Climate Pollution Assessment and Mitigation Roadmap for IPL 2022
(Rajasthan Royals)

Schneider Electric

May 2022

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Process Flow

1. Project Goals and Scope Definition

2. Life-Cycle Inventory Data Collection

3. Life Cycle Inventory Compilation

4. Life-Cycle Inventory Analysis & Interpretation
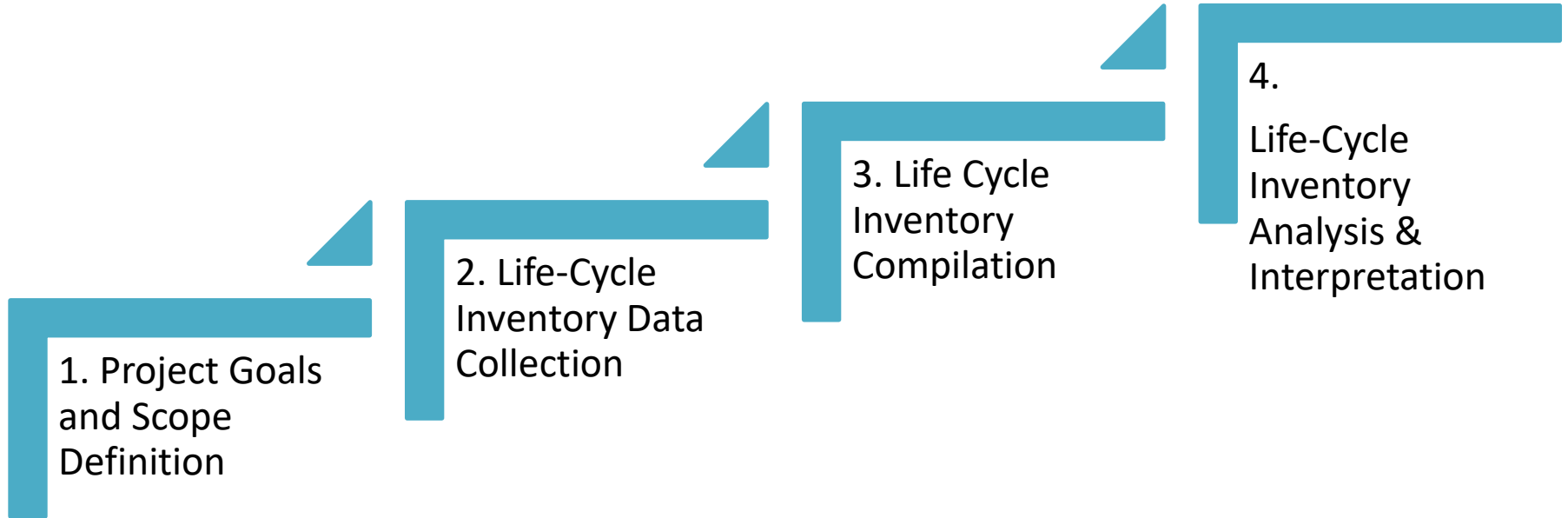
Protocols and Standards

➢ GHG Protocol's Scope 3 (Corporate Value Chain) Emissions Accounting and Reporting Standard

➢ 2006 IPCC Guidelines for GHG Inventories

➢ IPL 2010 Carbon Footprint Assessment Methdology developed with United Nations Environmental Program's Sport and Environment Unit

Goal

➢ Conducting a Baseline GHG Inventory for an IPL Cricket March in accordance with 2006 IPCC Guidelines for GHG Inventories, and WRI's Scope 3 (Corporate Value Chain) Standard.

➢ Reporting the GHG Inventory through narratives, tables and charts intended to convey the salient outcomes of the climate pollution estimation of the company to senior management.

➢ Footprint Mitigation Roadmap Report identifying short, medium and long-term climate pollution reduction projects that can be implemented through engagement with upstream partners/vendors related to raw material extraction and processing

Goal & Scope Definition

Scope: Operational Boundary

Emission Category	Activity Group	Activity Sub-Group
Purchased_Goods_and_Services	Materials	Agri_Inputs
Purchased_Goods_and_Services	Materials	Agri_Inputs
Purchased_Goods_and_Services	Materials	Construction
Purchased_Goods_and_Services	Materials	Paper
Purchased_Goods_and_Services	Materials	Plastics
Purchased_Goods_and_Services	Food_and_Beverages	Alcoholic_Beverages
Purchased_Goods_and_Services	Food_and_Beverages	Dairy
Purchased_Goods_and_Services	Food_and_Beverages	Meat
Purchased_Goods_and_Services	Food_and_Beverages	Packaged_Water
Purchased_Goods_and_Services	Food_and_Beverages	Grains
Purchased_Goods_and_Services	Food_and_Beverages	Soft Drinks
Upstream_emissions_of_purchased_fuels	Energy	Fugitive_Emissions
Upstream_emissions_of_purchased_electricity	Energy	Electricity_Upstream_Emissions
Transmission_and_distribution_losses	Energy	Electricity_TandD_Losses
Inbound_Logistics	Mobility	Logistics_and_Freight
Inbound_Logistics	Mobility	Road_Travel
Waste_Generated_in_Operations	Waste	Solid_Waste_Disposal
Business_Travel_Executive_Travel	Mobility	Air_Travel

