U.P. CLIMATE CHANGE CONCLAVE

28th & 29th October 2021

Event Carbon Footprint

PRE-EVENT EMISSIONS CALCULATION

Prepared by:

VNV Advisory

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For:

U.P. CLIMATE CHANGE CONCLAVE

28th & 29th October 2021

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Details and Assumptions

Name of Event	Uttar Pradesh Climate Change Conclave, 2021
Duration of Event	28th and 29th of October, 2021
Name & Location of Airport	Chaudhary Charan Singh International Airport, Lucknow, U.P.
Name & Location of Event Space	Indra Gandhi Pratishthan, Kathauta Chauraha Rd, Vibhuti Khand, Gomti Nagar, Lucknow, Uttar

Total Number of Attendees	400
Number of out-of-state Attendees	100
Number of Intra-State Outstation Attendees	200
Number of Local Attendees	100
Number of Staff hired for the event	60 Staff for 05 days.

Distance from Airport to City Centre	15 km	Source: Google Maps Data
Distance from City Centre to Event Venue	7.5 km	Source: Google Maps Data

Domestic Flight	**Distance**	**Number of Attendees**
DEL - LKO	419 km	34
BLR - LKO	1578 km	33
BOM - LKO	1181 km	33

Number of Meals served per day	400 meals, two times a day, for two days	-
Average Energy Consumption per person	3.62 kWh/person	Source: Company Data on Previous Carbon Offset Events

Average Intra-State Travel Distance (to and fro)	625.75 km	Source: Average Distances to 8 Major cities in Uttar Pradesh
Water Consumption	140 litre/cap/day	
Solid Waste Generation	425 gm/capita/day	Source: CPHEEO, Govt of India and CPCB Study
Sewage generation	120 litre/capita/day	Source: Lucknow Municipal Corporation City Development Plan

Exhibition Event Space	80ft x 100 ft	**8000 sq.ft**
Exhibition Event Space Lighting	Lighting power density of Exhibit Spaces is **1.45 watts/sq.ft**	Source: IECC 2015
	8000 sq.ft x 1.45 Watts/sq.ft	**11,600 Watts**
Exhibition Event Space Cooling	1 ton of cooling per 150 sq.ft of Area	53.3 tons of cooling
	Assuming 2000 W for every 2 tons of cooling	**27 Air Conditioners of 2000 W Each**
Exhibition Event Duration	Assuming exhibition setup (4hrs) + duration (8hrs)	**12 Hours a Day for 3 days**
Exhibition Event LED TVs	100 TVs rated 100W each.	Operated for 12 hours a day.

Pre-Event Carbon Emissions Calculations

	Category	Value	Unit	Total	Total Unit	EF	Emissions kgCO2e	Emissions tCO2e	
A	**OutStation Travel**								**49.59 tCO2e**
1	Total Domestic Flight Travel	210,586	pass-km	210,856	pass-km	0.15	32,372.72	32.37	
2	Travel of Intra-State Attendees, 200 Attendees, Avg. Distance - Travel by Car	313	km	125,150	km	0.14	17,218.14	17.22	
B	**Local Travel**								**3.59 tCO2e**
3	Local Staff Travel 60 Staff, 50 kms a Day for 5 Days - Travel by Motorbike	50.000	km	15,000.000	km	0.083	1,245.900	1.246	
4	Travel From and To the Airport, 100 Attendees - Travel by Car	17.500	km	3,500.000	km	0.138	481.530	0.482	
5	Travel From and To the Event Venue from City Centre, 100 Outstation Attendees twice a day - Travel by Taxi	7.500	km	3,000.000	km	0.208	624.780	0.625	
6	Travel From and To the Event Venue from City Centre, 300 In-Station Attendees twice a day - Travel by Car	7.500	km	9,000.000	km	0.138	1,238.220	1.238	
C	**Hotel Stay**								**7.55 tCO2e**
7	Hotel Stay, 50 Guests - 2 nights	2.000	nights	100.000	nights	75.500	7,550.000	7.550	
D	**Energy Use - Electricity**								**4.49 tCO2e**
8	Energy Use for Event Space - Based on Average energy use per person for 400 Attendees, 2 days	3.620	kWh/cap/day	2,896	kWh	0.800	2,316.800	2.317	
9	Energy Use for Exhibition Space - Lighting	1.450	Watt/sq.ft	418	kWh	0.800	334.080	0.334	
10	Energy Use for Exhibition Space - Cooling - 27 AC's Rated 2000W used for 12 hours a day - for 3 days	2.000	kW	1,944	kWh	0.800	1,555.200	1.555	
11	Energy Use for Exhibition Space - Stall LED TV's, 100 TV's, rated 100W used for 12 hours a day -	1.200	kWh/TV/day	360	kWh	0.800	288.000	0.288	
E	**Energy Use - Cooking**								**3.92 tCO2e**
11	Fuel Energy Use (LPG) 400 Meals, Twice a Day for 2 Days - Based on average LPG consumption per meal	0.833	kg/meal	1,332.8	kg	2.939	3,917.486	3.917	
F	**Water Consumption and Discharge**								**0.04 tCO2e**
12	Water Consumption - Based on average water supply per capita per day, 400 persons for 2 days	140.000	litres/cap/day	112,000	litres	0.00015	16.69	0.017	
13	Wastewater Discharge - Based on average sewage generation per capita per day, 400 persons for 2 days	120.000	litres/cap/day	96,000.000	litres	0.00027	26.11	0.026	
G	**Waste**								**0.108 tCO2e**
14	Waste Generation, 400 people for 2 days - Based on Solid waste generation per capita per day	425.0	grams/cap/day	340.0	kg				
	Assuming 50% Food and Drink Waste to Landfill	170.0	kg	0.2	tonnes	626.88	106.57	0.11	
	Assuming 50% Mixed Plastic Waste to Landfill	170.0	kg	0.2	tonnes	8.90	1.51	0.00	

