

Taking Action

Gran Tierra continues to take actions that will result in significantly lower emissions at its facilities. To reduce flaring at all three of the company's operating fields, GTE continues to develop and implement plans to convert excess natural gas to power generation. The gas, which would otherwise be flared, instead supplies generators that power GTE's operations at the Costayaco and Moqueta fields. Construction of additional Gas to Power has begun at Costayaco with an aim to have the facility powered 100% by Costayaco gas and surplus Moqueta gas. In 2016, progress on GTE's gas to power project resulted in the program generating nearly five megawatts of electricity for its operations in the Putumayo region.

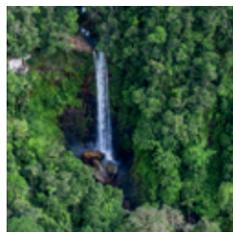
GAS COMPRESSION STATION



In last years report, flared gas from the Tie field in Brazil was identified as one of the primary sources of Gran Tierra's GHG emissions. In 2016 we completed construction of and commissioned a gas compression station at Tie which resulted in the compression and sale of approx. 25,000 m₃ of gas that would

otherwise have been flared. This was a significant step in GTE's efforts to reduce our carbon footprint.

NATURAMAZONAS



Given that nature-based approaches including conservation and restoration of tropical forests can provide 30% of the solution to climate change, GTE, in partnership with Conservation International is undertaking a large scale reforestation and conservation program called *NaturAmazonas*. GTE

will contribute \$11 million to the flagship environmental initiative in the Putumayo Region of Colombia which aims to reforest 1,000 hectares of land and secure and maintain 18,000 hectares of forested land that adjoins the restoration areas.

Accomplished 2015 Report Recommendations:

- We performed over 1,000 routine surveys in order to identify and repair any components that unnecessarily allow gas to escape.
- We brought in third party experts to perform regular rigorous asset integrity inspections at Costayaco and Moqueta in order to decrease non-routine venting of emissions.
- We explored production process changes to further reduce emissions, including studying the feasibility of alternative lower-emission power sources for the Acordionero facility and expanding gas to power capacity to reduce flare volumes at Costayaco.

2016 Report Recommendations

- Create and maintain an inventory of vulnerable leak components for fugitive emission estimation.
- For combustion equipment, in addition to fuel estimates based on fuel consumption from invoices, it is recommended that direct measurement using a flowmeter is used at least once a year. Leak detection measurements would assist in refining these estimates.
- Conduct a study to examine the viability of the addition of tank vapour control technology to the separators at Acordionero, Colón, Juglar, and Los Ángeles to help reduce emissions from tanks.
- An accurate tracking of the contents and movement of each tank product would allow for refined estimates of venting emissions, particularly at Acordionero.

Next Steps

GTE's goal going forward is to reduce its GHG emissions per barrel of oil on a year-over-year basis. In 2017 we expect to report significant progress as a result of the implementation of the three gas to power projects. GTE will also continue to fund *NaturAmazonas* and will continue to track and publish its emissions annually.



CORPORATE HEADQUARTERS

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BACKGROUND ON GRAN TIERRA ENERGY

Gran Tierra Energy Inc. is an independent international energy company focused on oil and natural gas exploration and production in Colombia. The company also has business activities in Peru.

The Company's common shares trade on the NYSE American and the Toronto Stock Exchange under the ticker symbol GTE.

Gran Tierra believes that our activities and presence should coincide with a healthy environment and prosperous communities.

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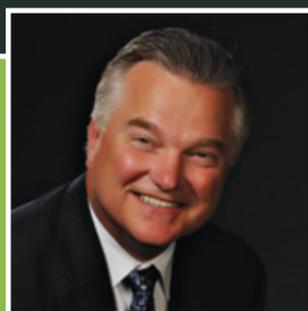
2016 STUDY OF GREENHOUSE GAS EMISSIONS

A Data Driven Approach to Emissions Reductions

GranTierra
energy inc. 

2016 Study of Greenhouse Gas Emissions by Novus Environmental

In 2017, Gran Tierra Energy (GTE) for the second year in a row retained Novus Environment Inc., a respected international expert in the field of air quality, to create a voluntary assessment of its greenhouse gas (GHG) emissions in Colombia and Brazil. Novus Environmental is a Canada-based consulting firm with extensive global experience assessing air quality and climate issues. This assessment involved collecting, analyzing and quantifying 2016 air emissions data from GTE's operations.



"As part of our continued commitment to operating in a responsible and transparent manner, GTE is pleased to release our 2016 GHG Assessment. This is a topic of significant importance to many of our stakeholders and we continue to make efforts to minimize our emissions wherever possible. In 2016 we made significant progress and look forward to continuing to do so in 2017."