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Goal & Scope Definition

Scope: Operational Boundary

Emission Category	Activity Group	Activity Sub-Group
Business_Travel_Executive_Travel	Mobility	Road_Travel
Business_Travel_Executive_Travel	Services	Accommodation
Spectator Travel	Mobility	Air_Travel
Spectator Travel	Mobility	Road_Travel
Spectator Travel	Services	Accommodation
Scope_1_Emissions	Energy	Fuel_Combustion_Activities
Scope_1_Emissions	Energy	Captive_Power_Generation
Scope_1_Emissions	Mobility	Road_Travel
Scope_2_Emissions	Water	Other Water
Scope_2_Emissions	Energy	Electricity
Use_of_sold_products	Energy	Electricity

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Goal & Scope Definition

Scope: Organizational Boundary

IPL Central Operations	Spectator Operations
Head Office	Stadium Spectators
Hospitality & Travel	TV Spectators
Merchandizing	Internet Spectators
Sponsors	Mobile Spectators
Catering - Concessions	
Catering - VIP	
Catering - Broadcasting	
Stadium Hospitality	
Stadium Entertainment	
Television Broadcasting - In-House	
Television Broadcasting - Vendor	
Player Security	
Umpiring	
Anti-Doping/Anti-Corruption	
Emergency Training	
Stadium Office	
Stadium Advertising (LED)	
Stadium Avertising (Flex Signage)	

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Goal & Scope Definition

Scope: Organizational Boundary

State Associaton Operations	Franchise (RR) Operations
Stadium Security	Head Office
Utilities	Hospitality & Travel
Ground Maintenance	Merchandizing
Catering - State Assoc.	Sponsors
Housekeeping	Beverage Contractor - Soft Drinks
Stadium Construction	Beverage Contractor - Alcoholic Bev.

Table 1 – Activity Data (1)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Qty.	Units
Purchased_Goods_and_Services	Materials	Agri_Inputs	Inorganic_Fertilizer	1162.2	kg
Purchased_Goods_and_Services	Materials	Agri_Inputs	Inorganic_Pesticide	0.5	kg
Purchased_Goods_and_Services	Materials	Construction	Cement	18552	kg
Purchased_Goods_and_Services	Materials	Construction	Masonry	781824	kg
Purchased_Goods_and_Services	Materials	Construction	Wood	1761	kg
Purchased_Goods_and_Services	Materials	Metals	Steel	33041	kg
Purchased_Goods_and_Services	Materials	Paper	Copy_Paper	692.2	kg
Purchased_Goods_and_Services	Materials	Paper	Paperboard	1315	kg
Purchased_Goods_and_Services	Materials	Plastics	Generic_Plastic	862.2	kg
Purchased_Goods_and_Services	Food_and_Beverages	Alcoholic_Beverages	Beer	424	kg
Purchased_Goods_and_Services	Food_and_Beverages	Alcoholic_Beverages	Spirits	122.6	kg
Purchased_Goods_and_Services	Food_and_Beverages	Alcoholic_Beverages	Wine	34	kg

Table 1 – Activity Data (2)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Qty.	Units
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Cheese	385	kg
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Cottage_Cheese	109.4	kg
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Cream	419.6	kg
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Milk	326.5	kg
Purchased_Goods_and_Services	Food_and_Beverages	Meat	White_Meat	939.2	kg
Purchased_Goods_and_Services	Food_and_Beverages	Meat	Red_Meat	166.7	kg
Purchased_Goods_and_Services	Food_and_Beverages	Packaged_Water	Retail_Bottled_Water	24200.9	kg
Purchased_Goods_and_Services	Food_and_Beverages	Grains	Rice	900	kg
Purchased_Goods_and_Services	Food_and_Beverages	Soft Drinks	Carbonated_Beverages	4197.9	kg

Table 1 – Activity Data (3)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Qty.	Units
Upstream_emissions_of_purchased_fuels	Energy	Fugitive_Emissions	Fugitive_Emissions	7859.1	liter
Upstream_emissions_of_purchased_electricity	Energy	Electricity_Upstream_Emissions	Grid_Electricity_Supply_Chain	20412.8	kWh
Transmission_and_distribution_(TandD)_losses	Energy	Electricity_TandD_Losses	Grid_Electricity_Losses	20412.8	kWh
Upstream_Transportation_and_Distribution_Inbound_Logistics	Mobility	Logistics_and_Freight	HMV	35513.3	vehicle-km
Waste_Generated_in_Operations	Waste	Solid_Waste_Disposal	Unmanaged_Waste_Disposal_Sites	14937.3	kg
Business_Travel_Executive_Travel	Mobility	Air_Travel	Narrow_Body_Aircraft	276811.8	person-km
Business_Travel_Executive_Travel	Mobility	Air_Travel	Wide_Body_Aircraft	1296645	person-km
Business_Travel_Executive_Travel	Services	Accommodation	Hotel	847.2	person-room-day

