

Coral and Ice

Black Carbon Impacts in the Arctic and Pacific Islands

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CHUKOTKA
RUSSIA

INUIT NUNAAAT

INUIT HOMELAND

U.S.A.

KALAALLIT NUNAAAT
GREENLAND

CANADA



INUIT
The Inuit are the indigenous peoples of the Arctic region of North America. They are the largest and most diverse of the indigenous peoples of the Americas. The Inuit are known for their traditional hunting and gathering lifestyle, and their unique culture and language. The Inuit are also known for their resilience and ability to survive in the harsh Arctic environment.

ICC Interest

Climate Policy

<https://www.inuitcircumpolar.com/project/inuit-arctic-policy>

<https://www.inuitcircumpolar.com/project/food-sovereignty-and-self-governance-inuit-role-in-managing-arctic-marine-resources>

From Utqiaġvik Declaration 2018

We know that the Arctic environment is unique and plays a fundamental role in global climate change regulation. Our culture is dependent on the land and sea. Therefore, the sustainability of the Arctic environment and its living resources is crucial to our communities and a focus on supporting families and Inuit society. More than 40 years ago, concern for the security and integrity of the Arctic environment prompted the establishment of ICC. ICC was the first [non-governmental organization to call] for the precautionary principle and vocalized the human rights dimension of the implications and impacts of a rapidly changing Arctic environment.

The following actions are required to protect Inuit Nunaat and guide academic institutions, governments, and researchers in the conduct of the Inuit Nunaat research:

Instruct ICC to engage appropriate international fora (e.g. Arctic Council, United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD), Intergovernmental Panel on Climate Change (IPCC)) in all aspects of Arctic science and research to contribute to the advancement of Inuit self-determination by promoting and contributing to activities that achieve partnerships and reflects the utilization of both Inuit Knowledge and science;

Mandate ICC to participate actively in the operationalization of the United Nations "Local Communities and Indigenous Peoples Platform" to create a space to share best practices, relevant climate change programs and policies, and build capacity for Indigenous Peoples to engage in the United Nations Framework Convention Climate Change (UNFCCC) process;

Instruct ICC to share research and actions that build climate resilience and to share and showcase the adaptation and innovative mitigation responses, including but not limited to monitoring the movement of animals due to climate change, erosion and community relocation, that are being designed and implemented by our communities across Inuit Nunaat;

Recognize the importance of short-lived climate forcers such as black carbon and support work through programs such as the European Union Action on Black Carbon;