– Gary Guidry, *President and CEO*

The most prevalent GHGs emitted from oil and natural gas industry operations are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Collecting this data is important because many scientists believe these gases contribute to global climate change. This information will allow GTE, its local and global stakeholders and the public to assess the company's emission reduction efforts over time.

Study Methodology

The assessment was conducted according to guidelines and standards adopted by the following organizations: International Petroleum Industry Environmental Conservation Association (IPIECA), International Association of Oil and Gas Producers (OGP), American Petroleum Industry (API), U.S. Environmental Protection Agency (EPA), Canadian Association of Petroleum Producers (CAPP) and Intergovernmental Panel on Climate Change (IPCC).

REPORTING PRINCIPLES

Novus prepared the report in adherence with the following principles of the IPIECA:

- Relevance
- Completeness
- Consistency
- Transparency
- Accuracy

REPORTING SCOPE

GTE's reporting boundary encompasses the producing assets in Colombia and former assets in Brazil:

- The Putumayo and Middle Magdalena Valley process facilities and well pads in Colombia
- The Tie process plant and associated well pads in Brazil

Equipment located within the physical plant boundary but not operated by GTE are not included in the reporting boundary.

REPORTING PERIOD

The reporting period is defined as January 1st through December 31st, 2016.



GHG EMISSION BY ACTIVITY (% CO₂e)

Facility	Flaring	Venting	Other Source	Total
Tie Field	15.83%	2.85%	0.65%	19.33%
Costayaco	4.73%	0.90%	7.36%	12.99%
Moqueta	2.16%	3.08%	4.75%	9.99%
Guayuyaco	0.00%	0.00%	0.18%	0.18%
Juanambu	0.00%	0.00%	0.05%	0.05%
Acordionero	11.42%	19.91%	14.88%	46.21%
Los Angeles	0.00%	3.13%	1.91%	5.04%
Santa Lucia	0.48%	0.63%	0.11%	1.22%
Colon	0.38%	1.40%	0.02%	1.80%
Juglar	0.00%	0.86%	0.76%	1.62%
Chuirra	0.17%	0.95%	0.09%	1.21%
Querbin	0.00%	0.31%	0.00%	0.31%
Gaitero	0.00%	0.02%	0.00%	0.02%
Zoe	0.00%	0.04%	0.00%	0.04%
Tronos	0.00%	0.00%	0.00%	0.00%
Total	35.17%	34.08%	30.75%	100.00%

GHG EMISSION BY TYPE (tonnes)

Facility	CO ₂	CH ₄	N ₂ O	Total CO ₂ e
Tie Field	18,272.95	246.99	20.96	30,694.51
Costayaco	16,754.52	78.73	6.36	20,617.78
Moqueta	9,857.22	205.56	2.92	15,865.14
Guayuyaco	261.75	1.01	0.00	287.53
Juanambu	65.45	0.32	0.00	73.52
Acordionero	35,687.62	1,328.27	15.03	73,371.86
Los Angeles	2,954.48	201.40	0.02	7,994.26
Santa Lucia	655.30	43.66	0.61	1,929.21
Colon	432.15	91.23	0.48	2,857.01
Juglar	1,177.41	55.59	0.01	2,570.34
Chuirra	301.64	61.98	0.21	1,914.89
Querbin	0.16	19.86	0.00	496.69
Gaitero	0.34	1.11	0.00	28.02
Zoe	0.13	2.50	0.00	62.66
Tronos	0.08	0.28	0.00	7.13
Total	86,421.20	2,338.48	46.60	158,770.54

Conclusions

REPORTING GHG EMISSIONS

GHG emissions are reported as tonnes of CO₂ equivalent (CO₂e), which is an aggregation of the mass of emissions of each GHG multiplied by its corresponding Global Warming Potential value, a relative measure of how much heat a greenhouse gas traps in the atmosphere. It compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide over a particular period of time, typically 100 years.

For example, the Global Warming Potential for CH₄ is 25 and for N₂O it is 298. This means that emissions of 1 metric tonne of CH₄ and N₂O respectively is equivalent to emissions of 25 and 298 metric tonnes of carbon dioxide.

The results show 2016 GHG emissions within reporting boundary totaled 158,176.05 tonnes of CO₂ equivalent (CO₂e). During 2016, GTE acquired PetroLatina and assumed ownership of all associated operated facilities. These facilities were designed to be powered by diesel, which contributed significantly to the relative large volume of GHG gas emitted at these sites and the resulting increase in GTE's emissions as a whole. In recognition of this, we have commenced feasibility studies into the use of alternative power sources for these facilities.