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Table 1 – Activity Data (4)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Qty.	Units
Business_Travel_Executive_Travel	Services	Accommodation	Hotel	847.2	person-room-day
Business_Travel_Management & Staff_Travel	Mobility	Road_Travel	4_Wheeler	15213.2	vehicle-km
Spectator Travel	Mobility	Air_Travel	Narrow_Body_Aircraft	412477.5	person-km
Spectator Travel	Mobility	Air_Travel	Wide_Body_Aircraft	258329	person-km
Spectator Travel	Mobility	Road_Travel	4_Wheeler	636446.9	vehicle-km
Spectator Travel	Services	Accommodation	Hotel	116.6	person-room-day
Scope_1_Emissions	Energy	Fuel_Combustion_Activities	Liquid_Fuels	7187.4	liter
Scope_1_Emissions	Energy	Fuel_Combustion_Activities	Other_Fuel_Combustion_Activities	28.4	kg

Table 1 – Activity Data (5)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Qty.	Units
Scope_1_Emissions	Mobility	Road_Travel	4_Wheeler	2571.4	vehicle-km
Scope_2_Emissions	Energy	Electricity	Grid_Electricity	20412.8	kWh
Scope_2_Emissions	Water	Other_Water	Other_Water	3417245	liter
Use_of_sold_products	Energy	Electricity	Grid_Electricity	6568333	kWh
Use_of_sold_products	Energy	Electricity_TandD_Losses	Grid_Electricity_Losses	6568333	kWh
Use_of_sold_products	Energy	Electricity_Upstream_Emissions	Grid_Electricity_Supply_Chain	6568333	kWh

Table 2 – GHG Emissions (1)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Emissions (tonnes CO2e)	%
TOTAL				9,442.3	100 %
Use_of_sold_products	Energy	Electricity	Grid_Electricity	5,845.8	61.9%
Use_of_sold_products	Energy	Electricity_TandD_Losses	Grid_Electricity_Losses	933.3	16.1%
Use_of_sold_products	Energy	Electricity_Upstream_Emissions	Grid_Electricity_Supply_Chain	1097.4	9.9%
Business_Travel_Executive_Travel	Mobility	Air_Travel	Wide_Body_Aircraft	220.2	2.3%
Business_Travel_Executive_Travel	Services	Accommodation	Hotel	171.9	1.8%
Spectator Travel	Mobility	Road_Travel	4_Wheeler	168.0	1.8%
Purchased_Goods_and_Services	Materials	Construction	Masonry	136.6	1.4%
Purchased_Goods_and_Services	Materials	Metals	Steel	105.1	1.1%
Upstream_Transportation_and_Distribution_Inbound_Logistics	Mobility	Logistics_and_Freight	HMV	32.4	0.30%

Table 2 – GHG Emissions (2)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Emissions (tonnes CO2e)	%
Spectator Travel	Mobility	Air_Travel	Narrow_Body_Aircraft	29.3	0.30%
Purchased_Goods_and_Services	Materials	Construction	Masonry	27.3	0.20%
Spectator Travel	Mobility	Air_Travel	Narrow_Body_Aircraft	24.8	0.20%
Spectator Travel	Services	Accommodation	Hotel	23.7	0.20%
Business_Travel_Executive_Travel	Mobility	Air_Travel	Narrow_Body_Aircraft	19.0	0.20%
Business_Travel_Executive_Travel	Mobility	Air_Travel	Narrow_Body_Aircraft	18.9	0.20%
Scope_2_Emissions	Energy	Electricity	Grid_Electricity	18.2	0.20%
Scope_1_Emissions	Energy	Fuel_Combustion_Activities	Liquid_Fuels	16.9	0.10%
Purchased_Goods_and_Services	Materials	Construction	Cement	16.0	0.10%

Table 2 – GHG Emissions (3)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Emissions (tonnes CO2e)	%
Spectator Travel	Mobility	Air_Travel	Wide_Body_Aircraft	15.2	0.10%
Waste_Generated_in_Operations	Waste	Solid_Waste_Disposal	Unmanaged_Waste_Disposal_Sites	9.9	0.10%
Purchased_Goods_and_Services	Materials	Agri_Inputs	Inorganic_Fertilizer	8.0	0.10%
Purchased_Goods_and_Services	Materials	Plastics	Generic_Plastic	7.4	0.10%
Scope_2_Emissions	Water	Other_Water	Other_Water	6.8	0.10%
Spectator Travel	Mobility	Air_Travel	Wide_Body_Aircraft	6.6	0.10%
Upstream_Transportation_and_Distribution_Inbound_Logistics	Mobility	Logistics_and_Freight	HMV	6.5	0.10%
Purchased_Goods_and_Services	Food_and_Bev	Meat	White_Meat	5.3	0.00%
Transmission_and_distribution_(TandD)_losses	Energy	Electricity_TandD_Losses	Grid_Electricity_Losses	4.7	0.10%

