

Marina Bay Sands Eco360 Meetings Impact Statement

Singapore

Marina Bay Sands

Conference Overview

Client:	ITB Berlin (Singapore) Pte Ltd
Event:	ITB Asia 2015

Conference Dates:	21 October 2015	to	23 October 2015
Total Event Meeting Space Used (sq. m.)	115,590		

Economic

Impacts	Key Performance Indicator	Value	GRI Indicator
Investment in Event Sustainability	Total expenditure to improve event sustainability and offset emissions (SGD)	N/A	EN 30
Participation	Number of delegates	10,300	

Social

Impacts	Key Performance Indicator	Value	GRI Indicator
Health and quality of air	Space designated smoke free in venue	No Cost	LA 8
Labour Rights	Employees covered by The Ministry of Manpower Employment Act	No Cost	LA 4

Environmental

Impacts	Key Performance Indicator	Value	GRI Indicator
GHG emissions	Total carbon footprint (tonnes CO ₂ equivalent)	159	EN 16, 17
	Emissions per delegate (tonnes CO ₂)	0.0154	
Energy	Total electricity consumed (kWh)	242,023	EN 4
	Electricity from Event in MICE (kWh)	175,036	EN 4
	Electricity from Accommodations (kWh)**	66,987	EN 4
	Total chilled water (electricity) consumed (kWh)	111,301	EN 4
	Chilled Water from Event in MICE (kWh)	88,972	EN 4
	Chilled Water from Accommodations (kWh)**	22,329	EN 4
Water	Total water used in Accommodations (m ³)**	674	EN 8
	Total bottle water used (Reference: Similar 3-day event uses 3,750 bottles)	0	
	Total drinking water used (No. of 5 gallon Water Barrels)	29	
Food & Beverage	Total number of meals (approximate) (100% Harvest Menu)	800	
Paper and materials usage	Notepads used for event (A5 size)	955	EN 1, 28
	Pens used for event (Reference: Similar 3-day event uses 1,800 pens)	1,133	EN 1, 28
	% of materials used that are recycled input materials (notepads, flipcharts) - Paper type is: 80gsm wood free FSC Paper	100%	EN2
Waste management	Event waste diversion rate	32%	EN 22
	Metal Recycled (kg)	10.0	EN 22
	Aluminum Recycled (kg)	7.0	EN 22
	Paper Recycled (kg)	68.0	EN 22
	Glass Recycled (kg)	40.1	EN 22
	Carton Recycled (kg)	3,453.0	EN 22
	Plastic Recycled (kg)	17.0	EN 22
	Wood Recycled (kg)	2,962.0	EN 22
	Non-Recycled (kg)	13,640.0	EN 22

*Please note to compensate potential inaccuracies a 10% buffer has been added to the total.

**Estimate based on Earthcheck data

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Marina Bay Sands | Convention Center

Assumptions for Calculations

Conference Center

- 1 Total sq meters used for calculation includes meeting rooms and conference space only and includes corridor spaces.
- 2 Objective of the calculation is to obtain incremental energy and water use occurring during the event.
- 3 Prefunction area utility usage is included in the calculation.
- 4 Total water useage also includes chilled and hot water consumption delivered from an offsite resource.
- 5 Sorting and recycling for the Marina Bay Sands Convention Center takes place off-site and the recycling rate is provided by a recycling/composting vendor.

Hotel

- 1 Per room energy and water use is based on a standard Marina Bay Sands suite.
- 2 Marina Bay Sands waste is pre-sorted at the recycling dock and further sorting takes place at an off-site facility.
- 3 Recycling rate is obtained from the recycling vendor and is prorated based on the conference guest occupancy.

Factors Used for CO₂ Equivalent Emissions Calculation

Electricity:

- 1 A grid emission factor of 0.0004499 metric tons CO₂/kWh was used and is based on the Singapore Energy Market Authority (EMA) 2013 Average Operating Margin Emission Factor.
- 2 Note that baseload emissions (emissions from power plants that run all the time) are not considered.

Natural Gas:

- 1 Emission Factor of 0.005 metric tons CO₂/therm is obtained from EPA.
- 2 Note that this is the CO₂ equivalency for natural gas burned as a fuel, not natural gas released to the atmosphere.
- 3 Direct methane emissions released to the atmosphere (without burning) are about 21 time powerful than CO₂ in terms of global warming effect on the atmosphere.

Recycling:

- 1 Emission factors from EPA's Waste Reduction Model (WARM) are used: 2.87 metric tons CO₂E/ton of waste recycled instead of landfilled

Summary of Conversion Metrics

1	0.005	metric tons CO ₂ /therm
2	0.0004499	metric tons CO ₂ /kWh
3	2.87	metric tons CO ₂ E/ton of waste recycled instead of landfilled
4	0.00892	metric tons CO ₂ /gallon of gasoline
5	5.1	metric tons CO ₂ E/vehicle/year