



Greenhouse Gas Emissions in Sri Lanka

Sri Lanka Numbers at a Glance (2011)

45 MtCO₂e*

Total GHG emissions
(0.10% of world total)
World: 46,906 MtCO₂e

20,869,000

Population
World: 6,964,618,177

2.16

tCO₂e per capita
World: 6.73 tCO₂e

US\$35,995 Million
GDP**

World: US\$54,034 Billion

1,255

tCO₂e/million US\$
GDP

World: 868 tCO₂e/million
US\$ GDP

+14 MtCO₂e (+43%)

Change in GHG
emissions (1990–2011)
World: +12,969 MtCO₂e
(+38%)

Source: WRI CAIT 2.0, 2015
Emissions including Land-Use
Change and Forestry

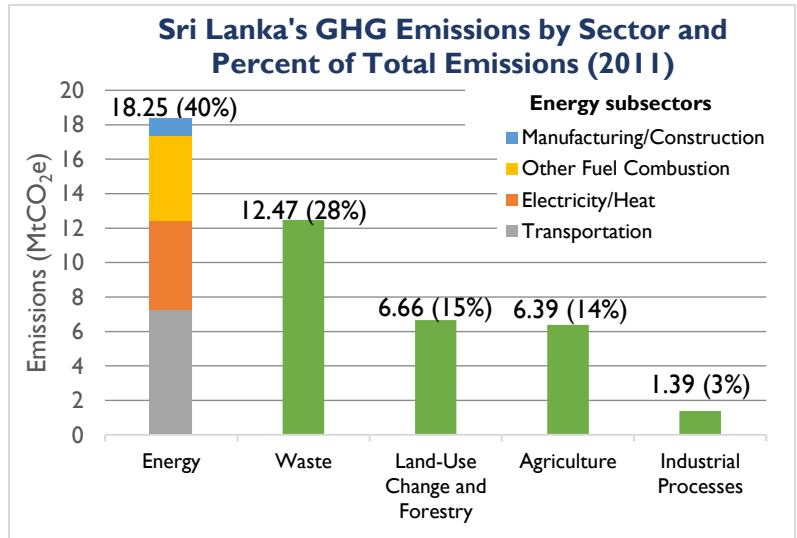
*Million metric tons of carbon
dioxide equivalent

**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), Sri Lanka's GHG profile in 2011 was dominated by the energy sector (40%), followed by the waste (28%), land use change and forestry (LUCF) (15%) and agriculture (14%) sectors. Industrial processes (IP) contributed the least (3%). Energy sector emissions consist of transportation (39%), electricity and heat (28%), other fuel combustion (27%), and manufacturing and construction (5%).



Source: WRI CAIT 2.0, 2015

Change in GHG Emissions in Sri Lanka (1990-2011)

Sri Lanka's GHG emissions grew by 43% from 1990 to 2011.¹ The average annual change in total emissions during this period was 2%, with sector-specific average annual change as follows: energy (6%), waste (1%), LUCF (-1%), agriculture (0%), and IP (1%).

Energy: According to WRI CAIT, Sri Lanka's energy emissions increased by 12.4 MtCO₂e from 1990 to 2011, with electricity and transportation contributing almost equally to 80% of the increase.² The share of total primary energy supply in Sri Lanka in 2013 consisted of biofuels (biomass) (48%), hydro (6%), oil (41%), and coal (5%), with consumption led by the residential sector, followed by transport, then industry.³ Business-as-usual energy demand growth is 2.3%, which will double overall demand by 2046.⁴ According to the [Second National Communication \(SNC\)](#) to the UNFCCC, the transport sector is the highest contributor to GHG emissions, emitting 48% of all carbon dioxide from fossil fuel combustion. Trucks operate on diesel fuel and consume 50% of the total diesel fuel in the country while cars, motorcycles, and three-wheelers consume gasoline. In recent years, two- and three-wheeled vehicles increased four to six fold compared to other vehicles.⁵ Over half of the vehicle fleet consists of two- and three-wheeled vehicles and the total fleet is expected to grow with economic development.⁶

According to the [Energy Sector Development Plan](#), total installed power generation is approximately 4,050 MW, consisting of 900 MW of coal power; 1,335 MW of oil; 1,375 MW of

¹ World Resources Institute Climate Analysis Indicators Tool (WRI CAIT) 2.0, 2015

² WRI CAIT 2.0, 2015.

³ International Energy Agency (IEA), Sri Lanka: Energy Balances for 2013:

<http://www.iea.org/statistics/statisticssearch/report/?country=SRILANKA&product=balances&year=2013>.

