SUSTAINABLE EVENT FRAMEWORK

In Collaboration:

Universiti Teknologi, MARA

AND

Malaysia Association of Convention Exhibition Organisers & Suppliers (MACEOS)

1.O Aims & Objective

This report aims to highlight the importance of educating business event stakeholders on incorporating sustainable business event concepts into the event planning process. Business events (BE) align with three key pillars of sustainable development, as outlined in the UN Sustainable Development Goals (SDGs).

The three essential SDG pillars in BE are social, economic, and environmental. Therefore, all event stakeholders must recognize the significance of integrating these factors to ensure the sustainability of the BE industry.

2.0 MACEOS Sustainable Business Event Commitment

At MACEOS, we recognize the vital role that the business events industry plays in driving economic growth, fostering innovation, and connecting global communities. However, we are also acutely aware of the environmental impact associated with events, including carbon emissions, resource consumption, and waste generation.

As the leading association for conference and exhibition organizers and suppliers in Malaysia, MACEOS is committed to championing sustainable event practices in alignment with the Net Zero Carbon Events framework. Our goal is to significantly reduce carbon emissions across the business events ecosystem by promoting responsible event planning, sustainable procurement, and innovative solutions that minimize environmental footprints.

To achieve this, we pledge to:

✅ Adopt Sustainable Event Practices – Encourage and support event organizers in implementing energy-efficient technologies, reducing waste, and promoting circular economy principles.

✅ Collaborate for Industry-Wide Impact – Work with government agencies, venue partners, suppliers, and event professionals to develop and implement sustainability best practices that align with global standards.

✅ Measure and Reduce Carbon Emissions – Advocate for the use of carbon footprint assessment tools, encourage offsetting strategies, and support the transition to low-carbon event solutions.

✅ Educate and Inspire Change – Provide industry stakeholders with the knowledge, tools, and training necessary to drive sustainability in business events and build awareness on the importance of green practices.

✅ Support Innovation in Green Technology – Embrace digital transformation, virtual and hybrid event solutions, and other sustainable technologies that reduce the need for excessive travel and resource use.

Through this commitment, MACEOS aims to lead the Malaysian business events industry towards a more sustainable future, ensuring that events are not only impactful and engaging but also environmentally responsible. Together, we can create a thriving events ecosystem that contributes to a greener Malaysia and a sustainable global economy.

3.0 Sustainable Event Scenario

The business event sector greatly boosts the economy, especially the tourism industry. In Malaysia, business events generate significant returns, with government investments bringing in over a hundred times their value. Despite these benefits, the industry's growth raises environmental concerns. Event materials like paper, posters, and banners can harm the environment if not managed properly. Additionally, events contribute to energy use, transportation emissions, and waste production.

Sustainability in event planning focuses on three key pillars: social, economic, and environmental. Economic stability should improve community life while protecting the environment. Sustainability requires commitment from all stakeholders, including event organizers and venue operators. Event management sector in Malaysia is growing, benefiting the economy and society. However, its environmental impact cannot be ignored. Sustainable event practices — including waste management, eco-friendly transport, and reducing material use — are essential for balancing economic growth with environmental protection. Stakeholder cooperation and clear sustainability guidelines will help ensure future events support both present and future generations.

4.0 Event Sustainability Practices

4.1 Production and Materials

	Indicator	Boundary	Requirement	Evidence	Example of Green Practices
1	Sustainable Materials		Demonstration on purchase/utilisation of sustainable materials utilisation with specific direction/vision; with self-	Company Sustainability Report: A report published by a company or businesses about environmental, social, and	• Choose renewable and sustainable materials for products, packaging,

			regulation implementation (evidence of correlation on sustainability goals); and received recognition/certification from third party/ies/certificate body	governance (ESG) impacts containing specific policy statements or guidelines or instructions for green material application as well as the practice of self-regulation on the application (through monitoring) to show the correlation with the sustainability goal and to provide evidence of related certificate or proof of recognition.	and office supplies. ● Incorporate recycled materials into products and packaging (goodies bag, souvenir etc)
2	Sustainable Services		Demonstration on purchase/utilisation of sustainable services utilisation with specific direction/vision; with self-regulation implementation (evidence of correlation on sustainability goals); and received recognition/certification from third party/ies/certificate body	Company Sustainability Report: A report published by a company or businesses about environmental, social, and governance (ESG) impacts containing specific policy statements or guidelines or instructions for green services application as well as the practice of self-regulation on the application (through monitoring) to show the correlation with the sustainability goal and to provide evidence of related certificate or proof of recognition.	● Adopt circular economy principles to design products, processes, and systems that minimize waste and promote resource efficiency, reuse, and recycling ● Implement sustainable supply chain practices

