



Greenhouse Gas Emissions in Georgia

Georgia Numbers at a Glance (2011)

10.5 MtCO₂e*

Total GHG emissions
(0.02% of world total)

World: 46,906 MtCO₂e

4,483,350

Population

World: 6,964,618,177

2.34

tCO₂e per capita

World: 6.73 tCO₂e

US\$8,835 Million

GDP**

World: US\$54,034 Billion

1,184

tCO₂e/million US\$ GDP

World: 868 tCO₂e/million US\$ GDP

-34.35 MtCO₂e (-77%)

Change in GHG emissions
(1990–2011)

World: +12,969 MtCO₂e

Sources: WRI CAIT 2.0, 2016.

Emissions including Land-Use Change and Forestry

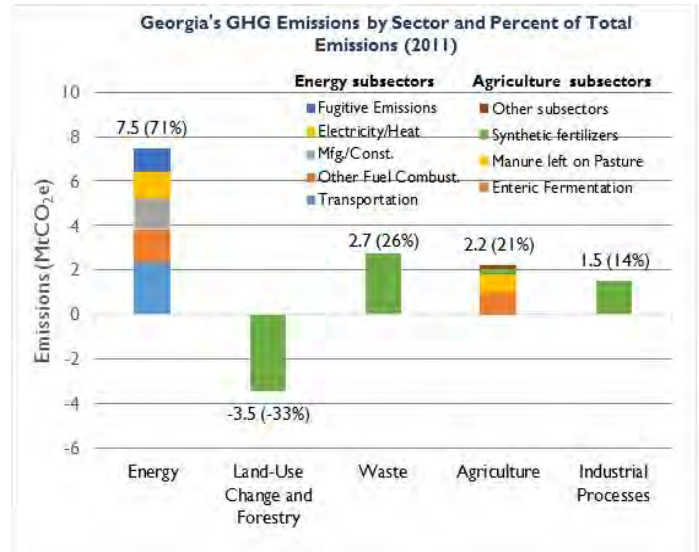
*Million metric tons of carbon dioxide equivalent

**Gross Domestic Product (GDP) in constant 2005 US\$

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Greenhouse Gas (GHG) Emissions by Sector

According to the World Resources Institute Climate Analysis Indicators Tool (WRI CAIT), Georgia's 2011 GHG profile was dominated by emissions from the energy sector, which accounted for 71% of Georgia's total emissions. Land-use change and forestry (LUCF) was the second most significant sector. A net sink, LUCF activities removed 3.5 MtCO₂e more than they emitted. Waste, agriculture, and industrial processes (IP) contributed 26%, 21%, and 14% of total emissions, respectively.¹



Sources: WRI CAIT 2.0, 2016; FAOSTAT, 2016
Note: Totals do not add up to 100% due to rounding

Change in GHG Emissions in Georgia (1990-2011)

According to WRI CAIT, Georgia's GHG emissions decreased by 34 MtCO₂e from 1990-2011. As of 2011, Georgia had regained 23% of its 1990 level emissions.² Georgia's [Third National Communication \(TNC\)](#) to the UNFCCC, submitted in 2015, references the country's political and economic instability in the years following the collapse of the Soviet Union and during the global recession from 2008-2010, which are reflected in the changes in GHG emissions during this period. In 2011, emissions rose again due to the economic recovery, particularly in the energy sector due to higher electricity demand and poor output from the country's hydroelectric power stations, which forced Georgia to increase the share of fossil-fuel based power generation.³

Energy: WRI CAIT data show that Georgia's energy GHG emissions decreased by 81% from 1990 to 2011, with electricity and heat responsible for 49% of the decrease.⁴ Between 2000 and 2007, energy emissions rose, due to the rise in transport emissions resulting from purchases of large, inefficient, aging used cars, as well as economic growth and improved living conditions overall.⁵ From 2001-2009, the number of vehicles doubled, and the number of buses and minibuses tripled.⁶ The fluctuations in energy emissions since 2008 reflect instability

¹ World Resources Institute Climate Analysis Indicators Tool (WRI CAIT 2.0, 2016); 31% of energy sector emissions were due to transportation, 21% to other fuel combustion, 19% to manufacturing and construction, 16% to electricity and heat, and 14% to fugitive emissions. Agriculture subsector emissions information presented in the bar chart is from Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT), viewed June 26, 2016: <http://faostat3.fao.org/download/GI/GT/E>.

² WRI CAIT 2.0, 2016.

³ Georgia. Georgia's [Third National Communication \(TNC\)](#) to the UNFCCC, 2015.

⁴ Ibid.

