Emissions Reduction in Tourism for the Protection of Natural and Cultural Heritage

APEC Tourism Working Group

June 2025

Asia-Pacific
Economic Cooperation

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Produced by
Peru - Ministry of Foreign Trade and Tourism
Project Lead - Karlo Edgardo García Lara
Especialista en Turismo
www.mincetur.gob.pe
Ministerio de Comercio Exterior y Turismo
Calle Uno Oeste N° 050, Urb. Córpac, San Isidro

Dr Natasha Montesalvo
EarthCheck & APEC International Centre for Sustainable Tourism
L5,189 Grey Street
South Brisbane, Qld. 4101
Consulting@earthcheck.org
www.earthcheck.org

For
Asia-Pacific Economic Cooperation Secretariat
35 Heng Mui Keng Terrace
Singapore 119616
Tel: (65) 68919 600
Fax: (65) 68919 690
Email: info@apec.org
Website: www.apec.org

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Executive summary

This report provides an overview of research conducted into Asia Pacific Economic Corporation (APEC) economies efforts to reduce carbon emissions in tourism activities, with a focus on protecting natural and cultural heritage, provides high-level insight into the outcomes of a workshop hosted in Lima, Peru to support emissions reduction among public and private partners and provides guidance for governments and tourism and hospitality organizations to advance climate action and emissions reduction for the protection of natural and cultural heritage. The report highlights the significant impact of tourism on the environment and the necessity for sustainable practices to mitigate these effects.

Tourism is a critical economic driver within the APEC region, contributing over 10% of GDP in several member economies and supporting around 187 million jobs pre-pandemic. Despite the disruptions caused by COVID-19, the sector has shown promising recovery, with increased visitor spending in 2023. However, the tourism sector faces challenges in reducing its carbon footprint due to its dependence on transportation, seasonality, and the need for decarbonizing accommodation.

The report identifies the following:

1. Government Policies and Initiatives: The report identifies various interventions that can be applied to reduce carbon emissions in tourism, including building regulatory policies, incentive-based policies, and collaborative initiatives to drive knowledge skills in emissions reductions.
2. Challenges and Barriers: The tourism sector faces several challenges in reducing emissions, including the high carbon footprint of transportation, supply chain challenges including food waste, the seasonality of tourism, and the need for significant investment in energy-efficient technologies. Additionally, consumer behavior and preferences often do not prioritize low-carbon alternatives.
3. Behavioral change becomes a core part of the tourism industry transition, both internally with staff and externally with the need to shift consumer behavior. As a people-centric organization, tourism has the opportunity to drive meaningful change. To achieve this, a skills gap needs to be addressed by training tourism staff in sustainable management practices to drive emissions reduction.
4. Communicating the action is critical to engage other stakeholders on the journey. This needs to be delivered with transparency and authenticity to meet legislative requirements.

For the tourism sector, “actionable carbon” in the form of emissions reduction outside of aviation is critical. Sustainably designing the built environment and retrofitting across buildings presents a significant opportunity for tourism to reduce its emissions. Driving efficiencies in operations will also support an industry transition.

The tourism supply chain is significant and there are synergies and collaborations that can drive rapid change for emissions reduction for the protection of natural and cultural heritage.

While not a core focus of this report, the restoration of biodiversity also presents a significant opportunity for tourism in its transition toward a low carbon future. Localized action in this area is appealing to destination management organizations and tourism operators as it provides additional connection points between visitors and the destination.

Emissions reduction is not one size fits all, the collaboration, policy response and actions vary globally. Based on the review of best practices, and aligned with the World Travel & Tourism Council (WTTC) approach, action requires the following steps:

1. **Assess, define and strategize**
    a) Scope the inclusions and exclusions of measurement and emissions reduction.
    b) Measure the baseline across energy, water, waste and other measures pertinent to the protection of natural and cultural heritage.
    c) Plan how to reduce emissions including attribution of roles and resources.
    d) Measure, manage and monitor over time, integrating adaptive management practices to refine actions as required.
2. **Build and enable**
    a) Set a policy led position to support industry and community transition.
    b) Lead by example, embedding emissions reduction in the remit of control.
    c) Capacity support for industry and community to build the skills required to take a strategic approach to action.
    d) Incentivise change to drive meaningful action at a rapid pace.
3. **Take action**
    a) Deliver to the strategy.
    b) Monitor and review outcomes overtime and adapt actions as required.

Both government and business stakeholders can employ a similar framework to drive strategic action. Operators are often the ones on the ground that are able to witness subtle changes in the landscape or asset, it is important to work in partnership with such operators to support the protection of natural and cultural heritage.

Based on the outcomes of the report, the following next steps are proposed for interested stakeholders:

- **Implementation of sustainable practices:** Begin the implementation of the identified sustainable practices across the tourism sector. This includes investing in renewable energy sources, promoting sustainable transportation options, and adopting waste reduction measures.
- **Policy development and support**: Work with government bodies to develop and enforce policies that support sustainable tourism practices. This includes providing incentives for businesses that adopt practices that reduce emissions and implementing regulations that limit carbon emissions. Advocacy for consideration of tourism's growth agenda coupled with the implications on the growth of carbon are also required.
- **Community engagement and education:** Engage local communities and stakeholders in the implementation process. Provide education and training programs to raise awareness about the importance of sustainable tourism and how individuals and businesses can contribute to emissions reduction.
- **Monitoring and evaluation:** Establish a robust monitoring and evaluation framework to track the progress of emissions reduction initiatives. Regularly

assess the effectiveness of implemented strategies and make necessary adjustments to ensure continuous improvement.

- **Collaboration and partnerships:** Foster collaboration between various stakeholders, including government agencies, private sector entities, and non-governmental organizations. Establish partnerships to share knowledge, resources, and best practices for sustainable tourism.

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Introduction

APEC was established to promote a growing and prosperous regional economy by focusing on:

- Facilitating trade and investment at, across, and behind borders.
- Reducing cross-border trade costs to support businesses.
- Enhancing economic and technical cooperation.
- Sharing best practices in trade and investment.
- Streamlining regulatory and administrative procedures.
- Strengthening institutional capacity to maximize the benefits of trade and investment reforms.

APEC's efforts are guided by the APEC Putrajaya Vision 2040, which envisions an open, dynamic, resilient, and peaceful Asia-Pacific community by 2040. This vision is driven by three key economic priorities:

- Trade and investment.
- Innovation and digitalization.
- Strong, balanced, secure, sustainable, and inclusive growth.

The 21 APEC member economies include Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; United States; and Viet Nam.

The APEC Tourism Working Group (TWG) was established in 1991 as a forum for tourism officials from APEC economies to share information, exchange perspectives, and collaborate on tourism, trade, and policy initiatives aimed at fostering regional growth through travel and tourism.

This piece of work delivered for the TWG offers insights into global best practice for emission reduction for the protection of natural and cultural heritage; practical guidance for governments and tourism businesses to progress climate action and next steps to support industry progress.

State of the industry

The tourism sector has been one of the fastest-growing economic sectors in the world. The total number of global tourist arrivals achieved a record high in 2019 at 1.46 billion people[1].

Tourism is a key driver for economic development within the APEC region with contributions exceeding 10% of GDP in several member economies, the sector not only supports direct spending on goods and services but also stimulates secondary sectors, such as transport, food services, and cultural industries. Tourism's influence and impact across sectors is critical to note, especially in the light of emissions reduction.

Pre-pandemic statistics from 2019 highlight that tourism supported around 187 million jobs across APEC economies, a figure that highlights the importance of tourism in supporting employment on a large scale[1]. Despite disruptions due to COVID-19, the sector has seen a promising recovery, with forecasts indicating robust growth across visitor numbers and revenue generation through 2023.

The recovery trajectory is also evident in the spending trends. In 2023, the tourism sector in APEC economies showed an increase in both international and domestic visitor spending. Tourism spending on leisure travel, a significant portion of total tourism activity, has rebounded faster than business travel, indicating a shift in traveler preferences that boosts local economies by engaging small to medium enterprises (SMEs) involved in tourism[2].

Data from the WTTC highlights that APEC economies collectively benefit from tourism due to its role in job creation, infrastructure development and expenditure[3]. As travel restrictions ease, the positive economic impact of tourism in the region is expected to continue, with targeted policies to support sustainable tourism growth and regional cooperation under the APEC framework.

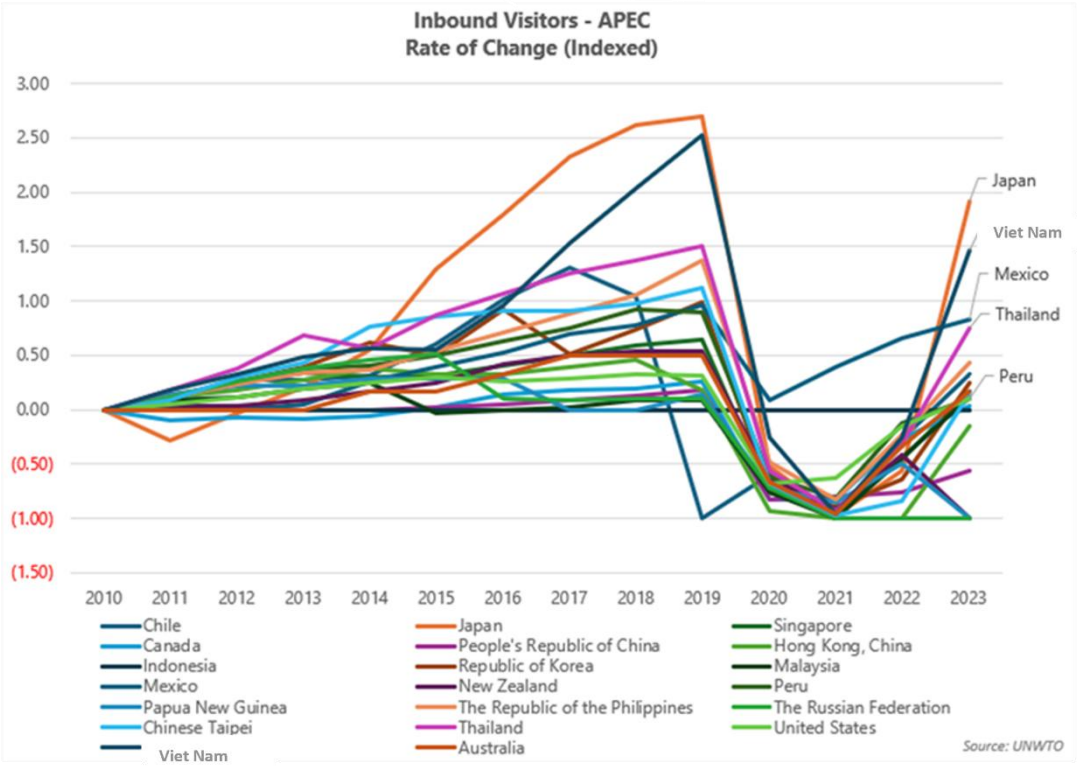
The Asia-Pacific region recorded the highest growth in terms of tourist arrivals and tourism receipts in 2019[1]:

- 464.7 million international tourist arrivals– up 5.5 per cent compared to the previous year and accounting for 32.7 per cent of global tourism arrivals.
- USD$606.5 billion in receipts – up 3.3 per cent compared to the previous year and accounting for 43.8 per cent of global tourism receipts.

The impacts of COVID-19 were catastrophic to the sector (highlighted in Figure 1), with the UN Tourism noting that 100% of destinations globally were impacted by some form of travel restriction. By 2023, Malaysia was the only APEC economy that had reached its 2019 visitor numbers. For the remaining economies, the rebound remains slower than anticipated.

[1] APEC. (2024). The Economic Value of Tourism. https://www.apec.org/groups/som-steering-committee-on-economic-and-technical-cooperation/working-groups/tourism
[2] UN Tourism (2024). UN Tourism Barometer. https://www.unwto.org/un-tourism-world-tourism-barometer-data
[3] WTTC. (2024). Travel and Tourism Economic Impact. https://researchhub.wttc.org/product/asia-pacific-economic-cooperation-apec-economic-impact-report?_gl=1*1i2ddms*_ga*NDA1ODIwODY5LjE3MDk3NzYzMDY.*_ga_JM5GLX6V1W*MTczMTk3Mzg2NS45LjEuMTczMTk3Mzg3My4wLjAuMA..*_gcl_au*MTM5ODI2MzQ2MC4xNzI4NDM1ODY2

Figure 1 - APEC Visitor Rate of Change, Source - UN Tourism[4]



Challenges and pathways post COVID-19

Tourism across the APEC region faced significant uncertainties as the global pandemic continues to impact travel. In a number of economies, flight routes have not returned to pre-COVID levels and economies have witnessed significant shifts in consumer behavior patterns and expectations. Fluctuating approaches to recovery across APEC economies created challenges for policy coordination and cross-border tourism security. Additionally, unilateral policies, political instability and the threat of further health related impacts further complicate tourism futures. As a result, tourism across APEC economies continues to navigate a complex and unpredictable environment[5].

International tourist arrivals are projected to grow by 3% to 5% in 2025 compared to 2024[6], driven by the continued recovery of Asia and the Pacific and steady growth in most other regions, assuming favorable global economic conditions, declining inflation, and stable geopolitical situations.

This outlook marks a stabilization following strong rebounds in 2023 (+33% vs. 2022) and 2024 (+11% vs. 2023), with the latest UN Tourism Confidence Index reflecting optimism—64% of experts expect better prospects for 2025, 26% foresee similar performance, and only 9% anticipate a downturn. However, economic and geopolitical uncertainties remain key risks, with high transport and accommodation costs, volatile oil prices, and broader economic challenges cited as primary concerns by over half of respondents.

[4] UN Tourism (2024). UN Tourism Barometer. https://www.unwto.org/un-tourism-world-tourism-barometer-data
[5] APEC/ 2024. Annual Report on Asia-Pacific Tourism (2021)
[6] UN Tourism. 2024. International tourism recovers pre-pandemic levels in 2024. https://www.unwto.org/news/international-tourism-recovers-pre-pandemic-levels-in-2024#:~:text=Positive%20outlook%20for%202025%20points,growth%20in%20most%20other%20regions.

Geopolitical risks beyond ongoing conflicts are a growing issue, ranking third among major challenges, followed by extreme weather events and staff shortages[6]. In this context, tourists are expected to prioritize value for money, while sustainability and the appeal of lesser-known destinations emerge as critical trends shaping the industry's future.

The Global Risks Report[7] emphasizes state-based armed conflict, extreme weather events and geoeconomic confrontation as the greatest short-term risks to global economies. In the longer term, extreme weather events, biodiversity loss and eco-system collapse and critical change to the earth systems will shape our communities.

As we enter 2025, long-haul[8] and off-the-beaten track travel[9] are high on travelers' agendas. Asia is the continent set to welcome the biggest year-on year rise in visitors, with Japan; Thailand; India; and the People's Republic of China amongst the favorite places people plan to visit. Both trends have positive implications across APEC economies. In addition, governments, influencers and tech giants are identified as core to shaping itineraries and the why and how of travel in 2025[10].