Table 2 – GHG Emissions (4)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Emissions (tonnes CO2e)	%
Purchased_Goods_and_Services	Food_and_Beverages	Packaged_Water	Retail_Bottled_Water	4.5	0.00%
Business_Travel_Management & Staff_Travel	Mobility	Road_Travel	4_Wheeler	4.0	0.00%
Business_Travel_Executive_Travel	Mobility	Air_Travel	Wide_Body_Aircraft	3.7	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Cream	3.5	0.00%
Purchased_Goods_and_Services	Materials	Paper	Paperboard	3.4	0.00%
Purchased_Goods_and_Services	Materials	Construction	Wood	2.9	0.00%
Upstream_emissions_of_purchased_electricity	Energy	Electricity_Upstream_Emissions	Grid_Electricity_Supply_Chain	2.9	0.00%

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Table 2 – GHG Emissions (5)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Emissions (tonnes CO2e)	%
Scope_1_Emissions	Energy	Fuel_Combustion_Activities	Liquid_Fuels	2.4	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Cheese	2.3	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Meat	Red_Meat	2.1	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Soft Drinks	Carbonated_Beverages	1.9	0.00%
Upstream_Transportation_and_Distribution_Inbound_Logistics	Mobility	Logistics_and_Freight	HMV	1.8	0.00%
Purchased_Goods_and_Services	Materials	Paper	Copy_Paper	1.8	0.00%
Purchased_Goods_and_Services	Materials	Agri_Inputs	Inorganic_Fertilizer	1.6	0.00%

Table 2 – GHG Emissions (6)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Emissions (tonnes CO2e)	%
Purchased_Goods_and_Services	Materials	Agri_Inputs	Inorganic_Fertilizer	1.6	0.00%
Scope_1_Emissions	Mobility	Road_Travel	4_Wheeler	0.9	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Grains	Rice	0.8	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Alcoholic_Beverages	Beer	0.5	0.00%
Fuel_and_Energy_Related_Activities_Upstream_emissions_of_purchased_fuels	Energy	Fugitive_Emissions	Oil_and_Natural_Gas_Fugitive_Emissions	0.4	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Milk	0.3	0.00%
Upstream_Transportation_and_Distribution_Inbound_Logistics	Mobility	Logistics_and_Freight	HMV	0.2	0.00%

Table 2 – GHG Emissions (7)

Emission Category	Activity Group	Activity Sub-Group	Activity Type	Emissions (tonnes CO2e)	%
Purchased_Goods_and_Services	Food_and_Beverages	Alcoholic_Beverages	Spirits	0.1	0.00%
Scope_1_Emissions	Energy	Fuel_Combustion_Activities	Liquid_Fuels	0.1	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Dairy	Cottage_Cheese	0.1	0.00%
Purchased_Goods_and_Services	Food_and_Beverages	Alcoholic_Beverages	Wine	0.0	0.00%
Scope_1_Emissions	Energy	Fuel_Combustion_Activities	Other_Fuel_Combustion_Activities	0.0	0.00%
Purchased_Goods_and_Services	Materials	Agri_Inputs	Inorganic_Pesticide	0.0	0.00%
Fuel_and_Energy_Related_Activities_Upstream_emissions_of_purchased_fuels	Energy	Fugitive_Emissions	Oil_and_Natural_Gas_Fugitive_Emissions	0.0	0.00%

Table 3 – GHG Emissions Summary (1)

Activity Group	Activity Sub-Group	Activity Type	Emissions (kg CO2e)	%
Energy	Electricity	Grid_Electricity	5,863,984	62.1%
Energy	Electricity_TandD_Losses	Grid_Electricity_Losses	1,526,971	16.2%
Energy	Electricity_Upstream_Emissions	Grid_Electricity_Supply_Chain	936,206	9.9%
Mobility	Air_Travel	Wide_Body_Aircraft	245,647	2.6%
Services	Accommodation	Hotel	195,588	2.1%
Mobility	Road_Travel	4_Wheeler	172,870	1.8%
Materials	Construction	Masonry	163,927	1.7%
Materials	Metals	Steel	105,068	1.1%
Mobility	Air_Travel	Narrow_Body_Aircraft	91,955	1.0%
Mobility	Logistics_and_Freight	HMV	40,878	0.4%
Energy	Fuel_Combustion_Activities	Liquid_Fuels	19,368	0.2%
Materials	Construction	Cement	15,955	0.1%
Waste	Solid_Waste_Disposal	Unmanaged_Waste_Disposal_Sites	9,920	0.1%
Materials	Agri_Inputs	Inorganic_Fertilizer	9,523	0.1%
Materials	Plastics	Generic_Plastic	7,436	0.1%

Table 3 – GHG Emissions Summary (2)