Photo credit: North Slope Borough

Ecological Context

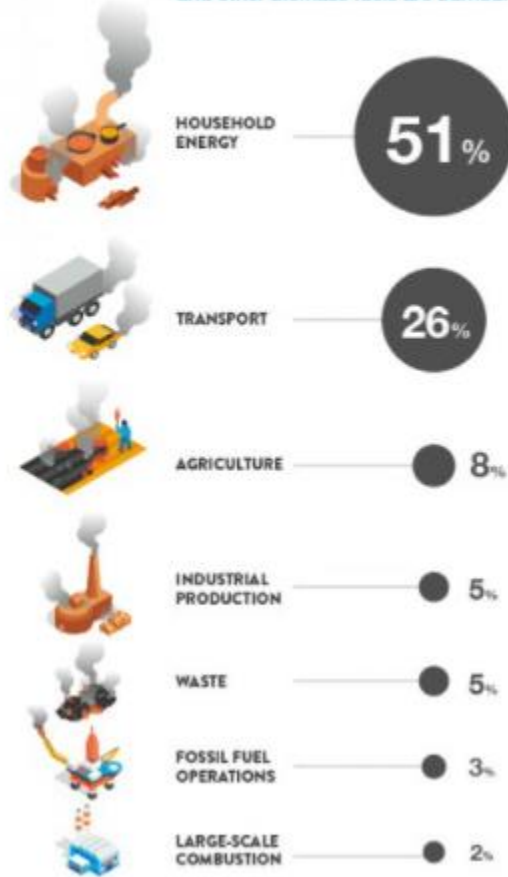


Sources

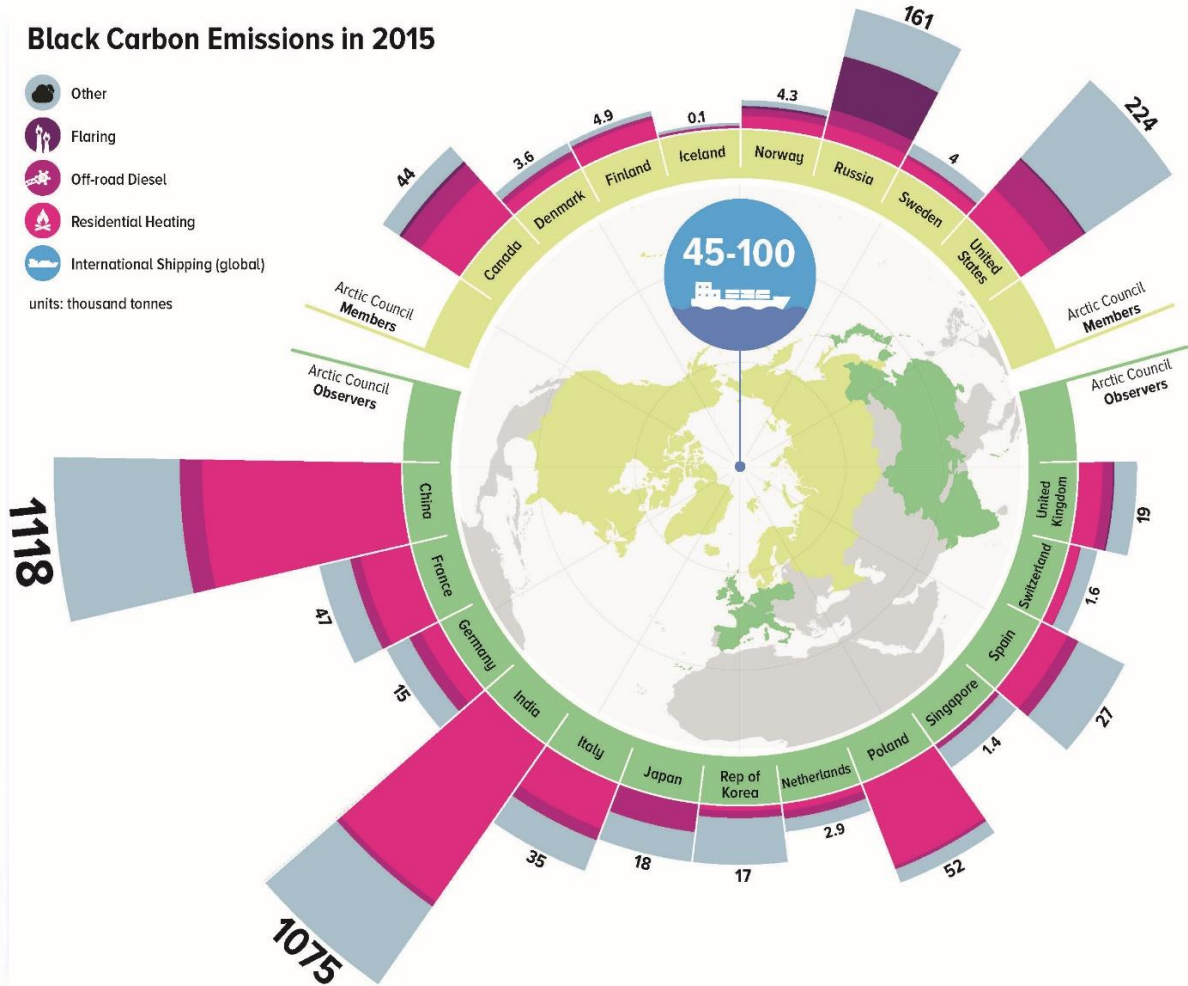


SOURCES

Black carbon is one of many particles and gases that are emitted when diesel, coal, and other biomass fuels are burned.



Black Carbon Emissions in 2015



Monitoring and Research

- Establishing uniform BC reporting guidelines (figure opposite shows a breakdown of black carbon sources in Canada as reported in it's Black Carbon Emissions Inventory)

Table 1 Black Carbon Emissions in Canada (2014)

Sector	Black Carbon (tonnes)	Percentage of Total
Industrial Sources	3 700	8.5%
Aluminium Industry	51	0.1%
Cement and Concrete Industry	17	<0.1%
Foundries	0.061	<0.01%
Mining and Rock Quarrying	450	1.0%
Pulp and Paper Industry	230	0.5%
Wood Industry*	190	0.4%
Upstream Petroleum Industry**	2 700	6.3%
Petroleum Liquids Transportation	2.3	<0.01%
Petroleum Liquids Storage	0.0054	<0.01%
Oil Sands In-Situ Extraction and Processing	120	0.3%
Oil Sands Mining Extraction and Processing	0.33	<0.01%
Bitumen and Heavy Oil Upgrading	730	1.7%
Light Medium Crude Oil Production	880	2.0%
Well Drilling	8.2	<0.1%
Well Servicing	0.02	<0.01%
Well Testing	67	0.2%
Natural Gas Production	460	1.1%
Natural Gas Processing	340	0.8%
Heavy Crude Oil Cold Production	120	0.3%
Disposal and Waste Treatment	6.3	<0.1%
Non-Industrial Sources	13 000	29.6%
Commercial Fuel Combustion*	830	1.9%
Electric Power Generation (Utilities)*	200	0.5%
Coal	46	0.1%
Natural Gas	8.8	<0.1%
Other	150	0.3%
Residential Fuel Combustion*	170	0.4%
Residential Wood Combustion	12 000	2.7%
Wood Stoves	4 100	9.4%
Furnaces	4 200	9.6%
Fireplaces	3 300	7.7%
Agriculture – Fuel Combustion*	9.9	<0.1%
Construction Fuel Combustion*	36	0.1%
Mobile Sources	27 000	61.9%
Air Transportation	670	1.5%
On-Road Transport	8 600	20%
Gasoline	1 000	2.3%
Diesel	7 600	18%
Off-Road Transport	14 000	33%
Gasoline, Liquid Petroleum Gas, Compressed Natural Gas	740	1.7%
Diesel	14 000	32%
Marine	940	2.2%
Rail	2 200	5.1%
Total	43 000	100%

