

GALAXY ENTERTAINMENT GROUP

ENVIORMENTAL AND SUSTAINABILITY PRACTICES

The PATA Gold Awards 2023
Sustainability & Social Responsibility Awards –
Climate Change Initiative

GALAXY ENTERTAINMENT GROUP

GALAXY MACAU™



- Opened in May 2011
- Comprises five world-class hotels with approximately 3,600 rooms, suites and villas, including:
 - Galaxy Hotel™
 - Banyan Tree Macau
 - Hotel Okura Macau
 - JW Marriott Hotel Macau
 - The Ritz-Carlton, Macau
- Features range of retail, food & beverage, entertainment and leisure options



BROADWAY MACAU™



- Opened in May 2015;
- Offers 314 rooms and suites
- Approximately 2,500 seat Broadway Theatre featuring the best in up-close-and-personal entertainment
- Features range of food & beverage and entertainment



STARWORLD HOTEL



- Opened in 2006 as the Group's first 5-star hotel
- Offers over 500 luxury rooms and suites
- Multi award-winning world-class luxury hotel



GALAXY ENTERTAINMENT GROUP • SELECTED MAJOR AWARDS



- Top 10 Companies of the 2nd Greater China Hotel Business Sustainability Index
- LEED v4 Gold Certificate – Galaxy Macau Phase 3C Lot 3
- The International Gaming Awards - Sustainability Award 2022
- EarthCheck Certified 2022 EarthCheck
- Green Key Award
- 2021 Macao Green Hotel Award
- 2022 Forbes Travel Guide
- 2022 The Best Travel Destination Hotels & Resort
- Best Hotels for Business Travelers 2022
- Luxury Resort Hotel of the Year
- 2022 Best Hotel & Resort Value Award – Best Integrated Resort
- CEM Energy Saving Contest 2022 – Excellence Award
- CEM Energy Saving Contest 2022 – Continuous Energy Saving Award

Reference:

- [f76b18322a0da7e7a904176c9079367e755e1c8b.pdf \(galaxyentertainment.com\)](https://www.galaxyentertainment.com/f76b18322a0da7e7a904176c9079367e755e1c8b.pdf)
- [Galaxy Entertainment](https://www.galaxyentertainment.com/)
- [澳門旅遊 - 銀娛EarthCheck認證冠絕全澳 \(macaotourism.gov.mo\)](https://www.macaotourism.gov.mo/)

ESTABLISHING A GREEN AND LOW-CARBON RESORT

GEG is committed to environmental sustainability and has embedded it into our business strategy. To strengthen management, we established an Energy and Environmental Management Committee to promote collaboration across functions and launch different sustainability programs to better manage our performance. We focus on 7 categories: minimizing energy use, reducing waste and water footprint, managing emissions, nurturing the environment, engaging staff on sustainability, and assessing climate change



MINIMIZING ENERGY USE AT OUR BUILDINGS AND SITES

GEG actively promotes energy saving initiatives and innovative solutions to reduce energy consumption under our ISO 50001 Energy Management System. We monitor consumption, practice responsible use, and incorporate saving standards to ensure energy use does not significantly impact the environment or communities. To improve efficiency, GEG introduced the following measures during the reporting year:

Air Conditioning 01

- Recommissioned the central air conditioning system at Broadway Macau
 - Optimized the central air-conditioning system based on real-time weather conditions



Lighting 02

- Replaced LED lights and added motion sensors to LED lights at the back-of-house areas at all properties
- Installed occupancy sensors in production kitchens at Galaxy Macau and Broadway Macau
- Reduced the lighting levels on external signage across all properties
- Minimized lighting level in unoccupied areas at StarWorld Hotel



Temperature 03

- Increased the temperature setpoint for non-peak hours in the front-of-house areas at all properties
- Installed high accuracy temperature sensors in chiller plants at Galaxy Macau and Broadway Macau
- Installed smart temperature sensors in walk-in freezers at StarWorld Hotel
- Replaced analog thermostats with digital ones in the back-of-house areas at all properties

Others 04

- Installed high efficiency motors on fan coil units at the back-of-house areas at Galaxy Macau and Broadway Macau
- Equipped energy saving pumps with variable speed drives at StarWorld Hotel
- Installed electric heating devices in the hot water system to save 3% to 6% of energy consumption per year at Galaxy Macau

RENEWABLE ENERGY

In 2022, GEG installed solar panels at Hotel Okura Macau and StarWorld Hotel. The solar panel systems generate 630 kWh of renewable energy monthly, saving 7,560 kWh of electricity annually. The panels power LED spotlights and light tubes at StarWorld Hotel.



