



إكسبو 2020
دبي الإمارات العربية المتحدة
DUBAI UNITED ARAB EMIRATES



Bureau
International
des Expositions

EXPO 2020 DUBAI

Economic, Social, and
Environmental Impact
of Expo 2020 Dubai

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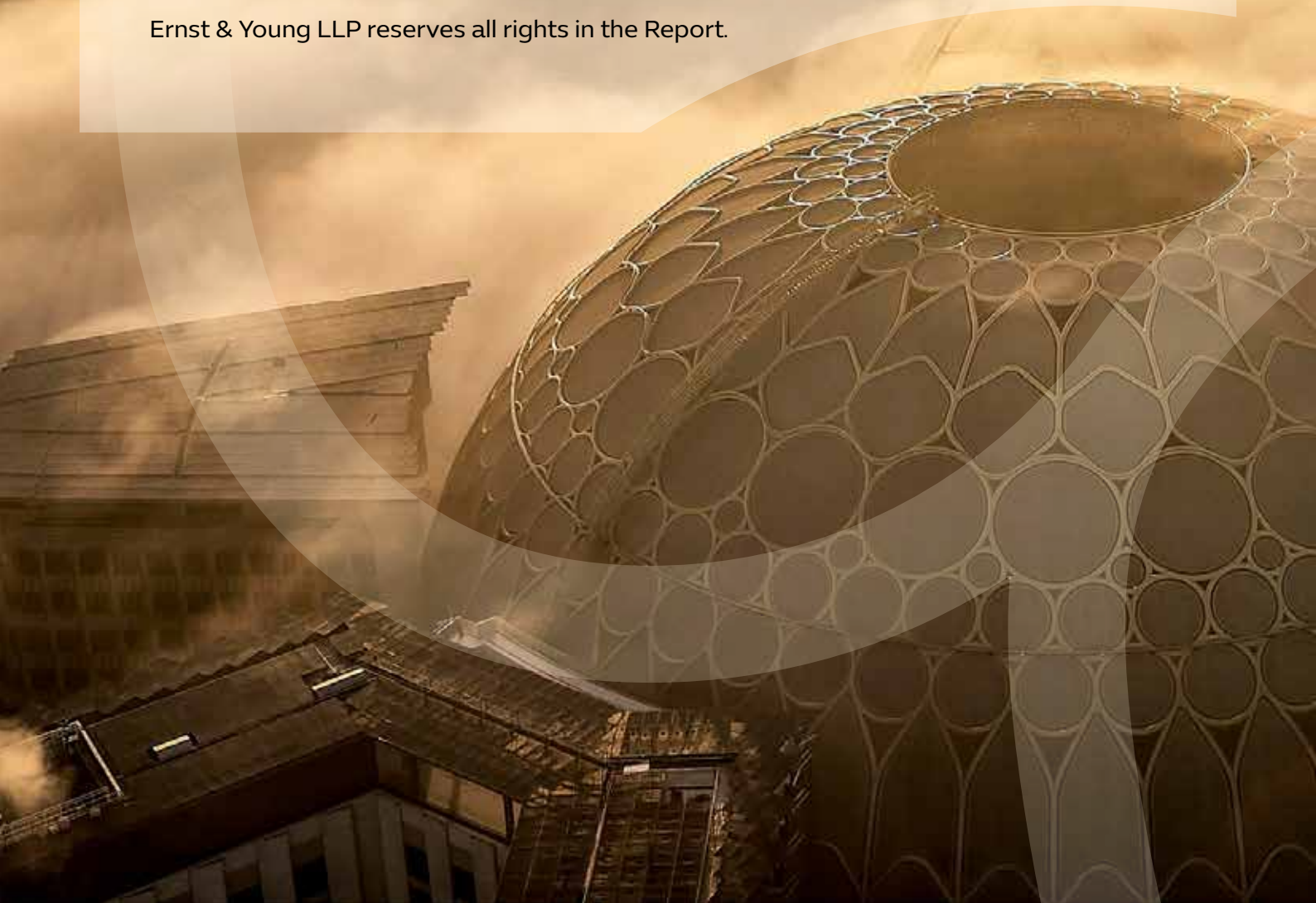
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INTRODUCTION

As the first World Expo ever held in the Middle East, Africa and South Asia (MEASA) region, Expo 2020 Dubai welcomed **192 nations, 24.1 million physical visits** and over **251.2 million virtual visits** over six months between October 2021 and March 2022. Despite the global challenges of COVID-19 that delayed the event by a year, it was highly successful in bringing the world together and educating a global audience, celebrating innovation, promoting progress and fostering cooperation across cultures with its overarching theme of '*Connecting Minds, Creating the Future*' and its three interconnected subthemes: Opportunity, Mobility and Sustainability.



Expo 2020 Dubai was a testament to the UAE's ability to organise and host some of the world's largest events, and its status as a hub for business, culture and international cooperation. It also reflected the success of becoming one of the first countries to recover from COVID-19, overcoming unprecedented obstacles to host the mega-event, and with the objective of taking a leading role in shaping a brighter future for all.

From the outset, there was an aim to deliver one of the most sustainable Expos ever, with the lowest possible environmental footprint, and to create a benchmark for the economic, social and environmental performance of future World Expos and the measurement thereof. The intention to raise awareness of global challenges, to have meaningful conversations, to inspire significant action on its theme and subthemes, and to engage meaningfully with youth and communities underpinned the approach, informed the design and build, and guided all of the outcomes that were delivered.

By the end of the six-month mega-event, Expo 2020 Dubai had delivered on its promises and demonstrated what can be achieved by uniting around solutions for a better future. Throughout its journey, Expo 2020 Dubai delivered a range of economic, social and environmental initiatives which would generate long-lasting benefits and contribute to the global sustainable development goals (SDGs) and agenda. The initiatives included, for example, the Programme for People and Planet that provided the platform and framework for policymakers, private-sector, civil-society actors, and the general public to come together to discuss key issues; providing support and funding

to social innovators globally (through the Expo Live programme); and engaging and inspiring youth in novel ways (the Expo Schools Programme).

By gathering the world in the spirit of pluralism, Expo 2020 Dubai played a key role in enhancing the international perception and appreciation of the UAE and the wider region's culture and heritage. It also served as a symbol of the nation's soft power and had global reputational significance, evident by visits from heads of state, government and business leaders, who participated in the numerous international summits, conferences and forums held throughout the six months. At a local level, its imprints included enhancing a national spirit of volunteerism and leaving a lasting contribution to the UAE's wider economy.

Post-event, Expo City Dubai now continues to deliver on the legacy of Expo 2020 Dubai. It does this by operating a uniquely designed mixed-use urban environment, through the active operation of the Expo site's permanent infrastructure, the continued utilisation of some of Expo 2020 Dubai's most iconic attractions, and the ongoing delivery of a number of programmes and initiatives. The aim is also to continue to take forward Expo 2020 Dubai's spirit of collective action and help inspire the next generation of World Expo hosts and participants.

This report sets out (i) the economic contribution Expo 2020 Dubai made to the UAE's economy and (ii) the social and environmental impact the event had on people and communities within the UAE as well as around the world. The report analyses these impacts in the period prior to the public opening of Expo 2020 Dubai (pre-Expo), during the public Expo event (during Expo) and the period after the Expo event closed (post-Expo).

EXECUTIVE SUMMARY



Expo 2020 Dubai provided a significant contribution to the UAE's continued economic growth and the local job market. It also supported other long-term targets, such as those for growth of small- and medium-sized enterprises (SMEs) and the development of future skills by young people. This contribution began in the period prior to the public opening of Expo 2020 Dubai (pre-Expo) and continued during the public Expo event (during Expo) and the period after the Expo event closed (post-Expo).