		Refer NZCE • Emissions from extraction and production associated with production materials. • Also known as embodied carbon. • Emissions from freight and logistics of transporting / shipping materials to and from event venue • included in Freight and Logistics section • Emissions from disposal of materials • Included in Waste	Refer NZCE Depending on the event type, materials and furniture can contribute significantly to event emissions. Exhibitions and congresses have an especially large carbon footprint connected to materials, while corporate events have a much smaller impact in this emission source. Research of the carbon emissions of events in France have found that materials and furniture used at an event contribute between 2% (with attendee travel and accommodation emissions included) and 65% (with attendee travel and accommodation emissions excluded) of overall event emissions.	Refer NZCE For Exhibitors – Data should be collected on all materials / equipment used in stand production for calculation. Including the weights, volumes or quantities used. For Organisers Organisers should account for all items and materials directly under their control that are either purchased or leased by them, including carpet, signage, and feature spaces. • Materials/Furniture items used • Quantity and weights of materials/furniture items used Primary data to be collected for materials includes: Formula for Converting Primary Data into Emissions GHG emissions for each material type = **Number of items** X **Weight of each item (kg)** X **Emission Factor (CO2e/kg)**	Refer NZCE 1. Stand Materials/ Construction Elements Wood: Example - Plywood, MDF, sawn timber (used in structural wall and floor construction). 2. Metal: Example – Welded steel, aluminium (used in modular shell scheme and floor edging). 3. Flooring: Example - Carpet, vinyl, wood. 4. Electricals: Example – Spotlights, lamps, wiring. Decoration: Example - Paint, wallpaper, vinyl wrap. 5.Signage Materials Plastics: Example - Adhesive vinyl, PVC Banners, Foamex/Foam core. 5. Paper & Board: Example - Cardboard, paper, Honeycomb Board. 6. Textiles: Example – Polyester, Cotton Canvas, Nylon.

		section		**Emission Factors (EFs) Sources:** • In addition to the sources highlighted below, the Smart Production and Waste Management Workstream has compiled a list of materials with corresponding information about emission factor sources. • Additionally, the Smart Production and Waste Management Guidance Secondary Data Examples: • Carbon footprint of materials used from a similar event as proxy • For collecting weight-based data of plastic items, the Plastics Measurement Methodology for Accommodation Providers by the Global Tourism Plastics Initiative (GTPI) can be consulted.	7. Marketing Materials Exhibitor/Attendee ID: Example – Lanyards, badge holders, labels. 8. Printed materials: Example – Catalogues, pocket guides, flyers. 9. Promotional Items: Example – Tote bags, water bottles, mugs. 10. Furniture Tables & Chairs: Example – Stools, desks, sofas. 11. Appliances: Example - Refrigerators, coffee machines, water coolers. 12. A.V. & I.T. Equipment Audio Visual: Example - Screens, monitors, speakers, and lighting, 13. I.T Example - Ticketing machines, Desktop computers, scanners.

4.2 Freight and Logistics

	Indicator	Boundary	Requirement	Evidence	Example of Green Practices
1.	Freight and Logistics	Refer NZCE	To calculate the carbon footprint produced by flight for airfreight cargoes	Distance of air cargo from a destination to a destination and gross weight of a cargo.	Average carbon factor for airfreight is 24kg CO2. Example of calculation: 1 air cargo with gross weight of 220kgs travel for 1500kms. 220kgs x 24kg/kg x 1500kms = 7,920,000kg CO2. Effective ways to reduce the carbon footprints: 1. By tree planting 2. Cargo via seafreight
2	Freight and Logistics	Refer NZCE	To calculate the carbon footprint produced by vessel for seafreight cargoes	Distance of sea cargo from a destination to a destination and gross weight of a cargo.	Average carbon factor for seafreight is 1kg CO2. Example of calculation: 1 sea cargo with gross weight of 220kgs travel for 1200kms. 220kgs x 1kg/kg x 1200kms = 264,000kg CO2. Effective ways to reduce the carbon footprints: 1. By tree panting 2. Send via FCL instead of LCL
	Freight and Logistics	Refer NZCE	To record the total of used	To record the total of used carton boxes after an	Venue: Provide data of total weight for the unused carton boxes

			carton boxes after an event	event. Data can be collected from the venue for the total weight of unused carton boxes and total re-used carton boxes can be collected from the organiser and suppliers.	collected after finished of an event. Those unused carton boxes can be recycled. Organiser & Freight Forwarder: Provide data of total new carton boxes use after an event vs before event. This can indicate the activities of reuse.