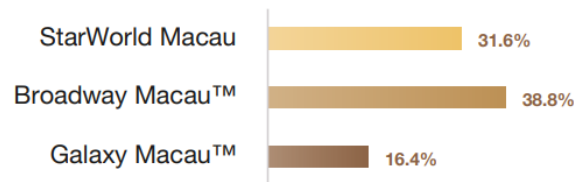
UNSDG Target 7.3: Double the improvement in energy efficiency

GEG implements various energy saving measures at all properties, promotes innovative solutions and adopts renewable energy to improve energy efficiency.

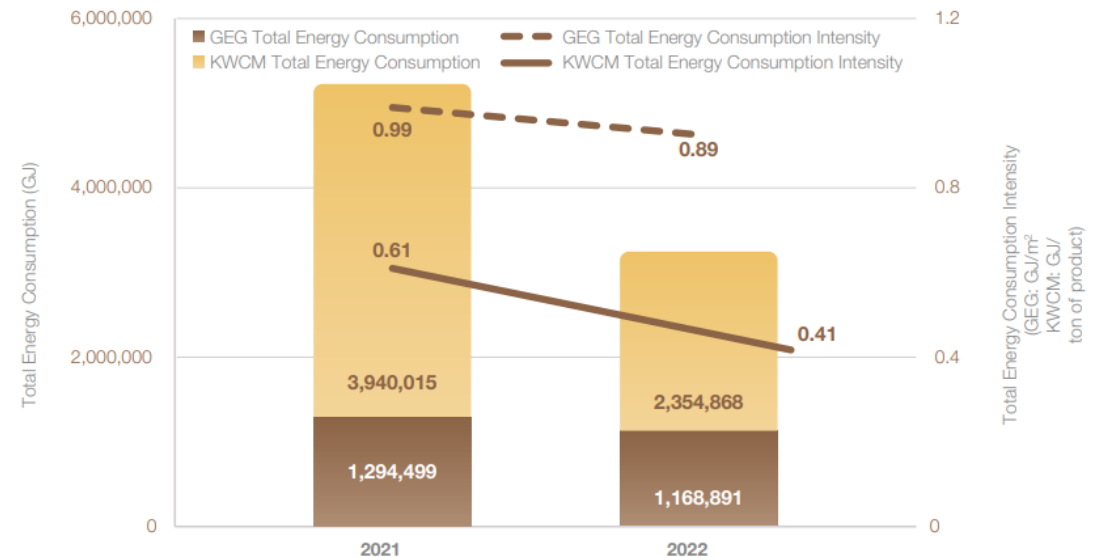
ENERGY PERFORMANCE

GEG set a 2022 target to reduce energy use by 3% at select Galaxy Macau, Broadway Macau and StarWorld Hotel from 2016 levels. Total energy consumption in the reporting year fell 10% to 1,168,891 GJ, meeting the energy reduction target.

2022 Energy Reduction Progress



Total Energy Consumption and Total Energy Consumption Intensity



REDUCING WASTES

GEG developed a Zero Waste Strategy to minimize waste and improve diversion rates. Our waste handling and recycling processes follow ISO 14001 standards. GEG generates hazardous waste like lube oil, cartridges and batteries along with non-hazardous waste. In 2022, we introduced measures to reduce paper, plastic and food waste



• Paper

- Installed paperless ticket system for the Galaxy Macau Car Park to eliminate paper tickets
- Used digitalized warehouse receiving process to reduce paper use for warehouse filing systems

• Plastic

- Promoted plastic usage reduction in offices by removing plastic bags from office trash cans and saving more than 100,000 plastic bags each year
- Sourced biodegradable alternatives to plastic bags and other single-use items
- Replaced the disposable plastic tableware used at our dining services establishments with biodegradable and environmentally friendly alternatives
- Installed multiple self-service water dispensers at Broadway Macau to promote "waste reduction at source, energy saving and emission reduction" to the community