Expo 2020 Dubai's legacy is now being realised through the continued re-utilisation of the urban environment and its re-purposing into Expo City Dubai. It also continues to have an impact through the continued use of many of iconic attractions and the ongoing delivery of events. The impact of this economic growth and productivity is quantified in this report by the gross value added (GVA) metric, which quantifies the contribution of Expo 2020 Dubai to the UAE's economy.

The total GVA (2013-42), including both Expo 2020 Dubai and Expo City Dubai, is **AED 154.9 billion / USD 42.2 billion**. In terms of employment, Expo 2020 Dubai is expected to support approximately 1,039,000 FTE job-years in the UAE from 2013-42. These figures, both of which exceed earlier forecasts, are the consequence of the activities undertaken to prepare, deliver and maintain the Expo 2020 Dubai site and event.

In addition to the economic contribution, Expo 2020 Dubai had a wider social impact (i.e., encouraging positive change for people, culture, society and the knowledge economy) on different stakeholder groups. The event provided a meaningful, engaging and memorable experience for millions of physical and virtual visitors. Recognising that we all have the power to build a better world and shape the future, a key focus area and measure of success for the event was

to ensure that visitors left the event with a better understanding of the world's most significant challenges, and felt more inspired, empowered and connected as a result of their visit. The data and feedback collected have confirmed that visitors' exposure to the key Expo 2020 Dubai's theme, subthemes and messages positively impacted their perceptions about the UAE, and inspired them to take meaningful individual actions in a range of key areas, including reducing

their environmental impact, creating gender equality and so on. These key messages and impacts also travelled across geographies as virtual visitors were provided with an online platform to be part of the event.

Inclusion, accessibility and the needs of the people of determination (POD) community were a key attribute in the planning and development of the event, as Expo 2020 Dubai aspired to be the most accessible World Expo in history. Features embedded across infrastructure, services, and extensive virtual tools and platforms (e.g., access to the Virtual Expo) provided everyone with a unique experience irrespective of location, age or physical, sensory and/or psychological challenges.

Additionally, through the People and Planet Programme, Expo 2020 Dubai provided a platform that brought together more than **20,000** changemakers, under-represented voices, the private sector and inspired participants to take action on some of the most pressing challenges of our time, including areas, such as climate change, water, gender equality and women's empowerment, the latter being highlighted by having a pavilion solely dedicated to women.

Expo 2020 Dubai also facilitated and supported hundreds of business meetings and summits which created trade and investment opportunities and allowed new potential partnerships to develop for businesses across the world. The reach for these potential new partnerships and opportunities was widened through the Expo Live innovation impact grant programme – to date this has **140** global innovators, from **76** countries, positively impacting **5.8 million** people worldwide. In addition to this, through the Expo Schools programme, **one million**

students were welcomed to Expo 2020 Dubai. Students were provided with access to an enhanced and unparalleled educational experience beyond the confines of the traditional classroom, thereby empowering them to become agents of change.

Expo 2020 Dubai was successful in creating a strong foundation and supporting the case for ongoing improvements to worker welfare standards by raising requirements for all contractors and strengthening market practices. By complementing and enhancing existing regulations and standards that the UAE currently has in place, the event has represented an opportunity and responsibility to establish new benchmarks for worker welfare.

Expo 2020 Dubai's sustainability strategy was designed to deliver on the event's Sustainability aspirations and subtheme. The key objectives included: (i) leaving a legacy of sustainable infrastructure and cutting-edge sustainability practices, (ii) catalysing and encouraging sustainability efforts in Dubai and the UAE, (iii) increasing public awareness and engaging society in wider sustainability principles and ways of living, and finally, (iv) developing scalable sustainable solutions to ensure that benefits could be extended to the wider economy. These objectives guided the successful planning, delivery and operation of the event, and with the transition of the site into Expo City Dubai — the emergence of a clean, green, innovative, human-centric city of the future.

A testament to the positive environmental impact of the Expo 2020 Dubai event is the **123 buildings** at the Expo site that achieved the **Leadership in Energy**

and Environmental Design (LEED) Certification, with **105 LEED Gold** and **seven LEED Platinum** certified buildings. Together, they reflect a significant integration of energy and water efficiency, air quality, materials, waste, ecology, and other considerations. The site also achieved the **Civil Engineering Environmental Quality Assessment and Award Scheme (CEEQUAL) Excellent Certification** for permanent infrastructure and public realm projects and was the first community in the region to be registered under the **WELL Community Standard** pilot. Other significant achievements include the fact that **87.9%** of total waste was diverted from landfill up to the end of the Expo 2020 Dubai event, and **56%** of trips to and from Expo 2020 Dubai were made using shared and more sustainable transportation modes (Dubai Metro and Expo Rider buses). As a result of a number of carbon reduction initiatives during construction and operations, Expo reduced its carbon footprint by **717,004 tonnes** of CO₂e (**tonnes of carbon dioxide equivalent**) and offset an additional **400,000 tonnes of CO₂e** through the purchase of certified carbon offsets that had social and environmental impacts in addition to carbon benefits. This represents a **10%** reduction in carbon emissions, compared to the business-as-usual scenario.

The remainder of this report provides more detail on the economic, social and environmental impacts that Expo 2020 Dubai delivered for Dubai, the UAE and communities around the world. Further information is provided in the Appendix on the methodology used to collect, analyse and report on the findings presented.

ECONOMIC IMPACT



From the earliest stages of the journey, through to the operation of the public event, Expo 2020 Dubai provided widespread economic value to Dubai and the UAE, despite the backdrop of a global pandemic and the challenges it brought. Expo City Dubai is expected to continue to generate economic value for years to come. For the purpose of this report, the overall economic impact has been quantified in terms of gross value added (GVA) and employment job-years.

The GVA indicates economic productivity and is measured by the contribution of Expo 2020 Dubai and Expo City Dubai to the UAE's economy. The total GVA (2013–42), including both Expo 2020 Dubai and Expo City Dubai, is circa **AED 154.9 billion / USD 42.2 billion**. The sectors contributing most towards this outcome are:

- 1 events organisation and business services:
AED 75.5 billion / USD 20.6 billion
- 2 construction:
AED 31.9 billion / USD 8.7 billion
- 3 restaurants and hotels:
AED 23.1 billion / USD 6.3 billion

Despite the worldwide impact of the COVID-19 pandemic, the projected economic impact was 26% higher than that quoted in EY 2019 Economic Impact Assessment (EIA)¹. This higher impact now being reported has been attributed to different aspects that occurred both pre-Expo and during Expo, and that are forecast to arise as part of the post-Expo activities and legacy.

In the pre-Expo period, due to the postponement of the event because of the pandemic, there was an additional year spent preparing for Expo 2020 Dubai, which affected the economic contribution. The post-Expo impact is expected to be greater than was projected in 2019. The majority of the increased impact is expected to be driven by a change in the legacy strategy. Under the changed strategy, more strategic assets will be retained within the Expo City Dubai organisation's ownership rather than being sold. The strategy is designed to promote more extensive and new business growth, technology and innovation, driven by the success of Expo 2020 Dubai. Given the advanced legacy planning and implementation, and through the contribution of events being organised at Expo City Dubai, such as the UN Climate Change Conference of Parties (COP28) in November 2023, and business

services, as Dubai's ever-increasing international profile further improves domestic and international business relations, Expo City Dubai is expected to drive significantly more GVA during the legacy period compared to the 2019 projection.