4.3 Food and Beverage (Dr Rasidah/??)

	Indicator	**Boundary**	**Requirement**	**Evidence**	**Example of Green Practices**
1.	Sourcing and procurement	Cost Constraints: Higher Prices for Sustainable Products: Organic, local, and sustainably sourced ingredients often come at a premium. For businesses operating on tight margins, the higher costs can be a significant barrier to adopting green practices. Budget Limitations:	Ethical Sourcing: Ensure that suppliers adhere to fair labor practices and animal welfare standards. **Seasonal Products Use seasonal ingredients to minimize the environmental impact of out-of-season sourcing. Efficient Transportatio n Optimize logistics to reduce fuel consumption, including using alternative fuel vehicles	Transparency and Traceability Evidence: A report from indicates that supply chain transparency is increasingly important for consumers, with willingness to pay more for sustainable products. Brands that provide information about their sourcing practices can build consumer trust. **Employee Engagement in**	• Use of locally sourced ingredients. • Purchase of organic, non-GMO, and sustainably produced items. • Commitment to fair trade practices.

		Limited budgets can restrict a company's ability to invest in sustainable sourcing, thereby hindering overall green initiatives. Limited Access to Sustainable Suppliers: In some regions, there may be a lack of reliable suppliers who can provide sustainably sourced ingredients. This scarcity can restrict the ability of food and beverage companies to implement green practices. Inconsistent Supply Chains: If sustainable suppliers cannot consistently meet demand, it can lead to disruptions in the supply chain, forcing	and optimizing delivery routes. Supply Chain Transparency : visibility and traceability in the supply chain to ensure sustainable practices are maintained from farm to.	**Sustainability –** show report Engage employees in sustainability initiatives. Green Certification: Get green certification from certification body and regulators.	

		businesses to revert to conventional sourcing methods			
	Waste Management		Reduce, Reuse, Recycle: Develop waste management strategies that focus on reducing waste at the source, reusing materials, and recycling packaging by-products. Composting: Establish composting programs for organic waste to divert food scraps from landfills and return nutrients to the soil.		• Implementation of composting programs for organic waste. • Reduction in food waste through donation programs or partnerships with food banks. • Use of biodegradable or recyclable packaging.
	Water Conservation		Water Conservation: Implement practices to minimize water usage in production and processing. This may include recycling water and using efficient irrigation techniques in agriculture.		• Adoption of energy-efficient appliances (e.g., Energy Star-rated equipment). • Use of renewable energy sources (solar, wind). • Implementation of energy conservation practices (e.g., LED lighting, smart thermostats).

4.4 Travel To and From the Destinations- Hafiz/Dr Emi

	Indicator	Boundary	Requirement	Evidence	Example of Green Practices
1.	Travel To and From the Destination	Refer NZCE			
	PRE-EVENT				
	- Number and mode of trips made by event staff, suppliers, and organizers to the event destination. - Emissions generated from air, rail, and road travel for planning and setup purposes.	-Covers transportation emissions within and outside the local region related to event planning. - Includes logistics for delivering materials and equipment to the destination.	-Document modes of transportation and frequency of trips. -Encourage sustainable travel options for setup teams and suppliers.	-Travel receipts, supplier invoices, or mileage logs for trips related to pre-event activities. -Delivery records from logistics providers.	-Reduce the number of in-person planning visits by utilizing virtual tools for meetings and venue tours. -Consolidate material deliveries to minimize trips. Example**:** A trade show organizer replaces multiple site visits with virtual planning sessions and consolidates equipment transport into one efficient shipment.
	EVENT				
	Travel mode and distance covered by attendees, participants, and staff traveling to the destination. Emissions from private vehicles,	- Includes all inbound and outbound trips to the destination by event attendees and contributors.	-Promote sustainable travel options such as public transit, carpooling, or rail travel.	-Participant registration forms capturing travel details (origin, mode, and distance).	-Partner with transport providers to offer discounted public transit passes or organize

	public transit, and air travel for the event duration.	-Covers travel emissions from accommodations to the event venue during the event.	-Provide tools for participants to calculate and offset their travel emissions.	-Data from travel booking systems or transportation partners.	shuttle services. -Incentivize attendees to use rail travel for inter-city trips. Example**:** An international conference collaborates with a rail company to provide discounted train tickets for attendees, reducing reliance on air travel.
	POST-EVENT				
	-Mode and distance of attendee departures and equipment/material transport back to the origin. -Emissions from trips related to waste removal and equipment return.	-Includes all outbound travel by attendees, suppliers, and staff after the event. -Covers the transportation of waste and any remaining materials from the venue.	-Encourage attendees to use shared or low-emission transport options when departing. -Optimize logistics for material returns and waste disposal to reduce trips.	-Travel surveys or logs detailing attendee departure modes and distances. -Transportation records from logistics providers handling equipment and waste.	-Consolidate shipments for returning equipment and materials using eco-friendly logistics providers. -Offer incentives, such as carbon credits, for attendees who choose sustainable travel options. Example: A festival provides electric shuttles for attendee departures and partners with a logistics company to return materials via a

					single electric freight vehicle.