[7] World Economic Forum. 2025. Global Risks Report.
[8] ABTA. 2024. Travel trends for 2025. https://www.abta.com/sites/default/files/media/document/uploads/Travel%20Trends%20for%202025%20251124.pdf
[9] Forbes. 2025. Travel Trends report 2025. Untouched tourism. https://www.forbes.com/sites/angelinavillaclarke/2024/12/21/travel-trends-report-2025-untouched-tourism/
[10] Skift. Mega Trends. 2025. https://skift.com/megatrends-2025/

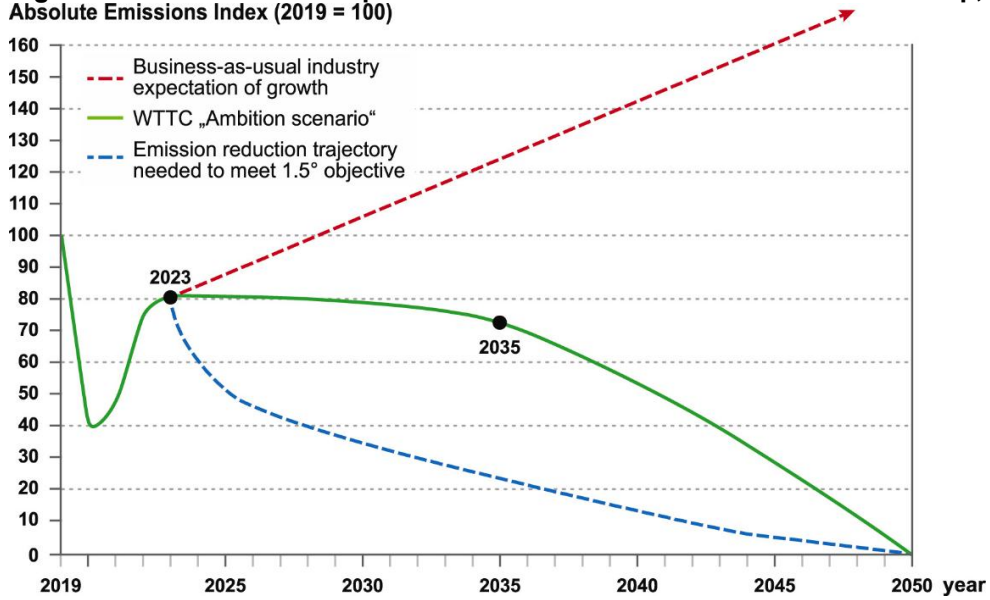
Emissions reduction in tourism

Research indicates that for the tourism sector to reduce its emissions in line with other economic sectors, then emissions need to be halved by 2030[11]. Estimates suggest that emissions from tourism including aviation are responsible for between 4.7%-10% of global CO2-e emissions[12],[11]. Of the tourism footprint, aviation is estimated to account for 60%-80% of emissions. The Sustainable Hospitality Alliance notes the need for emissions reduction of 89.5% across hospitality and 66% reduction by 2030 to meet global expectations and commitments[13].

The tourism sector is challenged by the paradox of a growth mentality, a need to build economic value through tourism and the additional carbon impact that this creates[14].

Tourism by its nature creates a footprint from transportation to in-destination activities. It is not deemed a traditional sector in the system of domestic accounts and therefore there are no comprehensive economy-wide statistics on energy, water, waste or other emissions specifically resulting from direct tourism activity[15]. Reducing these emissions is further challenged by the large number of micro, small and medium entities across the sector. Decarbonization challenges for tourism have been repeatedly reported across academic circles with a central conclusion that tourism will not achieve carbon-neutrality under continued growth scenarios, illustrated in Figure 2[16].

Figure 2- A net zero roadmap for tourism Source – WTTC Net Zero Roadmap,[17]

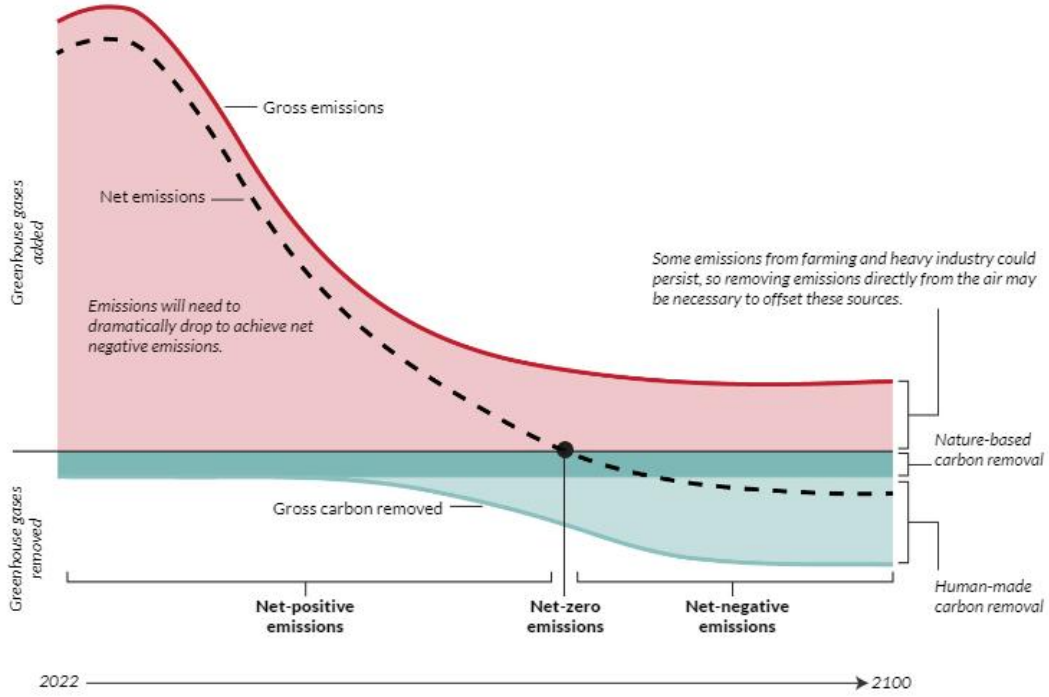


Emissions reduction across the tourism industry requires the engagement of multiple stakeholders, government policy needs to be clear and support transition through incentives, subsidies, financing or research and development. In addition, businesses need to take action to reduce direct emissions, enhance biodiversity (Figure 3) and

[11] Gössling, S, Balas, M, Mayer, M & Sun, Y. (2023). A review of tourism and climate change mitigation: The scales, scopes, stakeholders and strategies of carbon management. Tourism Management. 95. 104681.
[12] Lenzen, M, Sun, Y, Faturay, F, Ting, Y, Geschke ,A & Malik, A. (2018). The carbon footprint of global tourism. Nature Climate Change, 8 (6)
[13] World Hospitality Alliance. https://sustainablehospitalityalliance.org/our-work/climate-action/
[14] Riahan, A. (2024). The interrelationship amid carbon emissions, tourism, economy, and energy use in Brazil. Carbon Research. 3:11.
[15] Becken, S, Patterson, M. (2006), Measuring National Carbon Dioxide Emissions from Tourism as a Key Step Towards Achieving Sustainable Tourism. Journal of Sustainable Tourism. 14:4.
[16] Becken, S. (2019). Decarbonising tourism: mission impossible? Tourism Recreation Research. 44.4
[17] WTTC, UNEP, UNFCC (2021). Driving climate action: A net zero roadmap for travel & tourism.

to support behavioral shifts among staff and visitors to reduce impact. Researchers and academics also play an important role in the transition, collaborating cross discipline to bring best practice to the fore.

Figure 3 - Emissions reduction approach, Source – Intergovernmental Panel on Climate Change Working Group III[18]



Source: Graphic based on Intergovernmental Panel on Climate Change Working Group III report.

Credit: Daniel Wood/NPR

Destination Management/Marketing Organizations (DMO) are in some cases shifting roles and responsibilities to take on a stewardship position that considers resilience, inclusivity and sustainability[19]. Such a role is critical to drive partnerships, develop capabilities and enhance sustainable outcomes across the communities they represent.

However, shifting toward a stewardship capacity also requires a change in skills within the DMO with a greater emphasis on advocacy, leadership, systems thinking and sustainable management principles – a skill set that is not traditionally associated with the tourism industry. Traditionally the focus is on marketing the destination and increasing visitation, consequently leading to a larger footprint. The UN Tourism emphasized post COVID-19 the need to shift from a growth model to a sustainable model whereby traditional growth metrics are redundant and a focus is placed on emissions reduction, positive social and cultural impact and enhanced economic outcomes.

[18] IPCC 2022 Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change ed P R Shukla (Cambridge: Cambridge University Press). (https://doi.org/10.1017/9781009157926)
[19] OECD. (2024). Tourism stewardship: how destination organisations are driving change. https://oecdcogito.blog/2024/09/26/tourism-stewardship-how-destination-organisations-are-driving-change/

Impacts of climate change on natural and cultural heritage

Research from UNESCO[20] and European Parliamentary Research Service (EPRS)[21] indicate potential impacts of climate change on natural and cultural heritage, as well as efforts to tackle the problem. The report highlights that climate change poses significant threats with increased temperatures and shifting precipitation patterns, leading to the melting of ice caps and glaciers, affecting polar and mountainous regions. Coral reefs, which are critical ecosystems, are experiencing bleaching events due to rising sea temperatures, threatening marine biodiversity. As climate conditions shift, many species are forced to migrate to higher altitudes and latitudes, causing altered ecosystems and potential extinctions. The report also highlights that these changes disrupt ecological balances, impacting ecosystem services vital for human livelihoods, including agriculture and tourism.

Cultural environments across APEC economies will face these increased threats due to more frequent and intense extreme weather events, including typhoons, cyclones, landslides, floods, heatwaves, and droughts—many of which are already affecting member economies in the Asia-Pacific region. Rising sea levels and accelerated coastal erosion will particularly impact cultural heritage sites located along the coasts, such as ancient temples, historic trading ports, and indigenous settlements. Underwater cultural environments, including shipwrecks and submerged archaeological sites, are also at greater risk of damage due to storm surges and increased ocean acidity.

The warming climate is expected to accelerate reforestation and vegetation growth in previously open cultural landscapes, potentially altering historical land use patterns. In regions with high humidity and rising temperatures—such as Southeast Asia and the Pacific Islands—there will be a heightened risk of biological deterioration, including increased fungal growth, wood rot, and termite infestations affecting traditional wooden structures and historic buildings. Stone carvings and monuments, including UNESCO-listed heritage sites, may suffer faster degradation due to chemical erosion caused by pollution and acid rain, as well as mechanical damage from intensified freeze-thaw cycles in colder APEC economies.

Research indicates that the impacts of these conditions on natural and cultural heritage are as follows:

- Physical risks to cultural heritage: Climate change accelerates the degradation of cultural heritage sites due to extreme weather events such as floods, droughts, and heatwaves. Increased humidity, fluctuations in temperature, and rising sea levels pose significant threats to both tangible (e.g., buildings and artifacts) and intangible cultural heritage (e.g., traditions and local knowledge). For example, significant temperature increases may lead to accelerated degradation of limestone and thermal stress on cultural structures[22]. Changes in precipitation could enhance erosion of exposed stone surfaces, compromising the structural integrity of ancient stonework, while elevated pollution levels may contribute to acid rain that further

[20] UNESCO. (2007). Climate Change and World Heritage: Report on predicting and managing the impacts of climate change on World Heritage and Strategy to assist States Parties to implement appropriate management responses. UNESCO World Heritage Centre. https://unesdoc.unesco.org/ark:/48223/pf0000160019
[21] European Parliamentary Research Service (2024). Briefing https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/762282/EPRS_BRI(2024)762282_EN.pdf
[22] Esteban-Cantillo, O. J., Menendez, B., & Quesada, B. (2024). Climate change and air pollution impacts on cultural heritage building materials in Europe and Mexico. Science of the Total Environment, 921, 170945

deteriorates limestone. Additionally, high humidity fosters biological growth on stone surfaces, and the lack of ongoing monitoring increases vulnerability to rapid damage, highlighting the urgent need for proactive climate adaptation and conservation strategies.

- Loss of intangible heritage: Displacement of communities due to climate impacts can lead to the erosion of traditional knowledge and cultural practices, which are essential components of cultural identity. As communities are forced to adapt or relocate, their unique cultural expressions may diminish or be lost entirely.
- Economic and social consequences: Degradation of cultural heritage can have far-reaching economic impacts, particularly for regions that heavily rely on tourism. As cultural sites deteriorate, the economic benefits associated with tourism decline, leading to reduced funding for conservation efforts and loss of local livelihoods tied to heritage tourism.
- Increased vulnerability of marginalized communities: Beyond physical damage, climate change impacts the communities that rely on these heritage sites, altering social structures, cultural practices, and even leading to the displacement of populations. Changes in traditional lifestyles can erode cultural identity and heritage. Communities that are already vulnerable due to socio-economic factors may experience heightened risks to their cultural heritage as climate change intensifies. This can exacerbate existing inequalities and diminish the capacity of these communities to respond effectively to climate impacts.

The UNESCO[20] report overviews efforts at multiple levels (site, local, landscape, state party, regional or thematic, global level) to reduce emissions and manage impacts of climate change on world heritage including the need for:

- Adaptive management strategies: including updating management plans to incorporate climate change considerations, ensuring that conservation practices are resilient to future changes.
- Monitoring and research: understanding impacts of climate change on heritage sites. Monitoring programs can help assess vulnerabilities and inform adaptive measures, allowing for proactive management rather than reactive responses.
- Collaboration and knowledge sharing: sharing best practices and knowledge can enhance the effectiveness of strategies aimed at mitigating climate change impacts on heritage.
- Funding and resources: mobilizing financial resources to support adaptation efforts at world heritage sites. This includes funding for projects that aim to bolster resilience against climate change and preserve both natural and cultural heritage.
- Public awareness and engagement: raising public awareness about the threats posed by climate change to world heritage sites is crucial. Engaging communities and the general public in conservation efforts fosters a sense of ownership and responsibility, which can enhance the effectiveness of management strategies.

Several key measures are highlighted that are aimed at addressing the impacts of climate change on natural and human systems, with a strong focus on mitigation pathways. These pathways emphasize the urgent need to reduce greenhouse gas emissions through stringent policy frameworks that promote renewable energy

adoption and sustainable land use practices. Transitioning to cleaner energy and improving energy efficiency are critical steps in curbing emissions and limiting global warming.

As for efforts to reduce emissions and manage cultural heritage, combining actions in the areas of research, education, mitigation and adaptation are proposed. Specifically,

- Integrated policy approaches: The report advocates for integrating climate change considerations into cultural heritage policies. This involves recognizing the interdependence of climate action and cultural preservation, ensuring that heritage sites are included in climate adaptation strategies.
- Research and monitoring: Emphasis is placed on the need for ongoing research to assess the impacts of climate change on cultural heritage. Monitoring programs can help identify vulnerabilities and guide the development of effective mitigation strategies.
- Community engagement: Communities possess valuable knowledge and skills related to their cultural tangible and intangible heritage that can contribute to more effective climate adaptation and mitigation strategies.
- Funding and resources: Mobilizing financial resources to support projects aimed at protecting cultural heritage from climate change impacts is critical. This includes leveraging multi-national funding programs and creating incentives for sustainable heritage management practices.
- Education and capacity building: Raising awareness about the threats posed by climate change to cultural heritage is essential. Educational programs aimed at professionals in the cultural heritage sector can enhance understanding of climate issues and promote best practices in conservation.

In addition, the OECD[23] highlights the need for a “green” tourism recovery in a post-COVID-19 environment, including the need to:

- Develop long-term integrated strategies with a sustainable tourism vision, goals and targets, with action plans and mechanisms to leverage resources and coordinate across government.
- Implement a mix of evidence-based policies prioritizing high impact interventions along the tourism value chain, to raise awareness, regulate and incentivize green practices, and investment.
- Promote carbon literacy and build capacity of tourism actors to develop innovative solutions, empower sustainable travel choices, and help businesses to reduce their environmental impact.
- Leverage the role of government in catalyzing the green transition, and organize publicly funded or procured tourism infrastructure to contribute to environmental and climate resilient development.

A similar report in 2024[24] identified the need for tailored toolkits, indicators, tools and metrics to support sustainable action across the sector. Furthermore, the need for priority policy to accelerate a shift toward emissions reduction and sustainability in tourism.

[23] OECD Tourism Trends and Policies (2022). https://www.oecd.org/en/publications/oecd-tourism-trends-and-policies-2022_a8dd3019-en.html
[24] OECD Tourism Trends and Policies (2024). https://www.oecd.org/en/publications/oecd-tourism-trends-and-policies-2024_80885d8b-en.html

Key issues and challenges in emissions reduction in tourism

There are several issues that are unique to the complex structures and systems of the tourism economy that lead to additional barriers to actioning the reduction of emissions within tourism. These include, but are not limited to:

Dependence on transportation: A significant portion of tourism emissions comes from transportation, especially air travel. Air transport is currently one of the hardest sectors to decarbonize due to the lack of scalable low-emission alternatives. While electric cars and buses can reduce emissions from road travel, aviation has limited alternatives, with biofuels and electric planes still in early development stages[25].

