
MURPHY OIL AND CLIMATE CHANGE
Upstream Worldwide
Exploration/Production Assets
2017 Emission Data

Murphy Oil Corporation

Climate Change Activities

- **Murphy's emission inventory based on guidance from:**
 - American Petroleum Institute (API)
 - California Climate Action Registry (CCAR)
 - Environmental Protection Agency's Mandatory Reporting Rule (MRR)
 - International Association of Oil and Gas Producers (IOGP)
 - International Petroleum Industry Environmental Coalition (IPIECA)
 - World Business Council for Sustainable Development (WBCSD)
 - World Resources Institute (WRI)
- **Key premises for Murphy's 2017 Worldwide Emission Inventory**
 - Operational Control for Direct Emissions Owned or Controlled by Murphy
 - *De minimis* Threshold Set at Less than 3% of Total Emissions

Murphy Oil Corporation

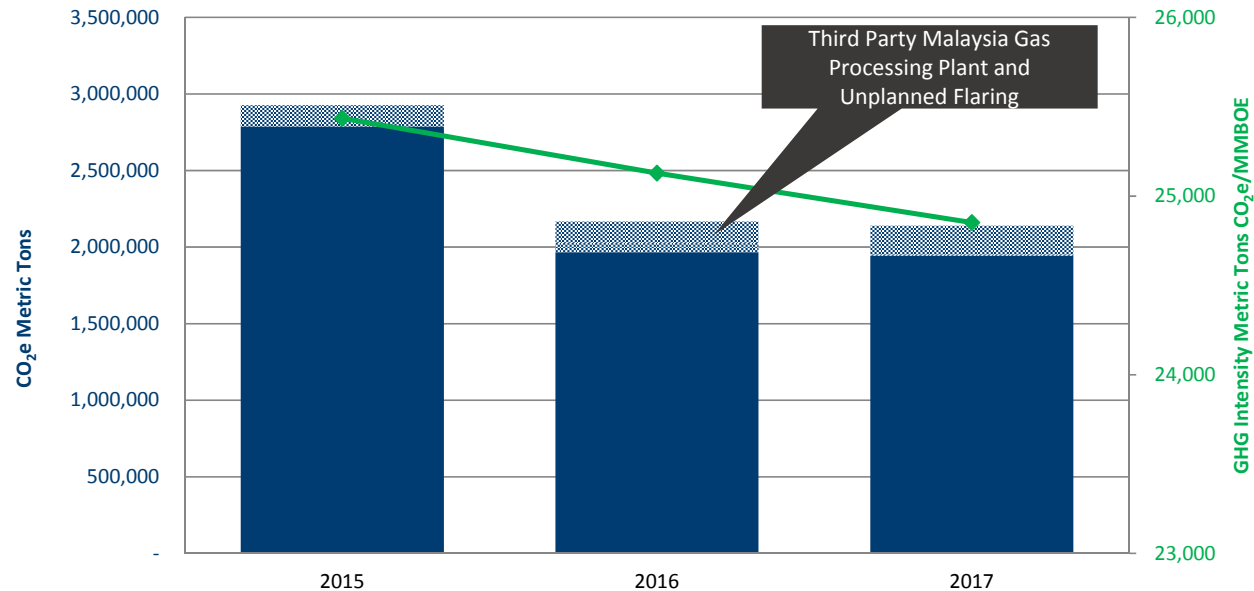
Climate Change Activities

- **Climate Change Report Format**

- Part 1-Emissions Inventory: Trends and Analysis
- Part 2-Initiatives to Address Scope 1 (Direct) Emissions
- Part 3-Comments on Climate Related Risk Issues
- Part 4-Murphy Organizational Structure and Activities to Manage Climate Change Issues
- Part 5-Links to Murphy's Worldwide HSE Policy and Climate Change Principles