4.5 Local Transportation (eMI/hAFIZ)

	Indicator	Boundary	Requirement	Evidence	Example of Green Practices
1.	Local Transportation	Refer NZCE	To calculate the carbon footprint produced by transportation company	Recorded for 1-week usage of diesel by meter readings or total fuel during tank fill in	In general, carbon factor for diesel truck is 2.68kg CO2. Example of calculation: 1 truck use of 250litres diesel per week. 250kgs x 2.68kg/kg = 670kg CO2. Effective ways to reduce the carbon footprints: 1. By tree planting 2. Usage of electric truck
	Bus and Coach Operator - E&M Horsburgh		Reduction in emissions by up to 30%	Over 16,000 kms of regular travel routes primarily from Livingston to Edinburgh hospitals	SulNOx reduces the production of harmful, environmentally damaging greenhouse gas emissions such as CO2/NOx (circa 30%),reducing deadly Particulate Matter (PMs), including soot and smoke (PM2.5 ↓60+% and PM10 ↓50+%). Real world variations such as driving conditions, traffic, different drivers etc. evidenced a 9% fuel saving/ increase in economy, from 12.98mpg to 14.16mpg. This is very significant both economically and environmentally, and corresponds well with evaluations of other vehicle types.
	PRE-EVENT				

	-Number and type of trips made by attendees, staff, and suppliers to the venue. -Modes of transportation used (e.g., private cars, public transport, cycling).	-Emissions from all local transportation within a specified radius of the venue (e.g., 50 km). -Includes transportation for planning meetings, site visits, and material delivery.	-Record transportation modes and trip frequencies. -Promote low-emission transport options to participants in advance.	-Attendee surveys about intended modes of transport. -Logs of supplier and staff trips, supported by invoices or delivery records.	-Provide virtual site tours or meetings to reduce pre-event site visits. -Arrange group transport or encourage carpooling for setup teams. -Example: A conference organizer replaces in-person pre-event meetings with virtual walkthroughs, saving an estimated 20% of local transportation emissions.
	EVENT				
	-Real-time data on attendee and participant transportation during the event. -Utilization of event-provided transport services like shuttles or rideshares.	-Transportation emissions occurring between local accommodation and the event venue. -Includes daily commutes of attendees and event staff.	-Offer incentives for using public transport or event-organized shuttles. -Monitor peak commuting times to manage transportation flow efficiently.	-Ticket or pass data for shuttle services and public transportation. -Ride-sharing app logs for trips associated with the event.	-Set up park-and-ride systems or dedicated bus routes for the event. -Install bike racks or provide e-scooter sharing near the venue. Example: A music festival partners with a local bus company to provide free shuttle services for ticket holders, reducing the need for private cars and lowering emissions by 30%.
	POST-EVENT				
	-Transportation used for attendee departure and material removal. -Trip counts for waste collection and recycling logistics.	-Includes all transportation for clearing the event, returning rental equipment, and attendee departure. -May extend to final disposal sites for waste.	- Facilitate grouped departures to reduce transport demand. -Ensure that waste and recycling logistics are optimized for minimal trips.	-Logs or receipts from waste disposal and recycling services. -Post-event attendee surveys detailing modes of departure.	-Provide incentives for attendees departing via shared or public transport. -Consolidate material and waste pickups into single trips using eco-friendly vehicles. Example: After a trade show, organizers partner with local recyclers to consolidate pickups into a single route using electric vehicles, achieving a 25% reduction in carbon emissions.