Seasonality and over-tourism: Many destinations experience a high degree of seasonality, with an influx of tourists during peak times. This puts enormous pressure on local infrastructure (heritage and natural assets) and energy use, leading to higher emissions. Over-tourism also strains the environment, contributing to increased energy consumption and waste production, which complicates emissions reduction efforts[26].

Retrofitting to decarbonize: The accommodation sector contributes significantly to tourism emissions through energy use for heating, cooling, and lighting. Hotels and resorts have begun adopting energy-efficient technologies such as solar panels, smart energy management systems, and energy-efficient appliances. However, widespread adoption is limited by often old infrastructure with high upfront costs to retrofit alongside the lack of regulatory incentives[27]. Retrofit options are further limiting Micro Small Medium Enterprises (MSMEs) action due to limited knowledge or resources to implement change.

Consumer behavior and preferences: Tourists are often reluctant to prioritize low-carbon alternatives. Sustainable tourism practices, such as staying in eco-friendly accommodations or choosing lower-carbon travel options, are often perceived as more expensive, less convenient, or less luxurious[28]. Changing consumer behavior and promoting sustainable tourism options is a key challenge in reducing tourism-related emissions.

[25] Gössling, S., & Humpe, A. (2020). The global scale, distribution and growth of aviation: Implications for climate change. Global Environmental Change, 65, 102194. https://doi.org/10.1016/j.gloenvcha.2020.102194
[26] Peeters, P., Higham, J., Kutzner, D., Cohen, S., & Gössling, S. (2018). Are we travelling too much? Exploring the sustainable travel debate. Journal of Sustainable Tourism, 26(4), 482-497. https://doi.org/10.1080/09669582.2017.1360318
[27] Font, X., & McCabe, S. (2017). Sustainability and marketing in tourism: Its contexts, paradoxes, approaches, challenges and potential. Journal of Sustainable Tourism, 25(7), 869-883. https://doi.org/10.1080/09669582.2017.1301721
[28] Becken, S. (2019). Decarbonising tourism: mission impossible? Tourism Recreation Research. 44.4

Opportunities for emissions reduction in tourism

Whilst the barriers are clear, there are also significant opportunities for tourism operators and governments that drive emissions reduction, these include:

- **Renewable energy adoption**: One of the most significant opportunities for reducing emissions in the tourism sector lies in the transition to renewable energy. Hotels, resorts, and tourism facilities can invest in renewable energy sources like solar and wind power, significantly cutting down emissions from energy use[29]. For many, this will involve retrofitting of built infrastructure.
- **Sustainable transportation**: Encouraging the use of public transport, cycling, and walking in tourism destinations can lower emissions. Additionally, the development of electric vehicles and infrastructure in tourism hotspots provides an opportunity to reduce road transport emissions[30]. The DMO transition towards stewardship is an important step in the engagement with sustainable transport, utilizing it as a key marketing opportunity. Destinations such as Copenhagen and Switzerland have taken great steps towards the encouragement of sustainable transport options among visitors.
- **Circular economy and waste reduction**: Integrating circular economy principles into operations—such as reducing waste, improving recycling rates, and promoting the reuse of resources—can contribute to lower emissions. Implementing sustainable waste management practices in hotels and resorts can reduce emissions from waste transport and landfill decomposition[31].
- **Government regulation and policy support**: Economy-wide and international policies can encourage sustainable practices by providing subsidies for renewable energy adoption or by implementing carbon taxes on high-emission activities like aviation. The introduction of sustainability certifications that are credible in light of sustainability legislation for tourism operators can also promote more environmentally responsible behavior[32].
- **Finance and transition support:** To facilitate the process of cutting emissions, UNEP24 highlights the importance of financial investment in the transition to low-carbon economies. A redesign of the international financial architecture is necessary to provide adequate resources for developing countries, enabling them to implement effective climate strategies. In addition, public and private sector engagement is vital for scaling up climate action. Collaborative efforts can lead to innovative solutions and investments in green technologies that contribute to emissions reductions.
- **Behavior change:** One of the greatest challenges and major opportunities is shifting behaviors among staff and visitors to more responsible business practices and mindful destination visitation. Changing behavior, or encouraging priority practices, may include reducing air travel, greater use of low-impact transport, purchasing from local vendors, reducing food waste and taking shorter showers to name a few[33]. Research indicates that often consumer (and staff) behavior changes are not included in climate change plans – missing significant opportunities to drive meaningful change.

[29] Scott, D., Gössling, S., & Hall, C. M. (2016). International tourism and climate change. Wiley Interdisciplinary Reviews: Climate Change, 7(6), 629-642. https://doi.org/10.1002/wcc.406
[30] Gössling, S., Scott, D., & Hall, C. M. (2020). Pandemics, tourism and global change: A rapid assessment of COVID-19. Journal of Sustainable Tourism, 29(1), 1-20. https://doi.org/10.1080/09669582.2020.1758708
[31] Brouder, P., Clavé, S. A., Gill, A., & Ioannides, D. (2019). Industrial heritage tourism and sustainable tourism. Journal of Sustainable Tourism, 27(11), 1726-1740. https://doi.org/10.1080/09669582.2019.1658689
[32] Scott, D., & Gössling, S. (2018). Tourism and climate change mitigation: Embracing the Paris Agreement. Climate Change, 151(1), 67-82. https://doi.org/10.1007/s10584-018-2269-3
[33] https://www.wri.org/insights/behavior-change-reduce-emissions-climate-plans#:~:text=These%20behaviors%2C%20referred%20to%20as,mobility%20like%20walking%20or%20biking.

Case-study analysis

In Phase one of this study, a number of case studies from across APEC economies were utilized to demonstrate the various approaches and strategies adopted to reduce carbon emissions in the tourism sector with varying levels of support, prioritization and engagement. These case studies provide valuable insights into the challenges and opportunities faced by different regions in their efforts to achieve sustainability goals.

- **Government policies and support**: The case studies emphasize the critical role of government policies and support in driving emissions reduction in tourism. This includes the implementation of regulatory policies, incentive-based policies, and collaborative initiatives to encourage sustainable practices. In many cases we see that tourism is not a priority sector in the transition, often because actionable carbon emissions outside of the aviation sector) is relatively small and relies on capacity building and retrofitting to drive change.
- **Measurement and monitoring:** The case studies underscore the importance of measuring and monitoring carbon emissions to ensure data-driven decision-making and accountability. Establishing baselines and tracking progress are essential for achieving emissions reduction targets. Failure to understand the baseline leads to tactical solutions that do not necessarily drive the meaningful action required to meet international and local carbon reduction targets.
- **Energy efficiency and renewable energy**: A significant focus is placed on improving energy efficiency and adopting renewable energy sources. This includes measures such as installing solar panels, using energy-efficient appliances, and transitioning to low-carbon energy sources. Energy efficiency is a critical step towards decarbonization and for many businesses is considered “low-hanging fruit”, action that can be reasonably taken.
- **Sustainable transportation:** The importance of sustainable transportation is highlighted, with case studies showcasing efforts to promote public transport, cycling, and walking in tourism destinations. The development of electric vehicles and related infrastructure is also discussed as a key opportunity for reducing emissions when in destination. Not only does walking and low carbon transportation support emissions reductions, but it also promotes a stronger connection with place.
- **Circular economy and waste reduction:** Integrating circular economy principles into tourism operations is identified as a strategy that accelerates decarbonization due to the reduction of waste to landfill, amount of waste incinerated and also the transport miles associated with waste management. Key actions to achieve this outcome are highlighted as capacity building to support the reduction of waste, improving recycling rates, and promoting the reuse of resources to lower emissions.
- **Collaboration and capacity building:** Collaboration among various stakeholders, including government, businesses, and academia, is highlighted as a key factor in successful emissions reduction efforts. Building internal capacity and fostering partnerships are essential for driving impactful actions. Looking outside of tourism also promotes opportunities, learning from agriculture and retail, closely aligned sectors, provides pathways and action that may advance tourism’s progress towards emissions reduction.
- **Consumer behavior and preferences:** Tourism is a people centric sector, and it can influence consumer behavior, but is also heavily impacted by the visitors that come to destinations. The case studies address the challenges related to changing consumer behavior and preferences. Encouraging tourists

to prioritize low-carbon alternatives and promoting sustainable tourism options are identified as critical steps in reducing tourism-related emissions. Taking advantage of tourism's ability to influence behavior change whilst visitors are travelling and also when they return home is an opportunity too large to ignore.

These themes provide an overview of the diverse strategies and initiatives being implemented across APEC economies to reduce carbon emissions in the tourism sector.

Case-study – Oxapampa

One of Peru's *Pueblos con Encanto* – Charming Towns – Oxapampa is recognized for its cultural and heritage significance. The objective of *Pueblos con Encanto* network is to generate a sustainable development model that promotes conservation alongside economic and social development opportunities.

The approach requires stakeholders of various levels including the domestic (Mincetur) and local government, private sector and community, to collaborate towards common actions and strategies that protect the sustainability of the communities.

Underpinning the program is a framework of four key pillars:

1. Planning and management – Preparing baseline measures to track progress over time, setting and action plan, strengthening governance and building awareness across all stakeholders within the community, including minority groups.
2. Developing and strengthening tourism materials – Identifying and protecting existing tourism resources, identifying opportunities to strengthen tourism services, building skills and capacity across tourism quality and sustainable management practice and supporting the formalization of businesses.
3. Development of tourist territory – Examining the opportunity for further investment in the destination, improving the landscape including conservation initiatives, transportation management and solid waste management.
4. Positioning – Delivering a plant to strengthen the community identity and showcase the unique cultural and heritage attributes. Strengthen the marketing capacity of the community and strengthening the use of information communication technologies.

Annually, a monitoring report is prepared based on 16 evaluation criteria. The following measures are considered- visitor flow, length of stay, average spend, number of tour companies, updated directory of formal tourism services and results of visitor satisfaction survey.

Oxapampa is the 10th *Pueblos con Encanto* distinguished for its characteristics of nature, culture and heritage. The joint commitment to sustainability sees, a focus in reforestation and a protection of the natural heritage in the region, working with community to upskill and understand impact to deliver a more sustainable future.

A strong partnership approach is key to delivering meaningful outcomes and this is exemplified in Oxapampa's approach.

Figure 4 - Participants of the 2024 workshop hosted in Lima

Workshop

Under Phase two of this project, the "*Workshop on Climate Action and Emissions Reduction for the Tourism Sector*" was held on 4-5 November 2024, in Lima, Peru, hosted by the Ministry of Foreign Affairs and Tourism. The event brought together 150 participants and fourteen expert speakers from across APEC economies to discuss strategies for reducing emissions in the tourism sector and protecting natural and cultural heritage.

Key outcomes from the international thought leaders and pioneers in sustainability include:

1. **Importance of tourism**: Tourism is a vital pillar of the global economy, significantly contributing to local economies and facilitating cross-cultural exchange. However, it also has substantial environmental impacts, particularly in terms of carbon emissions. The paradox between growth and negative impacts is rarely explored yet has significant policy and development implications.
2. **Environmental implications**: Tourism activities such as air travel and accommodation generate significant emissions, affecting natural heritage sites. The sector must halve its emissions by 2030 to align with global environmental targets.
3. **Strategies for emissions reduction**: Key strategies include investment in sustainable transport, adoption of sustainable practices in the hospitality sector, and promotion of low-impact tourism activities.
4. **Research and policy implications**: Governmental support through regulatory frameworks, incentive programs, and partnerships is crucial for promoting emissions reduction in tourism. Establishing baselines and monitoring carbon emissions are essential steps alongside capacity building among business and community.
5. **Case studies**: Examples from APEC economies highlight successful initiatives in promoting sustainable tourism and reducing carbon emissions. These include sustainable business events, waste management, and the promotion of alternative tourism routes.
6. **Carbon emissions and natural heritage**: Carbon emissions are accelerating climate change, affecting natural heritage sites like the Great Barrier Reef and Machu Picchu. Sustainable practices are essential to preserve these sites.
7. **Collaborative efforts**: Collaboration between governments, private organizations, and academia is necessary to achieve meaningful emissions reductions. Cross-sector partnerships can provide valuable insights and actionable paths.
8. **Sustainable tourism practices**: Initiatives such as the Green Seal program and the development of electric buses in Machu Picchu demonstrate the importance of sustainable practices in tourism.

The workshop emphasized the need for coordinated action, upskilling, and public investment to achieve emissions reductions and preserve natural and cultural heritage. By prioritizing sustainable practices, the tourism sector can work towards a more sustainable future.

Strategies for reducing tourism emissions

1. **Transportation initiatives:** Given transportation's dominant role in tourism emissions, investment in sustainable transport can significantly reduce the sector's carbon footprint. Airlines are exploring alternative fuels and more efficient aircraft, while some destinations are encouraging eco-friendly transportation options like high-speed rail and direct flights, which reduce emissions by limiting take-offs and landings.
2. **Sustainable accommodation:** The hospitality sector has begun adopting sustainable practices, such as renewable energy, energy-efficient systems, and water conservation. For example, the Peninsula Hotel Group has made strides toward sustainability by implementing a plastic-free amenity line and sourcing 35% of food locally.
3. **Low-carbon tourism activities:** The industry is also transitioning to low-impact activities like hiking and kayaking, promoting a greater connection to nature and fostering environmental awareness among travelers.

Findings and implications for policy

Similar to the case-study research, the workshop underlined the essential role of governmental support in promoting emissions reduction in tourism through regulatory frameworks, incentive programs, and partnerships. Establishing baselines and monitoring carbon emissions are crucial steps, enabling data-driven decisions that ensure accountability and targeted reduction efforts. Energy efficiency, sustainable transportation, and a circular economy are pivotal strategies to decarbonize the tourism sector.

Achieving meaningful emissions reductions necessitates collaboration between government entities, private organizations, and academia. Cross-sector partnerships with agriculture and retail can provide valuable insights and actionable paths. The shift towards sustainable practices is reinforced by evolving visitor expectations, as recent studies show that 70%-90% of travelers seek sustainability in their choices, with a significant percentage avoiding businesses perceived as environmentally misleading.

The following section of the report overviews the practical steps that can be taken to achieve these outcomes.

Case-study – Machu Picchu

A success story from Machu Picchu in the province of Urubamba was shared, which has become a model for solid waste management in Peru. The coordinated efforts with local authorities, communities, and families have significantly contributed to biodiversity conservation through a systematic waste sorting scheme.

Before 2007, Machu Picchu received around 1,500 to 2,000 visitors per day. Following its designation as one of the Seven Wonders of the World, tourism has grown exponentially, necessitating strategic decisions to manage this influx.

Despite ideological differences among mayors, there has been a unified approach to managing tourism and waste in Machu Picchu highlighting the importance of collaboration in climate action. The municipality is a member of the International Federation of Tourist Cities and the Network of Sustainable Cities, which has facilitated knowledge exchange with other countries on waste management and tourism administration.

The municipality is promoting alternative tourism routes to alleviate congestion at Machu Picchu. Two new projects are set to launch next year, focusing on developing tourism in nearby communities, Choquellusca and Qoriwayrachina with an investment of approximately USD6 million.

Among tourism and hospitality operators in Machu Picchu's surrounding community, a Green Seal program has been established to recognize hotels and restaurants that excel in waste management. An application is being developed to highlight these establishments as top choices for tourists.

In 2022, Machu Picchu emitted 7,117 tons of CO_2 equivalent. The primary source of emissions was fuel consumption by trains, accounting for 63% of total greenhouse gas emissions. The municipality aims to continue managing its carbon footprint and implement mitigation measures. The municipality owns 38% of the bus company that transports visitors. A pilot project is underway to introduce two electric buses to reduce emissions, with plans to convert the entire fleet to electric if successful.

Machu Picchu has achieved recertification as a carbon-neutral destination, a significant milestone resulting from collaborative efforts among various stakeholders, including the municipality and the Ministry of Culture. The municipality is committed to fostering better climate action practices, monitoring carbon footprint management, and incentivizing businesses to adopt sustainable practices.
The municipality has established a strong culture of waste segregation, which is essential for effective environmental management. Ongoing education is needed for transient populations who may not be familiar with these practices. An organic waste pyrolysis plant processes 60% of organic waste, converting it into biochar for agricultural use. This initiative has helped avoid the emission of 35 tons of CO2 equivalent.

