



Arctic Reflections

About us:

Arctic Reflections is a social enterprise focused on combatting global warming through research into the feasibility and viability of restoring the Arctic Sea ice by pumping water onto existing sheets of ice. A thicker ice surface is more likely to survive the warm summer months and continue reflecting the solar energy back into space –contributing directly to the cooling of the earth.

Our goal is to be operational by 2030 and thicken and restore at least 100,000 km² of sea ice per year.

Background information

1. Who founded Arctic Reflections?

Fonger Ypma and Tom Meijeraan co-founded Arctic Reflections in 2023. For more information on the founders please visit our [‘Who we are’](#) page.

2. Where is it based?

Arctic Reflections is based in Delft, the Netherlands, with some of our team working remotely.

3. Why is it important to preserve and restore the Arctic ice sheet?

Arctic sea ice plays a critical role in regulating global climate patterns by reflecting sunlight and maintaining cooler temperatures. Its gradual disappearance is leading to increased absorption of solar radiation by the dark ocean water, contributing to global warming. Sea ice is also crucial because it reflects the sun’s heat into space through its white ice sheets.

4. How does Arctic Reflections plan to restore it?

By pumping seawater on top of the existing ice in winter. When pumped over the ice, Arctic seawater freezes quickly due to the low Arctic atmosphere temperature. The pumping produces thicker ice sheets that are less likely to melt completely during

summer. Taking our cue from nature, we will operate in strategically chosen locations to use existing ocean currents to effectively distribute the thickened ice.

5. What effect will this have?

By pumping sea water from below the sea ice on top of the ice in winter, the extreme cold of the Arctic will cause the water to freeze rapidly. The thicker the surface ice, the more likely it is to survive the warm summer months and continue reflecting the incoming solar energy back into space – thus contributing to the direct cooling of the earth.

Halting the decline of the Arctic Sea ice protects a delicate and unique ecosystem, including the habitats of polar bears, and the cornerstones of the Arctic Sea's food system - algae and plankton.

6. Is this a viable solution to combat climate change?

It is not a solution to climate change, nor is it a replacement for cutting our carbon and greenhouse gas emissions. Restoring sea ice is a temporary measure aimed at buying us time to make the changes we urgently need, while preventing devastating feedback loops that come with Arctic sea ice loss.

7. What about risks to the environment?

Our goal is to protect the Arctic, but any human activity, including ours, can pose a threat to the Arctic environment and its unique biodiversity. Therefore, at every location, we will perform an ecological risk assessment.

8. How are to planning to mitigate these impacts?

We will start with small field tests and carefully monitor them for unwanted impact and any unforeseen risks. We also work closely with local communities and incorporate their valuable traditional ecological knowledge into our process. You can download the evaluation report of the environmental effect of our field test in Svalbard [here](#).

9. How is the work funded?

Arctic reflections is a social enterprise and is funded by a combination of philanthropic funding and governmental funding. Our funding partners include [ARIA](#), Finco Energies UNIIQ, CarbonFix, VP Capital, CIEIF, and Rabobank.

For more information on the selection of our funding partners, please download our [Ethics Statement](#).



10. What is your goal?

Over the past few decades, the average decrease in sea ice has been around 80,000 km² per year. We aim to be operational by 2030 and thicken and restore at least 100,000 km² of sea ice per year to reverse this trend by then.

11. Do you have videos showing your work?

Yes, please visit our [YouTube](#) channel, we regularly upload new videos to our channel.

12. How can people contribute to your mission?

- Follow us on [Linkedin](#) and [Youtube](#), and help us spread awareness of the importance of the Arctic Sea ice and our initiative to preserve and restore it.
- If you represent an impact investor or philanthropic organisation, please contact us at: funding@arcticreflections.earth
- If you have specific knowledge or skills to help us achieve our mission, please contact us at info@arcticreflections.earth

More questions?

Please visit our [FAQ](#) page or contact us.

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