

## Arctic Climate Services – CKIC Blog

**On the 15<sup>th</sup> October 2017 Climate-KIC chaired a discussion on fostering innovation in climate technologies and infrastructure at this year's Arctic Circle event in Reykjavik, Iceland.**

Arctic Circle is the largest annual international gathering on the Arctic for a growing community of organisations and stakeholders interested in the future of the Arctic. Bringing science, innovation, and industry closer together for sustainable growth in the region was a common theme across the event, and one echoed in a breakout session hosted by Climate-KIC Nordic's Peter Vangsbo and Solveig Zophoniasdottir.

Speakers from academia, government, and industry shared practical ideas on translating climate data into meaningful information for stakeholders, promoting a circular bioeconomy, and recognising and managing climate risk in maritime industry.



*Picture 1 Geir Oddsson presenting his segment "Arctic SME's & Facilitating Climate Resilience"*

Dr. Mark Payne, a senior researcher at the Danish Technical University, described his team's efforts to combine climate data and fisheries science to produce the first near-term forecasts for pelagic fisheries in the North Sea and the North East Atlantic. As climate change alters the physical properties of the oceans, the migration patterns of many commercially valuable fish (such as mackerel and tuna) are changing. As the distributions of fish change, national and international fisheries catch quotas and agreements no longer reflect the changing availability and population sustainability of targeted species. This kind of climate impact can spark transboundary conflict such as the disagreements over mackerel catch quotas between the EU, Norway, Iceland, Greenland, and the Faroe Islands, which has affected the sustainable management of the stock. Forecasts of fish distributions that incorporate and account for a changing climate can help policymakers and fisheries organisations better plan for sustainable fisheries harvests and mitigate future conflicts.

"The challenge", says Payne, "is striking a balance between what is feasible and what is useful to the end users". Achieving balance is not always easy, given the complexities of climate science and its data-rich outputs, and the specific high-level information needs of industry and policy-makers. With

this in mind, successful climate-based information products, also known as climate-services, can only be realised when the creators and end-users of climate data and information work together.

The need for cooperation between disciplines and sectors was also highlighted by Geir Oddsson, a Senior Advisor at the Nordic Council of Ministers. In 2017, the Nordic Council of Ministers released a catalogue of 25 case studies highlighting collaborative projects which exemplify innovative approaches to sustainability in the Nordic bioeconomy.

“In growing the Nordic bioeconomy, companies in different sectors enter into industrial symbiosis,” says Mr. Oddsson. “Research institutions work with the private sector to provide innovative solutions; regional authorities collaborate with industry to provide the right infrastructure and incentives; and public institutions engage with civil society to ensure participation and ownership.”

Industries also need to begin to adapt to and plan for a changing climate, argued Øivin Aarnes from DNV GL: “Climate change and sustainability are not simply environmental problems, but also business problems.”

For businesses, understanding the vulnerabilities of operations to climate change is imperative. However, downscaling climate model outputs to relevant operational scales poses a substantial challenge to climate researchers. For DNV GL and their clients, working closely with an academic team has enabled them to pinpoint what climate information is needed for businesses to operate safely in the Arctic. The outcome of this collaboration is DNV GL’s Arctic Risk Map, which will eventually include information about the risks posed by polar lows, small but intense storms which pose a hazard to Arctic operations such as shipping and oil and gas extraction.

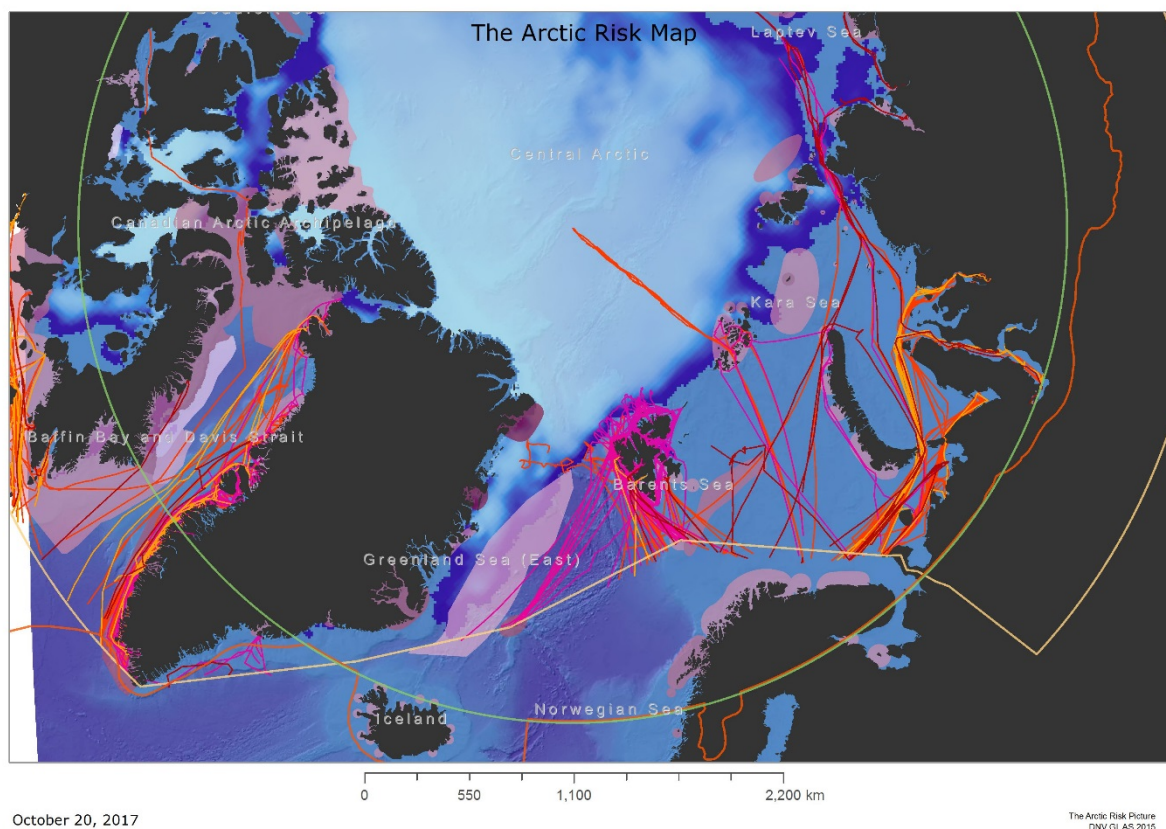


Figure 1 The Arctic Risk Map, DNV GL. This extract illustrates the tracks of tanker and passenger ships within the IMO Polar Code boundary, during the summer season. In this example, areas shaded in burgundy represents locations where shipping could have impacts

The Risk Map is just one example of a climate service that translates climate information into an industry-specific value added product, with the aim of reducing and managing business risks from climate change.

“The degree to which a company adapts to climate change will become more and more proportional to their competitiveness”, said Mr Aarnes. “To begin with, knowing the risks puts us in a better place to manage them.”

For Geir Oddsson, working together is the bottom line: “For businesses in the Arctic to achieve climate resilience, collaboration is essential”.



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