More specifically, the expected GVA impact is expected to be higher because the latest financial projections for Expo City Dubai better reflect this new business model, and Expo City Dubai is expected to contribute towards the majority of the overall GVA. This expected increase in activity is likely to lead to a higher GVA impact as the retained assets are leased and generate ongoing rental income and economic activity for a longer duration (over the operational lifetime of the assets). The timeframe of the Legacy analysis period has been extended compared to the 2019 analysis (by 11 years) to reflect this business model, which is different to the asset sales based model that the 2019 projections were based on. In an asset lease based model, the value to the economy is realised over a longer period of time as assets become operational and ramp up activity over time. In contrast, an asset sales based model captures the value added at the point in time the assets are sold. The change in strategy has therefore required a change to the modelling approach to accurately capture the Expo City Dubai's expected contribution to the economy.

¹The Economic Impact of Expo 2020 Dubai — Technical Report, April 2019

For this benefit to be realised in full, it is important that the legacy of Expo 2020 Dubai continues to add value to the UAE's wider economy, through investments into Expo City Dubai's planned events, exhibitions and other expected ongoing attractions. These attractions are forecast to draw visitors, businesses and tenants nationally and internationally, thus creating a greater, widespread impact from the legacy.

The breakdown of GVA and highest contributing sectors are summarised as follows:

1 pre-Expo GVA (2013-21)
AED 39.1 billion /
USD 10.7 billion

- 25.2% of total Expo GVA impact
- top driving sectors: construction, events organisation and business services

2 during-Expo GVA (2021-22)
AED 19.6 billion /
USD 5.3 billion

- 12.7% of total Expo GVA impact
- top driving sectors: restaurants and hotels, events organisation and business services

3 post-Expo GVA (2022-42):
AED 96.2 billion /
USD 26.2 billion

- 62.1% of total Expo GVA impact
- top driving sectors: events organisation, business services and retail

Another metric that has been used to quantify the economic impact are full-time equivalent (FTE) job-years. An FTE job-year is defined as full-time work (eight hours a day, five days a week) for one year, for one person. The three phases are expected to support approximately **1,039,000 FTE**

job-years in the UAE from 2013-42, which is **15%** higher than estimated in the pre-event study. This is equivalent to an average of approximately **35,000 FTE job-years per annum** in the UAE. Expo City Dubai is expected to support the majority of FTE jobs, with the breakdown as follows:

1. pre-Expo FTE job-years: **266,000**
 - mostly within the construction sector
2. during-Expo FTE job-years: **111,000**
 - mostly within the restaurants and hotels sector
3. post-Expo FTE job-years: **662,000**
 - will continue to be driven by ongoing events as well as a range of nonquantifiable impacts from improved trade and business relations as Dubai and the UAE increases its international profile for business and tourism

Expo 2020 Dubai exceeded its 2016 commitment to award at least **20%** of Expo 2020 Dubai's spending to small- and medium-sized enterprises (SMEs), by awarding **AED 6.8 billion** of contracts, **a quarter of all the contracts awarded** (by monetary value), with **64%** of these being domestic SMEs. Of the other SME suppliers, the majority were from the United Kingdom (**24%**), the United States (**16%**), France (**4%**), India (**4%**) and Australia (**4%**).³ This aligned with the UAE's ongoing national SME programme, which continues to provide incentives and benefits, further aiding SMEs growth and development. This also demonstrates the UAE's ongoing commitment to exemplifying the two key Expo 2020 Dubai subthemes of Mobility (motivating productive movement of technology towards human progress) and Opportunity (unlocking the potential to contribute towards the economy) amongst SMEs.

Furthermore, the products of the financial investments made in hosting the Expo, such as creating the

permanent infrastructure (as promised within the original bid), have become integral elements of Expo City Dubai. Approximately **80%** of the Expo-built infrastructure will be part of Expo City Dubai. These structures include some of the most iconic attractions, such as Al Wasl Plaza, the Garden in the Sky observation tower and the Surreal water feature. Additionally, a number of the event's flagship pavilions such as - Terra (the Sustainability pavilion) and Alif (the Mobility pavilion) - will be retained (with some already reopened), whilst thematic district pavilions are to be repurposed. This repurposing of structures is expected to continue to provide benefits through the activity that the retained assets generate.

The transition of Expo 2020 Dubai into Expo City Dubai, and the resulting impacts are a direct result of a deliberate strategy, initiated when the bid to host the event was won in 2013, and designed to help the UAE achieve its future ambitions and goals. The development of Expo City Dubai demonstrated how it is possible to create a clean, green and innovation-driven city of the future. This will be an important exemplar to both support the delivery the Dubai 2040 Urban Masterplan and demonstrate one of many ways in which the financial investments can create lasting sustainable impact.

Overall, Expo 2020 Dubai is expected to continue to provide a positive and long-lasting impact on the UAE's economy through the impacts described above, and also through nonquantifiable impacts continuing throughout Expo City Dubai. Although the scale of these nonquantifiable impacts has not been measured in this study, they are likely to have an economic impact on the UAE for a number of years and in a number of ways, including an increased international profile of Dubai and the UAE as a place to invest and do business, and therefore, also improve trade relations at a country-to-country level from relationships developed during the Expo.

² Expo 2020 Dubai boosts economy by awarding AED 6.8 billion of contracts to SMEs | Expo 2020 Dubai

³ <https://www.expo2020dubai.com/en/news/expo2020-dubai-boosts-economy>

SOCIAL IMPACT



Expo 2020 Dubai was designed to be an unforgettable and impactful experience for the millions of visitors who flocked to the mega-event. Visitors were immersed in stunning exhibits and events, while being deeply engaged in content that left them with a greater understanding of the main theme of '*Connecting Minds, Creating the Future*', and subthemes of Opportunity, Mobility, and Sustainability. The event had a profound impact on stakeholders, who reported experiencing a wide range of social benefits, such as a shift in their mindset, higher inspiration to take positive action, knowledge exchange, cultural awareness, becoming more innovative, and much more.

The following section presents Expo 2020 Dubai's key social impacts across eight key areas. These eight areas were identified based on a rigorous social impact framework developed with the help, review and advice from an independent Academic Advisory Committee. The study included a detailed assessment of Expo 2020 Dubai's activities, alignment with Expo 2020 Dubai's commitments, the social outcomes expected, and the selection of indicators that could support the measurement and monitoring of Expo 2020 Dubai's social impacts pre-, during and post-event.



1. Embedding a lasting positive impression on global and local visitors

As the first World Expo held in the Middle East, Africa and South Asia (MEASA) region, Expo 2020 Dubai welcomed and immersed millions of visitors under its theme of 'Connecting Minds, Creating the Future' and its three interconnected subthemes: Opportunity, Mobility and Sustainability. This theme and subthemes were reflected across the site, including three thematic pavilions, 192 country pavilions, and rich programming that included national day events, live performances, art, music, food, education, entertainment and others.

The mega-event also pioneered and featured new elements to enhance the visitor experience. Through a new virtual Expo initiative, there was an opportunity to significantly expand Expo's reach and engagement particularly in a post-Pandemic era, which resulted in visitors from almost every corner of the world experiencing the Expo virtually. The mega-event was designed to be fully inclusive and accessible for everyone regardless of their age, background, physical or mental abilities.

Expo 2020 Dubai set out to immerse millions of visitors in a deeply memorable and meaningful experience both on-site, and virtually. Through the exhibits and available contents, it helped them to acquire new knowledge and experiences, and change their perception about each country's history, culture, innovations and future.