*New sector/subsector

**Expanded subsector details from previous inventory

Policy and Regulation examples from the EU

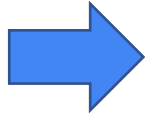


This project is funded by
the European Union

The Action is implemented through the EU Partnership Instrument providing 1.5 million EUR of funding for Action implementation during 2019-2020



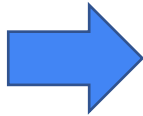
DOMESTIC HEATING



- “Burn right” education
- Scrapping incentives
- Economic incentives coupled with information.
- Emission reductions through regional, national and local actions
- Energy efficiency improvement
- Ban second-hand market for equipment not meeting standards
- Strengthen EU Ecodesign requirements (incl. saunas)
- Replace/modernise small and medium size district heating boilers



MARITIME SHIPPING

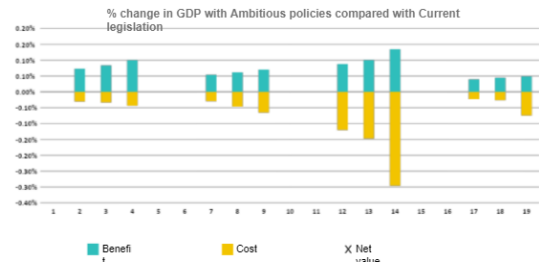


- Emission reductions through the IMO
- Emission reductions through regional, national and local actions

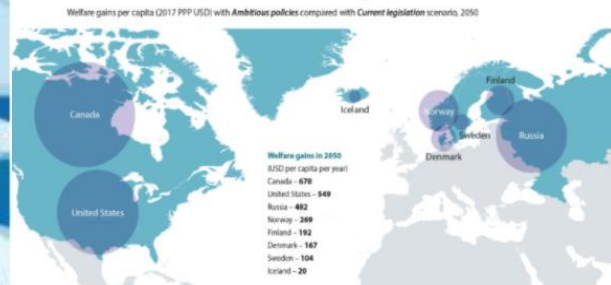
Outcomes



The economic case for policy action on air pollution

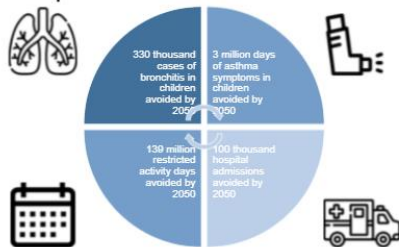


Ambitious air pollution policies result in welfare gains



Source: OECD ENV-Linkages model projections, based on OECD VSL values (OECD, 2020) and Holland (2014).

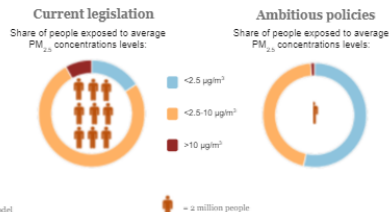
Ambitious policies can significantly reduce air pollution-related illnesses



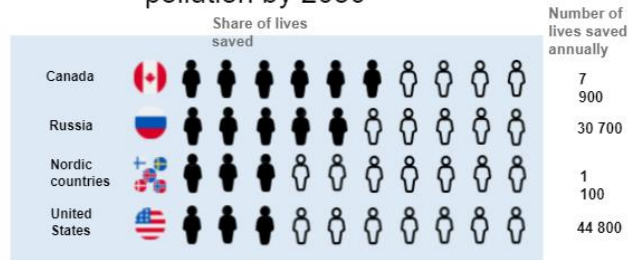
Source: OECD ENV-Linkages model projections and Holland (2014), based on Global Burden of Disease (GBD, 2016; Institute for Health Metrics and Evaluation (IHME), 2016).

Ambitious policies can reduce exposure to air pollution

1 billion less people exposed to PM_{2.5} concentrations above 10 µg/m³



Ambitious policies can significantly reduce deaths related to air pollution by 2050



Partnership and Collaboration

<http://www.manystrongvoices.org/>



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