• Food Waste

- Used a food waste dehydrator to significantly reduce the weight and volume of food waste that is transported to landfills and incinerators by up to 90%
- Participated in the "Pilot Project for the Collection of Food Residues from Food and Beverage Establishments" organized by DSPA to reduce food waste at StarWorld Hotel, Galaxy Macau and Broadway Macau



GREEN JOURNEY IN HOTEL

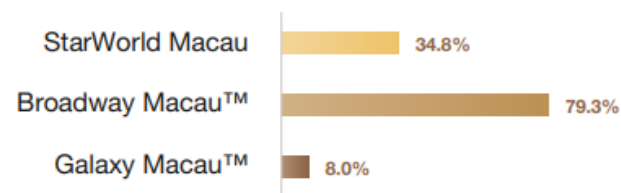
We replaced single-use bottles with refillable shampoo containers, switched to biodegradable utensils, and recovered unused consumables left in rooms for back-of-house use.



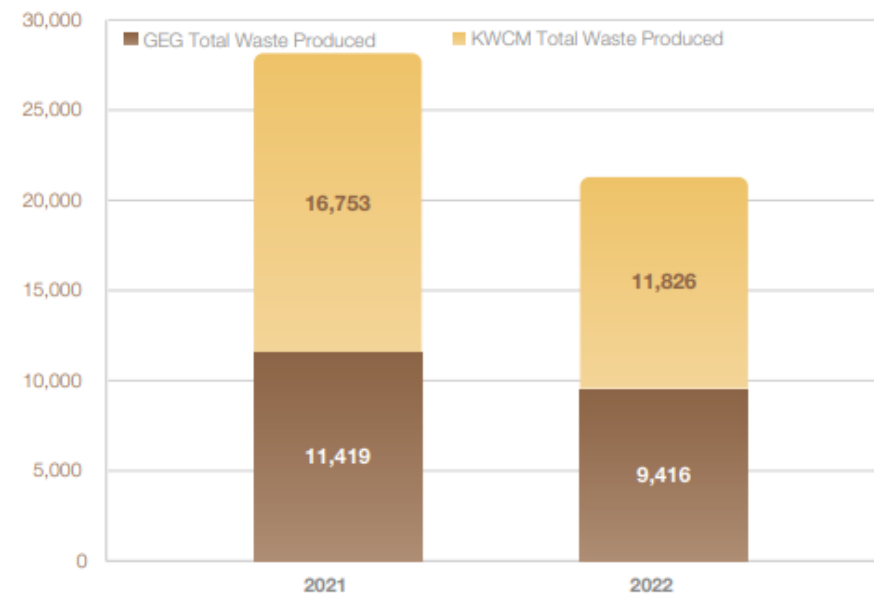
WASTE PERFORMANCE

GEG set a 2022 target to improve waste diversion rates by 5-8% from 2017-2018 baselines. In the reporting year, GEG generated 9,416 tons of waste, an 18% decrease from 2021.

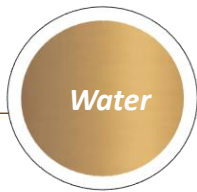
2022 Waste Diversion Progress



Total Waste Produced (Tons)



REDUCING OUR WATER FOOTPRINT



GEG is committed to improving water efficiency and quality. To achieve reduction targets, we implemented conservation practices. In 2022, we had no difficulties sourcing suitable water. To reduce consumption, GEG introduced the following water conservation measures in 2022.

GEG set a 2022 target to reduce water use by 3% at select properties from 2016 levels. Total water consumption in 2022 fell 8% to 2,341,662 m³, meeting the water reduction target. Water intensity was 1.79 m³/m².



Reduce

- Installed water-efficient fittings at the back-of-house areas across all our properties
- Installed water restrictors to reduce water use at the back-of-house area at all properties
- Optimized the operating hours of water features at Galaxy Macau
- Adjusted water consumption for landscaping based on weather conditions

Leakage Assessment

- Conducted water leakage assessment regularly to avoid water wastage
- Installed water-efficient fittings at the back-of-house areas.