Activity Group	Activity Sub-Group	Activity Type	Emissions (kg CO2e)	%
Water	Other_Water	Other_Water	6,834	0.1%
Food_and_Beverages	Meat	White_Meat	5,335	0.0%
Food_and_Beverages	Packaged_Water	Retail_Bottled_Water	4,454	0.0%
Food_and_Beverages	Dairy	Cream	3,487	0.0%
Materials	Paper	Paperboard	3,447	0.0%
Materials	Construction	Wood	2,925	0.0%
Food_and_Beverages	Dairy	Cheese	2,330	0.0%
Food_and_Beverages	Meat	Red_Meat	2,116	0.0%
Food_and_Beverages	Soft Drinks	Carbonated_Beverages	1,904	0.0%
Materials	Paper	Copy_Paper	1,787	0.0%
Food_and_Beverages	Grains	Rice	825	0.0%
Food_and_Beverages	Alcoholic_Beverages	Beer	503	0.0%
Energy	Fugitive_Emissions	Oil_and_Natural_Gas_Fugitive_Emissions	446	0.0%
Food_and_Beverages	Dairy	Milk	266	0.0%

Table 3 – GHG Emissions Summary (3)

Activity Group	Activity Sub-Group	Activity Type	Emissions (kg CO2e)	%
Food_and_Beverages	Alcoholic_Beverages	Spirits	144	0.0%
Food_and_Beverages	Dairy	Cottage_Cheese	101	0.0%
Food_and_Beverages	Alcoholic_Beverages	Wine	41	0.0%
Energy	Fuel_Combustion_Activities	Other_Fuel_Combustion_Activities	16	0.0%
Materials	Agri_Inputs	Inorganic_Pesticide	6	0.0%

Chart 1– GHG Emissions Summary

Emissions by Activity Sub-Group

kg CO2e

Road_Travel
1.8%

Construction
1.9%

Accommodation
2.1%

Air_Travel
3.6%

Electricity_Upstream_Emiss...
9.9%

Electricity_TandD_Losses
16.2%

936,206

1,526,971

5,863,984

Electricity
62.1%
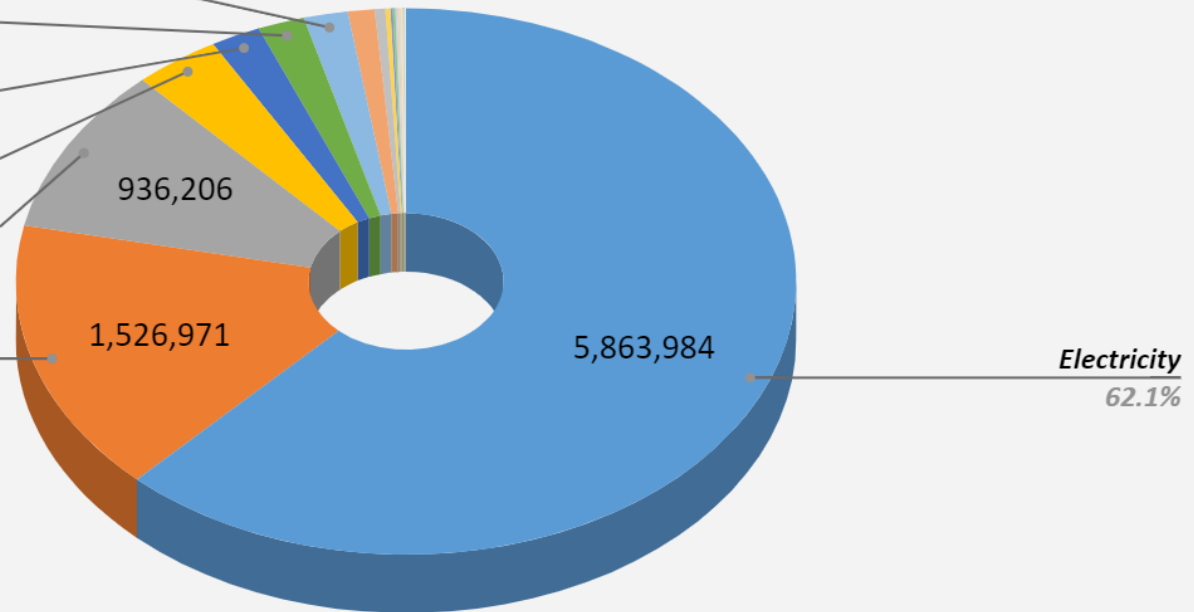
Chart 2– GHG Emissions Summary