A further key success measure for Expo 2020 Dubai was to equip visitors with a deeper understanding of the world's most significant challenges. Insights captured from the visitor surveys carried out before and during the mega-event, showed that exposure to content about the challenges, as well as to solutions to each of the subthemes (Opportunity, Mobility and Sustainability) at dedicated pavilions (Terra, Alif and Mission Possible) and a variety of country pavilions, resulted in visitors confirming that their understanding had increased significantly.

The survey insights indicate that there was a **112% increase** in visitors who now strongly agree that they are aware of how their daily habits contribute to a better and more sustainable future for everyone, compared to pre-Expo. Additionally, visitors acknowledged that even small actions such as recycling, smart

energy usage, and water conservation could have a positive impact on the planet.

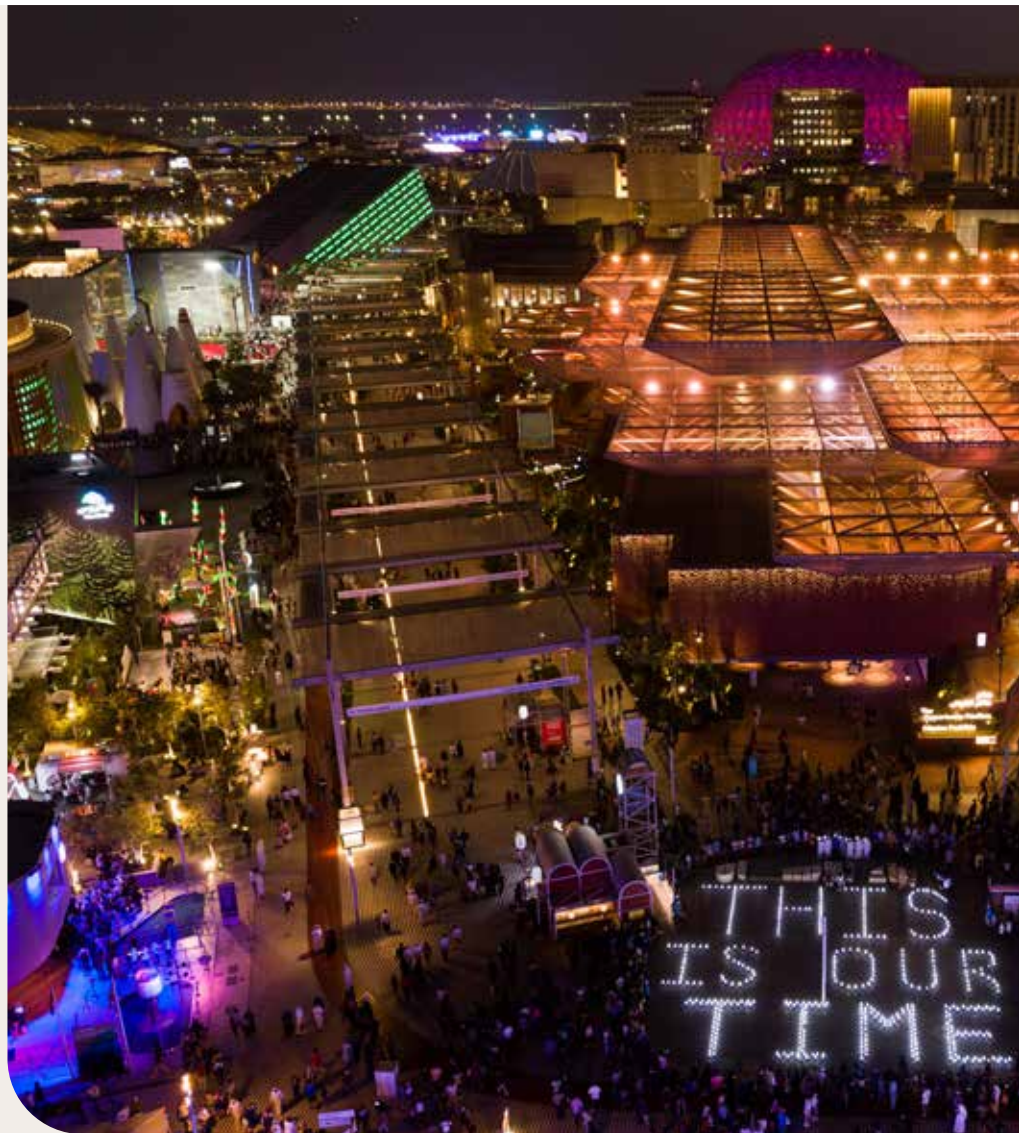
Similarly, the number of visitors who strongly agreed to take individual actions to reduce their environmental footprint **increased by 94%** when compared to pre-Expo levels. This outcome is noteworthy as it demonstrates a shift in visitors' perspectives on the broader climate agenda following their visit to Expo 2020 Dubai.

Expo 2020 Dubai also helped to further enhance perception about the UAE and the region amongst visitors. It provided them with the opportunity to explore the UAE's rich history and culture, get a first-hand experience of its values of the cultural diversity and tolerance, whilst also witnessing and appreciating some of UAE's achievements in industries of the future such as space technology, AI etc. This exposure led to **72.6%** more visitors (compared to pre-Expo), strongly agreeing to have increased their awareness of the UAE's history, and Islamic and cultural heritage. These new perspectives about the UAE could encourage them to share these positive views within their communities abroad and likely will inspire them to revisit the UAE for tourism or businesses purposes in the future.

2. Facilitating global conversations to generate new perspectives for Sustainable Development

The Programme for People and Planet was Expo 2020 Dubai's thought leadership programme, endorsed and adopted by the UAE Cabinet in April 2021. The Programme was established on the premise of Expo 2020 Dubai being a 'people's platform', and therefore, engaged and galvanised people to solve global development challenges. The programme facilitated business collaboration, partnerships, global discourse and pushed the needle forward on the Sustainable Development Goals, thereby strengthening UAE's role as a key global development facilitator. Some of the key activities included hosting 229 events, educational workshops and business forums that saw participants taking part in interactive activities.

Initiatives like Expo Live and the Global Best Practice Programme also allowed Expo 2020 Dubai to serve as a premier platform for global innovators to showcase impactful and scalable projects that could provide solutions to the world's challenges. The focus of the latter was on projects related to one of five key topics that included (i) resilient habitats, (ii) livelihoods and enterprise development, (iii) social development (health and education), (iv) water, food and energy security, (v) inclusive and sustainable service delivery. Five new pandemic-related projects were supported to offer short- and long-term solutions to the effects of COVID-19 pandemic.



Overall, the Programme for People and Planet was successful in providing a platform to more than **20,000** changemakers and underrepresented voices from across **192 countries**, along with more than **29 million online viewers**, enabling all of these to engage and investigate solutions to solve critical global challenges. The programme was also successful in helping Non-Official Participants (NOPs) and International Organisations (IOs) initiate hundreds of partnerships, helping raise their visibility and readiness and allowing them to access influential networks to continue their programmes and initiatives. Connections and partnerships were realised with powerful networks of governments, senior officials, businesses and other development partners.

3. Inspiring the next generation to explore, create and learn

Expo 2020 Dubai's dedicated School Programme made a commitment that it would inspire students to broaden their career aspirations in topics, such as robotics, space, technology and other futuristic careers. The Programme was a resounding success, despite the challenges of the pandemic, as evidenced by a total of **1,003,747 student visits** from **1,101 schools** in the UAE and **8.6 million visits** from **71 countries** to Expo School Programme's virtual platform. It achieved the highest number of school visits to any event ever in the history of the UAE.