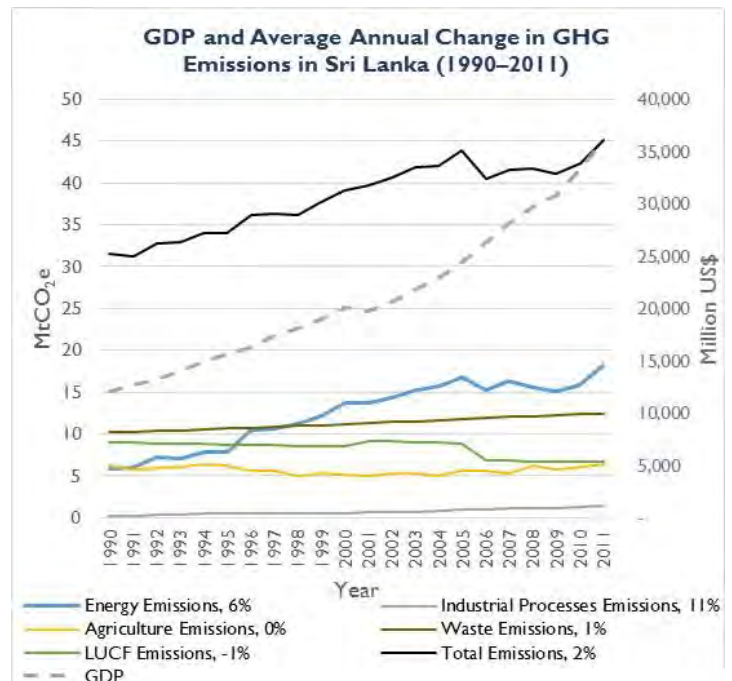
⁴ Sri Lanka. Sri Lanka's Intended Nationally Determined Contributions (INDC) to the UNFCCC, October 2015.

⁵ Sri Lanka. Sri Lanka's [Second National Communication \(SNC\)](#) to the UNFCCC, 2012.

⁶ Ministry of Power & Energy, [Sri Lanka Energy Sector Development Plan for a Knowledge-based Economy 2015-2025](#), 2012.

hydro; and 442 MW of wind, mini hydro, biomass, and solar. Industry consumes 39% of electricity, followed by 38% from domestic consumers, 20% from commercial enterprises, and street lighting and other sectors consuming the remainder. According to the Ministry of Power & Energy, annual electricity demand is expected to grow by 4-6% annually, which is constrained by high prices.⁷

Waste: According to WRI CAIT, Sri Lanka's waste sector emissions increased by 2.2 MtCO₂e from 1990 to 2011.⁸ GHG emissions from waste are from municipal solid waste (MSW) (87%), domestic and commercial wastewater (8%), and industry (5%).⁹ MSW is mainly organic, with some hazardous waste. Approximately 10-40% of MSW is collected, with the remainder either piled up or dumped in low lying areas. Industrial and hospital waste is largely hazardous, and includes inorganic acids, zinc and other heavy metals, waste oil, solvents from paint industries, dyes from garment industries, asbestos plastic and resin, and chemicals from pharmaceuticals. There are mandatory standards for industrial effluents discharged into waterways, with which some industries comply, and the government has considered but not constructed central waste water treatment facilities. There is some effort to sort recyclables and compost organic matter, and there are waste to energy proposals. The amount of urban MSW generated was projected to increase from approximately 0.80 kg per capita to 1.0 kg per capita by 2025.¹⁰



Source: WRI CAIT 2.0, 2015

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

According to WRI CAIT, GHG emissions grew 14 MtCO₂e from 1990-2011 averaging 2% annually, while GDP grew by 198%, averaging 5% annually.¹¹ With the carbon intensity of Sri Lanka's economy at approximately 1.5 times the world average, there is potential to reduce Sri Lanka's GHG emissions relative to GDP.

Climate Change Mitigation Targets and Plans

Through its [Intended Nationally Determined Contribution \(INDC\)](#), Sri Lanka communicates its intent to reduce GHG emissions unconditionally by 7% by 2030 compared to a business-as-usual scenario (with 2010 as a base year), achieving 4% from energy and 3% from other sectors. It commits to a more ambitious, conditional reduction of 23% that would increase reductions from energy to 16%, and 7% from other sectors. The unconditional energy target will be met through the implementation of non-conventional renewable energy sources projects including mini and micro hydro, wind and solar farms. The conditional target would require future support for the non-conventional renewables. Reductions from other sectors would consist of activities in the transport, waste, industrial, and forestry sectors, with detailed plans yet to be completed.

Other climate change mitigation policies include:

- [Energy Sector Development Plan for a Knowledge-based Economy 2015-2025](#) (2015) – the plan articulates 14 energy sector targets including reducing the carbon footprint of the sector by 5% by 2025.
- [National Solid Waste Management Strategy \(2007\)](#) – addresses emissions from MSW and biomedical waste.
- [National Environment Policy \(2003\)](#) – aims to promote the sound management of the environment while balancing social and economic development needs.

⁷ Ministry of Power & Energy, [Sri Lanka Energy Sector Development Plan for a Knowledge-based Economy 2015-2025](#), 2012.

⁸ WRI CAIT 2.0, 2015.

⁹ Calculated from data in Table 2.45 of Sri Lanka's [Second National Communication \(SNC\)](#) to the UNFCCC, 2012.

¹⁰ Sri Lanka. Sri Lanka's [Second National Communication \(SNC\)](#) to the UNFCCC, 2012.

¹¹ WRI CAIT 2.0, 2015.