The presentation emphasized the need for sustainable practices to accommodate increasing tourist numbers while preserving Machu Picchu's cultural and natural heritage. The goal is to position Machu Picchu as a leader in sustainable tourism domestically and internationally.

Action for government

To protect the natural and cultural heritage of a destination that has both community value and tourism value, it is critical to take action.

Whilst the problems associated with greenhouse gas emissions and the changing climate and vulnerable landscapes and the tourism sector are widely acknowledged, action to drive meaningful change is slow[34].

The Tourism Panel on Climate Change (TPCC) Stocktake[35] highlights that tourism policy is not yet integrated with global and domestic climate change frameworks. The following section highlights the opportunity for governments at all levels to embed climate action, to support emissions reduction for the protection of natural and cultural heritage.

The actions outlined within this report are aligned with global frameworks including the WTTC Net Zero Roadmap Part II[36] and UN Tourism's ESG framework[37]. Both offer strategic insight into opportunities for the reduction of carbon, however, alignment with economy-wide policy and strategy is integral for the successful application of such approaches.

Assess, define and strategise

Figure 5 - WTTC Net-Zero Strategy Framework

Strategic planning of the approach to emissions reduction enables a considered and managed approach by government. Considering the current state of emissions and the vision for the future, government can identify a strategic pathway with clear measures along the process.

Through a dedicated strategy for the asset or location, government can demonstrate its leadership and encourage a partnership approach with key stakeholders, institutions and communities to invest in the protection of natural and cultural heritage. Government action must align with the scale of the climate challenges and the risks associated with the natural, cultural or heritage asset.

Leading through tactical action rather than strategy may result in some good outcomes, but can also contribute to a lack of clarity around what was successful and how it was achieved. This in turn leads to limited replicability at other sites that may also require intervention.

[34] Higham, James, Loehr, Johanna, Hopkins, Debbie, Becken, Susanne, Stovall, Will (2022). Climate science and tourism policy in Australasia: deficiencies in science-policy translation. Journal of Sustainable Tourism
[35] TPCC Stocktake 2023. Key findings for policy makers. https://tpcc.info/stocktake-report/
[36] WTTC. A Net Zero Roadmap for Travel and Tourism. https://researchhub.wttc.org/product/net-zero-roadmap-for-travel-tourism-2nd-edition
[37] UN Tourism. ESG Framework for Tourism Businesses. https://www.unwto.org/tourism-statistics/environmental-social-governance-tourism

A strategic plan demonstrates a clear commitment towards action and encourages others to act in alignment with a vision. The plan or strategy may be site specific, regional or for a broader destination. Whatever the scope, key inclusions should be:

Scope – The scope outlines the inclusions to the geographic region that is being managed, along with any technical considerations that are required. By defining a clear scope, year on year measurements can be conducted to understand changes over time.

Scope may change or evolve, but it is important to understand what the baseline includes to effectively track progress.

Measure to manage –
Once a clear scope has been established, measurement and understanding of impact is critical. Depending on the size or scale of the asset, this may be done at a destination or an asset level, by a public or a private partner.

Defined by the WTTC as a carbon inventory, this step includes understanding the current impact, setting a baseline across key measures and utilizing this as a tool to set targets and actions moving forward.

The UN's Intergovernmental Panel on Climate Change (IPCC) emphasizes that technological solutions alone will not enable the reduction of greenhouse gas emissions that we need as a society[38]. Rather, innovation is required to integrate traditional and new knowledge, to understand the complexities of the systems in which we are operating and to deliver relevant alternatives that will meet our commitments.

UN Tourism (previously the World Tourism Organisation), undertook research into sustainable management of tourism in 2004 which highlighted that tourism decision makers need to consider the following types of indicators[39]:

- Warning indicators – to understand early warning signs or risks to the tourism industry.
- Measures of pressures or stressors – key external factors or concerns that should be integrated into decision making such as shifting consumer demand or pressure on environmental systems.
- Measures of the state of natural resources – to understand the level of pollutants, usage level and impact on the environment.
- Measures of impact or consequences – including biological and physical impact and cultural and economic impact.
- Measures of management action – to understand the level of intervention and action underway – are we doing enough?
- Measures of management impact – to enable adjustment if action does not deliver preferred outcomes.

Based on this, UN Tourism proposed a number of key indicators, those directly related to emissions reduction for the protection of natural and cultural heritage include:

[38]The Intergovernmental Panel on Climate Change https://www.ipcc.ch/
[39] https://www.unwto.org/sustainable-development

Key resource consumption

- Water - Total Potable Water Used – Natural and cultural sites may be major consumers of potable water, required for human consumption, recreation, manufacturing, and landscaping. Many are located in water-scarce regions where reducing demand and increasing reuse/recycling can significantly improve sustainability.
    - Minimizing Potable Water Use: Implementing conservation measures and efficiency improvements.
    - Recycled Water: Utilizing alternative sources (e.g., greywater, rainwater, treated wastewater) where potable water is unnecessary.
- Energy (Express consumption per tourist, per bed, or per night). Consideration should be given to electricity sourced from suppliers via a power grid. Measurement should encompass the entire destination or asset under assessment.
    - Green Power: Renewable electricity through self generated means or “green power” agreements, ensuring a percentage of purchased electricity is derived from renewable sources (e.g., wind, solar, hydro).
- Fuel - Stationary Fuels: Fuels combusted onsite in boilers, water heaters, oil heaters, stoves, and generators.
- Waste sent to landfills contributes to environmental degradation through transportation emissions, resource loss, potential contamination, and methane emissions from decomposition.
    - Recycling and resource recovery: Reducing landfill waste helps minimize emissions by decreasing the need for raw material extraction and processing.
    - Composting and circularity: Encouraging biodegradable waste diversion and reuse initiatives.

Environmental standards

In addition to emissions measures, the following environmental standards may also be considered depending on the nature and context of the destination:

- % of homes, and/or hotels with impact and of effects of potable water.
- % of urban communities/coastal communities serviced with sewage treatment (% of sewage discharge d raw into watercourses/seas)
- % recognized beaches meeting blue flag or equivalent standard.

Environmental planning

For the protection of natural heritage, government and destination management organizations should consider tracking the following:

- Existence of comprehensive environmental strategy at economy-wide level.
- Adoption of economy-wide codes of practice for tourism operators and tourists.
- Consumption
    - energy consumption per visitor day.
    - water consumption per visitor day.
- Environmental quality
    - air quality – % days exceeding standard.
    - water quality – potable water on site.

- % of waste from site serviced by sewage treatment.
- days of beach closures/exceed limit.
- report in last year of waterborne diseases (e.g. cholera, bilharzia).

Other GHG measures to include if taking a broader destination-based approach include:

- Percentage of tourism enterprises involved in climate change mitigation schemes—such as: CO2 offset, low energy systems, etc.—and "adaptation" responses and actions.
- Percentage of tourism accommodation and attraction infrastructure located in "vulnerable zones".
- Percentage of tourism enterprises audited through a sustainability certification scheme.

By systematically measuring and managing energy, water, and waste, destination managers can track associated emissions and implement data-driven strategies to reduce their environmental footprint.

It is understood that no two destinations are the same and a standard set of measures may not be applicable for all. Rather it is important to measure the fundamental resource usage across the destination and track other key indicators aligned with the strategic priorities of the destination[40].

Risk management plan – It is also important within the plan to identify the risks to the asset and identify strategies to manage and where possible mitigate the risks. Typical risks to natural and cultural heritage sites include:

- Extreme heat – increased frequency and intensity of extreme heat events, aggravating heat related illness and mortality among visitors and staff. In addition, damaging the assets through prolonged heat stress and extreme heating and cooling.
- Fire exposure – posing significant threat to the asset itself, visitation and perceived safety of the attraction.
- Sea level rise – risk of inundation and erosion of key assets or articles.
- Shifting seasonal demand – causing uneven or unexpected visitor flows or surges.
- Costs associated with decarbonization.

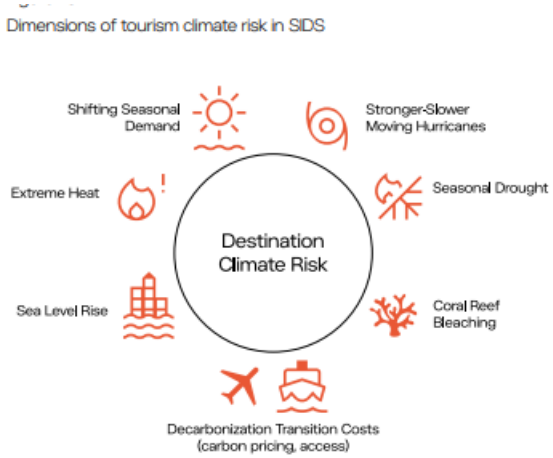


Figure 6 - Dimensions of tourism climate risks - TPCC Stocktake 2023[41]

[40] List of European Commission Indicators available in Annexure 4
[41] https://tpcc.info/new/wp-content/uploads/2023/11/TPCC-Stocktake-2023-New.pdf

Stakeholders that attended the hosted workshops also identified the following risks as most prevalent to the protection of heritage and natural sites:

- Increased frequency and intensity of storms, hurricanes, and droughts can damage ecosystems and biodiversity.
- Shifts in temperature can alter habitats, leading to the migration or extinction of species.
- Historic sites and buildings located near coastlines, such as ancient ruins and historic towns, are at risk of being submerged or eroded.
- Extreme weather events, storms and hurricanes can cause physical damage to heritage buildings, archaeological sites, temples, churches, and museums.
- Temperature changes can lead to the deterioration of materials like wood, stone, and metal used in historic structures.

Action plan –
Specific actions should align with the emissions identified, the risks and the opportunities for action. It is recommended that long, medium and short-term actions are established to push immediate outcomes and plan for investment heavy solutions that may take time to address.

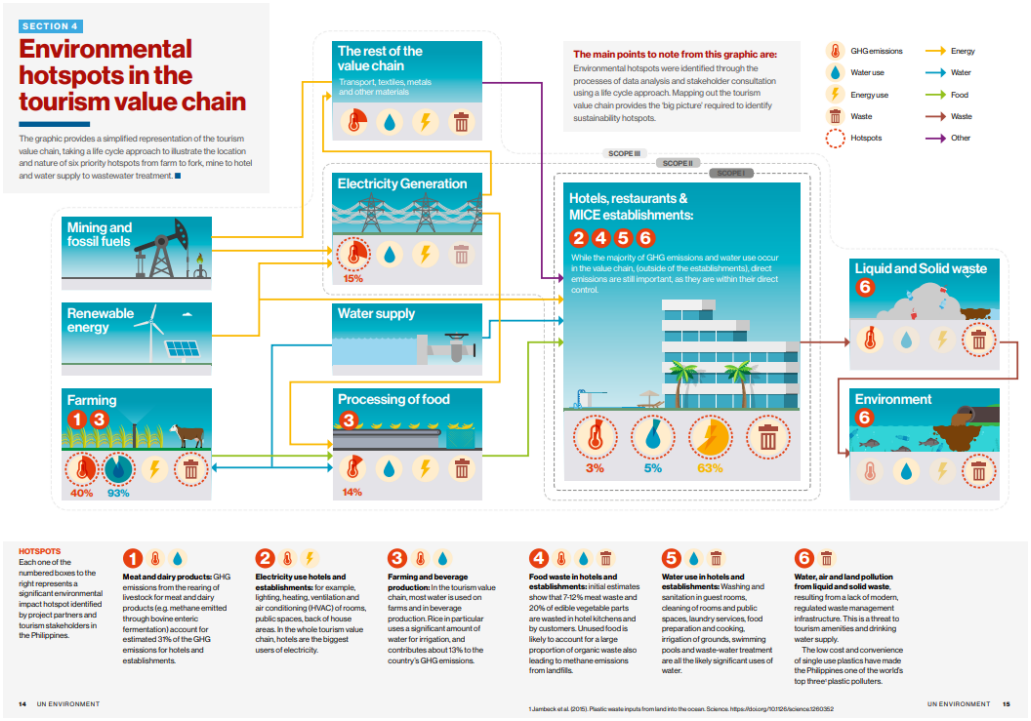
Case – study The Philippines - Net zero plan

The Philippines created a country climate and development report (CDDR) to analyse climate change, the consequences of carbon emissions and identify opportunities to reduce them. The Philippines is striving to improve their flood management, build energy efficient buildings, implement water management in the agricultural sector and promote non-motorised transport. The report identifies that mitigation measures would increase GDP by 0.5% by 2040 and create 80,000 jobs. To achieve these barries such as finance, regulatory obstacles and training need to be addressed, positioning the economy to take action. Success factors are measures that align with the transition including amount of investment in climate related action, regulatory reforms that lead to enhanced technology deployment and transition, access to investment, number of trained employees and emissions across the economy.

As an important sub-sector of the economy, the Department of Tourism of the Philippines and the Tourism Congress of the Philippines created a roadmap for low-carbon and resource efficient tourism in the Philippines. This roadmap is about transforming the tourism industry to achieve sustainable accommodation and meetings, incentives conferences and exhibitions. The roadmap sets the goal for the tourism sector to reduce GHG emissions by 30% between 2020 and 2030.

The vision for this roadmap is to make the Philippines a more competitive and globally recognised tourism destination, based on its sustainability credentials, natural beauty, and cultural identity. This is only possible through a more environmentally sustainable tourism sector that shows leadership in protecting the very foundations on which is it grounded.

The road map offers targets, actions and guidelines providing systemic solutions for sustainable food value chains, sustainable events, beating pollution in tourism and sustainable energy. The roadmap covers different segments in the tourism industry such as the sustainable accommodation and MICE (meetings, incentives, conferences and exhibitions). The vision of this initiative is to enhance a globally recognised tourism destination that protects the natural beauty and cultural identity of the country. Preserving the beautiful beaches, colourful coral reefs, and rice terraces is more important than ever. Due to the economic benefits of tourism the ultimate balance between tourism and preservation is needed. To understand tourism's impact, a value chain analysis and environmental hotspots analysis was conducted to understand where action is required (figure overleaf).



There are four main solutions outlined within the roadmap which are about sustainable food value chains, sustainable events, beating pollution and the use of sustainable energy.

1. Sustainable food value chains seek to reduce food waste by 50% by 2030 and improve the environmental impact of food consumed in tourism.
2. Sustainable events outline sustainability considerations to complement the economy-wide MICE sector 2030 roadmap.
3. Beat pollution aims to stop coastal pollution from sewage and reduce the use of, and impacts created by, single use plastics.
4. Sustainable energy intends to increase energy-efficiency and the use of renewable energy in hotels and conference venues through government policies to incentivise energy efficient technologies and the establishment of performance standards, and by increasing access and appetite of business for these technologies.

Data utilized to demonstrate progress against the goals include economy-wide GHG accounts, SDG reporting, Local Government beach water quality testing data and domestic energy accounts. Stakeholders including Hotels and MICE establishment and inspection bodies are required to report on key targets utilizing existing methodologies such as GHG Protocols, the food loss and waste standard and Scope 3 Protocols. In addition, the success of the roadmap is measured by the percentage of stakeholders aware and acting on the roadmap and the perception of stakeholders, challenges, opportunities and lessons learnt.

The roadmap highlights the importance of Government and business both playing a role in reaching emissions reduction targets. To achieve this, climate action is to be explicitly recognises in the National Tourism Development Plan, training support is to be provided to industry, and regulatory environments should support business transition.

Targets – Setting targets
Setting carbon reduction targets for the protection of cultural and natural heritage requires a well-researched baseline to understand existing emissions and vulnerabilities. By assessing current carbon footprints associated with heritage sites—factoring in energy use, transportation, tourism, and conservation activities—stakeholders can establish realistic and science-based reduction goals. These targets should align with international climate agreements, such as the Paris Agreement, and integrate sustainable practices like renewable energy adoption, eco-friendly restoration techniques, and low-impact visitor management.