4.6 Accommodation

	Indicator	Boundary	Requirement	Evidence	Example of Green Practices
1.	Energy consumption metrics, such as kilowatt-hours (kWh) per occupied room or energy use intensity (EUI).	To overcome these barriers, accommodations can focus on several strategies, including investing in staff training, conducting regular energy audits, integrating energy management systems, and exploring partnerships with energy providers for incentives or support. By addressing energy consumption challenges, the accommodation industry can make meaningful strides toward becoming more sustainable and environmentally friendly.	Many accommodations, especially smaller establishments, may struggle to justify these costs, opting to delay or avoid necessary upgrades that would reduce energy consumption.	Implementation of energy-efficient lighting (e.g., LED bulbs), appliances, and HVAC systems.	High Initial Costs for Energy-Efficient Upgrades Challenge: Upgrading to energy-efficient systems (e.g., HVAC, lighting, appliances) often requires substantial upfront investment. Green Certifications • Measurement: Attainment of recognized sustainability certifications (e.g., LEED, Green Key, Earth Check). • Indicator: Number of certifications held or maintained and the level of certification achieved.
	Installation of low-flow fixtures, dual-flush toilets, and water recycling systems.	High Initial Investment for Water-Efficient Technologies Challenge: Installing water-efficient fixtures (e.,	Installation of Water-Efficient Fixtures Evidence: The installation of low-flow faucets, showerheads,	Water usage per guest night or percentage reduction in water consumption compared to previous years.	Encouraging both staff and guests to adopt water-saving behaviours (e.g., shorter showers, reusing towels). Guest participation rates in sustainability programs (e.g., towel

		low-flow faucets, showerheads, toilets) or systems (like greywater recycling) often requires substantial upfront capital. Inadequate Water Monitoring Systems Challenge: Many accommodations do not have effective systems in place to monitor water usage or leaks. Regulatory constraints can hinder the implementation of green practices aimed at reducing water consumption.	and toilets is a common requirement to reduce water consumption. Example: The EPA's WaterSense program promotes the use of water-efficient products, resulting in substantial water savings in commercial facilities. Water Audits Evidence: Conducting regular water audits is essential to assess consumption patterns and identify areas for improvement.		and linen reuse programs) or feedback scores on sustainability initiatives. Incentives for Guests ● Evidence: Encouraging guest participation can be a requirement of successful recycling programs and may involve providing incentives for eco-friendly behaviors. ● Example: Programs that reward guests for participating in water conservation initiatives, such as discounts for opting out of daily towel service, can increase engagement and compliance.
2	Programs for recycling, composting, and reducing single-use plastics.	Community Engagement Measurement: Support for local businesses, cultural programs, and community service initiatives. Indicator: Percentage of	Carbon Footprint Reduction Measurement: Implementation of carbon offset programs or initiatives to reduce greenhouse gas emissions.	Percentage of waste diverted from landfills or total waste generated per guest night.	Community Engagement and Education ● Evidence: Engaging with the local community and providing educational resources can enhance recycling efforts. ● Example: Many successful

		partnerships with local organizations or community contributions (e.g., donations, volunteer hours).	Indicator: Annual carbon emissions per guest night or percentage reduction in carbon footprint over time		accommodations organize community events or partnerships with local schools to promote recycling and environmental awareness.

4.7 Energy (Dr Syawal/Zul)

	Boundary	**Indicator**	**Requirement**	**Evidence**	**Example of Green Practices**
1	Energy-related activities	Energy used at event venues	Purchased electricity . Purchased heating and cooling (chilled water)	. Meter energy usage readings	. Green Energy Tariff by TNB . Renewable energy sources i.e., Solar PV
		Energy used at an off-site event different than the venue (non-hotel)	. Purchased electricity . Purchased heating and cooling (chilled water)	. Meter energy usage readings	
		Energy used at an off-site event different than the venue (hotel)	. Purchased electricity . Purchased heatin	. Meter energy usage rea	

			g and cooling (chilled water)	dings	
2	Fuels-related activities	Fuels used/combustion in venues for events applications i.e., generators, heating and cooling system, cooking equipment, lighting towers, etc.	. Fuels (Petrol and Diesel)	. Bills of quantities for fuels	. Mobile truck with Solar Panel supply to substitute fuel consumption. . Bio-fuel alternatives i.e., biodiesel.
3	Refrigerants	Refrigerants used (chemical or gases) for mechanical appliances	. Refrigerants	. Type of refrigerants . Amount of refrigerant . Amount of refrigerant gas leaked	. Usage of eco-friendly R-134A refrigerants (non-ozone depletion agent)
4.	Energy- and Fuel-related activities	Emissions from total energy used at the venues off-site event different than the venue	Purchased electricity	CO_2e (DEFRA emissions factor)	Same as above
			Purchased heating and cooling (chilled water)	CO_2e (DEFRA emissions factor)	

			Fuels (Petrol & Diesel)	CO_2e (DEFRA emissions factor)	
5.	Transportation	Emissions from the transportation and distribution of event materials (either directly or through an intermediary), including inbound logistics and outbound logistics.	Fuels (Petrol & Diesel)	. Travelled distance in km . Type of fuels . Transport mode or vehicle type . CO_2e (DEFRA emissions factor)	. Shared transportation . Public transportation . Selection of venues with good accessibility to public transportation
		Emissions from the transportation of employees between their homes and the event sites.	Fuels (Petrol & Diesel)	. Travelled distance in km . Type of fuels . Transport mode or vehicle type . CO_2e	