Reuse

- Implemented grey water recycling for water discharged from the swimming pool at StarWorld Macau for reuse in cleaning of the carpark and garbage area before final disposal
- Reused swimming pool water for floor cleaning at StarWorld Hotel

Water Restrict

- Installed water restrictors to reduce guest room water use
- Installed a number of automatic hand washing machines in Galaxy Macau's staff canteen. It saved 90% of water consumption, 60% of hand sanitizer and paper towels

MANAGING OUR GREENHOUSE GAS AND AIR EMISSIONS

GEG is committed to managing GHG emissions so as to tackle climate change. We endeavor to reduce emissions by optimizing fleet operations, enhancing energy and water efficiency, and increasing our use of renewable energy. For continuous improvement, we plan to establish an emission reduction target and a GEG Emission Management Program by 2023

To minimize air and greenhouse gas emissions, we constantly improve our shuttle bus operations by adjusting the routes and service frequencies. We continue to replace diesel-fueled guest shuttle buses at Galaxy Macau and Broadway Macau with electric buses and compressed natural gas (“CNG”) buses.

As at the end of 2022, 50% of our guest shuttle bus fleet comprised of electric and CNG buses.

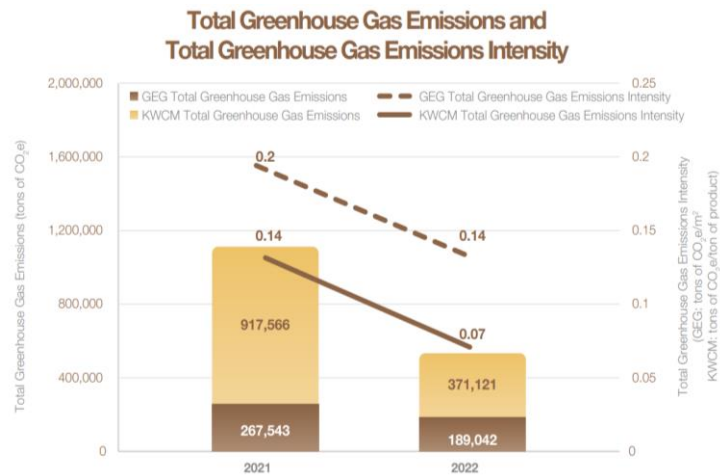


10
Electric Buses

22
Hybrid Electric
Buses

4
CNG Buses

In 2022, GEG’s total GHG emissions amounted to 189,042 tons of CO₂e



GEG’s emission of air pollutants mainly comes from the diesel and petrol burned by our vehicle fleet and the liquefied petroleum gas consumed in our operations. In 2022, we generated a total of 0.23 tons of Nitrogen oxides (“NOx”), 0.00 tons of Sulphur oxides (“SOx”) and 0.01 tons of Particulate matter (“PM”).



「澳門銀河™」
員工電單車停車場 B 區
「Galaxy Macau™」
Team Member
Motorcycle Parking Lot
Zone B



GEG installed an electric bike battery swap station in the team member motorcycle parking lot at Galaxy Macau™ and became the first integrated resort operator in Macau to provide electric motorcycle battery swap services

NURTURING OUR ENVIRONMENT

GEG integrates green spaces to enhance Macau and Hong Kong's biodiversity. We comply with regulations and found no significant impacts. Our Environmental Statements signed and approved by the property's respective senior management, showcase our approach to minimize impacts through commitments to:



- Develop an environmentally responsible workplace culture;
- Meet requirements of environmental legislation, and strive to surpass the stipulated standards;
- Promote sustainable resource usage; and
- Educate and train team members on sustainability initiatives.

Galaxy Macau has the industry's largest green landscape - 55,000 m2 with 2,000 trees, 1.5 million plants and seasonal flowers. GEG's measures ensure plants purchased avoid introducing invasive species:

- Galaxy Macau has the largest green landscape
- Measures to avoid introducing invasive plants

ENGAGING OUR TEAM MEMBERS ON SUSTAINABILITY

GEG engages team members in sustainability activities that spark their passion.