The School Programme focused on developing material to support a transition to virtual learning. This included recreating thematic journeys for school students to be conducted virtually through digital platforms that could be used before and during their Expo 2020 Dubai journey, together with other experiential learning tools and lesson plans for teachers.

Targeted surveys were conducted with students who visited Expo 2020 Dubai to measure impacts across a range of topics including broadening of their interests and life ambitions, exposure to innovative ideas and technologies as well as increase in skills such as creative thinking, innovation and problem solving. A positive trend was observed across all measured indicators.

The data collected through surveys and questionnaires indicated that visiting the Expo 2020 Dubai site encouraged a greater number of students to think about their future and explore career options based on trends of what tomorrow could look like. For example, **81.8%** agreed that after attending Expo 2020 Dubai, they had broadened their career aspirations and now wanted to pursue careers in science, technology, engineering and mathematics (STEM) topics related to robotics, space technology and the environment.

A range of exciting initiatives helped to further drive these outcomes. These included Expo 2020 Young Stars and immersive journeys across the site's thematic districts, all of which provided meaningful learning opportunities and exposure for students, and nurtured their understanding and importance of skills, such as collaboration and exploration. A survey taken during post-Expo showed that there was a significant increase in the proportion of students who strongly agreed that their understanding of collaboration (**129.1% increase**) and exploration (**179% increase**) had improved compared to before attending the event.

This is an important outcome, as these skill sets will be needed to support the development of new ideas, progress thinking across disciplines and are crucial if we are to make significant advances in the fields of science, technology, entrepreneurship and creativity, especially, with regards to the global challenges. Having students and teachers embrace these ideas will immediately help to enhance the teaching experiences in UAE schools, allowing students to become agents of change. This helps to ensure that the legacy of Expo 2020 Dubai continues to have a local and global impact on how future generations see and engage with new opportunities and challenges.

4. Establishing best practices for mega-event planning and community engagement

Hosting Expo 2020 Dubai was a national effort, that required all local and federal entities across the Emirates to coordinate to deliver such an exceptional event. Expo 2020 Dubai was a global platform for UAE government entities to demonstrate best practices in mega-event planning and delivery, showcase their preparedness, excellence and innovation; and to strengthen their workforce capabilities and skillsets. From the earliest days of the bid, key stakeholders were focussed on ensuring that all relevant entities were involved and ready. To drive seamless coordination and collaboration, a higher leadership committee was formed even before Expo 2020 Dubai was awarded to the UAE. The decree to form the higher committee stipulated that all local government departments and public authorities must cooperate with the committee and provide full support for it to meet its goal of successfully hosting the World Expo.

Expo 2020 Dubai also aimed to set a new benchmark of instilling within the local community a sense of pride for hosting a World Expo in the UAE. It engaged all segments of society, striving to maximise their involvement and participation. The outreach began during the Expo 2020 Dubai bid phase and continued to reach out and deliver benefits through the event itself and beyond. The community programmes designed by Expo 2020 Dubai ensured a sense of ownership by all segments of society and individual communities, who firmly stood behind the vision - from creating excitement, awareness, and inquisitiveness amongst the public, to creating innovative ways of involving them in aspects of the event, while ensuring opportunities for government, businesses, and youth.

5. Accelerating innovation and supporting start-ups and SMEs to scale and create solutions that make the world a better place

When presenting to the member nations of the BIE in Paris in 2013, the Expo Dubai leadership committed to the creation of a EUR 100 million Expo partnership fund to accelerate entrepreneurial spirit around the world, and support projects delivering a lasting and positive impact. Widespread access to finance remains limited for innovators, especially those working outside established start-up ecosystems, and younger organisations in small and emerging economies.

Expo Live was therefore created, so that every social innovator — no matter where they are in their journey — had the opportunity to gain access to funding, business guidance and support, and to realise their full potential. It is an innovation and partnership programme to fund, accelerate and promote creative solutions that improve lives, whilst preserving our planet. Expo Live harnesses the convening power of a World Expo to demonstrate how global innovation and committed people can advance the pace of progress and inspire an inclusive and prosperous future. It translates these themes into action through a combination of grant programmes, innovation challenges and knowledge-sharing events. It also promotes collaboration and provides technical assistance and exposure to Global Innovators. It is designed to symbolise the UAE's promise to inspire future generations, create positive impact and build a prosperous future for everyone. This will continue as it has been re-launched at Expo City Dubai.

Expo Live allowed global innovators access to influential networks and facilitated connections and partnerships amongst global

innovators and corporate organisations. For example, **98%** of surveyed global innovators agreed that after their involvement with Expo Live, they now have more opportunities to develop partnerships with other enterprises. Furthermore, **89%** of global innovators reported a large increase in their exposure to new markets and customers. This result showcases that through Expo Live, global innovators were able to mobilise significant resources through financial, commercial and non-commercial partnerships.

Expo 2020 Dubai also accelerated innovation by recognising its role towards SMEs and therefore, set targets, commitments, and preferential clauses to support SMEs. Expo 2020 Dubai from the outset engaged and supported a wide range of SMEs. This was particularly important as a mega-event of the scale of Expo 2020 Dubai provides a unique platform for start-ups and SMEs to leverage their products and services and provides an unparalleled opportunity for enhanced

networking in an environment where people are open and willing to engage. Additionally, it supports local entrepreneurs to gain exposure, expand into new markets and develop long-lasting business connections and helps them to demonstrate their competencies for future projects. For example, some of the SMEs highlighted that it was their first time working at a global scale and working with Expo 2020 Dubai has helped them to secure other business opportunities with large-scale projects. SMEs showed a **59.7% increase** in SMEs strongly agreeing that their credibility to pitch their business to investors and other businesses has increased following their experience at Expo 2020 Dubai. This directly aligns with the Expo's objective to provide SMEs a launchpad to excel in their work. Moreover approximately **86%** of the SMEs reported that they have increased the size of their teams by about **46%** since their involvement with Expo 2020 Dubai.



6. Working together to advance worker welfare standards

As the first mega-event of this size and scale to take place in the Arab world, Expo 2020 Dubai represented an opportunity to encourage the raising of standards and setting of new benchmarks for the region and the construction industry more widely. Aligning to the leading global health and safety practices was also fundamental to the planning and delivery of Expo 2020 Dubai. These commitments were extended to all stakeholders involved, in order to ensure health, safety and well-being of visitors, employees and any others who may be at risk. An integrated approach to the management of Health, Safety and Environment under the banner of “Better Together” was delivered through policies, commitments, standards and legislation (complying with laws and regulation of Dubai

and the UAE). This was supported by risk assessment, hazard identification and mitigation, engagement and continual improvement. The aim was to drive a marked shift in behaviour for worker welfare, health and safety, which continues to shape the industry, even after the close of the event. Expo 2020 Dubai showcased their commitment to ensuring that workers’ health, safety and welfare is protected by developing a worker welfare policy and a Worker Welfare minimum Assurance Standard (WWAS). These standards set out **386 requirements (70% legal and 30% Expo-specific)**, relating to worker welfare and treatment that every employer working with Expo 2020 Dubai was required to follow. As part of their commercial relationship with Expo 2020 Dubai, all contractors and suppliers were required to sign a commitment to the worker welfare policy and the WWAS. The worker welfare policy documented Expo 2020 Dubai’s goals and commitments

towards worker welfare. The policy was based on a number of fundamental principles that were applicable to all organisations working to deliver Expo 2020 Dubai.