Murphy Worldwide Emissions

Part 1-Trends and Analysis: Executive Overview



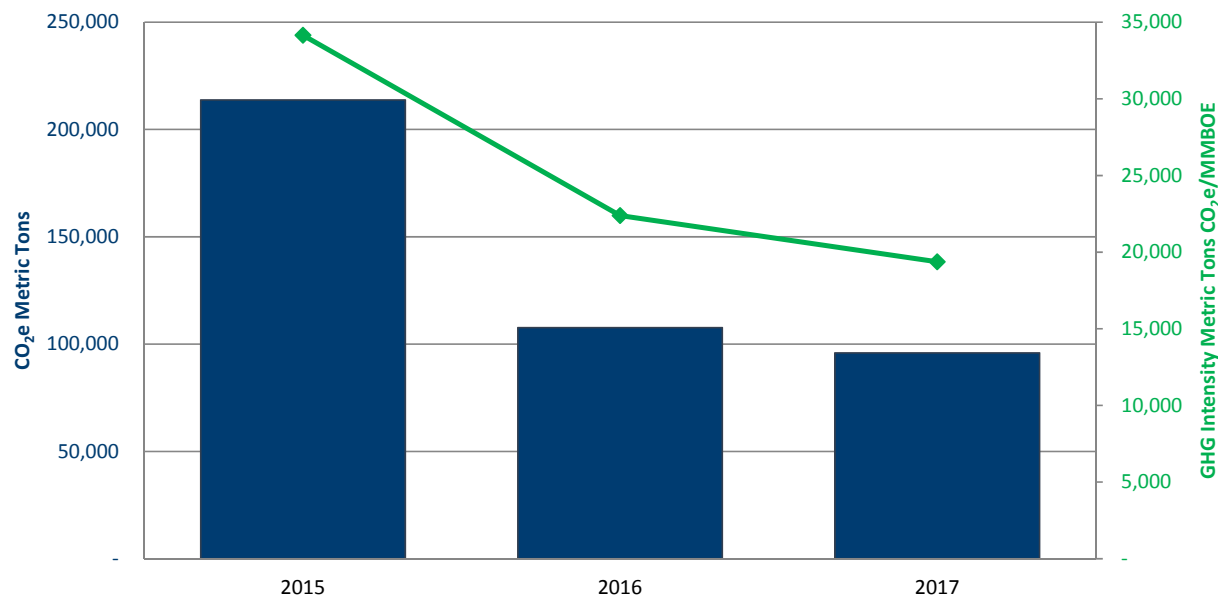
GHG Emissions: Murphy Oil Corporation

2017

- Slight Decrease in Emissions and Intensity Worldwide.
- Emissions Reduction from sale of Canada's Seal Lake asset was offset by increased activity in US Onshore and Malaysia.

