



Sustainability Report 2019

Environmental Performance

Key Performance Indicators (KPIs)¹

General KPIs			
	2017	2018	2019
Total greenhouse gas emissions (Scope 1 & 2) (tCO ₂ e) ¹	29,375	39,228	47,756
Operational emissions intensity (tCO ₂ e/t) ²	2.48	3.15	3.14
Water extraction (m ³)	485,300	607,609	691,324
Operational water intensity (m ³ /t) ³	40.98	48.73	48.16
Waste generated (t)	108.95	126.67	181.50

¹ Sales de Jujuy exclusively

² Intensity value based on total emissions by tonne of lithium produced. Only considers operational emissions to ensure comparability over time.

³ Intensity value based on total water extraction by tonne of lithium produced. Only considers water extraction for operations to ensure comparability over time.

Performance Data

EHS Management & Compliance

EHS Management & Compliance			
	2017	2018	2019
Notices of violation (NOVs)/citations			
Environmental	0	0	0
Safety	0	0	0
Fines			
Environmental fines paid	\$0	\$0	\$0
Number of environmental fines	0	0	0
Safety fines paid	\$0	\$0	\$0
Number of safety fines	0	0	0

Energy

Energy			
	2017	2018	2019
Energy Consumption			
Electricity (GJ)	335,643	311,527	330,401
Heat (GJ)	209,249	298,880	296,295
Total Energy Consumption (GJ)	544,892	610,406	626,696
Electricity Intensity (GJ/t)	28.30	24.98	26.21
Heat Intensity (GJ/t)	17.64	23.97	23.51
Energy Intensity (GJ/t)	45.94	48.95	49.72
Fuel Consumption			
Natural Gas (GJ) ¹	544,892	610,407	626,696
Diesel (Stationary) (GJ) ²	-	14,084	21,152
- Operations	-	14,084	12,897
- Expansion	-	-	8,255
Diesel (Transport) (GJ) ^{2,3}	-	47,664	145,666
- Operations	-	47,664	44,670
- Expansion	-	-	100,996
Petrol (Transport)	-	222	0
Total Fuel Consumption (non-renewable)	544,892	672,377	793,514
- Operations	-	61,748	684,263
- Expansion	-	-	109,251

NOTE: Restatement of figures from 2018 report due to methodology changes

¹ Natural Gas: m³ to GJ conversion factor of 0.03451

² Diesel: L to GJ conversion factor of 0.0366

³ Increase in Transport Diesel attributable to Stage 2 Expansion and increased construction activity on site.

Emissions

Carbon Emissions

GHG Emissions Summary *	2017	2018	2019
Scope 1 greenhouse gas emissions (tCO ₂ -e)	29,375	39,206	47,719
- Operations	29,375	39,206	39,507
- Expansion	-	-	8,213
Scope 2 greenhouse gas emissions ² (tCO ₂ -e)	-	22	37
- Operations	-	22	27
- Expansion	-	-	10
Scope 3 greenhouse gas emissions ³ (tCO ₂ -e)	-	12,145	13,818
Scope 1+2 - Total emissions intensity ⁴ (tCO ₂ -e/t)	0.17	3.15	3.79
Scope 1+2 - Operational emissions intensity ⁵ (tCO ₂ -e/t)	2.48	3.15	3.14
Production (t)	11,862	12,470	12,605
Scope 1 Emissions (as % of total Scope 1 emissions)*	2017	2018	2019
Natural gas (for electricity generation)	62%	45%	39%
Natural gas (for processes)	38%	43%	35%
Stationary Diesel	-	3%	3%
Transport Diesel	1%	10%	23%
Transport Petrol	-	0%	0%
Petroleum based oils and greases	-	0%	0%
Scope 2 Emissions (as % of total Scope 2 emissions) *	2017	2018	2019
Purchased electricity - Jujuy office	-	100%	73%
Purchased electricity - Expansion office	-	-	27%
Scope 3 Greenhouse Gas (GHG) Details (tCO ₂ -e) *	2017	2018	2019
Waste generated in operations (emissions from disposal and treatment)	NA	196	283
Employee business travel ⁶	NA	132	261
Purchased goods and services ⁷	NA	5,680	5,295
Fuel and energy-related activities not included in Scope 2 ⁸	NA	6,136	7,980
Capital goods ⁹	NA	NA	NA
Upstream transportation and distribution	NA	NA	NA
Downstream transportation and distribution ¹⁰	NA	NA	NA
Employee commuting	NA	NA	NA
GHG emissions from use of sold products	NA	NA	NA
End-of-life treatment of sold products	NA	NA	NA
Total	NA	12,145	13,818

* Complete emissions inventory methodology in accordance with GHG Protocol was introduced in FY18. Emissions reporting in FY17 included only our material emissions sources: electricity generation, process heat, and transport.