Moreover, the worker welfare team at Expo 2020 Dubai constantly monitored the compliance of contractors with the WWAS and the ensured the welfare of over **250,000 workers**. This dedicated team was supplemented by a wider, virtual team of welfare managers from contractors and consultants, who all shared the aim of managing worker welfare compliance across the five years of the programme. In total, the team conducted more than **1,100 audit activities**, as well as capacity building and trainings. This has led to many contractors gradually enhancing their internal processes for monitoring worker welfare.

For example, after being contracted by Expo 2020 Dubai, contractors reported an improvement in their processes and standards. Survey results showed that there was an almost doubling, **80% increase**, in contractors who strongly agreed that they now have a more comprehensive process for monitoring worker welfare after being contracted by Expo 2020 Dubai. The efforts made by the worker welfare team at Expo 2020 Dubai has significantly contributed to positive changes in worker’s working conditions.

Expo 2020 Dubai aimed to create a better working environment for blue-collar workers, in line with international best practices. This is reflected in the worker survey results which indicated that there were almost three times as many workers (an **increase of 185%**) reporting their working conditions at Expo 2020 Dubai to be “excellent” when compared to their previous employment. The achievement of Expo 2020 Dubai serves as a valuable example for other mega-events and infrastructure projects in terms of prioritising worker welfare standards.



As one of the first mega-events to take place during the Pandemic, organisers faced and surpassed a number of significant challenges. Conscious of the responsibility to ensure the safety and wellness of employees, workers, visitors and participants, Expo 2020 Dubai proactively implemented comprehensive COVID-19 measures. This included establishing a large task force to operate testing facilities on-site and run a large-scale vaccination programme for the workforce and country participants. Additionally, safety guidelines were constantly updated, in line with the Dubai Health Authority and the UAE Ministry of Health and Prevention.

In 2020, Expo 2020 Dubai was awarded the British Safety Council's Sword of Honour in recognition of the

organisation's dedication to ensuring the health, safety and wellbeing of its workforce. It was one of 66 organisations from across the globe to achieve the prestigious accolade that year. The British Safety Council is one of the world's leading health and safety bodies, with the London-based charity providing training in more than 50 countries. The 2020 awards was the 41st consecutive year in which the Sword of Honour for health and safety management excellence had been presented. To be eligible for the award, an organisation must first achieve the five-star assessment in the British Safety Council's internationally recognised health and safety management audit scheme, which Expo 2020 Dubai accomplished in 2020.

7. Offering unique opportunities to unlock the potential of volunteers and employees

The event contributed to the growth of the knowledge economy and upskilling and enhancing the capabilities of the workforce, creating a greater spirit of volunteering and engagement with the local population and instilling an enhanced sense of connection. This involved the organisers developing and rolling out a variety of targeted initiatives and programmes aimed at skillset development and training for volunteers and employees.

More than **30,000 volunteers committed over one million hours across 190 different roles**. Almost **55%** of the volunteers were UAE nationals and **45%** were expats, and **51%** of the volunteers were male and **49%** were female volunteers. This was the first time that the UAE involved such a significant number of volunteers in a single event and it was a first for the region as well. After their experience at Expo 2020 Dubai, a **35.1% increase** (compared with pre-Expo survey numbers) was observed in volunteers surveyed post-Expo, who now strongly agreed that the volunteer programme had made them more motivated to dedicate time to volunteering. Similarly, a **51.4% increase** (compared with pre-Expo survey numbers) was seen in volunteers, who now strongly agreed to have developed or furthered their interest in new or innovative career paths after attending Expo 2020 Dubai.

Expo 2020 Dubai has also impacted nearly **3,700 employees over the 10-year** period since the bidding phase began. It has provided these individuals with the opportunity to learn new and refresh existing skills, and the confidence to consider new career paths related to the theme and subthemes of the event. In surveys



conducted with the workforce, there was an almost tripling, **180.1% increase** in employees who strongly agreed that they had become more of an expert in certain business areas after their experience with the Expo 2020 Dubai event, compared to pre-Expo. Additionally, there was an **increase of 61.2%** in employees surveyed post-Expo who strongly agreed that they now aspire to broaden their career goals and consider new fields following their engagement with Expo 2020 Dubai, compared to pre-event.

The time spent by volunteers with Expo 2020 Dubai also resulted in expanded horizons, training and skills development for individuals. The Expo 2020 Volunteer Programme was specifically developed to provide experience to volunteers, which could enable them to think more holistically about career paths, garner essential work-related skills and feel confident about prospects for different career opportunities after Expo 2020 Dubai. A **significant increase of 51.5%** was observed in volunteers who strongly agreed that the Expo 2020 Dubai Volunteer Programme had made them interested in new or innovative career paths, when compared with individuals surveyed prior to their engagement with Expo 2020 Dubai.

8. Creating a blueprint for a city of the future that carries forward Expo 2020 Dubai's legacy of sustainability, innovation, education and entertainment

Since the beginning, Expo 2020 Dubai has been committed to building a legacy that is meaningful and sustainable, extending its impact beyond the mega-event. More than **80%** of Expo 2020 Dubai's existing built environment is now being transformed into a mixed use,

environmentally friendly 15-minute city – Expo City Dubai – that will become an important part of the Dubai Urban 2040 Masterplan and enable future users to live a sustainable lifestyle in an eco-conscious urban environment.

Alif (the Mobility Pavilion) and Terra (the Sustainability Pavilion) will remain as interactive educational spaces. The Opportunity Pavilion and Expo Live Pavilion will become dedicated indoor event spaces. Several of the other Expo 2020 Dubai's attractions — the Al Wasl Plaza, the Garden in the Sky Observation Tower, the Surreal Water Feature, and Vision and Women Pavilions — will also remain as entertainment and cultural attractions for future visitors and tenants. Additionally, the Dubai Exhibition Centre will continue to support and connect visitors to a mix of world leaders, educational institutes, innovators and many more.

Expo 2020 Dubai's flagship Expo School Programme (ESP) is being carried forward into Expo City Dubai, with a special focus on providing students with the space to test what they have learnt at school in real life through engaging workshops and journeys. Students and other visitors will get to experience meaningful, relevant and stimulating cultural experiences that inspire learning, agency and creativity to carry on the legacy of World Expo and its theme and subthemes. Some curated programmes and attractions have already reopened, allowing thousands of post-event visitors to already experience the legacy impact of the city.

Expo City Dubai will gradually grow to become home for a residential community of up to 12,000 people. Residential spaces will be developed within central areas of the Expo City Dubai site, which will be seamlessly integrated with the commercial spaces, social and cultural attractions

and other amenities within the city's main districts. Through their design and special features, they will aim to support creativity, health and wellness of families and children, and promote communal spaces, outdoor activity, green spaces and nature.

As a human-centric city, pedestrians and soft mobility options will be prioritized, like bicycles, scooters and electric buggies to move around the site and connect to public transport networks, reducing the dependence on traditional personal vehicles. Smart technologies and outdoor spaces (e.g. parks, running and cycling paths) will encourage active living and connectivity. As a 15-minute city, it aims to provide everything within a short walking or cycling distance, including proximity to education and healthcare facilities.

Expo City Dubai will also serve as an ideal ecosystem for businesses of all sizes across industries, with a focus on sustainability, innovation, education and entertainment. Through this, the site will continue Expo 2020 Dubai's efforts to fund and empower innovative businesses to create long-term economic and social impacts in the UAE and across the world.