01

WWF (World Wildlife Fund) Earth Hour Campaign

- For 14 years, GEG joins the Monthly Earth Hour campaign. We switch off non-essential exterior lights at properties for an hour monthly to promote energy reduction

02

World Water Day

- GEG celebrated by hosting an exhibition promoting the ecological value of Macau's mangroves forests. An expert from the Institute of Science and Environment of the University of Saint Joseph educated team members on mangroves' environmental role. A quiz tested knowledge on water conservation

03

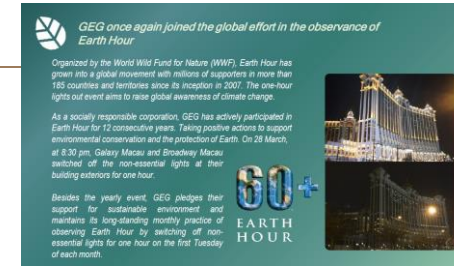
World Environmental Day

- GEG encouraged joining the Environmental Protection Bureau "Dress Light, Save Energy" campaign. The office temperature was maintained above 25°C in summer to reduce energy use and shift workplace culture

04

Energy and Environmental Conservation Month

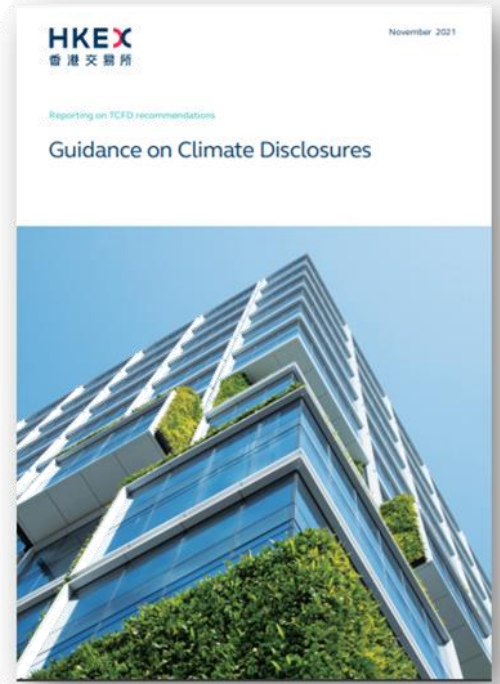
- GEG inaugurated this initiative. Activities promoted a green lifestyle to further educate staff on personal actions to reduce carbon footprints. The goal is to nurture changemakers who contribute to Macau's development as a livable green city





UNSDG Target 12.6: Sustainable practices in companies

The Group's commitment to sustainability and climate reporting contributes to our adoption of internal sustainable practices.



*"The evidence on **climate risk** is compelling investors to reassess core assumptions about modern finance. In the near future – and sooner than most anticipate – there will be a significant **reallocation of capital.**"*

Chairman and CEO of BlackRock
Larry Fink
~ Annual Letter to CEOs



- In 2022, we identified material environmental aspects and began reviewing medium to long-term strategies to set future targets addressing climate risks .Our team is focused on resource reduction targets for energy, water, and refrigerants. We want to ensure targets accurately reflect sustainability performance across entities
- Besides being committed to setting a quantitative reduction in consumption, we want to focus on more environmentally friendly materials and also minimize the environmental impact of the materials that we do end up using. Following the recommendations set out in the Task Force on Climate-Related Financial Disclosures (“TCFD”) guidelines, GEG has kickstarted our alignment to the TCFD recommendations by conducting a scenario analysis to assess various climate-related risks within our operations.

Reference :
<https://www.galaxyentertainment.com/uploads/investor/f76b18322a0da7e7a904176c9079367e755e1c8b.pdf>

01. Has your organisation/destination increased its tourism business as a result of environmental initiatives?

Although we do not have precise data directly correlating our environmental initiatives with an increase in business volume, we recognize the importance of sustainable operations for attracting and retaining customers. We strive for a balanced approach that considers the needs of all stakeholders while minimizing environmental impact.

The Grand Resort Deck - Macau's largest skytop water park featuring the longest water rapids ride, largest wave pool and pristine white sand beach - showcases how we integrate ecologically designed green spaces and natural landscapes into our operations. These natural elements develop Macau's biodiversity, providing environmental benefits while also attracting customers seeking world-class vacations amidst natural scenery. This potentially enhances our reputation, appeals to environmentally conscious customers, and boosts employee morale, while minimizing our footprint through measures like screening purchased plants to avoid introducing invasive species that could harm the local ecology.