				(DEFRA emissions factor)	

4.8 Waste (Dr Zada/Zul)

	Indicator	Boundary	Requirement	Evidence	Example of Green Practices
1	General Waste	Volume or weight of general waste generation.	Material type of each waste (wood, contaminated items, etc) and its disposal method (landfilled, incinerated, etc.)	Waste data collection template.	3R and Recovery of potential recyclable items
2	Recyclable Items	Volume or weight of general waste generation.	Material type of each waste (paper, plastic, can, aluminium, etc.) and its disposal method (recycled, landfilled, incinerated, donated, etc.)	Waste data collection template.	Recycling initiatives
3	Food Waste	Volume or weight of general waste generation.	Material type of each waste (organic, inorganic, etc.) and its disposal method (composted, landfilled, incinerated, etc.)	Waste data collection template.	Composting
4	Scheduled Waste	Volume or weight of general waste generation.	Material type of each waste (scheduled waste code) and its disposal method (landfilled, incinerated, etc.)	Waste data collection template.	Responsibly disposed to licensed contractor instead of landfilled
5	Wastewater	Total wastewater discharged.	Volumetric or weightage of wastewater	Wastewater data	Responsibly disposed to

			discharge from the event in either litres, gallons or m^3.	collection template.	licensed contractor
7	Emissions from disposal method of each type of waste	All potential emissions that result from waste generation in the before-during-after the event	Type of waste generated . Treatment of waste i.e., landfill, recycle, compost, etc.	Weightage of each waste material type . Disposal method . CO_2e (DEFRA emissions factor)	Use of recycled-content materials.
8	Emissions from collection, transportation and disposal of all types of waste)	Data of distance travelled by waste truck for event's waste management and handling.	Fuels (Petrol & Diesel)	. Travelled distance in km . Type of fuels . Transport mode or vehicle type . CO_2e (DEFRA emissions factor)	Choose the contractor that applies ESG principles for carbon conserved.
9	Emissions from treatment of wastewater	All potential emissions that result from wastewater generation in the before-	. Type of wastewater generated . Weight or volume of wastewater	. Total wastewater disc	Choose the contractor that applies ESG principles for

		during-after the event		harge. . CO_2e (DEFRA emissions factor)	carbon conserved.

4.9 **Digital Content and Communication (Yusno)**

	Indicator	Boundary	Requirement	Evidence	Example of Green Practices / Emission Calculation
1.	Digital Content and Communication	Virtual Event/Meeting /Conference	Direct Emission – Computer Emission Indirect emissions – server energy usage	● Number of attendees ● Duration of conference ● Lifecycle emissions of computers/laptops – (Based on research can assume to be 340 kgCO2e per computer) ● Average service life of computer (based on research, assume to be 4 years) ● Average daily hours of computer use ● Number of servers used (Based on research, it is typically found	Computer emission = Number of attendees X Lifecycle emissions of computer or laptop X [Duration of conference / (service life of computer X 365 X average daily hours of computer use)] ● No. of attendees = 50 ● Duration of meeting/conference = 2 hours

				that only 1 server is used to host a Zoom meeting with hundreds of participants) • Duration of conference • Server power rating (based on research, an average power rating for 1 server is around **0.594 kW/server**) • Electricity emissions factor (The grid emission factor used for calculating energy emissions is **0.758 kgCO2e/kwh** (0.000758 tCO2e) from Energy Commission in 2021)	• Life cycle emissions of computer = 340 kgCO2e • Average service life of computer = 4 years • Average daily use = 3 hours/ day Computer emission = Number of attendees X Lifecycle emissions of computer or laptop X (Duration of conference/service life of computer X 365 X average daily hours of computer use) = 50 X 340 X [2 / (4 X 365 X 3)] = **7.76 kgCO2e** Data centre / server energy use = Electricity emission factor X No. of servers X Duration of conference X

					Server power rating • Number of servers used = 1 • Duration of conference = 2 hours • Server power rating = 0.594 kW/server • Electricity emissions factor = 0.758 kgCO2e/kwh Server energy use = Electricity emission factor X No. of servers X Duration of conference X Server power rating = 1 X 2 X 0.594 X 0.758 = **0.9005 kgCO2e**
2		Email Marketing	Email Emission	• Coefficients per email based on the type of email, i.e., whether short or long email, etc. Estimated range of 0.03 gCO2e to 26 gCO2e per email.	Emissions from 200 invite emails = The average emissions of the range given was taken which is 13gCO2e per email. Therefore, the emissions from 200 email are

