Council. **Panellists:** Amin El Najjar (Enova), Ghaith Tibi (Arup), and Sonya Benjamin (AESG).

The panel started by discussing the road to achieving zero waste in which the panellists agreed that reducing and reusing waste is the first steps, with recycling as the secondary step. If recycling is not possible, however, then waste recovery acts as the last resort. With the UAE a construction hub of high-rise buildings, it was important for the panel to touch on how to deal with the quantities of construction waste that comes with being in that position. Sourcing sustainable materials and collecting scraped metals can support diversion of construction waste from landfills while increasing the government tipping fees and providing financial incentives can support in achieving the zero waste goals. The panellists emphasised the importance of culture and human behaviour on the reduction of waste generated and water consumed, coming to agreement that the best way to reduce waste and water in operations is to provide incentives and to use technological advancements, such as apps and dashboards to show the efforts being undertaken to reduce water usage and waste. To conclude the session, the possibility of achieving Net Zero waste or Net Zero water was brought forward, and the panellists were of the opinion that Zero should be looked at not only at buildings level, but rather at



communities, districts and cities, all the while examining the operations of buildings as an integrated system, combining energy, water, and waste.

The closing remarks for the 7<sup>th</sup> Annual EmiratesGBC Congress were given by Saeed Al Abbar, who summed up the proceedings of the day and thanked the Congress patron, venue sponsor, supporting associations, speakers, participants and attendees for their contribution to making the event a successful platform for dialogue. He urged participating delegates to continue building on the conversation and urgency regarding Net Zero and to actively push towards achieving a better built environment.

## Acknowledgement

EmiratesGBC would like to acknowledge and thank all its members and strategic partners for joining us during this vital event. We would also like to extend gratitude to the speakers who shared their expertise and experiences with us and the audience, to aid in kickstarting the conversation that will benefit our liveable communities.

Lastly, Emirates Green Building Council would like to extend special thanks to the UAE Ministry of Climate Change & Environment for its patronage and Majid Al Futtaim for its sponsorship of the 7<sup>th</sup> Annual EmiratesGBC Congress and for their ongoing support and dedication to the Council's efforts and the green building movement.

Under the patronage of



## Venue Sponsor



## Supporting Associations