Through initiatives like switching to refillable shampoo dispensers and biodegradable utensils, optimizing bus routes, transitioning half our fleet to electric and compressed natural gas vehicles, replacing plastics with sustainable alternatives, and recovering unused supplies, we are minimizing waste and emissions in meaningful ways. These responsible practices help distinguish our offerings, strengthen our reputation as an eco-conscious business, attract like-minded customers, and potentially improve employee engagement over time.

While more data is needed, we believe our environmental programs differentiate us positively with customers and employees. We will continue exploring innovative ways to integrate sustainability further into our operations, communications and culture to minimize our impact, enhance reputation, and ultimately support business growth.

02. Have environmental issues been the focus of your organisation's/destination's advertising and/or public relations campaigns within the past year? If so, please give details.

Environmental sustainability is integrated into our business strategy and operations. We have ISO 14001 and ISO 50001 certification to minimize our properties' environmental impacts.

Demonstrating good environmental governance, we have an Energy and Environmental Management Committee that promotes cross-departmental collaboration for initiatives like our Climate Change and Risk Assessment and Energy and Environment Assessment programs. These programs help us optimize energy, water, waste and emissions performance in compliance with regulations. In new facilities like Phase 3C Lot 3 (MICE), we apply LEED green building standards to minimize their environmental footprint, reflecting our holistic approach to environmental stewardship.

We communicate our sustainability efforts through various public campaigns. For example:

- We participate in recycling campaigns to promote sustainability among employees and guests. This year we again joined Macao Environmental Protection Bureau's Red Packet Recycling Campaign and launched an employee campaign for donating pre-loved household items. Meanwhile, we achieved over 5% waste recycling increases year-on-year across properties.
- We have participated in World Wildlife Fund's Earth Hour for 14 years, promoting energy reduction through switching off non-essential lights for one hour monthly.
- On occasions like World Water Day, we organize exhibitions and educational sessions to raise environmental awareness. We invited a university professor to educate team members about Macau's mangroves' role in environmental protection.
- During campaigns like World Environment Day and our inaugural Energy and Environmental Conservation Month, we encourage sustainable actions among employees through initiatives like "Dress Light, Save Energy" and promoting green lifestyle habits.

Overall, environmental sustainability is integrated into our governance, operations and communications. We will continue seeking innovative ways to minimize our footprint and maximize our positive environmental impact.

03. Is there a senior person responsible for environmental concerns in your organisation/destination?

We have a dedicated Sustainability Department led by our Senior Vice President of Facility Management, who reports to the Executive Vice President of Hotel & MICE Operations. This demonstrates the importance we place on environmental stewardship at high executive levels.

The Sustainability Department implements and manages all our environmentally focused programs and initiatives. Since it was established in 2015, sustainability has become a greater focus across GEG.

An Energy and Environmental Management Committee promotes cross-departmental collaboration to launch programs that optimize energy, water, waste and emissions performance in compliance with laws. These include our Climate Change and Risk Assessment and Energy and Environment Assessment programs.

The Energy and Environmental Management Statement, approved by senior management, outlines Galaxy Entertainment's governance approach to environmental stewardship through commitments to developing an environmentally responsible culture, complying with and exceeding regulations, promoting efficient resource use, and educating employees on sustainability.

Overall, the creation of a senior sustainability role demonstrates our commitment to systematically managing and reducing our environmental impact. Supported by the Management Committee, our Vice President of Facility Management provides leadership and oversight to integrate sustainability into our operations and strategy.

Moving forward, we will continue strengthening sustainability by assigning clear responsibilities, setting measurable targets, and cascading objectives throughout the organization. With strong leadership and a dedicated sustainability function, we are well positioned to reduce our footprint while maximizing our positive environmental impact.

04. Does your organisation/destination have a system in place for employees/stakeholders to make suggestions to help improve environmental standards?

We actively engage employees and stakeholders to improve our environmental performance through knowledge sharing and feedback.

New hires receive sustainability orientations where we introduce communications platforms and tools encouraging participation in initiatives like training, workshops and field trips. We regularly communicate best practices through a quarterly sustainability newsletter and monthly posts on GEG Buzz our internal team member mobile app network.

Employees and external stakeholders can suggest improvements directly to our sustainability department via email. Many valuable insights submitted have been successfully implemented, helping reduce our footprint. Green representatives from each department also attend energy and environmental committee meetings for updates.