2015 – 2017 CO₂e Emissions for U.S. Offshore E&P

Part 1-Trends and Analysis

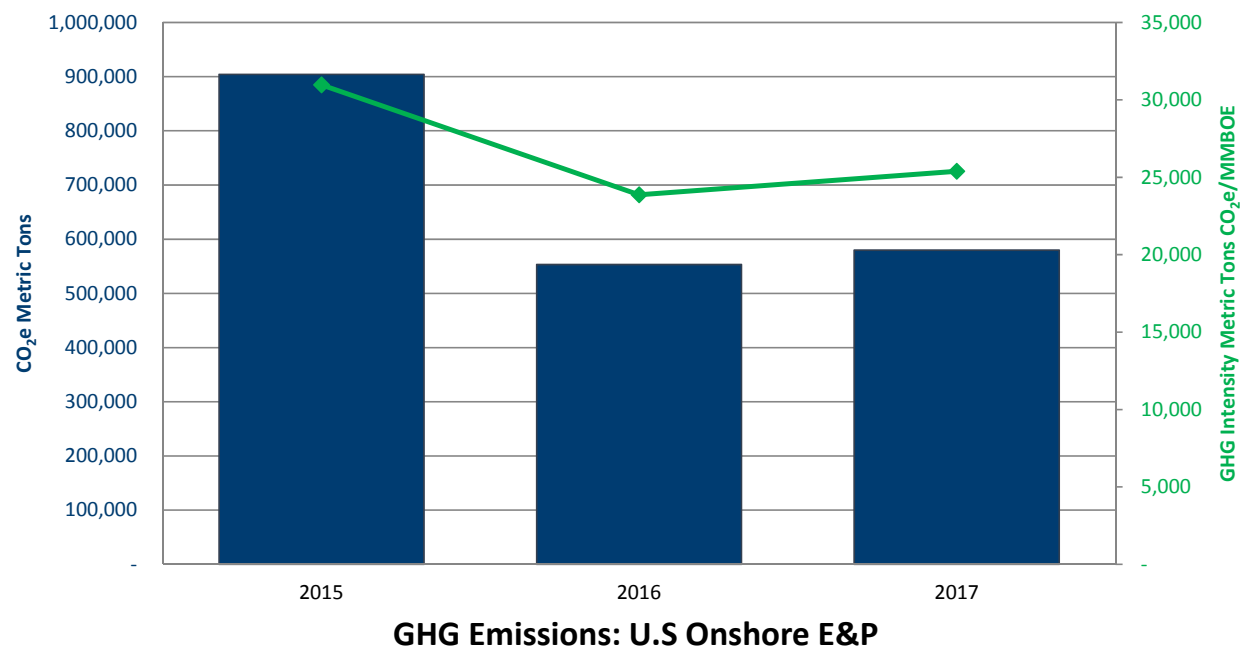


GHG Emissions: U.S Offshore E&P

- **2016 Emission Decreases for U.S. Offshore E&P were Attributable to:**
 - Thunder Hawk Platform Changed Operatorship
 - No Exploration Activity in the Gulf of Mexico
- **2017 Emission Decreases for US Offshore E&P was Attributable to:**
 - No Significant Changes in Activity Levels
 - Applied Updated Emission Factors Received from Regulator

2015 – 2017 CO₂e Emissions for U.S. Onshore E&P

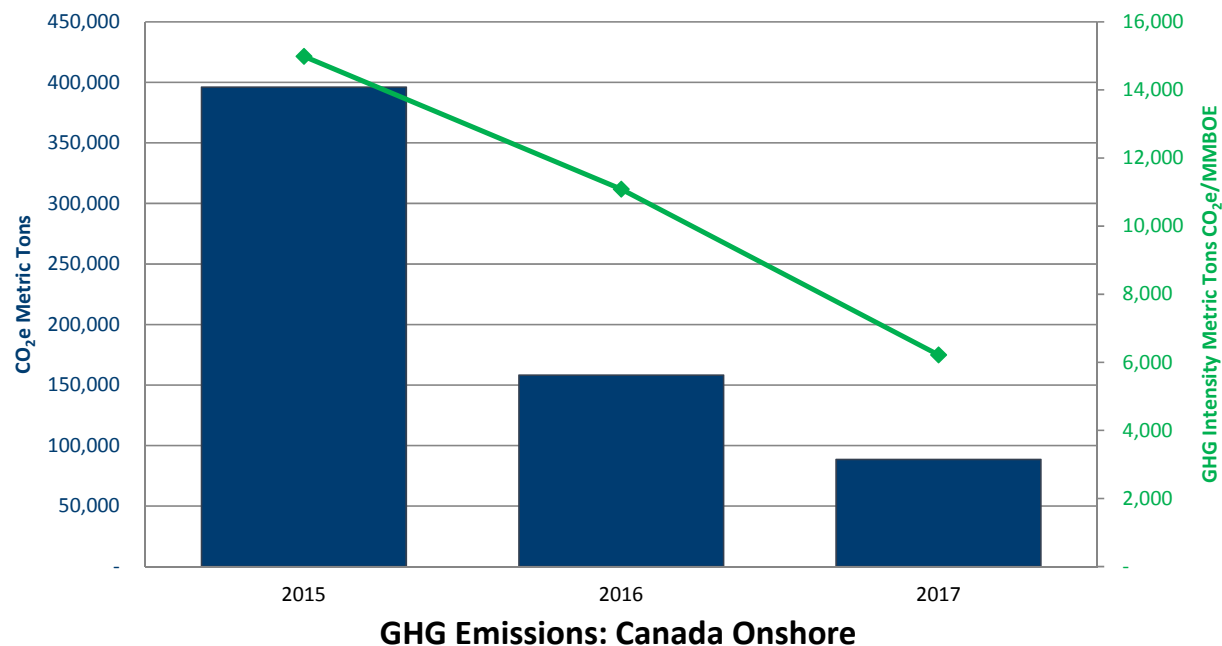
Part 1-Trends and Analysis



- **2016 Emission Decreases for U.S. Onshore E&P were Attributable to:**
 - Decrease in Upset Flaring
 - Decrease in Drilling and Completion Activity
- **2017 Emission Increases for U.S. Onshore E&P were Attributable to:**
 - Increase in Drilling and Completion Activity

