Climate & Community INSTITUTE

ANALYSIS

Two weeks of war in Iran unleashed more carbon pollution than Iceland does in a year

US and Israeli bombardment is inflicting climate costs for decades to come.

March 21, 2026

By Patrick Bigger, Benjamin Neimark, and Fred Otu-Larbi

Summary of carbon emissions for first 14 days of US-Israel-Iran conflict from February 28 – March 14, 2026.

Activity	***Total Emissions (tCO_2e)***
Destroyed homes and buildings	2,415,000
Destroyed fuel	1,883,000
Fuel used in combat and support operations	529,000
Equipment embodied carbon	172,000
Missiles and drones	55,000
Total	**5,054,000**

Methodology

Our analysis focuses on direct and indirect emissions from the 14 days of warfare from February 28 to March 14, 2026. We estimate carbon emissions for five major categories of activities following the methodology reported in Neimark et al. and De Klerk et al.[1]

First, we consider embodied emissions in missiles and drones used by the US, Israel, Iran and other countries in the Gulf region that have been affected by the conflict. In the second category we also estimate the total emissions from fuel used by combat aircraft and equipment as well as that used by support operations such as transporting troops to the battlefield, refueling fighter jets, and the movement of naval vessels. Fuel destroyed through the bombing of storage facilities, refineries and oil tankers constitute the third category of activities for which we estimate emissions. Fighter jets, ships, and other military assists have either been destroyed or damaged in the conflict. We estimate the embodied carbon in this equipment as a separate category. The fifth category of emissions comes from destroyed homes, schools, and other infrastructure that has been destroyed or damaged and will require reconstruction after the war.

Data on the types and quantities of munitions, equipment losses, fuel consumed or destroyed, and infrastructure were obtained from media sources, reports by international organizations and other independent bodies. Information from the warring parties such as the US Central Command or Iran's Islamic Revolutionary Guard Corps were used but triangulated against media reports to confirm accuracy of the data obtained from such sources.

Emissions for each activity were estimated based on the volumes used or destroyed and the specific emissions factors proposed by De Klerk et al. and the Intergovernmental Panel on Climate Change.[2] In many instances, a range

---

[1] Neimark, B., Belcher, O., Ashworth, K. and Larbi, R., 2024. Concrete impacts: Blast walls, wartime emissions, and the US occupation of Iraq. *Antipode*, 56(3), pp.983-1005.https://onlinelibrary.wiley.com/doi/full/10.1111/anti.13006; https://en.ecoaction.org.ua/wp-content/uploads/2024/11/20241107_Guidance_Conflict_Emissions.pdf

[2] https://en.ecoaction.org.ua/wp-content/uploads/2024/11/20241107_Guidance_Conflict_Emissions.pdf; IPCC (2006). *IPCC Guidelines for National Greenhouse Gas Inventories, Volume 1: General Guidance and Reporting, Chapter 3: Uncertainties.* Intergovernmental Panel on Climate Change.

of values were obtained for an activity. In those instances, we estimated the mean value from the range of possible values and used that to estimate the carbon emissions for that activity. For example, the total amount of fuel destroyed through a missile strike on an oil tanker could range from a minimum capacity to a maximum capacity. We use the mean capacity of the tanker to estimate the carbon emissions from fuel destroyed when the tanker is destroyed.

Destroyed Homes and Buildings

Airports, military structures, homes, and commercial buildings have either been destroyed or damaged in the conflict. The number of destroyed infrastructure across the Gulf Region and Israel is difficult to ascertain partly due to censorship and because of the intensive nature of the conflict. Our estimate of carbon emissions depends on reports from the Red Crescent Society of Iran (IRCS)about damage to houses and other civilian buildings. The ICRS estimates that about 20,000 units have been affected by the conflict.[3] This includes 16,191 residential units, 3,384 commercial units, 77 medical centres and 69 schools. Even with a conservative estimate of 300 square meters per unit and 408kg CO_2e per square meter, we estimate the embodied carbon emissions in these buildings to be **2,415,000 tCO_2e.**

Destroyed Fuel

Israel has bombed several oil storage facilities in Iran including those in Tehran, Shahran, and Aghdasieh.[4] Iranian drone strikes have also caused fires and damage to oil refineries and storage facilities in Oman, Saudi Arabia, Bahrain and Kuwait.[5] Iranian forces have also struck at least 5 oil

---

3 https://www.msn.com/en-gb/war-and-conflicts/military-organizations/red-crescent-says-some-16-000-homes-damaged-in-iran/ar-AA1XUNC1

