



Greenhouse Gas Emissions in Azerbaijan

Azerbaijan Numbers at a Glance (2012)

69 MtCO₂e*

Total GHG emissions
(0.15% of world total)

World: 47,599 MtCO₂e

9,295,784

Population

World: 7,043,181,414

7.46

tCO₂e per capita

World: 6.76 tCO₂e

US\$28,952 Million

GDP**

World: US\$ 55,261 Billion

2,395

tCO₂e/million US\$ GDP

World: 861 tCO₂e/million US\$ GDP

+6.8 MtCO₂e (+11%)

Change in GHG emissions
(1992–2012)

World: +14,303 MtCO₂e

Sources: WRI CAIT 2.0, 2016.

Emissions including Land-Use Change and Forestry

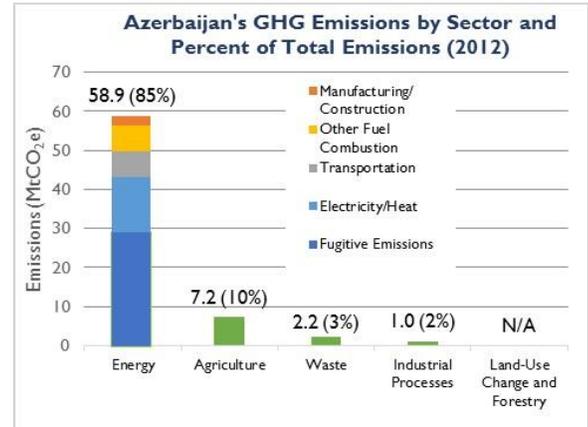
*Million metric tons of carbon dioxide equivalent

**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), Azerbaijan's GHG profile is dominated by emissions from its energy sector, which contributes 85% of total emissions. Fugitive emissions account for 50% of energy sector emissions, and electricity and heat account for 24%. Agriculture contributes 10% of the total. Waste and industrial processes (IP) contribute minimal emissions. WRI CAIT reports zero GHG emissions from land-use change and forestry (LUCF).¹



Source: WRI CAIT 2.0, 2016

Change in GHG Emissions in Azerbaijan (1992-2012)²

Azerbaijan's total GHG emissions grew 11% from 1992-2012. The average annual change during this period was 0.7%, with sector-specific average annual change as follows: energy (0.5%), agriculture (2.1%), waste (0.3%), and IP (9.7%).³

Energy: According to WRI CAIT, energy emissions increased by 3.7 MtCO₂e (7%) from 1992-2012, largely due to the increase in fugitive emissions. These emissions are released during oil, gas, and industrial production due to leaks, venting, evaporation, and flaring, as well as accidents and equipment failures. Azerbaijan's [Third National Communication \(TNC\)](#) to the UNFCCC states that fugitive emissions occur most often during natural gas production, processing, transportation, and distribution.⁴ Production of natural gas reached record levels after the Shah Deniz gas field began production in 2007 and the Umid field began production in 2012. Although Azerbaijan has taken steps to reduce fugitive emissions from gas flaring and leaks, reducing its gas flaring by almost 50% since joining the Global Gas Flaring Reduction partnership in 2010, there is additional potential to reduce emissions from this sub-sector.⁵ Azerbaijan's [Intended Nationally Determined Contribution \(INDC\)](#) points to the need to modernize gas pipelines and distribution systems and prevent gas leakages during processing.⁶ As of 2012, electricity generation also continues to be a major contributor to energy GHG emissions, despite emissions declining by almost 40% from 1992-2012.⁷ While installed electricity generation capacity increased by 37% during this time period, the generation mix shifted from GHG-intensive oil to less GHG-intensive natural gas.⁸ As of 2012, 90% of electricity was

¹ For LUCF sector emissions, WRI CAIT uses data from the Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT). Since 1990-1992 LUCF emissions data are not available for Azerbaijan from WRI CAIT or FAOSTAT, and since LUCF emissions from 1992 onwards are zero, LUCF sector emissions are not presented in the graphs in this fact sheet.

² This fact sheet would use 1990 as the initial year to show change in GHG emissions. However, WRI CAIT does not provide data on total GHG emissions for Azerbaijan from 1990-1991, as emissions from agriculture, land-use change and forestry, and total emissions are not available until 1992. The 1990-1991 emissions from other sectors are approximated according to a methodology used to calculate emissions for newly formed countries.

³ WRI CAIT 2.0, 2016.

⁴ Republic of Azerbaijan, Azerbaijan's Third National Communication (TNC) to the UNFCCC, 2015.

⁵ International Energy Agency (IEA), Energy Policies Beyond IEA Countries: Eastern Europe, Caucasus, and Central Asia, 2015.

⁶ Republic of Azerbaijan, Azerbaijan's Intended Nationally Determined Contribution (INDC) to the UNFCCC, 2015.

⁷ WRI CAIT 2.0, 2016.

