

# **Yamal 2040: Use of Strategic Foresight scenarios for regional adaptation**

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Photo credit: DMI chb

# Main Goals

**Yamal 2040** is a case study within the international Blue-Action research project

**Partners:** IASS Potsdam, Foresight Intelligence, IMEMO

## Goals

Build, use, and assess scenarios for the future of the Yamal region in the Russian Arctic in collaboration with stakeholders

## In order to

- Develop greater capacity among stakeholders to adapt to multiple changes including climate change and
- proactively prepare for alternative and uncertain futures of the Yamal region

# The Yamal region

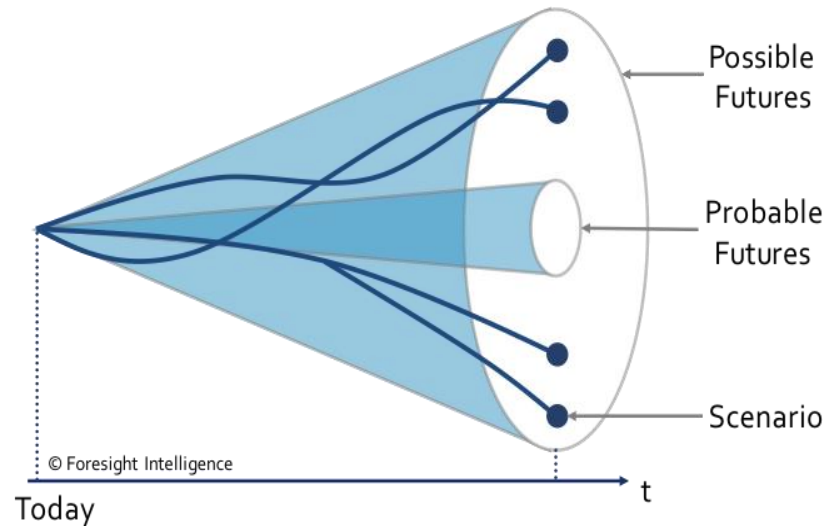
- Yamal is considerably affected by climate change
- Yamal region is at the core of petroleum development in Arctic Russia and produces more than 80% of Russia's natural gas
- Population of the Yamal region is 534.000 people. 8% of them are Indigenous (Nenets, Khanty, Selkup)
- The future of Yamal is highly uncertain due to substantial climatic, environmental, economic, social, political, and legal changes in the years and decades to come



Source: IASS/Olga Lukianova, adapted from: <https://en.wikipedia.org>

# Scenario methodology: Strategic Foresight

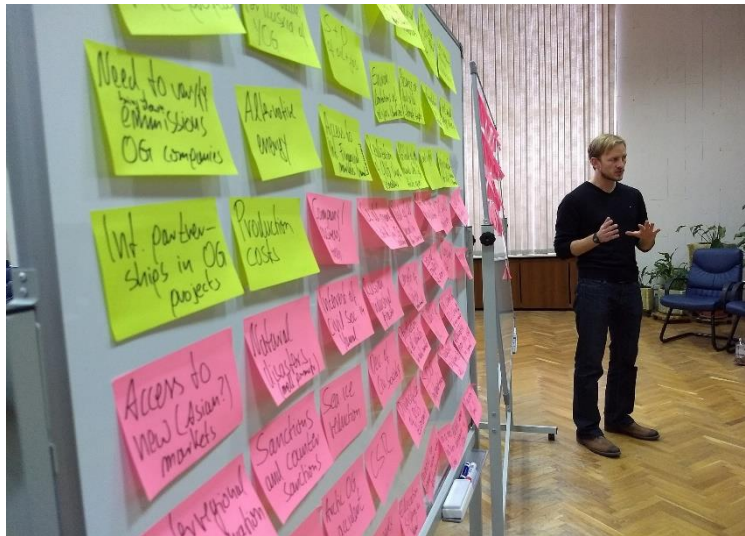
- Foresight is systematic thinking about uncertain futures.
- We can't predict the future, but we can prepare for alternative developments
- Scenarios are (strategic) foresight tools.
- A scenario is a comprehensive description of:
  - a possible future situation, composed of consistent parts.
  - a plausible trajectory that leads to a certain situation.



Credits: Johannes Gabriel (Foresight Intelligence)

# Creating scenarios is a structured group process

- Three workshops
- Participants: Representatives of Indigenous rights organizations, environmental NGOs, local communities, Yamal business, media, scientists etc.



Credits: Kathrin Stephen (IASS), Jumia Baronina (IMEMO)


# Results

- Three complex scenarios
- A wild card scenario
- Strategic options for three stakeholder groups:
  - ✓ Local and Indigenous communities
  - ✓ Russian and international oil and gas business
  - ✓ Federal government of Russia



Photo: Julia Baronina, IMEMO


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## Yamal 2040: Scenario "Gas Boom"

Part of the Blue-Action Research Project

Valeeva V., Gabriel J., Stephen K., and Nikitina E.





### The Yamal region in 2040: Gas Boom


- In the early 2020s, several large-scale climatic disasters shook the world and motivated the international community to increase efforts in climate change mitigation.
- Demand for LNG in general and Yamal LNG in particular is steadily on the rise until 2040. LNG is promoted as a transition fuel and is widely used for shipping.
- In a gradual process starting in 2030, a consensus on Crimea

### Impact of climate change

- By 2040, the effects of climate change in Yamal have not been as severe as many expected. However, the mean temperature still has increased by 3°C.
- Precipitation has increased slightly.
- Coastal erosion is at a steady 1-2 meters per year.
- Yamal is still subjected to extreme weather events and

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## Yamal 2040: Scenario "Reinventing itself"

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### The Yamal region in 2040: Reinventing itself


- Breakthroughs in energy storage technologies changed the global energy market. The demand for Yamal gas sharply declined.
- Due to shrinking job opportunities, Yamal's population dropped. Only about 200,000 people are left in the region.
- The impacts of man-made climate change have taken their toll and Yamal is doubly affected.

### Impact of climate change

- By 2040, the mean temperature in Yamal is reaching a level of 4°C warmer in comparison to pre-industrial times. In summer, temperatures are frequently higher than 30°C.
- This rise in mean temperature leads to an increase in precipitation. But the distribution is uneven throughout the year: most of the region gets an increased amount of precipitation in winter and autumn but sees less rain during summer months in comparison to pre-industrial times in Yamal.

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## Yamal 2040: Scenario "Snow Queen"

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### The Yamal region in 2040: Snow Queen

- In 2040, the Yamal and European climate is much cooler than expected.
- Prices for oil and gas are high due to a stalemate in the global energy transition and higher global energy consumption rates.
- The continuing sanction regime imposed by Western states has promoted industrial diversification and home-grown innovation in Russia (and Yamal).
- Russia has enjoyed high growth rates originating from the

### Impact of climate change

- Regional climate impacts have been rather unexpected.
- Starting in 2018, a series of extremely cold winters in particular in Europe put demand for Yamal gas and its



Thank you!



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