					= 200 X 13 = 2.6 kgCO2e.
3		Use of digital technology to reduce printed materials	% of reduction from printed materials Adoption of event technology/solution/software/app	• # of printed materials • Use of social media to market events • Event technology/solution/software/app adopted	Example of green practices:- • Use of online registration and payment • Promotion of events via website, social media, digital advertising and/or email marketing • Utilization of event technology such as event management software, survey management, live polling • Design reusable printed materials by avoiding omitting the date (for

					future use) • Use of digital badge/ticket instead of printed ones • If requires printed badges, use biodegradable materials for the badge and encourage participants to recycle the badges and lanyards. Avoid plastic covers/ pouches.

5.0 Green Practices Assessment

5.1 Food and Beverages (Dr Rasidah/Zul/Norol)

5.1.1 Event Venue

Point	Assesment	Mark
0	No Food and Beverage Green Awareness	
1	Food and Beverage Green Practices without Reporting	

2	Food and Beverage Green Practices with Reporting	
3	Food and Beverage Green Practices with Reporting and Monitoring	
4	Food and Beverage Green Practices with Reporting, Monitoring and Policy Implementation	
5	Food and Beverage Green Practices with Reporting,Monitoring, Policy Implementation and Certification Award for Food Beverage Green Practices	

5.2 Event Accommodation (Rasidah/Norol/Zul)

5.2.1 Food and Beverage

Point	Assesment	Mark
0	**No Food and Beverage Green Awareness**	
1	**Food and Beverage Green Practices without Reporting**	
2	**Food and Beverage Green Practices with Reporting**	
3	**Food and Beverage Green Practices with Reporting**	
4	**Food and Beverage Green Practices with Reporting,Monitoring and Policy Implementation**	
5	**Food and Beverage Green Practices with Reporting,Monitoring, Policy Implementation and Certification Award for Food Beverage Green Practices**	5

5.2.2 Energy

Point	Assessment	Mark

0	No Energy Green Practices	
1	Energy Green Practices without Reporting	
2	Energy Green Practices with Reporting	
3	Energy Green Practices with Reporting and Monitoring	
4	Energy Green Practices with Reporting,Monitoring and Policy Implementation	
5	Energy Green Practices with Reporting,Monitoring, Policy Implementation and Certification Award for Energy Green Practices	

5.2.3 Waste

- example : hotel, etc.

Point	Assesment	Mark
0	No waste Green Practices	
1	Waste Green Practices without Reporting	
2	Waste Green Practices with Reporting	
3	Waste Green Practices with Reporting and Monitoring	
4	Waste Green Practices with Reporting,Monitoring and Policy Implementation	
5	Waste Green Practices with Reporting,Monitoring, Policy Implementation and Certification Award for Waste Green Practices	

5.3 Freight and Logistics (Hafiz/Dr Emi)

Point	Assessment	Mark
0	**No Sustainable Practices related to freight and logistics**	
1	**Sustainable Materials with Reporting for Freight and Logistics**	
2	**Sustainable Practices Reporting and Monitoring for freight and logistics**	
3	**Sustainable Practices Reporting,Monitoring and Policy**	
4	**Sustainable Practices Reporting, Monitoring, Policy Implementation for Freight and logistics**	
5	**Sustainable Practices Reporting, Monitoring, Policy Implementation and Certification Award for freight and logistics**	

5.4 Travel To and From the Destinations (attendees/crew) (Yusno/Hafiz/Emi)

5.4.1 Sustainable Transportation Program

Point	Assessment	Mark
0	No consideration for sustainable travel options; no information or effort to reduce travel-related emissions.	
1	Some encouragement or awareness of sustainable transport (e.g., mention of carpooling or public transport) without documentation or data.	
2	Sustainable transport practices encouraged and promoted (e.g., shuttle services, EV options), with	

	informal reporting (e.g., estimated mode of transport used by attendees).	
3	Sustainable transport practices promoted, with formal reporting and measurement of attendee/staff travel data (e.g., travel survey, carbon emissions estimation).	
4	Formal reporting and monitoring in place, with active implementation of transport-related sustainability policies (e.g., no-fly policies for short-haul travel, carbon offsetting partnerships).	
5	Comprehensive sustainable travel program in place with: - Reporting - Monitoring - Policy implementation - **Recognized certification or award related to green travel or event mobility (e.g., ISO 20121 certification or any related Green accreditation)**	

5.5 Digital Content and Communication (Yusno)

5.5.1 Sustainable or responsible email marketing practices

Point	Assessment	Mark
0	No consideration for sustainable or responsible email marketing practices (e.g., mass blasts, no unsubscribe option, poor list hygiene).	
1	Basic email marketing conducted with minimal awareness of sustainability or data responsibility (e.g., no segmentation, no performance review).	
2	Email marketing practices include some green awareness such as reduced frequency, use of cleaner email templates, and basic audience segmentation; informal reporting in place (e.g., open rates, bounce rates).	
3	Email marketing is conducted with formal performance monitoring and reporting (e.g., carbon impact per email, engagement metrics), with practices to reduce digital pollution (e.g., removing inactive users).	