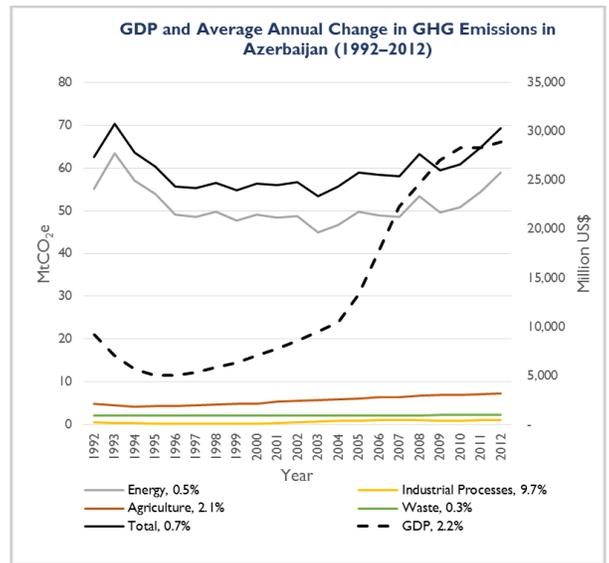
⁸ US Energy Information Administration (EIA), viewed June 30, 2016: <http://www.eia.gov/beta/international/>.

generated by natural gas, and only 2% was generated by oil.⁹ Transportation accounts for 11% of energy emissions, increasing 65% from 1992-2012.¹⁰ Most of this is from road transport, particularly passenger cars.¹¹ Azerbaijan's 2015 [Biennial Update Report](#) (BUR)¹² to the UNFCCC attributes the increase to vehicle imports, which have driven the 86% increase in the overall vehicle fleet from 2005-2012. As of 2012, Azerbaijan had 104 passenger cars per 1000 people, up from 36 per 1000 people in 1992.¹³

Agriculture: Data from WRI CAIT shows that agriculture emissions increased by 2.4 MtCO₂e (49%) from 1992-2012, due almost entirely to enteric fermentation and manure left on pasture.¹⁴ Azerbaijan's TNC attributes this increase to the growth of the livestock sector; production of both meat and milk more than doubled from 1992-2012.¹⁵ Despite the apparent improvement in productivity – with production doubling while emissions grew only by half – the BUR notes that the government has carried out relatively few activities to limit emissions from the agriculture sector.¹⁶

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

According to WRI CAIT, Azerbaijan's GHG emissions grew 6.8 MtCO₂e from 1992 to 2012, averaging 0.7% annually, while GDP grew by 215%, averaging 6.8% annually.¹⁷ While these data show that Azerbaijan's economy grew much faster than GHG emissions, its carbon intensity is more than double the world average. There is thus potential to reduce GHG emissions relative to GDP. [Azerbaijan 2020](#), the president's 2012 economic strategy, states that the country plans to reduce carbon intensity to OECD levels by the end of the decade.



Source: WRI CAIT 2.0, 2016

Climate Change Mitigation Targets and Plans

Azerbaijan's INDC expresses an absolute target to reduce emissions 35% below 1990 GHG levels by 2030. In the decade following the dissolution of the Soviet Union, GHG emissions in Azerbaijan fell by almost 50% from 1990-2000.¹⁸ Azerbaijan's INDC target requires Azerbaijan simply to stabilize emissions at current levels. Meanwhile, Azerbaijan's economy is expected to grow by approximately 8% between 2014 and 2021.¹⁹ The INDC pledges to meet this target through mitigation measures including raising awareness of energy efficiency, modernization of natural gas pipelines to decrease losses, prevention of leakage during gas production, increased development of renewable energy sources, development of public transit, methane capture from livestock sources, and planting of new forests. Since 2004, Azerbaijan has developed policies and strategies to encourage renewable and alternative energy development, although implementation has been uneven. The government established a State Agency on Alternative and Renewable Energy Resources in 2009 under the Ministry of Industry and Energy to facilitate its 2005-2013 renewable energy strategy, which the IEA states has seen little implementation.²⁰ Driven by a 2011 presidential decree, the government drafted a second renewable and alternative energy strategy for 2012-2020, which is still under consideration. The new program proposes a legal framework to achieve the following goals by 2020: reduce GHG emissions by at least 20% below 1990 levels (superseded by the INDC); generate 20% of electricity from renewable sources; and increase energy efficiency by 20%. A draft Law on Renewable Energy also proposes incentives for renewable energy development, including a feed-in tariff and reduced tariffs on imported equipment.²¹

⁹ IEA, Energy Policies Beyond IEA Countries: Eastern Europe, Caucasus, and Central Asia, 2015.

¹⁰ WRI CAIT 2.0, 2016.

¹¹ Republic of Azerbaijan, Azerbaijan's TNC to the UNFCCC, 2015.

¹² Republic of Azerbaijan, Azerbaijan's Biennial Update Report (BUR) to the UNFCCC, 2015: http://unfccc.int/national_reports/non-annex_i_natcom/reporting_on_climate_change/items/8722.php.

¹³ Azerbaijan, State Statistical Committee Database, viewed June 30, 2016: <http://www.stat.gov.az/source/transport/indexen.php>.

¹⁴ Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT), viewed June 26, 2016: <http://faostat3.fao.org/download/G/1/GT/E>.

¹⁵ FAOSTAT, viewed June 26, 2016: <http://faostat3.fao.org/download/Q/QL/E>.

¹⁶ Republic of Azerbaijan, Azerbaijan's BUR to the UNFCCC, 2015.

¹⁷ WRI CAIT 2.0, 2016.

¹⁸ Republic of Azerbaijan, Azerbaijan's TNC to the UNFCCC, 2015.

¹⁹ International Monetary Fund (IMF), World Energy Outlook (WEO), 2016: <http://www.imf.org/external/ns/cs.aspx?id=29>. The WEO projects GDP through 2021.

²⁰ IEA, Energy Policies Beyond IEA Countries: Eastern Europe, Caucasus, and Central Asia, 2015.

²¹ Ibid.