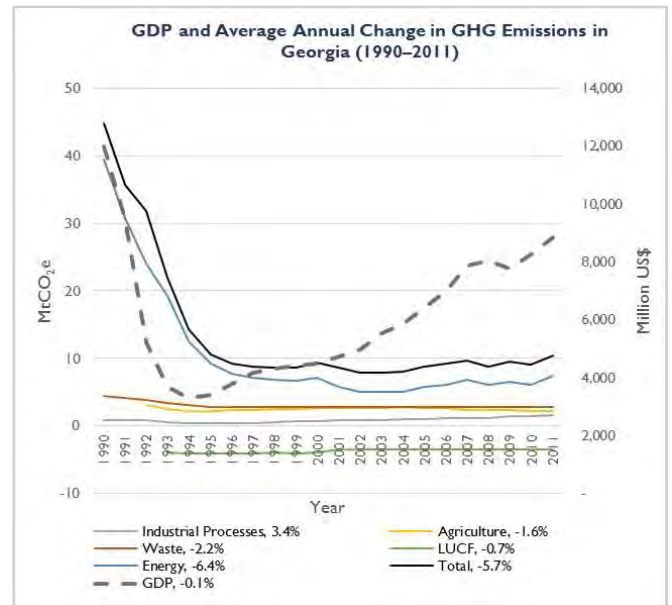
⁵ Ibid.

⁶ Georgia. Ministry of Environment and Natural Resources Protection, [National Report on the State of the Environment of Georgia](#), 2009.

due to the global economic crisis and the Russo-Georgian War, with the upturn in emissions from 2010 to 2011 due to emissions growth from electricity and heat production.⁷

LUCF: According to WRI CAIT, Georgia's LUCF emissions decreased 13% from 1993 to 2011.⁸ According to the Ministry of Environment and Natural Resources Protection, forests cover 2.7 million hectares or 40% of the territory. The political crisis of the 1990s and the growing domestic and international demand for timber caused intensive, and often illegal, exploitation of the country's forests.⁹ Illegal logging has dropped significantly in recent years but still remains high. Forest fires are also a threat, and aerial bombing by Russia in 2008 destroyed approximately 1,300 hectares of forest areas. More recently, large-scale infrastructure development (pipelines, dams, power lines, railways, mining facilities, roads, and buildings), triggered by rapid economic recovery and growth, have become a threat to Georgia's forests and biodiversity.¹⁰

Waste: According to WRI CAIT, Georgia's waste sector emissions decreased by 1.7 MtCO₂e from 1990 to 2011.¹¹ The TNC shows a similar trend, with waste sector emissions decreasing during the early 1990s, largely due to a reduction in wastewater, followed by stable emissions and slight increases since 2000.¹² Georgia has 69 "official" municipal landfills and 28 known "unofficial" landfills.¹³ Georgia's landfills operate under local government authorities but without proper measures for groundwater protection, leachate collection/treatment or energy recovery. In 2012, the World Bank estimated the cost of environmental degradation from the waste sector at 5% of GDP and identified waste management as a key environmental issue.¹⁴



Source: WRI CAIT 2.0, 2016

Carbon Intensity: GHG Emissions Relative to Gross Domestic Product (GDP)

Georgia's GHG emissions decreased 77% from 1990 to 2011, averaging -5.7% annually. Georgia's GDP also decreased but less, by 26%, averaging -0.1% annually.¹⁵ Georgia's key development challenge is to accelerate economic growth while limiting GHG emissions by boosting investments in low carbon technologies.¹⁶

Climate Change Mitigation Targets and Plans

Supported by the US Government, Georgia started preparing its Low Emission Development Strategy (LEDS) in 2013, which is expected to be finalized by the end of 2016. Georgia's [Intended Nationally Determined Contribution \(INDC\)](#) builds on the LEDS and communicates the country's plans to reduce its GHG emissions by 15% below the business as usual scenario for the year 2030 through actions in the energy, waste, IP and agriculture sectors. With international support, including technical cooperation, low-cost financial resources, and technology transfer, the 15% reduction target could be augmented to 25%. Georgia is drafting its first National Energy Efficiency Action Plan (NEEAP) and will also increase the share of renewable energy in its generation mix by adding 4,800 MW of hydropower generation capacity and 240 MW of wind. Georgia plans to improve public transportation and use more energy efficient light commercial vehicle technologies. Georgia has also prepared Nationally Appropriate Mitigation Actions (NAMA) in forest management, renewable energy, and energy efficiency, which are expected to be implemented prior to 2020 with international support.¹⁷

⁷ Georgia. Georgia's TNC, 2015.

⁸ For LUCF sector emissions, WRI CAIT uses data from FAOSTAT. Since there are no FAOSTAT LUCF data for Georgia during the period 1990-1992, LUCF sector emissions are presented in the second graph of this fact sheet starting in 1993.

⁹ Georgia. Ministry of Environment and Natural Resources Protection, National Report on the State of the Environment of Georgia, 2009.

¹⁰ The World Bank. [Georgia's Country Environmental Analysis \(CEA\)](#), Institutional, Economic, and Poverty Aspects of Georgia's Road to Environmental Sustainability, June 2015.

¹¹ WRI CAIT 2.0, 2016.

¹² Georgia. Georgia's TNC, 2015.

¹³ Georgia. Ministry of Environment and Natural Resources Protection, National Report on the State of the Environment of Georgia, 2009.

¹⁴ The World Bank. Georgia's CEA, Institutional, Economic, and Poverty Aspects of Georgia's Road to Environmental Sustainability, June 2015.

¹⁵ WRI CAIT 2.0, 2016.

¹⁶ Georgia. Georgia's [Intended Nationally Determined Contribution \(INDC\)](#) to the UNFCC, 2015.

¹⁷ Georgia. Georgia's TNC, 2015.