

# BLACK CARBON

FACTSHEET | 2021

The short-lived climate pollutant black carbon is a troublemaker in the Arctic. Suspended in air, the black particles absorb energy and warm the atmosphere. Deposited on snow and ice, they can cause surface warming and melting. Inhaled by humans, black carbon poses a serious health risk. But the good news is, Arctic states are taking action.

## WHERE DOES BLACK CARBON COME FROM?

Black carbon is formed by the incomplete burning of fossil fuels, biofuels, and biomass.

### KEY SOURCES:

- Old diesel engines, still widely used in the Arctic for transport, machinery equipment and energy production
- Inefficient residential heating stoves and boilers in households
- Flaring of associated petroleum gas in oil and gas production
- Field burning of agricultural residues
- Outdated large-scale combustion plants in energy production and industry
- Wildfires

Arctic nations are responsible for around ten per cent of global black carbon emissions. However, as most black carbon particles do not travel far from their source, emissions released close to the Arctic often have the biggest impact. Thus, Arctic States account for about one third of the Arctic warming caused by black carbon.



ARCTIC COUNCIL

### FOR MORE INFORMATION

[arctic-council.org/egbcm](http://arctic-council.org/egbcm)  
[acs@arctic-council.org](mailto:acs@arctic-council.org)

### ARCTIC COUNCIL ACTIVITIES

**The Expert Group on Black Carbon and Methane (EGBCM)** provides a summary of progress on black carbon reductions to Senior Arctic Officials and foreign Ministers every two years, including recommendations for enhanced action to reduce black carbon and methane emissions.

**The Arctic Contaminants Action Program (ACAP)** encourages national actions to reduce emissions and releases of pollutants such as black carbon. In cooperation with national authorities, ACAP develops pilot projects that build capacity and demonstrate emission reduction activities for contaminants.

**The Arctic Monitoring and Assessment Programme (AMAP)** monitors and assesses pollution in the Arctic and proposes actions to reduce associated threats for consideration by policy makers.

### HOW CAN BLACK CARBON AFFECT HUMAN HEALTH?

When the fine particles of black carbon are inhaled, they can increase symptoms of and mortality from respiratory and cardiovascular diseases. Those with underlying diseases, children and older people are especially vulnerable. Some studies have shown that black carbon can even pass the blood brain barrier and can even affect fetal development.

## RECOMMENDATIONS

These initiatives are local in nature, specifically designed and tailored for Arctic conditions. Yet they can be scaled up and replicated, reducing emissions while improving health and sustainable use of natural resources.

### DIESEL ENGINES

- Reduce emissions from diesel engines
- Shift to alternative energy and vehicles
- Reduce emissions from shipping

### RESIDENTIAL COMBUSTION

- Adopt cleaner and more efficient heating sources, proper maintenance of appliances and storage of fuels
- Replace outdated, inefficient equipment
- Enhance energy efficiency in residential dwellings

### WILDFIRES

- Build international networks among Arctic fire management experts
- Develop localized public education campaigns of fire prevention and safety
- Develop models to predict fire risk and support prevention and emergency response plans

## KEY PUBLICATIONS

Evaluation of Potential Impact of APG Flaring on Arctic Zone Environment

ACAP Black Carbon Case Studies Platform

AMAP Assessment 2015: Black carbon and ozone as Arctic climate forcers.

Expert Group on Black Carbon and Methane Summary Of Progress And Recommendations 2019 Report