Regular monitoring and adaptive strategies ensure that reductions remain effective in safeguarding heritage from climate-related threats like rising temperatures, extreme weather, and ecosystem degradation.

Setting meaningful targets involves:

1. Setting the scope for inclusion and garner senior management commitment;
2. Measuring scope 1 and 2 emissions to set a baseline;
3. Understand and where viable measure scope 3 emissions;
4. Define the target timeframe and commitment period;
5. Establish the methodology for measurement over time;
6. Set a realistic target based on the relationship between emissions and other business metrics, ensure that growth is factored in alongside mitigation strategies;
7. Track and report over time;
8. Plan for the role of biodiversity investment where total emissions do not meet targets.

As an outward sign of commitment to carbon reduction targets, many tourism destinations and stakeholders (outlined in Annexure 2) have committed to the Glasgow Declaration. The Glasgow Declaration highlights the need for increased urgency for emissions reduction and climate action in tourism to support global goals to halve emissions over the next decade and reach net zero emissions as soon as possible before 2050. Over 850 organizations have now become signatories of the Glasgow Declaration on Climate Action in Tourism to accelerate climate action.

When signing the declaration, destinations and organizations are committing to:

- Support the global commitment to halve emissions by 2030 and reach Net Zero as soon as possible before 2050.
- Deliver climate action plans within 12 months from becoming a signatory (or updating existing plans), and implement them.
- Align plans with the five pathways of the Declaration (Measure, Decarbonize, Regenerate, Collaborate, Finance) to accelerate and co-ordinate climate action in tourism.
- Report publicly on an annual basis on progress against interim and long-term targets, as well as on actions being taken.
- Work in a collaborative spirit, sharing good practices and solutions, and disseminating information to encourage additional organizations to become signatories and supporting one another to reach targets as quickly as possible.

[42]

Case-study – New Orleans, United States of America Net Zero Targets

New Orleans is on the frontline of climate change. The devastation from Hurricane Ida highlights the risks of an increasingly volatile climate and the need to build strong and lasting infrastructure that can adapt.

As the region ramps up economic recovery, climate change is central to decision making. By integrating initiatives that reduce greenhouse gas emissions and help the city adapt to climate change into the economic agenda, the region is creating new, environmentally-friendly economic opportunities that reduce risk and improve the long-term health and vitality of the city. Initiatives include, investment in clean energy and climate solutions, establishing a regional green bank to finance private transition opportunities, promoting sustainable business practices and jobs, making climate action data available for action and analysis, diversifying transport options with a focus on bike paths and building green infrastructure.

Focusing on the promotion of sustainable businesses and jobs, the city launched a program to training small and disadvantaged businesses to build understanding of the blue and green economy. In addition, the Youth Force program supports high-school students in developing the skills to deliver sustainable outcomes when they reach the workforce.

Green infrastructure enhancements include a focus on composting. Led by a community organisation a program Compost NOW empowers residents to compost. Since 2017, more than 180,000kg of waste has been diverted from landfill. This is achieved through DIY backyard composting, free drop off sites and education for residents.

The city completed inventories of community-wide emissions for the years 2014 and 2017 setting clear baseline years. The 2014 inventory estimated 3.6 million metric tons of CO2e and the 2017 indicated a small reduction to 3.5 million metric tons of CO2e. The city uses emissions reporting to the U.S. Environmental Protection Agency and the Louisiana Department of Environmental Quality for some information, but cannot rely only on a direct measurement of GHG emissions at their source; therefore, the inventory employs a calculation-based
methodology that involves the conversion of GHG-inducing activities into emissions based on specific emissions factors.

The City of New Orleans has the target to achieve net zero GHG emissions by 2050. By net zero, the city aims to reduce emissions as much as it can, and “zero out” any remaining emissions with reductions elsewhere.

Based on a range of scenarios, and through the use of the C40 pathways tool, the city was able to identify key goals across various sectors – setting targets that lead toward the overarching ambition. Based on this, prioritization of actions was completed to reach energy reduction of 43%, transport emissions reduction of 45%, a 3% reduction in waste and a 9% increase in biodiversity for the city.

[42] https://nola.gov/nola/media/Climate-Action/2022/Net-Zero-by-2050-A-Priority-List-for-Climate-Action-in-New-Orleans.pdf

Build and enable

Once a clear strategy is in place, other mechanisms to support a transition towards the reduction of emissions for the protection of natural and cultural heritage are outlined below. These should align directly to the strategy and action plan and work towards collective action:

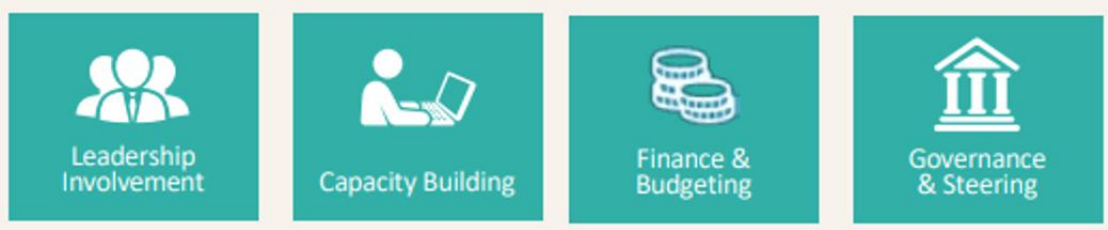


Figure 7 - WTTC Net Zero Roadmap Framework

Incentivization– One of the strongest tools that government has is the opportunity for financial incentives to support businesses operating in the destination or around the asset to reduce emissions. This may include:

- Increased permitting length once when the business demonstrates it has in place emission reduction targets and is taking action to achieve set targets;
- Funds to transition to low carbon futures (e.g. renewable energy, fleet transition or support for composting infrastructure) – either delivered as a grant or through low interest loan options;
- Tax credits or deductions offering businesses that invest in renewable energy, energy-efficient equipment, or carbon reduction projects a tax breaks or investment tax credits.
- Prioritization of sustainable businesses in public contracts or tenders and providing fast-track permits. Companies that meet emissions targets could also be utilized preferentially among marketing campaigns.

Case-study – Indonesia Government GoJek Transformation
The Indonesian government has implemented various regulatory and fiscal incentives to encourage green growth, focusing on electric mobility, carbon markets, and renewable energy. Examples include:

- **Electric vehicle (EV) incentives** – The government provides tax breaks and subsidies for EV manufacturers and buyers. This includes VAT reductions (from 11% to 1%) for EV purchases and import duty exemptions on EV components to accelerate local production.
- **Green tax incentives for businesses** – Companies investing in renewable energy, energy efficiency, or other sustainable initiatives can benefit from tax holidays (for investments between IDR100 billion and IDR500 billion, investors can receive a 50% corporate tax income) reduction for 5 years, followed by a 25% reduction for the subsequent two years), reduced corporate income tax rates (100% exemption for a period ranging from 5 to 20 years, depending on the investment amount), and accelerated depreciation on green assets. These incentives encourage businesses to transition to low-carbon operations.
- **Renewable energy investment incentives** – The government offers feed-in tariffs, tax holidays, and import duty exemptions to attract investment in solar, wind, and geothermal projects.

In September 2022, Indonesia increased its Nationally Determined Contribution (NDC) targets, aiming for a 31.9% emissions reduction (up from 29.0 %) and 43.2% reduction with international support (up from 41.0%) below a business-as-usual scenario by 2030.

As part of this ambition and the *Every Step Matters Movement*, the Indonesian Government is supporting Gojek, a ride share company, to transition towards an electric fleet. The Indonesian government has banned the sale of fossil fuel motorcycles by 2040 and cars by 2050, offered incentives for upfront purchase prices and non-monetary benefits such as exemptions from the odd-even traffic rule for EV and luxury sales tax exemptions.

Gojek is committed to three zeros: Zero Emissions, Zero Waste and Zero Barriers - to be achieved by 2030. Gojek's approach will be structured around three specific areas: environmental sustainability (GoGreener) to achieve Zero Emissions and Zero Waste, as well as socio-economic progress (GoForward) and equality and inclusion (GoTogether) to achieve Zero Barriers. Joint ventures have commenced to realize meaningful shifts.

Capacity building - programs to help businesses, communities, and institutions reduce emissions while safeguarding natural and cultural heritage. These programs can combine training, technical assistance, policy support, and financial incentives to promote sustainable practices. Some approaches could include:

- Workshops and capacity sessions – including basic 101 support to build sustainable management practices and more technical solutions offering guidance on low-carbon transition or measurement support. For example, UNESCO Climate Action in Heritage supports governments in building expertise on heritage-sensitive climate mitigation.

- Community-led capacity building for conservation and where applicable Indigenous engagement, providing programs that build knowledge and skills among local communities in implementing traditional low-carbon conservation practices and behaviors in their daily lives.
- Toolkit development – to provide on demand support and information across various aspects of community or industry operations to support a shift in behavior.
- Case-studies of existing business transitions, to provide success stories of the how and the why in emissions reduction in a way that connects with operators in a meaningful way.

Policy led action – Integration of climate action across all policy agendas that support or govern action within the destination, including:

- Land use planning whereby climate friendly land use and spatial planning actively considers emissions reduction from transport and building and limits the loss of carbon-rich areas.
- Tourism management plans where climate action is embedded across all aspects of the management plan including understanding risks, driving climate resilience, low carbon investment and supporting industry with capacity building.
- Grants or tender opportunities led by government that have climate action embedded within them, prioritizing businesses that are focused on reducing negative impacts and including reporting measures directly aligned to the environmental impact of the project (as well as social and heritage impact).

Case-study – Great Barrier Reef

The Great Barrier Reef (GBR) is one of the world's most valuable natural ecosystems, attracting millions of visitors annually. However, increasing tourism and climate change pose significant threats to its sustainability. To promote responsible tourism and ensure long-term ecological health, the Great Barrier Reef Marine Park Authority (GBRMPA) implemented the High Standard Tourism Operator program. This initiative rewards tourism businesses that adopt best environmental practices with extended permits and recognition.

The High Standard Tourism Operator program is a voluntary certification initiative that encourages businesses to meet and exceed environmental sustainability benchmarks. Operators who achieve high standards in ecological sustainability, customer experience, and safety receive longer permit durations—extending from the standard six years to up to 20 years. The program aligns with the EarthCheck and Ecotourism Australia certification frameworks, ensuring operators are third party audited and adhere to rigorous environmental standards.

Case-study - Harnessing Cultural Heritage for Environmental Education: Insights from Indonesia

Project lead: Francesca Salvi, University of Nottingham through AHRC-DCMS Cultural Heritage and Climate Change Research Funding.

This research project investigates how Indonesia's rich cultural heritage can inform locally driven climate solutions to reduce reliance on fossil fuels, curb deforestation, and address the country's vulnerability to climate change.

Through an interdisciplinary and participatory approach, the project will position cultural heritage as a key resource in shaping equitable, inclusive, and context-specific climate adaptation and mitigation strategies.

Engaging a wide range of stakeholders—including primary school communities, local cultural heritage organizations, and Indigenous knowledge holders—the initiative will explore sustainable practices rooted in Indonesia's traditions.
By integrating cultural heritage into environmental education, the project aims to cultivate innovative, locally relevant sustainability solutions, empowering future generations to actively contribute to Indonesia's just transition towards a more resilient and equitable future.

Support industry led research – Where clusters of businesses are unable to transition due to structural or technological barriers, support operators by enabling access to researchers or partners to aid in the development of priority solutions.[43]

Build partnerships and collaborative networks – take a collaborative approach to foster partnership across the tourism network. Build a cluster of like-minded organizations that are driving meaningful change.

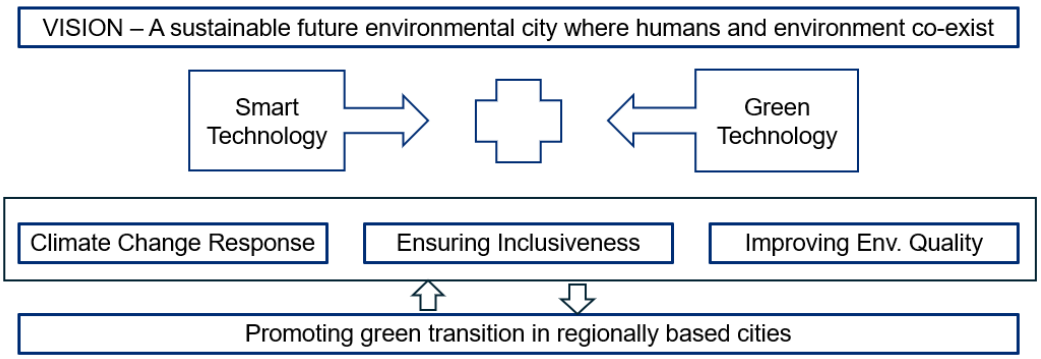
[43] https://www.ukri.org/news/five-new-projects-tackle-climate-change-with-cultural-heritage/

Case-study – Gangneung, Republic of Korea A Low-Carbon Green City Development

Gangneung, located on the east coast of the Republic of Korea, is a strategic transportation hub where highways, railroads, and sea routes converge. With its abundant natural resources and a thriving tourism industry, the city has great potential in renewable energy development and sustainable tourism. Recognising this, Gangneung aspires as a leader in green transportation, energy, and tourism to promote local economic growth. In 2009, it was chosen by the central government as the country's first pilot "Low-Carbon Green City".

This masterplan, created through collaboration with experts, private entities, and public research institutions, and influenced by international conferences on urban development, is grounded in six core principles:

- Environmentally friendly land-use planning
- Green transportation
- Preservation of natural ecology
- Energy use optimisation
- Supporting water and resource cycles
- Promoting green tourism



The plan aims to significantly reduce greenhouse gas (GHG) emissions and energy use, while expanding green spaces in the city. Specifically, the masterplan targets a 49% reduction in GHG emissions, a 35.9% reduction in energy consumption, and a 16.5% increase in green ecological spaces, compared to business-as-usual (BAU) scenarios. The plan consists of 29 projects, to be rolled out in three phases between 2011 and 2020.

Phase 1 (2011-2012): Quick-start projects - This phase focused on nine projects that could be implemented in a short timeframe. Initiatives included creating bicycle paths, installing renewable energy facilities at the Gangneung wastewater treatment plant, and retrofitting schools with energy-efficient systems. These projects laid the groundwork for sustainable urban practices, leading to increased use of bicycles, improved ecological conditions at Gyeongpo Lake, and heightened community engagement in environmental initiatives.

Phase 2 (2011-2016): Laying the green foundation - During this phase, the focus shifted to 15 projects aimed at establishing a solid foundation for Gangneung's transformation into a Green City. These projects addressed key issues such as reducing traffic congestion in city centres and enhancing the tourism infrastructure. These projects contributed to improved urban infrastructure, reduced traffic congestion, increased green spaces, and a boost in eco-tourism, positioning Gangneung as a leader in sustainable urban development.

The third phase (2011-2020) seeks to attract private investments in five large-scale projects based on a longer timeframe. The phase prioritises investment for complex renewable transitions. This phase aimed to solidify Gangneung's commitment to sustainability by integrating cutting-edge renewable energy technologies, attracting significant private investment, and fostering a culture of innovation in green technology.

Key measures of success included:

- Greenhouse gas (GHG) emissions reduction: A primary objective was to achieve a 49% reduction in GHG emissions compared to business-as-usual (BAU) projections by 2020.
- Energy consumption metrics: Monitoring total final energy consumption per capita and per unit of GDP provided insights into the city's energy efficiency improvements. For instance, total final energy consumption was recorded at 0.231 TOE (tons of oil equivalent) per capita and 0.317 TOE per one million units of real GDP.
- Renewable energy utilization: The percentage of total energy derived from renewable resources was tracked, with an initial figure of 0.41%.
- Building energy efficiency: Energy consumption in buildings was measured, with data indicating 433.5 MWh per 1,000 square meters, serving as a benchmark for future efficiency improvements.
- Transportation and infrastructure development: Success was also gauged by the implementation of projects such as the construction of bicycle networks and the reduction of traffic congestion in city centers, aiming to promote sustainable urban mobility.