2015 – 2017 CO₂e Emissions for Canada Onshore

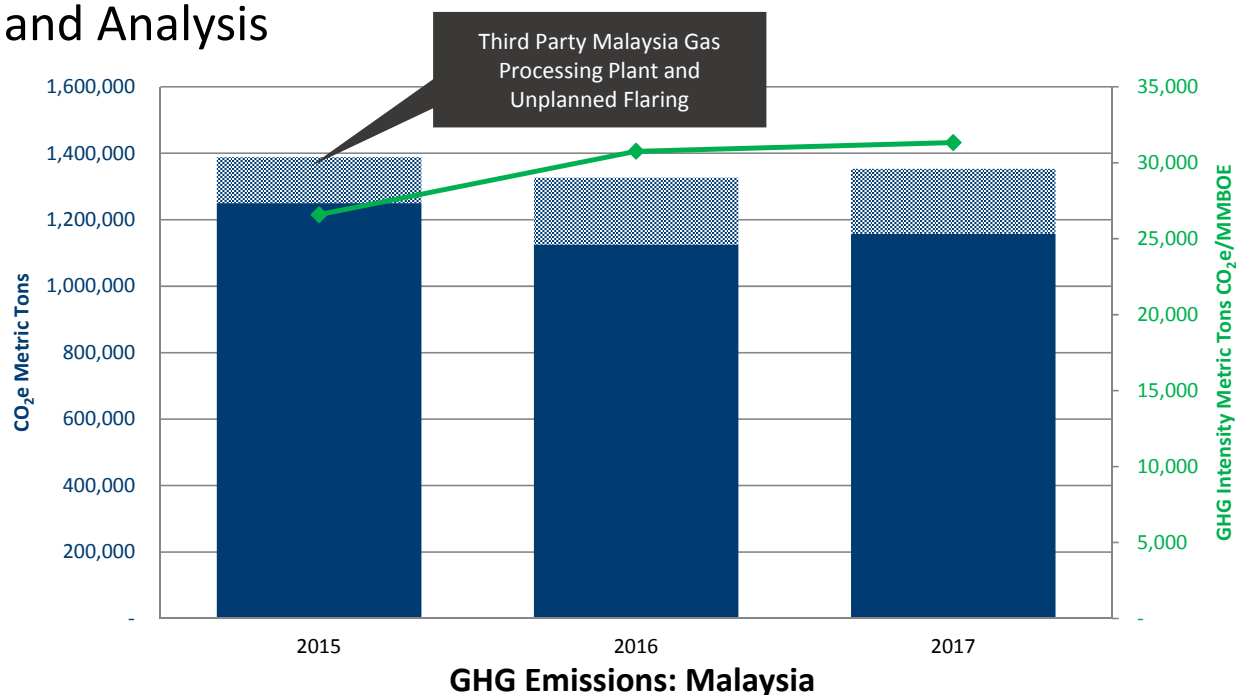
Part 1-Trends and Analysis



- **2016 Emission Decrease for Canada Onshore was Attributable to:**
 - Tupper Main A-21 and Tupper West 05-01 Gas Plants Divested
- **2017 Emission Decrease for Canada Onshore was Attributable to:**
 - Sale of Seal Lake Assets

2015 – 2017 CO₂e Emissions for Malaysia

Part 1-Trends and Analysis



- **2016 Emission Decrease for Malaysia was Attributable to:**
 - Natural Field Decline Led to Reduced Production
 - Reduced Explorations
- **2017 Emission Increase for Malaysia was Attributable to:**
 - Increased Third Party Malaysia Gas Plant and Unplanned Flaring.