4	Sustainable email marketing policies in place (e.g., limits on campaign frequency, commitment to avoid spam-like behaviors, responsible use of graphics and attachments to reduce energy load), with active monitoring and feedback.	
5	Certified or recognized implementation of green digital marketing practices, including: - Full reporting and monitoring - Policy integration - Use of green-certified ESPs (Email Service Providers) or low-carbon email infrastructure i.e., MailChimp, SendGrid) - Demonstrated commitment to responsible and ethical communication (e.g., GDPR, PDPA compliance, sustainability disclosures)	

5.5.2 Virtual Event/Hybrid/Meeting/Conference

Point	Assessment	Mark
0	No virtual or hybrid options considered; all engagements require physical attendance.	
1	The use of virtual/hybrid meetings/events, but without a sustainability intent or documentation.	
2	The use of virtual/hybrid formats with the intent to reduce carbon footprint, with some informal reporting (e.g., number of virtual attendees).	
3	Virtual/hybrid formats are part of standard practice, with formal reporting and tracking (e.g., carbon savings, reduced travel impact, participation metrics).	
4	Strategic use of virtual platforms supported by sustainability policies (e.g., travel reduction guidelines, digital-first engagement), with active monitoring and feedback mechanisms.	

5	Comprehensive virtual sustainability strategy in place, including: - Reporting and monitoring - Policy integration - Certified digital sustainability practices (e.g., carbon accounting for digital activities, use of green-certified platforms or data centers) - Digital Event Strategist (DES) Certification	

5.5 Energy (Dr Syawal/Zul)

5.5.1 Event Venue

- example: seminar room, conference room and etc

Point	Assessment	Mark
0	No Energy Green Practices	
1	Energy Green Practices without Reporting	
2	Energy Green Practices with Reporting	
3	Energy Green Practices with Reporting and Monitoring	
4	Energy Green Practices with Reporting ,Monitoring and Policy Implementation	
5	Energy Green Practices with Reporting ,Monitoring, Policy Implementation and Certification Award for Energy Green Practices	

5.5.2 - Transportation (freight)

Point	Assessment	Mark
0	No Energy Green Transportation Practices	
1	Green Energy Practices without Reporting	
2	Green Energy Practices with Reporting	
3	Green Energy Green Practices with Reporting and Monitoring	
4	Green Energy Green Practices with Reporting,Monitoring and Policy Implementation	
5	Green Energy Practices with Reporting, Monitoring, Policy Implementation and Certification Award for Green Energy Practices	

5.6 Production and Materials/green procurement

- example: decoration material, event set etc.

Point	Assessment	Mark
0	No Sustainable Materials Practices	
1	Sustainable Materials Practices without Reporting	
2	Sustainable Materials Practices with Reporting	

3	Sustainable Materials Practices with Reporting and Monitoring	
4	Sustainable Materials Practices with Reporting,Monitoring and Policy Implementation	
5	Sustainable Materials Practices with Reporting,Monitoring, Policy Implementation and Certification Award for Sustainable Materials Green Practices	

5.7 Waste (Dr Zada/Dr Rizuan/Zul)

5.7.1 Event Venue
example : seminar, conference , meeting room and etc.
(attendees, event's organizer, venue provider)

Point	Assessment	Mark
0	No waste Green Practices	
1	Waste Green Practices without Reporting	
2	Waste Green Practices with Reporting	
3	Waste Green Practices with Reporting and Monitoring	
4	Waste Green Practices with Reporting, Monitoring and Policy Implementation	
5	Waste Green Practices with Reporting, Monitoring, Policy Implementation and Certification Award for Waste Green Practices	

Sustainable Framework Assessment Matrix

Sustainable Items:	**Food and Beverage, Waste, Product & Material and Energy**	
Level	**Mark**	**Award**
Beginner I	10 - 20	Sustainable Certified Event
Sustainable Items:	**Freight and Logistic, Accommodation, Digital and Communication,Travel To and From the Destinations**	
Level	**Mark**	**Award**
Intermediate	0-10	Bronze
Advance	11-19	Silver
Excellent	20	Gold

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