An open culture of communication and knowledge sharing around sustainability allows us to identify innovative solutions across the organization. Our employee suggestion system and stakeholder engagement empower team members to contribute tangible 'greening' ideas for our operations.

Moving forward, we will continue strengthening two-way dialogue with employees and stakeholders to ensure their perspectives inform the evolution of our environmental strategies and objectives. With a culture that consistently acts upon sustainability recommendations, we can achieve performance improvements that meet the evolving expectations of our diverse stakeholder groups. Transparency and action on stakeholder input will reinforce trust in our progress towards continuous improvement.

05. Does your organisation/destination participate in or actively encourage community environmental programmes?

We actively promote environmental awareness and stewardship through community outreach and partnerships.

We organize sustainable facility tours for stakeholders to showcase our initiatives and inspire best practices. These tours give community members an up-close look at how we reduce our footprint through energy efficiency upgrades, waste reduction efforts and greenery installations.

We participate in and support various environmental programs and events that raise awareness. For example, we regularly exhibit at the Macao International Environment Cooperation Forum & Exhibition (MIECF) where we share our sustainability approach with the public. We have also been featured on Macao Broadcasting TV programs about our green development practices, serving as a role model for the local business community.

We engage team members in activities that nurture their passion for sustainability, including our involvement in World Wildlife Fund's Earth Hour campaign for 14 years and celebrations of World Water Day, World Environment Day and our inaugural Energy and Environmental Conservation Month. During these events, we organize exhibitions, competitions and educational sessions to motivate sustainable actions.

We partner with non-profits and government agencies on outreach initiatives. For donating proceeds from plastic bag charges to Green Future Macau, we received a certificate of appreciation from the Municipal Affairs Bureau, recognizing our efforts to promote recycling and a greener Macau.

Finally, our prestigious certifications and awards in 2022 like Green Key Eco-label, EarthCheck certification, the GBA Low Carbon Buildings Top 100 Award and the Macau Green Hotel Award demonstrate our efforts to integrate environmental excellence throughout our operations to meet high global sustainability standards.

Overall, through stakeholder engagement, advocacy, employee campaigns and responsible operations, we strive to set an example of environmental stewardship that inspires meaningful change within our organization and beyond into the wider Macau community. Moving forward, we will continue exploring innovative ways to cultivate sustainable behaviours and foster collaboration to maximize our positive environmental and social impact.

06. What are the local communities' involvement and impact?

Galaxy Entertainment Group (GEG) is a patriotic Chinese enterprise deeply rooted in Macau, committed to fulfilling its corporate social responsibility and contributing to the sustainable development of the local community. Our initiatives aim to enhance community well-being and promote sustainability across different sectors. This includes sports, arts, and cultural exchange, talent and youth cultivation, environmental stewardship, charitable causes, and care for the needy.

At GEG, we are dedicated to supporting the well-being and career development of our team members, building an inclusive workplace, achieving mutual growth with SMEs through win-win partnerships, and supporting local industries for a thriving economy. We are also committed to deepening awareness of responsible gaming through our corporate citizenship pledge of "Community at Heart, Empathy in Action."

Through charitable donations, GEG provides financial support to important social causes and non-profit organizations in Macau. In the past year, we donated over MOP 39M and were recognized with the Volunteer Award of Outstanding Enterprise 2022 in Macau by the Association of Volunteer Social Service Macao. We also contribute to the development of local SMEs, "Made in Macau" brands, and young entrepreneurs, through a "Large-Businesses-Leading-Small-Businesses" cooperation model in line with the Macau SAR Government's policies. Local procurement is one of the direct ways we support the growth of our key partners, with over 90% of our total expenditure on goods and services coming from Macau enterprises and SMEs, and local enterprises and SMEs accounting for over 62% of our suppliers.

At GEG, we aim to create shared value for Macau and build thriving communities through donations, volunteerism, hiring local talent, and local procurement. We are committed to empowering the communities where we operate through entrepreneurship and meaningful stakeholder engagement in sustainability initiatives that maximize positive social impact. Our responsible business practices are built on transparency and mutually beneficial partnerships that strengthen trust in our role as a responsible business. For further details, please refer to GEG's CSR report, available at https://www.galaxyentertainment.com/ebook/2022_GEG_CSR_Report/index.html.