Emissions by Activity Sub-Group
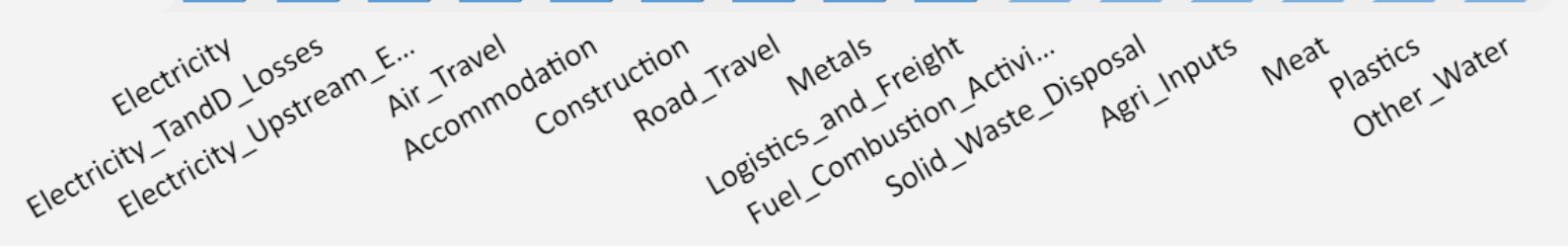
kg CO2e

Chart 3 – GHG Emissions Summary

Emissions by Activity Type (excluding TV Spectators)

kg CO2e

- Cement 1.4%
- Liquid_Fuels 1.7%
- HMV 3.7%
- Narrow_Body_Aircraft 8.2%
- Steel 9.4%
- Masonry 14.7%
- Wide_Body_Aircraft 22.0%
- Hotel 17.5%
- 4_Wheeler 15.5%

245,647
195,588
172,870
163,927
105,068
91,955
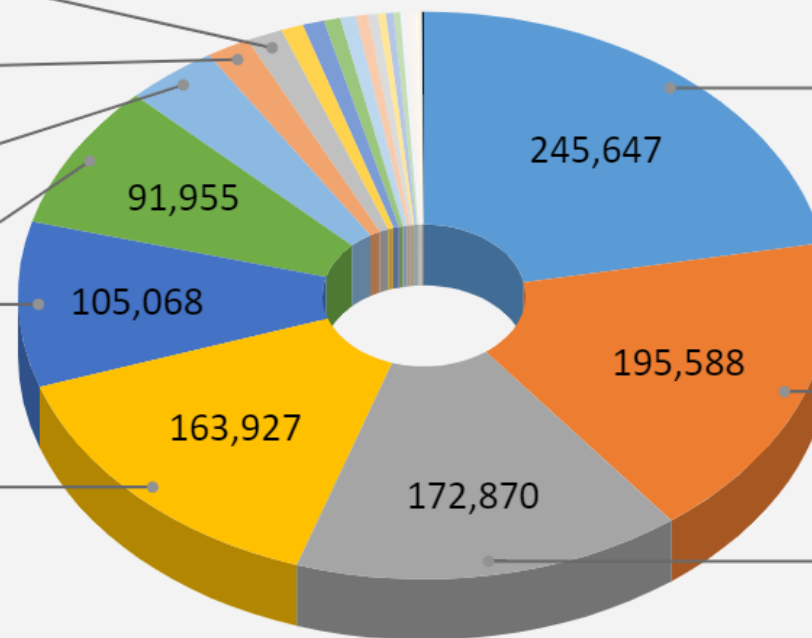
Chart 4 – GHG Emissions Summary

Emissions by Activity Type (excluding TV Spectators)
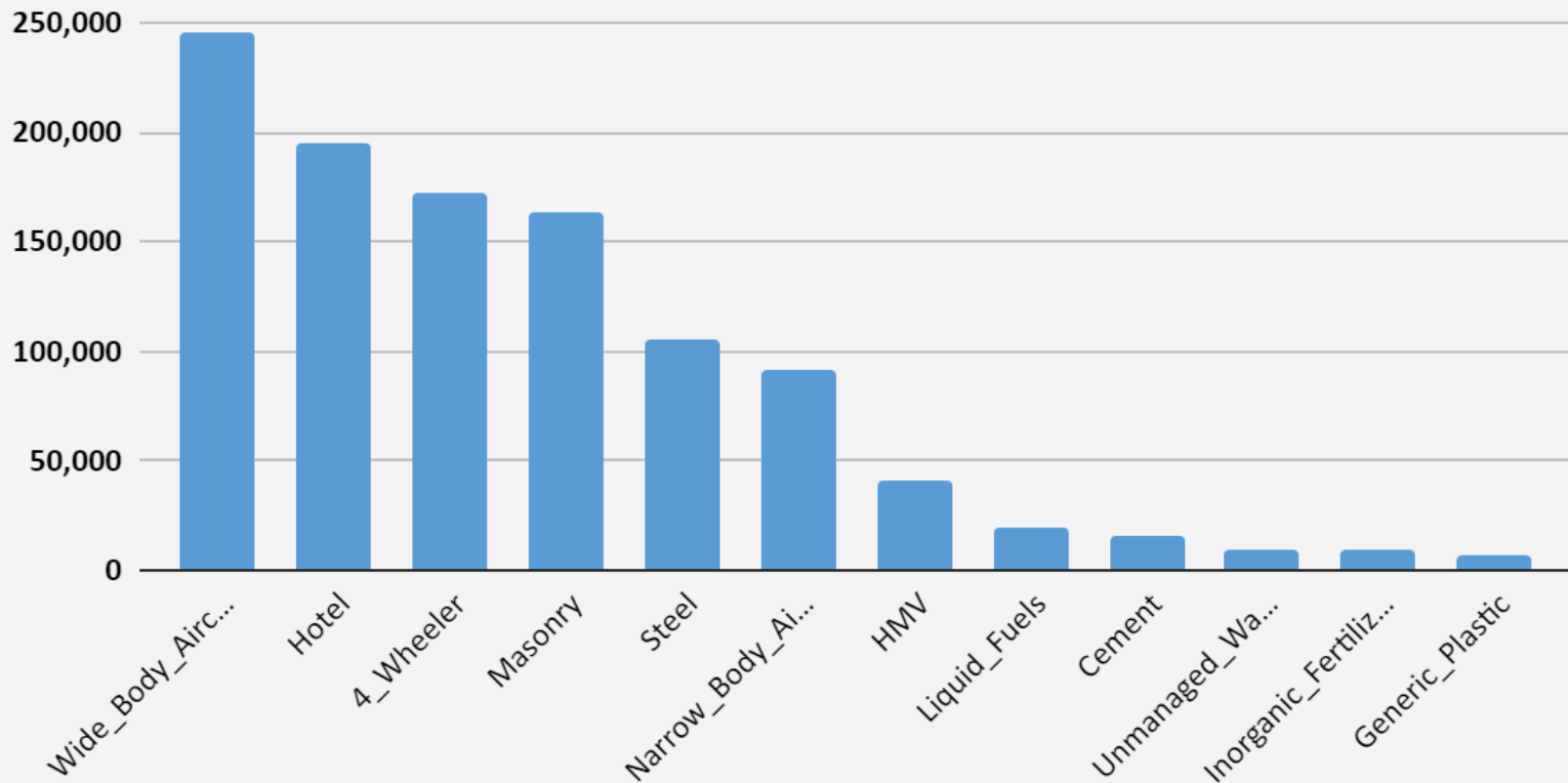
kg CO2e