The project provided outcomes such as revitalised wetland areas that promote low-carbon travel, encouraging walking routes over driving. The project also added to the ecological value of the region through the revival of Prickly Lotus, a Class 2 Endangered Plant, otters, a Class 1 Endangered Species, and the transformation of the restored wetland into a habitat for migratory birds. In addition, a low-carbon, sustainable traditional housing and cultural experience space, was introduced with thermal performance and energy efficiency using renewable solar energy.

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[45] Full overview in Annexure 5
https://documents1.worldbank.org/curated/en/099111723085027262/pdf/P1779770cba4b40fc086490294354e98506.pdf

Offer localized solutions – Identify local solutions to support the transition of businesses, this may be in direct emissions reduction or through options of localized biodiversity restoration projects. Where full emissions reduction is not achievable, provide authenticated schemes on a local basis to invest in biodiversity restoration, social action or investment into innovative solutions.

Case-study: Investing in Local Biodiversity Through Trees for Tourism, Noosa Australia

Trees for Tourism is an environmental sustainability initiative developed by Tourism Noosa (a Local Tourism Management Organisation) in partnership with Noosa and District Landcare. This initiative focuses on reinvesting into local biodiversity, ensuring Noosa's pristine natural environment remains a key attraction for visitors while also enhancing ecological resilience.

Noosa's unique natural environment is a major draw for tourists, yet increasing visitor numbers pose challenges to the region's biodiversity. Ensuring long-term environmental health requires proactive efforts to mitigate erosion, support wildlife habitats, and offset carbon emissions. Trees for Tourism addresses these challenges by engaging the local tourism sector and major events to fund tree-planting projects. For every paying event participant, AUD1 is donated to the initiative, supporting restoration projects such as the Noosa Trail Network rehabilitation. This project enhances the trail experience by planting shade trees, stabilising erosion-prone areas, and improving wildlife habitats—especially for vulnerable species like koalas.

The collective contributions from tourism businesses and community events have resulted in the planting of over 6,523 trees (as of February 2025). While Trees for Tourism is not an official carbon-offset program, each tree is estimated to sequester 124 kg of CO2 over its lifetime. This equates to approximately 809 tonnes of CO2 being removed from the atmosphere, significantly contributing to climate action efforts.

Beyond industry contributions, Trees for Tourism encourages locals and visitors to participate in biodiversity conservation. Individuals can support the initiative by making direct donations at the Noosa Information Centre, fostering a community-driven approach to sustainability.

Trees for Tourism exemplifies how local tourism industries can actively invest in localised solution for environmental sustainability. By leveraging tourism revenue to support biodiversity initiatives, Noosa ensures its natural assets remain protected for future generations while reinforcing its reputation as a sustainable travel destination.

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[46] https://www.visitnoosa.com.au/trees-for-tourism

Take action

Government has the opportunity to take a leadership role and demonstrate meaningful action towards decarbonisation and emissions reduction for the protection of natural and cultural heritage.

Guided by the strategy developed, key actions might include:

- Review of transportation methods to the asset, development of strategies to reduce reliance on traditional fossil fuel transportation and shift towards active transport (e.g. walking and cycling routes), public transportation routes (powered by renewables where viable) and electric vechile access with charging ports etc.
- Identifying ways to get visitors to stay longer when in region. Through additional tours, clusters of experiences or promotion of “off-the-beaten-track” options.
- Prioritization and marketing of operators and partners that are meeting carbon reduction targets, or that are actively engaged in taking action.
- End-of -life retrofit of assets – when the time for rennovation of government owned assets, ensure responsible upgrades, energy and water efficiency, renewable energy and adapation measures. For example where flood prone, selecting flooring that is easy to clean and moving power-points above the waterline.
- Prioritization of low impact activities – permitting tourism activities that offer low impact options delivered through responsbile operators. Regulated tours offer greater management opportunties and protection than freedom of visitation. Operators should be encouraged with clear guidnace on emissions reduction and responsible operations.
- On-going management of energy, water and waste resources, measurement and continual improvement. Taking first simple actions to reduce emissions and longer-term implementing the actions identified within the action plan whilst maintaining the cultural or historical significance of the region.
- Embed sustainability and climate action as a core part of the education system to ensure that workers across the tourism and hospitlaity sector enter with the skills required to deliver action.
- Risk reduction action – safegurading cultural and heritage envrionments through a depth in understanding the greatest risks to the natural and cultural heritage and identifying mitigation action to reduce the risks or further protect the integrity of the asset.

Action for the tourism industry

Aligned to the World Travel and Tourism Council's[47] approach, the following four steps are recommended when pursuing a reduction of carbon emissions for the protection of natural and cultural heritage:

Action area	Sub action	Key message
Assess and define	Carbon footprint analysis (inventory)	Understand the carbon footprint and the composition of carbon. Use to make data-led decisions that reduce negative impact.
	Risk analysis (understanding materiality)	Identify and define the issues that influence and impact the business or destination and how these need to be managed to mitigate.
	Target setting	Set targets to reduce emissions and specify long-term targets to decarbonize.
	Action plan	Develop a road-map or action plan based on your data to drive decarbonization actions.
Build and enable	Leadership	Allocate roles to relevant stakeholders to create ownership and to empower action. Build internal and external support.
	Finance and budgeting	Identify a relevant proportion of budget to allocate to carbon action – align this with targets and action plans. The WTTC recommends 2% of revenue.
	Employee empowerment	Invest in capacity – offer training, skills assessment and performance measurement. Integrate climate action across new role descriptions.
	Governance	Demonstrate strong leadership through the policy and governance model required to deliver net zero outcomes.
Reduce and collaborate	Carbon reduction action	Prioritize meaningful action that delivers positive impacts and avoids greenwashing.
	Partnership alignment	Identify partners and industries that can support the net zero transition.
	Policy advocacy	Collaborate with government and regulators to drive change and decouple tourism growth and emissions.
Monitor and report	Data and monitoring	Empower industry and develop capabilities to measure and monitor carbon footprints accurately and with integrity.
	Progress reporting	Share results publicly.
	Voluntary disclosures	Develop goals for reduction and set targets for short- medium and long term. Publicly speak to goals and track progress.

This step-by-step approach, whilst not tailored to the protection of natural and cultural heritage, offers a framework to guide tourism operators of varying size businesses to emissions reduction goals.

[47] WTTC. 2021. A net zero roadmap for travel and tourism. https://wttc.org/portals/0/documents/reports/2021/wttc_net_zero_roadmap.pdf

The following section will examine the implications of the approaches with a specific focus on natural, cultural and heritage protection.

Assess and define

A first step in emissions reduction is demonstrating commitment to the process and to becoming more sustainable through a sustainable management approach.

To achieve this, identify the priority focus area for the business and put that into a statement. Describe what is already being done, what the business wants to achieve and how this will be delivered. What is in, and what is out. It is important for businesses to be clear on local influence and impact, the type of experience, attraction or accommodation and what is included and excluded from measures.

The statement should be publicly displayed to hold the business accountable. This may be on a website, in a lobby or another space.

The statement is a living document to be updated over time as ambition changes and the business gets closer to your goals. An example commitment, or statement is:

Aman and Sustainability

Aman is a company with purpose; we care about our guests, employees, suppliers, and the environments and communities that surround us. Our ethos has always been to support the well-being of people, society, and our planet, Earth.
The world is facing many challenges. At Aman, we believe in the ideals of sustainable development - *leaving a better world to future generations* – an ethos which remains at the forefront of our brand. Such ideals are in Aman's DNA and have been part of the success of our brand since its inception, the opening of our first property, the Amanpuri, Phuket, in 1988. Cultivating a symbiotic relationship with the host community and the environment, Aman embraces the culture of its destinations, wherever it is in the world.

Aman's sustainability efforts combine the expertise of all of our hotel and resort teams around the world who consider the following four pillars in every aspect of their work – local heritage, local culture, environment protection and social responsibility Our company uses the United Nations Sustainable Development Goals (UN SDGs) platform to build a holistic Sustainability strategy.

Environmental protection

- *Respect and preservation of native milieus and ecosystems:* tree planting, the protection of mangrove, coral and sea turtles, clean beach initiatives, preservation of open lands
- *Waste management:* refuse, reduce, reuse, recycle
- *Food waste management:* composting
- *Water conservation:* low flow equipment, use of grey waters
- *Energy efficiency:* LED lighting in all properties
- *Single use plastic:* a commitment from all hotels eliminating single use plastic
- *Education:* programs for young guests at Aman's Nature Discovery Centers
- *Kitchen gardens:* growing of organic produce within the surroundings of the resort

Local heritage

- *UNESCO World Heritage:* 15 properties are on or close to a UNESCO protected site and support them actively, either in-kind or financially
- *Protected landmarks:* man-made, natural or spiritual landmarks are supported by Aman properties

Measuring to manage

In order to understand the impact of a business' actions, it is important to understand the tourism operation, the demand profile, carbon footprint and the resources used. Tracking and monitoring this overtime enables businesses to adopt actions to ensure meaningful outcomes. Recommended measurements include:

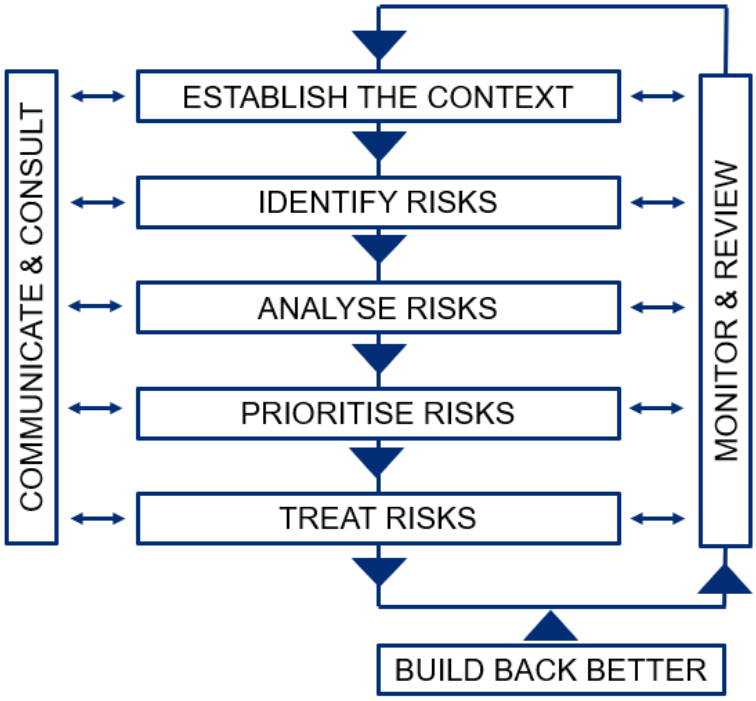
- Total number of visitors
- Satisfaction and motivation
- Volunteer hours spent on local conservation efforts
- Water usage
- Energy from the grid or renewables
- Diesel or petrol your business vehicles use
- Waste you send to landfill, recycling and incinerator.

There are several tools available for the measurement of GHG emissions for tourism and hospitality operators. These are economy specific in many cases. Organizations such as the World Hospitality Alliance, UN Tourism and WTTC offer guidance on where to find tools.

Risk analysis

For businesses operating within areas of cultural, heritage and natural value, it is important to understand risk to proactively manage this impact and reduce the vulnerability of the business and the asset (Figure 8).

Figure 8 - Risk Management Process- ***Source Adapted from APEC Introduction to Risk Management in Tourism***[48]



[48] APEC. 2004. Introduction to Risk Management in Tourism. https://www.apec.org/docs/default-source/publications/2007/4/tourism-risk-management-an-authoritative-guide-to-managing-crisis-in-tourism-december-2006/toc/introduction-participants-workbook.pdf?sfvrsn=1afdb111_1#:~:text=In%20simple%20terms%2C%20the%20tourism,should%20be%20done%20about%20them.

Heritage based solutions – Thailand's flood risk

As a result of changing climate conditions, Thailand regularly feels the impact of flooding events. Climate change is making weather unpredictable and so managing floods is a major issue across communities.

To protect significant heritage assets, nature-based solutions have been adopted including reviving mangrove areas to protect coastal areas and reduce storm surges. Similarly, "heritage-based solutions" offer valuable approaches to addressing modern challenges. These solutions draw upon both natural and cultural assets, blending nature with traditional knowledge. Historic buildings, settlements, and landscapes were often designed with a profound understanding of natural systems, including land, water, and climate. For example, traditional water management systems utilised the land's slope, gravity, and the natural rhythm of seasonal water flow, combined with simple mechanics, to function efficiently. This approach contrasts sharply with modern engineering practices, which often seek to overpower natural forces, sometimes leading to unsustainable outcomes.

An example of this in practice was following the floods that submerged the Ayutthaya World Heritage site for over a month in 2011. Post flood, UNESCO collaborated with the Thai government's Hydro Informatics Institute and Fine Arts Department, along with Dutch hydrology experts, to devise solutions. One key recommendation was to restore the ancient network of ponds and canals in the historic city. This revival aimed to enhance the city's ability to temporarily store water during severe floods, offering a sustainable and culturally rooted approach to flood management. By understanding and enhancing the character of the historic urban landscape, planners get better results from new infrastructure projects. Another example is traditional architectural construction practices that rely on natural ventilation and renewable materials which is helping to address Thailand's transition to low carbon.

Enhancing national heritage is identified within the *20-Year National Strategy* and the *National Economic and Social Development Plan* as an important tool for conservation and for the sake of sustainable development.

Target setting

The most common approach to businesses setting targets is through the Science Based Targets initiative (SBTi). SBTi seeks to reduce scope 1, 2 and 3 emissions and utilize offsetting ONLY to neutralize unavoidable residual emissions. Targets for businesses under the SBTi are:

- Near term – 95% scope 1 and 2 emission reduction and 67% scope 3 reduction by 2030.
- Long term – 95% scope 1 and 2 emission reduction and 90 % scope 3 reduction by 2050.

For businesses, whether formalizing through SBTi or self-setting, the following steps build a strategic approach:

1. Gain senior management commitment – Board or CEO level engagement to drive behavioral change and willingness to fund transition.
2. Select the type of target –
    a. Absolute – where the reduction over time is specified quantity of GHG emissions, typically expressed as tons of CO2-e.

    b. Intensity based – where the reduction of emissions is relative to another business metric like area under roof or person years.
3. Define the boundaries of operation and inclusion within the target setting. Businesses may want to start with scope 1 & 2 only or focus on parts of the operation to begin with.
4. Select a base year and collect relevant data (see measure to manage).
5. Identify realistic reduction targets based on baseline data for near and long term. The World Economic Forum suggests:
    a. Halving greenhouse gas emissions before 2030
    b. Achieving net-zero emissions before 2050, and
    c. Disclosing progress on a yearly basis.
6. Set a road map and actions to reach the target – allocate suitable resources to deliver sought outcomes.
7. Continual measurement and adjustment of actions to reach goals.

Target setting for hotels

ICHL group, operating hotels in the United States, is committed to placing the community at the heart of its activities and delivering environmental stewardship, sustainable growth and preservation of heritage and brand among others.

ICHL has committed to the Science Based Targets initiative to reduce its emissions across the entire portfolio of hotels. In FY 2023-24, seven of the portfolio hotels operated with 100% green energy, with a total of 43 hotels powered by renewable energy. Management use energy-efficient appliances, designs, and materials to reduce emissions and increase the infrastructure's energy efficiency. LED fixtures, heat pumps, and air conditioning units have been installed and electrical and LPG appliances are used to reduce the carbon footprint. Water is also an important part of the management approach with alignment to globally recognised sustainability standards in water management and wastewater reduction and reuse. Water risk assessments have been conducted across hotels, and sewage and effluent treatment plants have been optimised. Rainwater harvesting is bolstering sustainable water management efforts.

With many of the ICHL properties heritage listed, the protection and preservation of heritage is a key priority for this tourism business. In 2023-24 ICHL supported the adoption of Intangible Culture Heritage (ICH) Project with UNESCO by 2030 in all areas of operations. This project is safeguarding intangible cultural heritage through specifically designed interventions. IHCL preserves cultural heritage through culinary innovation, artisanal revivals and community engagement initiatives. Furthermore, the team prioritises Indigenous sourcing where viable, capability building for partners and the promotion of traditions, arts, craft and culture to promote activities of historical significance.

