

Tullow Oil's GHG Emissions Scope & Calculation Methodology

GREENHOUSE GAS REPORTING BOUNDARIES

Tullow Oil reports its greenhouse gas emissions in line with the World Resources Institute (WRI)/ World Business Council for Sustainable Development (WBCSD) GHG Protocol Corporate Standard and Corporate Value Chain (Scope 3) Standard and IPIECA Estimating petroleum industry value chain (Scope 3) greenhouse gas emissions. The scope of our greenhouse gas reporting includes all of Tullow's countries of operation including UK, Ghana, Kenya and Uganda.

Organisational and operational reporting boundaries:

Material emissions categories	Organisational boundary reported	
	Net equity share	Operational control
Scope 1: Direct Energy Consumption and Direct Emissions		✓
Scope 2: Emissions from Purchased Electricity		✓
Scope 3: Business Travel		✓
Scope 3: Non-operated assets	✓	

Net Zero Commitment

Tullow has and will:

- Embed mitigation of climate change risks in our strategy, decision-making on capital allocation and management compensation;
- Ensure our business strategy responds to evolving climate-related transitional (market, reputational, technology, regulatory, policy, legal and financial) and physical risks;
- Increase transparency in our performance reporting, including reporting in alignment with the recommendations of the Taskforce on Climate-Related Financial Disclosures and other key global benchmarks including CDP. This will include stress testing our portfolio annually to ensure its resilience in a 1.5-2°C scenario in support the Paris Agreement goals and report transparently on the findings;
- Seek to influence operator efforts on non-operated joint ventures to ensure projects minimise emissions;
- Develop a Net Zero Delivery Plan to achieve net zero Scope 1 and 2 emissions from its operations, including setting a timeframe for the delivery of the plan.

Carbon Intensity Calculation

Tullow's Carbon intensity is reported in line with IPIECA 'Sustainability reporting guidance for the oil and gas industry 2020' and will be expressed as both thousand tonnes of CO₂e per thousand tonnes of hydrocarbon produced, as well as kilograms (KG) of CO₂e per barrel of oil equivalent (boe).¹

Calculation approach:

$$\frac{\text{Scope 1 operated emissions (thousand tonnes CO}_2\text{e)} + \text{Scope 2 emissions (thousand tonnes CO}_2\text{e)}}{\text{thousand tonnes of oil equivalent}}$$

$$\frac{\text{Scope 1 operated emissions (kilograms CO}_2\text{e)} + \text{Scope 2 emissions (kilograms CO}_2\text{e)}}{\text{barrels of oil equivalent}}$$

Scope of the numerator:

- Greenhouse gases in scope: CO₂, CH₄ and N₂O expressed as CO₂e
- Assets in scope: All controlledⁱⁱ and operated assets, excluding monitoredⁱⁱⁱ activities
- Emissions intensity remains constant regardless of equity stake, therefore gross production and emissions figures are used

Scope of the denominator:

- Production of oil, measured as either tonnes of hydrocarbons or barrels of oil, in the reporting period from all operated assets, plus.
- Production of gas, measured as million standard cubic feet per day, in the reporting period from all operated assets, converted to barrels of oil equivalent. Gas production is measured at the wellhead.

Key Assumptions

Scope 1 emissions

- IPECA Oil and Gas Industry Guidance on Sustainability reporting guidance for the oil and gas industry, Appendix Measurement Units and Conversion Factors – various conversion factors
- IOGP Environmental Data Collection User Guide-2019 Data – various conversion factors
- Source: UK Ministry of Defence Standard 91-91 Issue 7 – aviation fuel conversion factors
- DEFRA Greenhouse Gas Emission Conversion Factors – greenhouse gas emission factors and global warming potential for various fuels, electricity, fluorinated gases (F-gas) and ozone-depleting substances (ODS)
- Oil and Gas UK EEMS Atmospheric Emissions Calculations (Nov 2008) – emission factors for combustion of diesel and fuel gas in turbines, boilers and engines
- The gas composition of vent gas from tank tops on Tullow's operated asset, Jubilee was reviewed in 2020. Previously the vent gas was assumed as 100% methane, however, laboratory analysis indicates a methane composition of 1.5%. For 2021 the new composition of methane in vent gas will be reported and in our 2021 reporting we will restate methane emissions for the period 2015-2019
- Flared gas will contain a small percentage of unignited hydrocarbons (typically 1-2%) and the methane component of this unignited emission is also reflected in the overall CO₂ equivalent emissions

Scope 2 emissions

- Emissions from consumption of purchased electricity at Tullow's main offices are calculated using the 2019 version of the DEFRA UK electricity conversion factor.

Scope 3 emissions

The scope 3 Greenhouse Gas (GHG) emissions calculated by Tullow followed the Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0) (2013). Emissions are from four categories of Scope 3 emissions include:

- Category 4: Upstream Transportation and Distribution (distance-based method) – Emission factors sources from: Oil and Gas UK EEMS Atmospheric Emissions Calculations – 2008
- Category 5: Waste Generated in Operations (average-based method) – conversion factors sourced from DEFRA & IPECA Sustainability reporting guidance, Appendix: Measurement Units and Conversion Factors
- Category 6: Business Travel (distance-based method)- The emission factors used are from DEFRA
- Category 15: Investments (investment-specific method) (Non-Operated assets) (conversion factors are the same as Scope 1)
- DEFRA Conversion Factors used for waste & freighted good

ⁱ In 2019 Scope 3 emissions from business travel were included in the carbon intensity calculation. From 2020 onwards, Scope 3 emissions will not be included in the carbon intensity calculation.

ii Controlled sites are those where Tullow sets EHS management standards and directly supervises and enforces their application

iii Monitored sites are those where Tullow can influence but cannot set EHS management standards and/or cannot directly supervise and enforce their application.