Total CO2 Emissions	**69,293.74**	**69.29**

Actual emissions will be calculated post the event.
Data collection is initiated for the same.

Approximately 46,200 trees are required to be planted and maintained in the long-term in order to offset 69.29 tCO2e of Carbon Emission.

Carbon Neutrality claim will be validated upon the successful certification of the project under a carbon credits mechanism.

List of Emissions Factors (EF)

Category	Details	Unit	EF	Source
Hotel Stay	India	kgCO2e/Room per night	75.5	BEIS, UK (2021)
Air Travel - Short Haul	Average passenger	kgCO2e/passenger.km	0.15353	BEIS, UK (2021)
Road Transport	Small Car	kgCO2e/km	0.13758	BEIS, UK (2021)
	Regular Taxi	kgCO2e/km	0.20826	BEIS, UK (2021)
Fuel	LPG	kgCO2e/tonne	2939.29	BEIS, UK (2021)
Electricity	Grid	tCO2/MWh	0.8	Central Electricity Authority, India
Local Travel -Staff Travel	Small Motorbike	kgCO2e/km	0.08306	BEIS, UK (2021)
Water Consumption	Supply	kgCO2e/million litres	149.0	BEIS, UK (2021)
Water Discharge	Sewage Treatment	kgCO2e/million litres	272.0	BEIS, UK (2021)

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Developers of High Quality & High Social Impact Carbon Credits Projects

Plantations

Details of Miyawaki Plantations being done for off-setting the Carbon Footprint.

S. No.	Name of Site	District	Area (ha.)	No. of Seedlings Planted	Latitude	Longitude
					dd mm ss	dd mm ss
1	Chandan Forest Block-1	Lucknow	0.44	15,400	N 26^{0}54^{I}32.9^{II}	E 80^{0}59^{I}36.5^{II}
2	Chandan Forest Block-2	Lucknow	0.24	8,400	N 26^{0}54^{I}30.5^{II}	E 80^{0}59^{I}35.8^{II}
3	Chandan Forest Block-2	Lucknow	0.18	6,300	N 26^{0}54^{I}30.9^{II}	E 80^{0}59^{I}37.8^{II}
4	Public Park, F Block, Rajaji Puram	Lucknow	0.02	700	N 26^{0}50^{I}50.50406^{II}	E 80^{0}53^{I}18.49092^{II}
5	Talkatora Industrial Area Park	Lucknow	0.02	700	N 26^{0}50^{I}3.72818^{II}	E 80^{0}53^{I}41.5446^{II}
6	Alam Nagar, Rajajipuram Underpass Green Belt	Lucknow	0.01	350	N 26° 50' 3.0804"	E 80° 53' 1.4964"
7	Triveni Nagar Park	Lucknow	0.04	1,400	N 26° 53' 17.2068"	E 80° 55' 47.91"
8	Sector D Park, Aliganj	Lucknow	0.06	2,100	N 26^{0}53^{I}.35.679^{II}	E 80^{0}56^{I}.19.449^{II}
9	Sector O Park, Aliganj	Lucknow	0.09	3,150	N 26^{0}54^{I}16.758^{II}	E 80^{0}57^{I}00.435^{II}
10	Mehedikhera Park, Rajajipuram	Lucknow	0.02	700	N 26° 50' 27.0276"	E 80° 52' 26.418"
11	Shiksha Sankaya, Banaras Hindu Vishvavidyalaya	Varanasi	0.5	15,000	N 25° 17' 57''	E 82° 59' 45''
Total			**1.62**	**54,200**		