The combination of emissions reduction and tracking and supporting intangible heritage provides a balanced approach to sustainable management of the business, building positive social, cultural and environmental impact.

Build and enable
Sustainability, emissions reduction and climate action are not roles that a single person within an organization can take on. These should be shared responsibilities. Leaders, managers and supervisors should play a role in engaging and empowering staff to address the challenges being faced and reduce their emissions across their respective departments.

The workforce can make changes in energy usage, water use and waste management processes, all of which have a positive impact on the reduction of emissions.

Communicating the aims and vision of the organization, integrating sustainable management practices into standard operating procedures and supporting, empowering and building capacity among team members is critical. Regular updates on tracking and progress will support and reinforce behavioral change.

Traditionally, tourism does not train or educate in climate action or emissions reduction. Thus, equipping employees with the necessary knowledge and skills is essential for achieving organisational success.

Case-study – Newport World Resorts, the Philippines

Newport World Resorts believes that success is intertwined with the welfare of community, society and the environment. Leading from the top, the Chairman is committed to promoting sustainable action across all aspects of the integrated resort. In order to deliver meaningful sustainable action, they understand that training is critical to build capacity, drive interest and to shift the behaviour of employees.

Starting with senior management, Newport World Resort team members engaged in training delivered through the Asian Institute of Management and the EarthCheck Research Institute. The program was designed to build foundational knowledge in the area of sustainability before building specific skills to help drive emissions reduction action. To achieve this, participants:

- Enrolled in three micro-credential programs delivered by EarthCheck – Sustainability 101, Sustainability Management and Sustainability and your Experience Delivery.
- On completion of the courses after competence was tested, the group went on to a one-day face to face training at the Asian Institute of Management. The course included to the topics of:
    - Stakeholder engagement and bridging leadership for sustainable tourism;
    - Implementation, monitoring and evaluation for sustainability;
    - The business case for sustainable action.
- During the course, developed the business case for a sustainability initiative that would lead to emissions reduction. The initiative was presented to academic advisors and the cohort for feedback and refining, ready to implement on completion.

Multiple cohorts of Newport World Resort employees participated in the training, building their knowledge on emissions reduction and sustainable management practices and building a clear business case for action within their areas of work.

Strong positive feedback from all participants highlights the value of tailored sustainability training.

Reduce, collaborate and report

Once a baseline has been set and the team empowered, that is where a structured plan comes into place to deliver targeted actions that will reduce emissions and minimize risks.

Implementing strategic reduction activities will support a business reach its targets, by monitoring progress and adjusting action over time.

Tailoring action to meet the business needs is critical. Some key considerations include:

Benchmarking and performance	**Yes**	**No**
Has the organisation developed a simple and repeatable methodology outlining how the data will be collected?	☐	☐
Has data been collected to establish a baseline for the core indicators including energy, water and waste?	☐	☐
Has the organisation observed current performance and commitments in areas such as greenhouse gas emissions, ecosystem conservation, land use, air quality, wastewater, and cultural sensitivity, engagement and awareness?	☐	☐

Does the business action plan contain KPIs or targets for the following areas?	**Yes**	**No**
Energy usage	☐	☐
Water usage	☐	☐
Waste	☐	☐
Emissions - CO2	☐	☐
% of supplies procured locally	☐	☐
Staff satisfaction	☐	☐
Guest or visitor satisfaction	☐	☐

Energy efficiency measures Has the business undertaken any of the following energy efficiency measures over the past 2 years, or is it considering them over the next 2 years?		
Green power contract for electricity	Undertaken ☐	Considering ☐
Investing in renewable energy - solar	Undertaken ☐	Considering ☐
Investing in renewable energy - biomass	Undertaken ☐	Considering ☐
Measures to improve the thermal efficiency of buildings – insultation, insulation of pipes etc	Undertaken ☐	Considering ☐
Installing a building management system or metering that allows energy usage to be monitored in parts of the building	Undertaken ☐	Considering ☐
Installing more energy-efficient lighting (Replace halogen and CFL bulbs with LEDs)	Undertaken ☐	Considering ☐
Automation of lighting (key card control, movement controls)	Undertaken ☐	Considering ☐
Thermostat/ automated control for heating levels	Undertaken ☐	Considering ☐
Lowering standard heating levels in the building – for example, setting room temperature levels to a lower default level	Undertaken ☐	Considering ☐
Undertaking regular maintenance/ a preventative maintenance schedule on equipment that is a larger energy user – boilers etc	Undertaken ☐	Considering ☐
Replacing older or inefficient equipment with more energy-efficient models – boilers, heating systems, air con, kitchen equipment etc	Undertaken ☐	Considering ☐
Changing standard operating procedures/staff training to improve efficiency/ use less energy	Undertaken ☐	Considering ☐

Water efficiency measures Has the business undertaken any of the following water efficiency measures over the past 2 years, or is it considering them over the next 2 years?		
Regularly monitoring water meters to understand overall and daily usage	Undertaken ☐	Considering ☐
Installing sub-meters to better understand usage in parts of the business	Undertaken ☐	Considering ☐
Regularly checking for appliance leaks (including nighttime testing to identify potential leaks)	Undertaken ☐	Considering ☐
Establish water flow rates for your taps, toilets, and showers	Undertaken ☐	Considering ☐
Measures to reduce water usage in toilets and urinals (cistern size/ installing dual flush)	Undertaken ☐	Considering ☐
Measures to reduce water usage in showers and taps (flow reducers, mixer taps, tap aerators, low flow equipment)	Undertaken ☐	Considering ☐
Measures to reduce water usage in swimming pools (pool covers)	Undertaken ☐	Considering ☐
Monitoring outdoor water usage – maintenance, cleaning, irrigation	Undertaken ☒	Considering ☐
Rainwater harvesting	Undertaken ☐	Considering ☐
Greywater harvesting	Undertaken ☐	Considering ☐
Changing standard operating procedures/staff training to improve efficiency/ use less water	Undertaken ☐	Considering ☐

Waste reduction measures Has the business undertaken any of the following waste reduction measures over the past 2 years, or is it considering them over the next 2 years?		
Have you carried out a waste audit to understand the types and quantities of waste your business generates?	Undertaken ☐	Considering ☐
All waste is separated – recyclables, organic, landfill, containers for change and incineration.	Undertaken ☐	Considering ☐
Food waste – composting	Undertaken ☐	Considering ☐
Food waste reduction program / software	Undertaken ☐	Considering ☐
Construction waste / renovations	Undertaken ☐	Considering ☐
Waste material is donated (where appropriate)	Undertaken ☐	Considering ☐
A plan is in place for segregation of hazardous materials	Undertaken ☐	Considering ☐
Elimination/ reduction of single use plastics in the business	Undertaken ☐	Considering ☐
Work with suppliers to reduce waste entering the business	Undertaken ☐	Considering ☐
Adapting menus/ plate size to reduce waste	Undertaken ☐	Considering ☐
Replacing supplies/products with eco-friendly equivalents	Undertaken ☐	Considering ☐
Please specify eco-friendly supplies and products used.		
Local sourcing of supplies	Undertaken ☐	Considering ☐
Changing standard operating procedures/staff training to reduce waste generation	Undertaken ☐	Considering ☐


Welcome to all Devotees
Thaipusam
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Transparent reporting

With increasing regulation globally, it is more critical than ever that environmental claims are credible and transparent. Greenwashing—making misleading or exaggerated sustainability claims—can harm reputation and lead to legal consequences.

Greenwashing occurs when a business presents itself as more environmentally friendly than it truly is. It includes vague, unverified, or misleading claims that create false impressions of sustainability efforts. Common forms include:

- Vague statements – Using terms like “eco-friendly” or “green” without clear evidence.
- False labels – Displaying unverified certifications or misleading imagery.
- Selective disclosure – Highlighting positive aspects while omitting negative impacts.
- Irrelevant claims – Promoting sustainability actions that are required by law or industry standards.

To ensure credibility and integrity in environmental communication, tourism operators should follow these best practices:

1. Be transparent and specific - Avoid generic terms and instead provide measurable, verifiable details. For example, rather than claiming, “We are reducing our carbon footprint,” specify, “We have cut our carbon emissions by 20% through renewable energy adoption.”

2. Use credible certifications - Third-party certifications add legitimacy. Choose recognized programs like EarthCheck, Green Key, or Eco Tourism Australia certification to validate claims.

3. Provide evidence and data - Support statements with data, reports, or case studies. Transparency builds consumer trust and demonstrates a commitment to real impact.

4. Avoid misleading imagery - Using nature-based images or symbols does not automatically make a business sustainable. Ensure that visuals align with real, verifiable environmental actions.

5. Communicate holistically - Sustainability and climate action to reduce emissions is more than a single initiative. Instead of highlighting one effort, present a comprehensive sustainability strategy, including waste reduction, energy efficiency, and community impact.

6. Stay updated and compliant - Laws and standards around environmental claims are evolving. Keep informed about regulations and industry guidelines to ensure compliance and maintain credibility.

Owners, managers and leaders play a crucial role in fostering a culture of accountability and transparency in reporting action underway. Sharing the story of action can be delivered through internal newsletters, social media, website and in person throughout the tourism or hospitality experience.

Summary and call to action

The project "*Emissions Reduction in Tourism for the Protection of Natural and Cultural Heritage"* has provided a comprehensive analysis of the current state of the tourism industry within the APEC region and its impact on carbon emissions. The research highlights the critical need for a balanced approach that promotes economic growth through tourism while simultaneously addressing the environmental challenges posed by increased carbon emissions.

The findings underscore the importance of collaborative efforts among governments, private sectors, and local communities to implement sustainable practices that protect natural and cultural heritage sites and reduce emissions in line with our global commitment.

The project has identified key strategies and best practices for reducing emissions in the tourism sector, including the adoption of renewable energy, sustainable transportation, waste reduction, and community engagement. These strategies are essential for achieving the dual goals of promoting tourism and preserving the environment for future generations.

Call to action

In order to progress emissions reductions for the protection of natural and cultural heritage, the following action is required:

- **Policy development and support**: Work with government bodies to develop and enforce policies that support sustainable tourism practices. This includes providing incentives for businesses (regulatory and/or financial) that adopt practices that reduce emissions and implementing regulations that limit carbon emissions. Advocacy for consideration of tourism's growth agenda coupled with the implications on the growth or carbon are also required.
- **Community engagement and education:** Engage local communities and stakeholders in the implementation process. Provide education and training programs to raise awareness about the importance of sustainable tourism and how individuals and businesses can contribute to emissions reduction.
- **Monitoring and evaluation:** Establish a robust monitoring and evaluation framework to track the progress of emissions reduction initiatives. Regularly assess the effectiveness of implemented strategies and make necessary adjustments to ensure continuous improvement.
    - **Set a clear baseline:** Understand the current impact of the destiantion or the tourism attraction and seek to track progress against the baseline. There may be an increase in emissions on the path to decarbonization – for example if significant construction is requried to retrofit a building for efficiences.
    - **Engage with existing programs:** There are a number of existing programs that are globally aligned for supproting the measurement of emissions. Reduce the confusion in the market by engaging with reliable measures that are approved by the CDP.
    - **Track progress over time:** Utilize a system to monitor and track progress over time. Be transparent with progress among stakeholders, tracking the success and the challenges along the journey.
- **Implementation of sustainable practices:** Begin the implementation of the identified sustainable practices across the tourism sector. This includes

investing in renewable energy sources, promoting sustainable transportation options, and adopting waste reduction measures.

- **Implementation of sustainable practices:** Begin the implementation of the identified sustainable practices across the tourism sector. This includes investing in renewable energy sources, promoting sustainable transportation options, and adopting waste reduction measures.
    - Take a strategic approach to implementation base action on data to drive meaningful impact.
- **Collaboration and partnerships:** Foster collaboration between various stakeholders, including government agencies, private sector entities, and non-governmental organizations. Establish partnerships to share knowledge, resources, and best practices for sustainable tourism.

By taking these steps, the tourism sector within the APEC region can significantly reduce its carbon footprint while continuing to thrive economically. The successful implementation of these strategies will serve as a model for other regions and contribute to the global effort to combat climate change and protect our natural and cultural heritage.

Annexure 1 - Methodology

Methodology

This research project has been delivered through three distinct phases:
Phase one – desktop research review. This stage was designed to build understanding and awareness of the approach that APEC economies are taking to the reduction of emissions for the protection of natural and cultural heritage.

Phase two – workshop. This stage was designed to share knowledge, create a learning community and build awareness among stakeholders of the importance of immediate action.

Phase three – connects phase one and two and offers practical strategies and outcomes to drive meaningful action towards the reduction of emissions for the protection of natural and cultural heritage.

Phase One

1. Purpose and objectives
The purpose of the first research report in the project was to comprehensively assess APEC economies' engagement in emissions reduction within the tourism sector for the protection of natural and cultural heritage as a priority and general climate action as a secondary goal. The review explores government policies and actions through direct and statutory engagement. The review aims to:

- Analyze existing government policies across APEC economies related to emissions reduction in tourism.
- Examine the scope and effectiveness of policy interventions, strategies, and regulatory frameworks.
- Identify best practices, key challenges, and opportunities for enhancing sustainability in tourism through emissions reduction.

2. Scope of review
This review covers:

- The 21 APEC member economies, assessing economy wide and regional policies aimed at reducing emissions within the tourism industry. In addition, the review examines APEC observers and world leading best practices outside APEC.
- Government-led initiatives, partnerships with private and international entities, and other regulatory actions.
- Policies that integrate carbon emissions reduction, sustainability, and climate change adaptation and or mitigation in tourism.

3. Data collection
The sources for this desktop review include:

- Government websites and official documents: policy papers, white papers, and strategic plans related to tourism and emissions reduction.
- International organizations' reports: relevant reports from APEC, UN Tourism, and the World Travel & Tourism Council (WTTC).
- Legislation databases: economy-wide laws and regulations related to tourism sustainability and environmental conservation in APEC member economies.
- Peer-reviewed academic journals that discuss policy frameworks, emissions reduction in tourism, and government actions across the APEC region.

- Existing literature reviews and meta-analyses on tourism and sustainability in the APEC region.
- Case studies from think tanks and research institutes that focus on APEC economies and emissions reduction in the tourism sector.
- Conference proceedings and workshop summaries from regional meetings on sustainable tourism and climate change mitigation.

4. Analytical framework
First, policies and strategies were identified and examined against the priorities of reducing carbon emissions and protecting natural and cultural heritage. Next, these were examined in relation to the policy focus area such as:

- Regulatory policies (e.g., carbon taxes, emissions standards for tourism businesses).
- Incentive-based policies (e.g., subsidies for infrastructure enhancements or certification adoption)
- Collaborative initiatives (e.g., public-private partnerships for knowledge and capacity advancement).

Policies and actions were explored in terms of the aims and vision, the commitments that they are aligned to, and any outcomes reported. It is important to note that many are relatively new policies or strategies and therefore outcomes are yet to be realized. Furthermore, the innovation and breadth of the activities were examined.

5. Policy implications and recommendations
Following on from the review a suite of implications and common actions were identified as best practice in transitioning the tourism sector towards emissions reduction activities. In addition to this, challenges were identified that highlight barriers that need to be overcome in order to support the sector in delivering toward global ambition.

The report concludes with key performance indicators and measures that have been adopted to support baseline and on-going measurement of emissions and climate action across the tourism sector. This ties directly to policy recommendations which speak to the need for APEC economies to embed tourism as a core part of transition strategies.

6. Limitations
This desktop review will focus on publicly available information, which may limit access to proprietary data or internal governmental reports not disclosed in the public domain. Destinations are challenged with the need to reduce emissions and the implications of publicly addressing the reduction pathway – meaning action in some areas is further advanced but the practice of green hushing (not talking about the action) is prevalent. Additionally, the review may be limited by language barriers where English translations of relevant policies are not available.