Chart 5 – GHG Emissions Summary

Emissions by Stakeholder

kg CO2e

IPL - Sponsors
0.5%
Spectator Oper. - Stadium...
2.8%
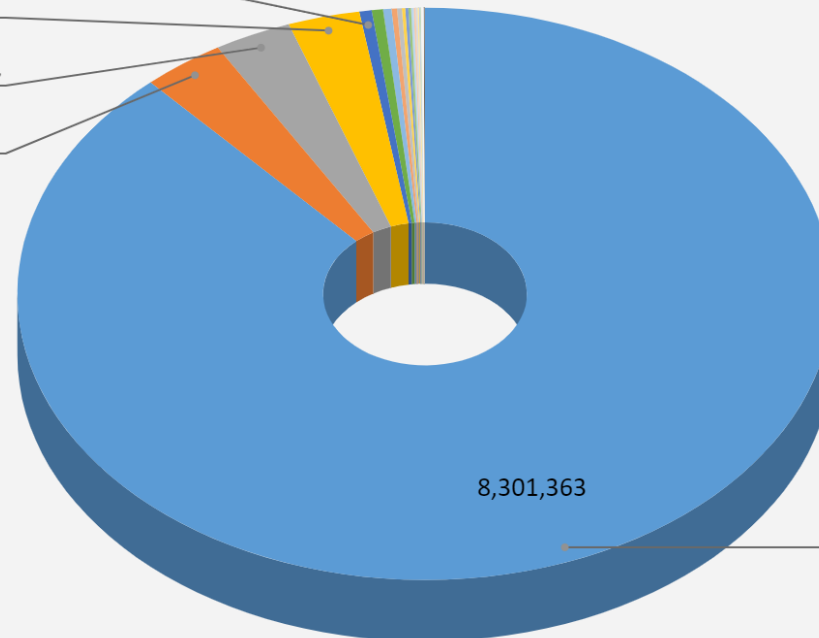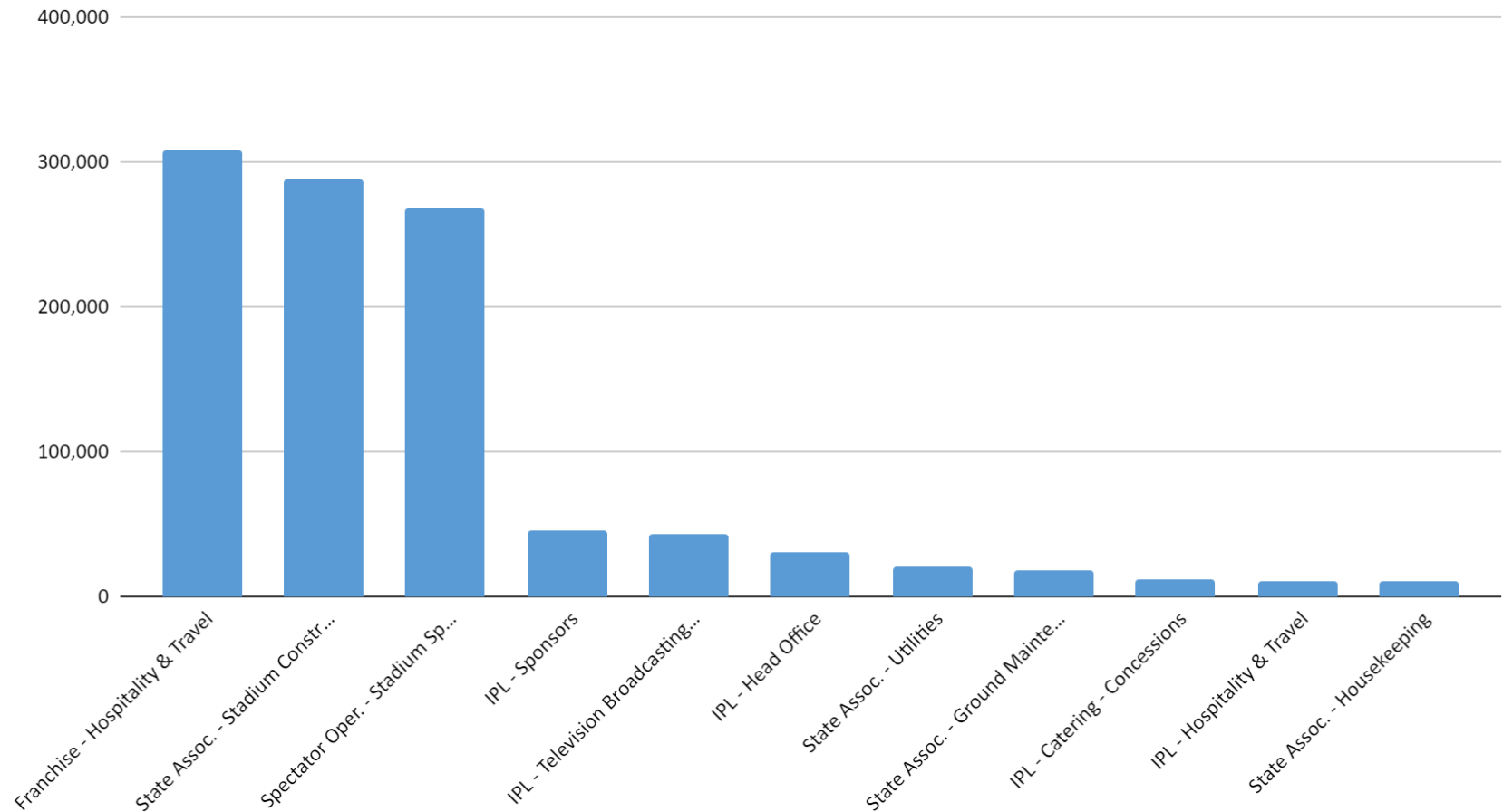**State Assoc. - Stadium Con...**
3.1%
Franchise - Hospitality & T...
3.3%