² Reported using Scope 2 location-based value in accordance with the Greenhouse Gas Protocol.

³ Tracking of our Scope 3 emissions began in 2018

⁴ Intensity value based on total emissions on site (Operations + Expansion) by tonne of lithium produced.

⁵ Intensity value based on total emissions by tonne of lithium produced. Only considers operational emissions to ensure comparability over time.

⁶ Business Travel: Emissions calculated based on km travelled and short, medium and long-haul flight emissions factors.

⁷ Emissions associated with the production of soda ash, and with the provision of water at Jujuy offices.

⁸ Extraction, production, and transportation of fuels and energy purchased or acquired

⁹ Construction materials and services

¹⁰ Transportation and distribution of lithium carbonate from plant to ports (road/rail) and from ports to customers (ship)

NA: Not available.

Note: We will expand coverage of our Scope 3 emissions over time to include those not currently available.

Water			
Water Extraction by Source (m³)	2017	2018	2019
Groundwater ¹	485,300	607,609	691,324
- Operations	485,300	607,609	607,057
- Expansion	-	-	84,267
Water Intensity (m³/t)	2017	2018	2019
Total Water intensity (m ³ /t) ²	40.91	48.73	54.85
Operational Water intensity (m ³ /t) ³	40.91	48.73	48.16
Production (t)	11,862	12,470	12,605
Water Risk by Region (m³)			
Olaroz - Current⁴	Low	Medium	High
Water Stress	691,324	-	-
Overall Water Risk	681,324	-	-
Olaroz - Future⁵			
Water Stress	691,324	-	-
Overall Water Risk	681,324	-	-
Water Discharges	2017	2018	2019
Water bodies affected by water discharges and/or runoff ⁶	0	0	0

NOTE: Olaroz does not extract any fresh water for use in operations.

¹ The ground water extracted is highly saline and not suitable for human consumption or agricultural use.

² Intensity value based on total water extraction (Operations + Expansion) by tonne of lithium produced.

³ Intensity value based on operational water extraction by tonne of lithium produced. Only considers water extraction for operations to ensure comparability over time.

⁴ Based on the WRI Aqueduct Tool "Water Risk Atlas".

Low: 0-2 (<20%) includes Low and Low-Medium; **Medium**: 3 (20-40%) includes Medium-High; **High**: 4-5 (>40%) includes High and Extremely High

⁵ Based on the WRI Aqueduct Tool "Water Risk Atlas" Pessimistic Future Outlook: Projected Change in Water Stress value to 2030.

Low: 0-2 (<20%) includes Low and Low-Medium; **Medium**: 3 (20-40%) includes Medium-High; **High**: 4-5 (>40%) includes High and Extremely High

⁶ The Company does not have water run-off or effluent discharges to water bodies.

Waste			
Waste Generated by Type (t)	2017	2018	2019
Non-Hazardous	94.35	107.81	156.83
Organic	54.27	57.07	74.41
Recyclable	15.77	18.06	28.79
Non-recyclable	24.31	32.68	53.63
Hazardous	14.6	18.86	24.67
Total Waste Generated	108.95	126.67	181.5
Non-Hazardous Waste by Disposal Method (t)			
Landfill	78.58	89.75	128.34
Recycled	15.77	18.06	28.79
Hazardous Waste by Disposal Method (t)			
Recovery	5.44	4.36	-
Treatment and Disposal	11.82	14.53	24.67
Spills			
Significant spills ¹	0	0	0

¹ We have had minor spills which we have reported in our annual sustainability disclosures, but none that are significant.

Biodiversity			
Biodiversity Impact	2017	2018	2019
Number of sites used for production, extraction or plantation activities	1	1	1
Total land area of production sites (ha)	18,000	18,000	18,000
Land area used or impacted by Company's activities and installations ¹	1,529	1,529	1,529
Number of sites assessed and mapped for biodiversity (past 5 years)	1	1	1
Total land area of said sites (ha)	18,000	18,000	18,000
Operational sites that contain or are adjacent to globally or nationally important biodiversity area ²	0	0	0

¹ Figure refers to total anticipated land coverage for Company-related assets as disclosed in the 2017 EIA Addenda (Stage 2 Expansion).

² Operational site is not located within a national or international protected area. The 18,000ha is located within the Olaroz-Cauchari reserve.