Phase Two – Confernece and workshops

1. Purpose and objectives
This project seeks to foster the exchange of knowledge and promote collaboration between APEC economies in relation to understanding the tourism economy's contribution to carbon emissions, reduction strategies and the protection of natural and cultural heritage.

The workshop and conference sessions served to:

- Showcase global best practice in relation to emissions reduction within the tourism sector.
- To increase capacity and knowledge among participants on how to measure and manage emissions to meet global targets and protect natural and cultural heritage.
- Share resources and support tools for APEC economies on emissions reduction for the protection of natural and cultural heritage.
- Increase stakeholder connections and networks among APEC economies to support enhanced collaboration in the region to deliver emissions reduction at a business and destination level.

2. Scope
The workshop was a 2-day event moderated by an expert consultant who offered a diverse range of information on emissions measurement and reduction in line with global best practice and targets. The workshop included presentations by experts, panel debates from experienced practitioners and hands on activities to extend knowledge and delivery of emissions reductions.

Agenda for the Workshop Day 1

Timetable	***Activities***
9:00 - 9:30	Opening doors to go through the accreditation system
9:30 - 9:40	**Opening:** by the representative of the Ministry of Foreign Trade and Tourism of Peru
9:40 – 10.00	**Welcome and overview of the importance of the topic by Peru**
10:00 - 10:20	Break
10:25 - 11:45	**Panel 1:** Tourism and carbon emissions for the protection of natural and cultural heritage – opportunity or oxymoron?
11:45 - 13:00	**Panel 2:** Emissions reduction in natural & cultural heritage – leading sector examples.
13:00 - 14:00	Lunch
14:00 - 15:30	**Thematic Working Groups – Building blocks for success**

15:30 - 16:00	Break
16:00 - 16:30	**Presentation of results by working groups**
16:30 - 16:45	**Closing of the session and invitation to the next day:** by the representative of the Ministry of Foreign Trade and Tourism of Peru.

Agenda for the Workshop Day 2

Timetable	***Activities***
9:00 - 9:30	Opening doors to go through the accreditation system
9:30 - 9:40	**Opening remarks:** by representative of the Ministry of Foreign Trade and Tourism of Peru
9:40 - 10:10	**Welcome speech and presentation of results of the first day of work**
10:10 - 10:30	Break
10:30 - 11:45	**Panel 3:** First Nations knowledge – working to protect Country for the protection of natural and cultural heritage
11:45 - 13:00	**Panel 4**: Best practice working in partnership – public and private - for the protection of natural and cultural heritage and emissions reduction
13:00 - 14:00	Lunch
14:00 - 16:00	Thematic Working Groups – Whatever it takes – how to deliver results. [break in the middle of two sessions – 10 minutes]
16:00 - 16:30	Presentation of results by working groups
16:30 – 17:00	Workshop summary & wrap up

Phase Three

Combining the phase one research report with the insights surfaced during the phase two workshops and conference sessions, this report overviews key insights and approaches for both government and private actors to take towards emissions reduction for the protection of natural and cultural heritage.

Annexure 2 – Public climate action declarations

APEC Economies with public declarations for emissions reduction

The Glasgow Declaration is considered across the tourism sector as a catalyst for increased urgency about the need to accelerate climate action. It provides strong commitments to support the global goals to halve emissions over the next decade and reach Net Zero emissions as soon as possible before 2050. The following destinations within APEC economies have committed to emissions reduction through the Glasgow Declaration.

APEC Economy	Destination	Declaration
Australia	Echidna Walkabout (Victoria)	Glasgow declaration on climate action in tourism Tourism declares Climate Emergency
	Tasmania (Tasmania's Wilderness World Heritage Area)	
	Queensland (Gold Coast, Sunshine Coast)	
	South Australia (Kangaroo Island)	
	ACT government	
	City of Sydney	
	Byron Bay (NSW)	
Brunei Darussalam	-	-
Canada	Destination Canada	Glasgow Declaration on Climate action in Tourism. Tourism Declares Climate Emergency.
	Tourism Vancouver Island	
	Thompson Okanagan Tourism Association	
	British Columbia (Rail Trails)	
	Cape Breton, Nova Scotia	
Chile	San Pedro De Atacarma	Glasgow Declaration on Climate action in Tourism.
	Valparaiso	
	South Patagonia (Route of the Parks of Patagonia)	
	Central Chile	
	Lake District & Chiloe Island	
	Carretera Austral	
	Arucania	
	North & Altiplano	
The People's Republic of China	Beijing (Intrepid Travel)	Glasgow Declaration on climate action in Tourism
	Shanghai	
	Guilin	
Hong Kong, China	Hong Kong Tourism Board	Glasgow Declaration on Climate action in tourism
	Victoria Peak	
	Kowloon East	
	Tung Chung Town	

APEC Economy	Destination	Declaration
	Lantau Island	Tourism Declares Climate Emergency
	Eco Park (Tuen Mun)	
Indonesia	Bali	Glasgow Declaration on Climate action in tourism Tourism Declares Climate Emergency
	Raja Ampat	
	Komoda National Park	
	Yogakarta	
	Sumatra (Toba Lake)	
Japan	Hokkaido	Glasgow Declaration on Climate action in tourism Tourism Declares Climate Emergency
	Kyoto	
	Okinawa	
	Nagasaki	
	Mount Fuji Area	
	Ishigaki Island	
	Fukuoka	
Republic of Korea	Seoul	Glasgow Declaration on climate action in tourism. Tourism Declares Climate Emergency
	Jeju Island	
	Busan	
Malaysia	Penang	Glasgow Declaration on climate action in tourism. Tourism declares Climate Emergency
	Langkawi	
	Kuala Lumpur	
	Sabah	
	Perak	
	Malacca	
Mexico	Los Cabos	Glasgow Declaration on climate action in tourism Tourism declares Climate Emergency
	West Mexico (Riviera Nayarit)	
	Puerto Vallarta	
	Baja Cancun	
	California Sur	
	Tulum	
New Zealand	Queenstown Lakes District	Glasgow declaration on climate action in tourism Tourism declares Climate Emergency
	Rotorua	
	Auckland	
	Wellington	
	Taranaki	
Papua New Guinea	Kokoda Track	Glasgow declaration on climate action in tourism
	Highlands Region	
	Sandaun Province	
	East New Britain Province (Rabaul)	
	Port Moresby	
	Milne Bay	
	Oro Province	

APEC Economy	Destination	Declaration
Peru	Lima	Glasgow declaration on climate action in tourism Tourism declares Climate Emergency
	Machu Pichhu and Cusco	
	Amazon Rainforest	
The Philippines	Boracay Island	Glasgow declaration on climate action in tourism Tourism declares Climate Emergency
	Palawan	
	Siargao Island	
	Bohol	
	Davao City	
	Batanes	
	Cebu	
	Siqujor	
The Russian Federation	-	-
Singapore	Gardens by the Bay	Glasgow declaration on climate action in tourism Tourism declares Climate Emergency
	Singapore Botanical Garden	
	Pulau Ubin	
	East Coast Park	
	Sentosa Island	
Chinese Taipei (Taiwan)	Taroko Gorge	Tourism declares Climate Emergency
	Alishan	
	Kenting	
	Sun Moon Lake	
	Green Island	
Thailand	Phuket	Glasgow declaration on climate action in tourism Tourism declares Climate Emergency
	Chiang Mai	
	Khao Yai National park	
	Ko Samui	
	Krabi and Ao Nang	
	Sukhothai	
	Ko Yao and Ko Pha Ngan	
United States	New York	Tourism declares Climate Emergency
	California	
	Hawaii	
Viet Nam	Ha Long Bay	Glasgow declaration on climate action in tourism Tourism declares Climate Emergency
	Phong Nha – Bang National Park	
	Hoi An	
	Phu Quoc (coastal region)	

Annexure 3 – Support resources

APEC Economy	Toolkit Link
WTTC	Net Zero Roadmap
ICOMOS	Carbon Reduction Strategy
ICOMOS	Guidelines for Renewable Energy Infrastructure and Cultural Heritage
OECD	Measuring Sustainable Tourism
European Commission	European Tourism Indicator System Toolkit
Australia	Austrade Guidelines and support for tourism business
Brunei Darussalam	Brunei Government Carbon calculator
Canada	Disaster management Municipal government toolkit .
Chile	Department of Economy, development and Tourism Sustainable tourism training
The People's Republic of China	Guidelines on Sustainable Tourism
Hong Kong, China	Sustainable development support Business Environment Council - low carbon support
Indonesia	Every Step Matters
Japan	JTB Sustainability Support Sustainable events
Republic of Korea	Ministry of Environment – Climate Action
Malaysia	Bank Negara Malaysia Supporting SMEs Transition to Greener Practices Simplified Disclosure Guide
Mexico	Secretaria de Turismo – ADAPTUR Sustainability Training Sustainable Tourism Program
New Zealand	Tourism Industry Aotearoa – Sustainability Training Tourism Industry Aotearoa – Carbon Challenge Ministry for the Environment – What you can do
Papua New Guinea	PNG Environmental Management Plan
Peru	Small Business Climate Innovation Pro Innovate Climate Action
The Philippines	Philippine Centre for Sustainable Development
The Russian Federation	-
Singapore	Singapore Tourism Board – Decarbonisation Playbook
Chinese Taipei	Net Zero Commission Pathway
Thailand	Climate Action Academy
United States	Sustainable and Regenerative Tourism Toolkit
Viet Nam	For Green Future Foundation

Annexure 4 – ETIS measures

Criteria	Indicator
Reducing Transport Impact	Percentage of tourists and same day visitors using different modes of transport to arrive at the destination (public/private and type)
	Percentage of visitors using local/soft mobility/public transport services to get around the destination
	Average travel (km) by tourists to and from home or average travel (km) from the previous destination to the current destination
	Average travel (km) by same day visitors from and to destination
Climate Change	Percentage of tourism enterprises involved in climate change mitigation schemes—such as: CO2 offset, low energy systems, etc.—and “adaptation” responses and actions
	Percentage of the destination included in climate change adaptation strategy or planning
	Percentage of tourism accommodation and attraction infrastructure located in “vulnerable zones”
Solid Waste Management	Waste volume produced by destination (tonnes per resident per year or per month)
	Percentage of tourism enterprises separating different types of waste
	Volume of waste recycled (percent or per resident per year)
Sewage Treatment	Percentage of sewage from the destination treated to at least secondary level prior to discharge
	Percentage of commercial accommodation connected to central sewage system and/or employing tertiary sewage treatment
Water Management	Fresh water consumption per tourist night compared to general population water consumption per person night
	Percentage of tourism enterprises with low-flow shower heads and taps and/or dual flush toilets/waterless urinals
	Percentage of tourism enterprises using recycled water
	Percentage of water use derived from recycled water in the destination
Energy Usage	Energy consumption per tourist night compared to general population energy consumption per person night
	Percentage of tourism enterprises that have switched to low energy lighting
	Annual amount of energy consumed from renewable sources (Mwh) as a percentage of overall energy consumption
Landscape and Biodiversity Protection	Percentage of destination (km2) that is designated for protection
	Percentage of local enterprises in the tourism sector actively supporting protection, conservation, and management of local biodiversity and landscapes
	Percentage of destination covered by a biodiversity management and monitoring plan
Light and Noise Management	The destination has policies in place that require tourism enterprises to minimise light and noise pollution
Bathing Water Quality	Percentage of the destination and percentage of population covered by local strategy and/or plans to reduce noise and light pollution
	Level of contamination per 100 ml (faecal coliforms, campylobacter)
	Number of days beach/shore closed due to contamination

Annexure 5 - Gangneung, Republic of Korea a low-carbon green city detailed approach

The Gangneung Low-Carbon Green City Development project, initiated in July 2009, was Republic of Korea's inaugural pilot project aimed at fostering a globalized city that champions low-carbon green growth.

Spanning an area of 18,326 square kilometers, the project was structured to be implemented over three phases, culminating in 2020, and encompassed a total of 29 sub-projects.

Phase 1 (up to 2013):

- Green Renaissance Landmark Project: Focused on establishing iconic green landmarks within the city.
- Gyeongpo Lake Wetland Restoration Project: Aimed at revitalizing the wetland ecosystems of Gyeongpo Lake.
- Green Path Project: Developed eco-friendly pathways to promote sustainable transportation.
- Project for 10 Bicycle Cities: Encouraged cycling infrastructure and culture across ten designated areas.

Phase 2 (up to 2016):

- Home Stream Project for Gyeongpo Stream: Targeted the restoration and preservation of the Gyeongpo Stream.
- Healing Forest Project: Created forested areas designed for public relaxation and ecological benefits.

Phase 3 (up to 2020):
Included additional initiatives aimed at further promoting sustainable urban development and reducing carbon emissions.
Collectively, these sub-projects were categorized into five key areas:

- Green Transportation: Finalization of a connected low carbon transportation network including cycling infrastructure.
- Green Energy: Large-scale Energy Storage Systems (ESS) to store surplus energy generated from photovoltaic plants during the day for use at night, enhancing energy efficiency and self-sufficiency.
- Green Industry: The project emphasized development and integration of green technologies within local industries, aiming to create new growth and employment opportunities in the green sector.
- Green Culture: Efforts were made to connect natural landmarks such as Gyeongpocheon, Gyeongpoho, and the East Sea through green corridors, fostering connectivity between urban spaces and the natural environment. Additionally, vehicle-free roads were created around these areas to promote eco-friendly tourism and cultural activities
- Green Community: Gangneung Green City transformed a coal yard into an example green city as a representation of the natural resources available in Gangneung. The site uses only natural energy gathered through solar panels and geothermal heat pumps.

The overarching goal was to integrate sustainable practices across various sectors, thereby reducing greenhouse gas emissions and promoting environmental sustainability within Gangneung.

This initiative was part of Republic of Korea's broader "Low Carbon, Green Growth" strategy, which aimed to harmonize economic development with environmental preservation. The strategy emphasized the importance of local governments in implementing green growth policies tailored to their unique regional characteristics. Yet, OECD reported "*The dual economic and environmental aims of green growth can at times lead to conflicting objectives. As mentioned previously, the design of the Gangneung-si green city demonstration project was initially hampered by conflicting objectives of the ministries involved in the project, understandably due to differences in the scope of each ministries' work: MOE wished to focus on environmental protection while MLTM stressed the development process and maximisation of the return on investment.*[49]"

Key measures of success included:

Governance and Planning:

- An Intergovernmental Project Taskforce, led by deputy secretaries from the Ministry of Environment and the Ministry of Land, Transport, and Maritime Affairs, was established to oversee the project. This taskforce included two sub-organizations:
    - **Intergovernmental Cooperation Committee:** Comprised policymakers from various ministries to handle administrative processes and financing.
    - **Green City Project Management Group:** Consisted of environmental experts from public, private, and academic sectors responsible for developing and implementing the Green City Master Plan.

Financial Framework:

- The total estimated cost of the project was approximately USD900 million, with funding sources as follows:
    - **Economy-Wide Budget:** 35%
    - **Local Budget (Province and City):** 14%
    - **Private Investment:** 51%
- Budget allocation by sector:
    - **Green Transportation:** 7.6%
    - **Ecology Preservation:** 11.8%
    - **Energy:** 50.8%
    - **Water and Waste Recycle and Recovery:** 7.6%
    - **Eco-Tourism and Green Practices:** 22.2%

Greenhouse Gas (GHG) emissions reduction: Aimed to reduce GHG emissions by 49% compared to Business-As-Usual (BAU) scenarios by 2020.

Renewable energy adoption: Targeted that approximately 9.3% of the city's total energy consumption would be supplied by renewable sources upon project completion.

[49] https://www.oecd.org/content/dam/oecd/en/publications/reports/2011/07/the-implementation-of-the-korean-green-growth-strategy-in-urban-areas_g17a1fe9/5kg8bf4l4lvg-en.pdf

Green City Index (GCI): Applied as a planning index to evaluate and monitor the sustainability of green spaces within Gangneung-si, establishing baseline data for ongoing assessment.

Environmental impact assessments: Conducted to evaluate the project's effectiveness in reducing GHG emissions and to inform urban environmental planning for expanding low-carbon initiatives.

Figure 9 - Gangneung Green City Experience Centre