Ultimately, Expo City Dubai will offer a new type of urban community that houses rich experiences and exhibitions, purpose-oriented tenants and residents alike. It will continue to be a destination for meaningful experiences that attract all types of visitors, youth and encourages a better, more sustainable future for all.

ENVIRONMENTAL IMPACT

Expo 2020 Dubai's intention from the start was to ensure that it would have the minimal possible environmental footprint and be one of the most sustainable Expos in history. Its sustainability strategy was mainly developed to deliver on those aims with its four key objectives: (i) leaving a legacy of sustainable infrastructure and cutting-edge sustainability practices, (ii) catalysing sustainability efforts in Dubai and the UAE, (iii) increasing public awareness and engaging society in sustainability principles and ways of living, and finally, (iv) developing sustainable solutions that were scalable, to ensure benefits could be extended to the wider economy.

The outcomes achieved by Expo 2020 Dubai were extensive. Partly, this was a result of the Sustainability Strategy, containing more than **40 sustainability key performance indicators** (KPIs) applicable to all aspects of the site. These were then subject to a monthly monitoring, reporting and review regime. It was also a result of sustainability being actively driven through the design, construction, commissioning, operations and legacy work activities, and the active prioritisation of passive design approaches and integrated approaches.

For example, passive strategies were used to reduce the urban heat island effect across the site, reducing energy demand and creating a comfortable environment for visitors; photovoltaics (PV) were integrated into many of the permanent buildings and international pavilions to meet some of the onsite energy demand. Sustainable Materials Guidelines were developed to ensure that major materials used in construction on site had a reduced environmental impact. Overall, **98%** of materials used on the Expo site adhered to these Guidelines and contributed to **16% reduction** in the embodied carbon of construction materials compared to the business-as-usual greenhouse gas (GHG) emissions for construction. Additionally, RISE Guidelines, were developed as an exemplar approach to establishing "Respectful, Impactful, Safe, and Environmentally-friendly practice" and to ensure the integration of sustainable operational practices across the site.

A certification strategy was developed, setting out the LEED, CEEQUAL and WELL certification requirements, and management approaches. The outcome was that **123 buildings** at the Expo site achieved LEED Certification, with **105 LEED Gold** and **seven LEED Platinum** buildings, reflecting a significant

integration of energy and water efficiency, air quality, materials, waste, ecology, and other considerations. In addition, a total of **eight** infrastructure and public realm projects achieved **CEEQUAL Excellent Certification**.

The implementation of the Siemens' MindSphere Smart City platform that automatically collected water and energy data across the whole site directly from Dubai Electricity and Water Authority (DEWA) meters, identified a **33% reduction** in projected energy consumption, based on ASHRAE (American Society of Heating, Refrigeration and Air-Conditioning Engineers) standards, and a **53% reduction** in potable water consumption level as compared to local standards.

Expo 2020 Dubai developed a clear approach and methodology for carbon accounting that was used to account for all the emissions that resulted from the event, whilst also being applicable to future global events. This began with the development of a GHG Inventory Management Plan, based on a number of international standards, which was used to develop a comprehensive and credible GHG Emissions Inventory (EI) that aimed to accurately capture true impact of the event across its phases. The comprehensiveness



of the EI meant that controlled and noncontrolled activities were considered: embodied energy of construction materials, energy from operating the buildings and public realm infrastructure, water usage and so on. This was updated periodically, reflecting a range of emissions, reduction strategies and actions that were implemented throughout the phases to reduce the pre-, during, and post-event footprint of the event in all its phases.

ICROA-certified (International Carbon Reduction and Offset Alliance) offsets were then procured for a portion of the remaining unavoidable emissions through the Seeds of Change programme (a part of the Expo 2020 Dubai visitor engagement programme). Other significant achievements include the fact that **87.9%** of total waste was diverted from landfill up to the end of the Expo 2020 Dubai event, and **56%** of trips to and from Expo 2020 Dubai were made using shared and more sustainable transportation modes (Dubai Metro and Expo Rider buses). As a result of a number of carbon reduction initiatives during construction and operations, Expo reduced its carbon footprint by **717,004 tonnes of CO₂e (carbon dioxide equivalent)** and offset an additional **400,000 tonnes of CO₂e**

through the purchase of certified carbon offsets that had social and environmental impacts in addition to carbon benefits. This represents a **10%** reduction in carbon emissions, compared to the business-as-usual scenario.

The intention, development and rollout of appropriate supporting content and materials, was to influence awareness and, through this, educate and initiate a change in the behaviours of visitors. The mega-event ensured that available technological solutions were deployed where possible, and that features of these and the built environment on the site were highlighted. It was a practical demonstration of how energy use efficiency (through the prioritisation of passive solutions, technological innovations and solutions that drive efficiency) could be delivered. It offered an insight into how carbon emissions associated with energy generation could be reduced (through the use of onsite solar energy generation, and a reduction in energy demand through behavioural changes and awareness).

Looking ahead, Expo City Dubai will reuse over **80%** of the Expo 2020 Dubai built infrastructure, including the **123 LEED-certified** buildings and **eight CEEQUAL Excellent**

infrastructure and public realm projects achieved. This represents the highest levels of sustainable design, construction and operations. This existing built environment is now being transformed into a mixed use, environmentally friendly 15-minute city that will become an important part of the Dubai Urban 2040 Masterplan. It enables future users to live a sustainable lifestyle in the UAE with neighbourhoods linked by pedestrian walkways and autonomous vehicle routes, with an eco-conscious urban environment containing 45,000 sqm of parks and gardens. It also remains the first community in the region to be registered under the WELL Community Standard pilot. Developed by the International WELL Building Institute, this recognises communities that prioritise the health and wellbeing of all inhabitants and set a benchmark for healthy communities.

From a technology point of view, Expo City Dubai will retain Expo 2020 Dubai's pioneering urban development initiatives, such as the world's largest installation of Siemens' MindSphere Smart City platform, ensuring that it can continue to set new standards for a clean, green, innovation-driven, human-centric city of the future in the region, and demonstrate that innovation can deliver ongoing legacy benefits.

CONCLUSIONS

Expo 2020 Dubai had positive economic, social and environmental impacts on the UAE and communities around the world. Expo City Dubai will continue to deliver additional growth and development, whilst continuing to demonstrate the subthemes of Opportunity, Mobility and Sustainability. Over all three phases, the economic impact exceeded the predicted value with the main contributors being construction activity, Expo 2020 Dubai visitor activity, commercial activity and visitors to the Dubai Exhibition Centre.

From a social impact perspective, millions of physical and virtual visitors had a memorable and impactful experience through their visit, or involvement with, the event. Visitors were immersed in a multidimensional experience, exposing and engaging them with the main theme and subthemes of the event at scale. They left the event with a better

understanding of the world's most significant challenges, and felt more inspired, empowered and connected as a result of their visit. The event helped to promote and drive innovation, encourage the development of creative solutions and skillsets, supporting the growth of the knowledge economy. Expo 2020 Dubai also helped to enhance best practices and develop lasting platforms for educational, social and cultural interaction that will continue to raise awareness internationally on the Expo's messages.

Expo 2020 Dubai supported national priorities by demonstrating that large events can be delivered with smaller environmental and carbon footprints, and can act as agents of change for the regional community. Through careful planning, the right resources, the integration of sustainability throughout the organisation and the

close engagement of suppliers, it is possible to deliver a clean, green, innovation-driven, human-centric city in the region. The continued operation of the site will provide ongoing opportunities to share learnings and findings with other stakeholders for future infrastructure developments and events.

