

Part A - General Information

Organisation/Individual Name

Real Ice Development Company LTD

Organisation Type/Structure

Company (Limited by Shares)

Theme/Nature of Project

Environment

Company/CIC Registration Number (if applicable)

13876877

Project Name (if same as Organisation Name, please leave this blank)

Real Ice

Name of Lead Contact

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Website

<https://www.realice.eco/>

Social Media Handles (Twitter, Facebook, LinkedIn, Instagram etc):

Facebook- <https://www.facebook.com/RealIce.eco>

LinkedIn- <https://www.linkedin.com/company/realice-eco/>

Part B - Project Proposal

Project Mission: A snapshot of the project's intention (50 words max)

Real Ice is committed to developing zero emissions, sustainable solutions to ice melt as a direct result of climate change and the rising temperatures experienced in the North and South poles. We will aim to help communities and key areas of concern by providing a solution to abnormal ice melt.

Situation (250 words)

Research shows that a 1.4 metre thickness of sea ice in the Arctic won't generally survive through the summer months and that approximately 6 cm of ice will be lost each year from the ice pack. To ensure ice stability the ice should be greater than 2 metres thick, thus Real Ice will aim to build ice to this thickness. Sir David King, former UK Government Scientific Advisor said that "we have to leave fossil fuels in the ground, we have to remove excess greenhouse gases that we have already put into the atmosphere that are creating this crisis today and into the future and then to buy time while we manage those to processes we will also need to refreeze the Arctic" and also said he doesn't "know what the alternative is".

This significant drop in total sea ice has not only increased sea temperature rise but it also has a negative feedback loop, which means that the planet is heating up more rapidly due to lost sea ice. Ice, which is light in colour, reflects the heat of the sun back into the atmosphere (the albedo effect). When this ice is lost it exposes the dark sea beneath, which in turn, absorbs heat from the sun's warm rays. By creating thicker sea ice we will assist the ice's survival through the summer which will increase the albedo effect, and subsequently reverse the feedback loop.

Complication (250 words)

Environmental- Due to the negative feedback loop caused by global warming, which has resulted in significant ice loss in recent decades, many issues have arisen. The loss of sea ice has caused biodiversity loss, intense weather events and will cause the total collapse of ecosystems if action isn't taken. Action has been taken by other organisations however these issues cannot be fixed by one solution alone and therefore it is necessary for Real Ice to positively contribute to the reclamation of ice.

Financial- To reduce and then reverse Arctic ice-melt thousands of devices will eventually be required. Prof. Desch et al posited that >\$5trillion would need to be spent. With subsequent advances in technology and the use of renewable energy sources, we believe that this can be reduced significantly. Our device designs will be proven in situ and then once validated, we expect there to be >£500 billion p.a. in market opportunity across all companies that would participate, with Real Ice having a small fraction of this as the initial proven platform.

Solution (250 words)

Our solution will help rescue the rapidly melting Arctic by replenishing the region's shrinking sea ice. The green energy driven pumps will be deployed in winter months and would be used to pump water to the surface of the ice, where it will freeze at the average ambient winter temperatures of <-10 degrees celsius, thus thickening the cap. By utilising fully renewable energy technology we can generate carbon credits to create an income stream for each deployment. We are advised by some of the world's leading experts in climate change, Arctic sea ice, rising sea levels & carbon trading. Our hope is that we can create an end-to-end solution for Arctic sea ice reclamation to the conservation of indigenous culture and local wildlife, resulting in the creation of carbon credits.

We hope to show that generating sea ice can be commercially viable, encouraging larger corporations and later governments to become involved and accelerating the creation of Arctic sea ice across the region, which, alongside carbon sequestration projects and a reduction in new carbon will help cool the planet. By showing that it can be commercially viable to reclaim ice we can encourage competition, which is essential to ensure we maximise the positive impact we have on the planet.

Part C - Wider Support

How would the Stephen Lloyd Award network of partners' support be beneficial to your project? (250 words max)

Real Ice could benefit significantly from the wider support network which the Stephen Lloyd Award can provide. Sonnet Advisory and Impact CIC would be able to assist Real Ice in many ways, ranging from social investment fundraising to assisting our structuring as a social impact organisation. Additionally, as Real Ice is looking to partner with many different organisations to achieve our incredibly ambitious goals, Sonnet Advisory and Impact CIC could also support us in choosing the correct partners for our specific organisational needs.

It is essential for Real Ice that we understand the impact we have on the regions we intend to deploy our devices in as well as the effect we have on the planet as a whole. This is for 2 main reasons. For instance, we need to understand whether we cause any unintended consequences, for which we would need to adapt our approach in order to mitigate, and additionally, it is essential that we are able to provide financial organisations with clear evidence of the beneficial impact Real Ice is having. Coalition for Efficiency could provide Real Ice with the data which would allow us to measure our impact.

There is a financial aspect that Real Ice could capitalise on to achieve our incredibly ambitious goal of re-icing a single bay in the Arctic as a proof of concept within 5 years, and subsequently applying the technology across the regions. In order to raise funding Real Ice could benefit significantly from connections with Stephen Lloyd Award partners PWC and EQT Partners UK Advisors LLP in particular.

Part D - Financial Justification

In general terms, please explain how the winning funds would be used to carry out your project. (50 words max)

Funds won from the Stephen Lloyd Awards would form part of the funding needed to complete the design, develop the prototype and test Real Ice's MVP device in the Nunavut region of Canada and/or Barrow, Alaska in the winter of 2022/2023.. Testing the MVP device is a vital milestone for Real Ice, which would give the team, and future investors the confidence that our engineering approach is going in the right direction.

Part E - Supporting Information

Team: We would like to learn a little more about the individual or team invested into the project. What are your individual credentials? Is there a story behind how you or your team all came together to support the project? (75 words max)

Real Ice initially began as a volunteer project with volunteer members having some affiliation to Bangor University, the company became a limited company to accelerate progress.

CEO- Cian Sherwin- BSc Zoology with Herpetology
Director of Marketing- Joshua Roberts- MSc in Marketing Management
Chairman- Simon Woods- President & COO at Senseye inc and Mentor at Capital Factory

Chief Engineer- Andrew Woods- 30 years of leadership within water processing

Real Ice also has a number of very experienced and well respected advisors with expertise in climate change issues.