8,301,363

Spectator Oper. - TV Spect...
88.2%

Chart 6 – GHG Emissions Summary

Emissions by Stakeholder (excluding TV Spectators)

Context 1 – Climate Pollution Impact

Greenhouse Gas Emissions (Climate Pollution)
emitted by a typical IPL Rajasthan Royals Match
in 2021 is estimated to be:

9,442 metric tonnes of CO2e

Context 2 – Primary Climate Pollution Activities

1. Fossil Fuel Combustion for Grid Electricity Generation, Transmission and Distribution Losses and related Fossil Fuel Extraction activities for TV Viewing of IPL Matches
2. Fossil Fuel Combustion for Air Travel
3. Electricity and other resource use by Luxury Hotels
4. Manufacturing of Construction Materials used in Stadium Construction
5. Fossil Fuel Combustion for 4 Wheeler Travel by Management Executives, Staff and Spectators

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Context 3 – Primary Climate Polluting Stakeholders

1. TV Spectators
2. Rajasthan Royals Hospitality & Travel
3. Stadium Spectators
4. IPL Sponsors

Context 4 – Mitigation Roadmap for IPL 2023

TV Spectators: *reduced AC use when watching IPL at home (communication campaign)*

Rajasthan Royals Hospitality & Travel:

1. substituting air travel for bus/high speed train travel by high-ranking officials and Team Members for some city pairs within 6-8 hours of travel – for at least 2 IPL Matches (along with communication campaign)

2. Selecting hotel partners with the lowest energy consumption per room-night in the 4-Star Hotel Category (i.e. not staying in 5-Star Hotels for atleast 25% of room nights per year)

Stadium Spectators: *provision of high quality free public transport, especially free fan-buses to pickup spectators from key locations in ci*

IPL Sponsors:

1. substituting air travel for bus/high speed train travel by high-ranking officials and Team Members for some city pairs within 6-8 hours of travel – for at least 2 IPL Matches (along with communication campaign)

2. Selecting hotel partners with the lowest energy consumption per room-night in the 4-Star Hotel Category (i.e. not staying in 5-Star Hotels for atleast 25% of room nights per year)