4 https://www.aljazeera.com/news/2026/3/8/israel-strikes-irans-oil-facilities-for-first-time-as-war-enters-ninth-day

5 https://www.reuters.com/world/middle-east/oil-storage-facilities-hit-omans-salalah-port-ambrey-state-tv-say-2026-03-11/; https://timesofindia.indiatimes.com/world/middle-east/bahrain-news-drone-strike-sparks-fire-at-airport-fuel-tanks-during-iran-vs-usisrael-war/articleshow/129529636.cms

tankers in the Strait of Hormuz since the conflict began.[6] We estimate that the total oil destroyed at oil storage facilities across the Gulf region and those in oil tankers to be between 2.5 and 5.9 million barrels. Using an emission factor of 425 kg CO_2e per barrel, we estimate the mean carbon emissions from destroyed oil at **1,883,000 tCO_2e.**

Fuel Used in Combat and Support Operations

The US and Israel have relied on aerial bombardments to strike at targets in Iran. F-15s, F-35 and even B-12 bombers have been used in this conflict. Based on the over 6,000 targets struck so far in the conflict and the number of missiles required to achieve those strikes, we estimate that about 2,500 flights each lasting about 3 hours have been completed. This is based on our assumption that each fighter jet is armed with up to four bombs per sortie. In addition to combat sorties, the transport of troops using planes and ships, and the delivery of logistics are all fuel-intensive activities. We estimate that between 150 and 270 million liters of fuel have been consumed by aircraft and support vessels and vehicles in this conflict, leading to a total emission of **529,000 tCO_2e.**

Equipment Loss (Embodied Carbon)

The US has lost four aircraft so far in this conflict, consisting of 3 F-15 fighter jets and 1 KC-135 refueling aircraft.[7] Iran is reported to have lost 28 aircrafts since the conflict began.[8] This includes fighter jets like F-14, SU-22 and SU-24, and military transport aircraft such as IL-76 and Boeing 747. In addition, aircrafts, Iran has lost about 21 of its naval vessels and about 300 missile launchers.[21] Altogether, this equipment is estimated to have an embodied carbon emission of **172,000 tCO_2e.**

---

[6] https://www.reuters.com/business/energy/three-tankers-damaged-gulf-us-iran-conflict-escalates-2026-03-01/

[7] https://www.bbc.co.uk/news/articles/cy0dz5ql17vo; https://www.theguardian.com/us-news/2026/mar/12/us-military-aircraft-iraq-crash

[8] https://www.globalmilitary.net/conflicts/iran-2026/

Missiles and Drones

This war has been intensive in the use of missiles and drones. The US and Israel have been reported to have struck more than 6,000 Iranian targets in the last 2 weeks utilizing predominantly Joint Direct Attack Munitions or JDAMs, Tomahawks, and similar missiles weighing between 300 and 1000 kilograms.[9] The US has also used more than a dozen GBU-57 Massive Ordnance Penetrator missiles to destroy Iran's nuclear facilities.[23] The US and Israel have also used drones on a smaller scale compared to missiles. We estimate that about 9000 missiles have been used by US and Israeli forces since the conflict began assuming 1.5 missiles are required on average per target.

Iran has relied mostly on ballistic and cruise missiles, and Shahed drones in the conflict. It is reported that Iran has fired up to 1,000 missiles weighing about 1,500 kilograms each, and about 2,000 Shahed drones weighing 200 kilograms each.[10]

The US, Israel and Guld countries like Kuwait and Saudi Arabia have fired an estimated 1,900 interceptor missiles to defend against Iranian missile and drone attacks.[11]

We estimate that all missiles and drones used in this conflict have contributed a total of **55,000 tCO_2e in carbon dioxide emissions**. This is based on a total weight of 26,865,000 kilograms and an emission factor of 4kg CO_2e for each kilogram of munition used.

---

9 https://www.wsj.com/livecoverage/iran-war-us-israel-latest-news-2026/card/u-s-has-hit-more-than-7-000-iranian-targets-trump-says-xpqky7DOEoGvM4oF0xb9; https://www.csis.org/analysis/iran-war-cost-estimate-update-113-billion-day-6-165-billion-day-12; https://foreignpolicy.com/2026/03/05/iran-war-munitions-critical-minerals

10 https://www.bloomberg.com/news/features/2026-03-10/iran-s-attack-drones-and-missiles-put-us-military-under-unexpected-strain; https://abcnews.com/International/irans-low-cost-long-range-shahed-drones-wreaking/story?id=130995895

11 https://en.defence-ua.com/news/patriot_missile_shortage_becomes_critical_after_persian_gulf_countries_used_over_1600_interceptors-17813.html