Expo City Dubai is expected to continue to influence and support future initiatives within Dubai and the UAE, and support the Dubai 2040 Urban Master plan that is focused on achieving the goal of enhancing people's happiness and quality of life through sustainable urban development. The intent behind



Expo 2020 Dubai's main theme, '*Connecting Minds, Creating the Future*' and its subthemes, will remain relevant when Expo City Dubai hosts the UN Climate Change Conference of Parties (COP28) in November and December 2023.

Expo City Dubai holds the potential to create a sustainable blueprint for designing and executing future mega-events, including World Expos, that can create a lasting legacy

which generates positive social, environmental and economic impact. Further to this, it is set to support the more immediate strategic priorities and the wider future economic, social and environmental ambitions of the UAE.



APPENDIX



Methodology

Different methodologies were used to collect, calculate and assess the economic, social and environmental impacts. Each are summarised below.

Economic

The economic impact assessment has measured the impact of Expo 2020 Dubai on gross value added (GVA) and employment in the Dubai economy. GVA is a measure of the value of goods and services in an economy and is similar to gross domestic product (GDP), whilst 'employment' shows the jobs created and supported by Expo 2020 Dubai.

The methodology used to measure these impacts is based on the Input-Output (IO) model of an economy. This model measures three distinct types of impacts:

- direct impacts: economic activity directly created by Expo 2020 Dubai
- indirect impacts: economic activity supported by Expo 2020 Dubai-related local suppliers
- induced impacts: economic activity supported by Expo 2020 Dubai-related employee spending

The direct, indirect and induced impacts are then summed to obtain the total impact of the Expo, across the pre-Expo, during Expo and post-Expo periods. Both GVA and employment are measured across direct, indirect and induced impacts.

Gross Value Added

GVA can be measured using income, expenditure and production approaches. In simple terms, this means GVA can measure the money earned in an economy, the money spent in an economy, or it can measure the value of goods and services produced in an economy. In this study, GVA has been measured using the income approach — i.e., the money earned in the UAE economy because of the Expo 2020 Dubai. To measure the money earned across direct, indirect and induced impacts, an 'Input-Output' (IO) table-based approach has been used: an IO table shows how each sector in an economy both relies on inputs from other sectors and also provides outputs to other sectors — these linkages are quantified by 'multipliers', which, in simple terms, shows how activity in one sector 'multiplies' through the rest of the economy because of the linkages mentioned above. As an IO table for the UAE is not publicly available, the Kuwait IO table has been used as a proxy, with minor adjustments to reflect specific characteristics of the UAE economy.

The IO approach is a sectoral-based approach and some of the key sectors impacted by Expo 2020 Dubai include:

- events organisation
- business services
- construction, transport, storage and communication
- retail
- restaurants and hotels

Employment

Employment is calculated using 'labour productivities', which are ratios in economics that measure the average economic output per employee in different sectors in an economy (for example, in the construction sector, labour productivity shows how much output the average construction worker helps to produce). These ratios have been calculated using publicly available UAE macroeconomic data. These labour productivities help to show the additional employment supported by Expo 2020 Dubai-related activities by quantifying the jobs that are required because of the GVA impact in different sectors in the economy (construction, retail, hospitality etc.). Employment is measured in job-years — where a job-year is one full-time employee working for a year.



Social

The eight key areas that Expo 2020 Dubai developed to measure its social impacts were identified based on a rigorous social impact study conducted with the help, review, and advice of a number of external consultants and an independent Academic Advisory Committee.

The work began by establishing the scope and boundary of the social impact experienced by stakeholders — which stakeholders, over what period of time and which activities were relevant. The work then mapped social outcomes by developing impact maps to capture the changes that would occur as a result of the activity for each stakeholder group. The identified changes were mapped — as the ‘outcomes pathway’ — for each stakeholder group (and updated for changes associated with impacts relating to COVID-19).

The design and approach benefitted from peer analysis research, logic models (across programmes and activities) and the development of a Social Impact Measurement Framework (MF). The MF was based on the detailed assessment of Expo 2020 Dubai’s activities, alignment with

Expo 2020 Dubai’s commitments, the social outcomes expected, and the selection of indicators that would support in measuring and monitoring Expo 2020 Dubai’s social impacts pre-, during and post-Expo. Two rounds of stakeholder discussions were conducted to capture feedback on the change in activities due to the postponement of Expo 2020 Dubai and to validate the updated MF.

The framework described social outcomes in line with outputs from each activity and captured the frequency of reporting and the stage of Expo 2020 Dubai within which the outcomes would take place. It also set up subjective indicator measurement questions and objective KPIs to measure social impact across the Expo’s impact areas, and established indicators specific for social impact deadweight, attribution and drop-off.

Expo 2020 Dubai recognised the importance of measuring its impact on various stakeholder groups. Therefore, appropriate data collection and data monitoring tools were developed to support the measurement of impacts, and to gather a combination of quantitative and qualitative

data. These tools included various techniques, such as self-reported questionnaires/surveys, focus group interviews and templates to collect any objective indicator data based on Expo-collected information and publicly available resources.

The self-reported surveys were designed to capture data from various stakeholder groups, including visitors, participants, partners and employees, among others. These surveys included retrospective questions that were used to capture the average position of the sample on the 5-point or 3-point scale before the stakeholders’ involvement with Expo 2020 Dubai. The stakeholders were asked to reflect on how well they understood a certain topic or how their emotional being was before engaging in an Expo 2020 Dubai activity or program. Moreover, focus group interviews were conducted to collect qualitative information from stakeholder group representatives. Overall, Expo 2020 Dubai had eight main areas of impact, which comprised 24 social outcomes and 78 individual indicators.

Environmental

For Expo 2020 Dubai, eight environmental focus areas were selected for this report:

- energy management
- waste management and diversion
- ground transport optimisation
- environmental education
- green procurement
- water
- built environment and ecology
- carbon

Theory of Change (TOC) framework models for each of the environmental focus areas were then developed. The TOC approach represents a logical thought process to map out how certain activities and the necessary conditions for carrying them out can lead to the desired impacts.

It involved the completion of the following steps:

- identifying the environmental impact for each focus area in line with Expo 2020 Dubai's environment and sustainability strategy and vision
- extracting Expo 2020 Dubai's activities for all the phases of the event for each focus area to assess the contribution of these activities towards creating the impact
- mapping these activities through outputs and outcomes to reach the impact
- determining the preconditions and assumptions for all activities which are necessary to move from activities to outcomes and finally to impacts
- confirming the relevance of initial KPIs developed to assess the environmental impacts of activities and development of additional KPIs, if necessary

The resulting approach measured the expected environmental outcomes and impacts across the eight focus areas through 20 individual KPIs.

Expo 2020 Dubai developed a clear approach and methodology for carbon accounting that could be applied to future global events. This began with the development of a comprehensive and credible Greenhouse Gas (GHG) Inventory Management Plan (which was based on international standards and best practice), that was then used to develop the GHG Emissions Inventory (EI). It accurately captured the true impact of the event across its phases, creating a benchmark for future events. Inclusion of the entire site across all phases in the EI also meant that all sources that could be included were captured and measured: embodied energy of construction materials, energy from operating the buildings and public realm infrastructure, water usage and so on. The EI was then updated periodically, reflecting a range of emissions reduction strategies and actions that were implemented throughout the phases to reduce the pre-, during and post-Expo footprint. Offsets for a portion of the remaining unavoidable emissions were then procured through the Seeds of Change programme (a part of Expo 2020 Dubai visitor engagement programme).



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