Initiatives to Address Direct Emissions

Part 2 – Initiatives to Address Scope 1 (Direct Emissions)

- **Compared to 2008, Murphy's GHG Intensity Factor (metric tons CO₂e/million BOE) for Upstream Operations has decreased by 66%.**
- **Since 2003, Murphy has spent over \$734 Million in environmental expenditures to reduce emissions through improved technology and increase energy efficiencies.**
- **In 2017, Murphy spent \$25.7 million on gathering systems, instrument air compressors and electrification projects.**
- **Constructed Gas Sales Pipeline to capture up to 100 million standard cubic feet/day of flared emissions from our Malaysia operations (2008).**
- **Prepared an Internal Annual Worldwide GHG Emissions Report (since 2001).**

Initiatives to Address Direct Emissions

Part 2 – Initiatives to Address Scope 1 (Direct Emissions)

- **Conducted Environmental Assessment of Eagle Ford Operations (2011).**
- **2012 through 2017 Emission Reduction Efforts:**
 - Eagle Ford Shale - Solar Powered Instrument Air Compressors, Chemical Pumps and Batteries
 - Eagle Ford Shale - Installed Low Bleed Controllers, Installed Air-Actuated Controllers, Completion Flow-Back to Flare and Flares at Well Sites
 - Eagle Ford Shale - Pipeline infrastructure and process efficiencies that lead to a significant reduction in venting and flaring emissions
 - Vapor Recovery Units Offshore and Onshore
 - Canada Seal - Vent Reduction Initiatives (emergency vent control, flares, and gas gathering systems). **Note: Seal Lake assets were sold in January of 2017.**
 - **Canada Kaybob Duvernay – Gathering Systems to Central Facilities**

Climate Related Risk Issues

Part 3 – Comments on Climate Related Risk Issues

- **Regulatory/Legislative Risk**

- Environmental regulations have historically been subject to frequent change by regulatory authorities and these are expected to continue to evolve in the foreseeable future. We are unable to predict Murphy's ongoing cost to complying with these laws and regulations or the future impact of such regulations on our operations.

- **Financial Risk**

- The Company is unable at this time to predict the financial impact of climate related issues.

Climate Related Risk Issues

Part 3 – Comments on Climate Related Risk Issues

- **Marketplace Impacts**

- Severe weather related incidents that may be due to climate change may cause disruptions to major customers or suppliers, and The Company is unable to predict at this time how much impact this disruption may have to Murphy or to the industry in general.

- **Reputation Risks**

- Murphy is engaged in today's global policy dialogue both nationally and internationally.
- Murphy as a responsible energy company recognizes the importance of environmental stewardship as a part of its mission and has implemented organizational structure, disclosure controls, and procedures to process climate-change related information.

Managing Climate Change Issues

Part 4 - Organizational Structure and Activities to Manage Climate Change Issues

- **Organizational Structure**

- Murphy's Board of Directors Health, Safety And Environmental (HSE) committee meets regularly and conducts an annual review of our emissions inventory, and monitors compliance with our worldwide HSE policy and climate change principles.
- Management and the HSE committee of the Board oversee Murphy's activities that may affect climate change.
- Murphy established a Director of Governmental Affairs for the U.S. who monitors for management legislative developments regarding climate change both on a state and national level.
- Murphy has reorganized its HSE functions to provide a more integrated and efficient approach with operations involvement to implement the directives of The HSE committee of the Board.

Managing Climate Change Issues

Part 4 - Organizational Structure and Activities to Manage Climate Change Issues

- **Climate Change Activities:**
 - Annual internal determination of GHG emissions and trends for the last 17 years.
 - Membership in trade organizations to actively participate in the national and international dialogue regarding climate change:
 - MIT Joint Program on Science & Policy of Global Change
 - American Petroleum Institute
 - Society of Petroleum Engineers
 - Canada Association of Petroleum Producers
 - Offshore Operators Committee
 - South Texas Economic and Energy Roundtable
 - Joint Environmental Work Group, Malaysia

Worldwide Environmental, Health, and Safety Policy and Climate Change Principles

Part 5

- The links to Murphy's Worldwide HSE Policy and our Guiding Principles for Climate Change can be found at:
 - http://www.murphyoilcorp.com/content/documents/Responsibility/Website_Worldwide_HSE_Policy.pdf
 - http://www.murphyoilcorp.com/content/documents/Responsibility/Climate_Change_Principles.pdf

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