

# Challenges and opportunities in communication of risk from ice throw

How to get control over ice throw risk?

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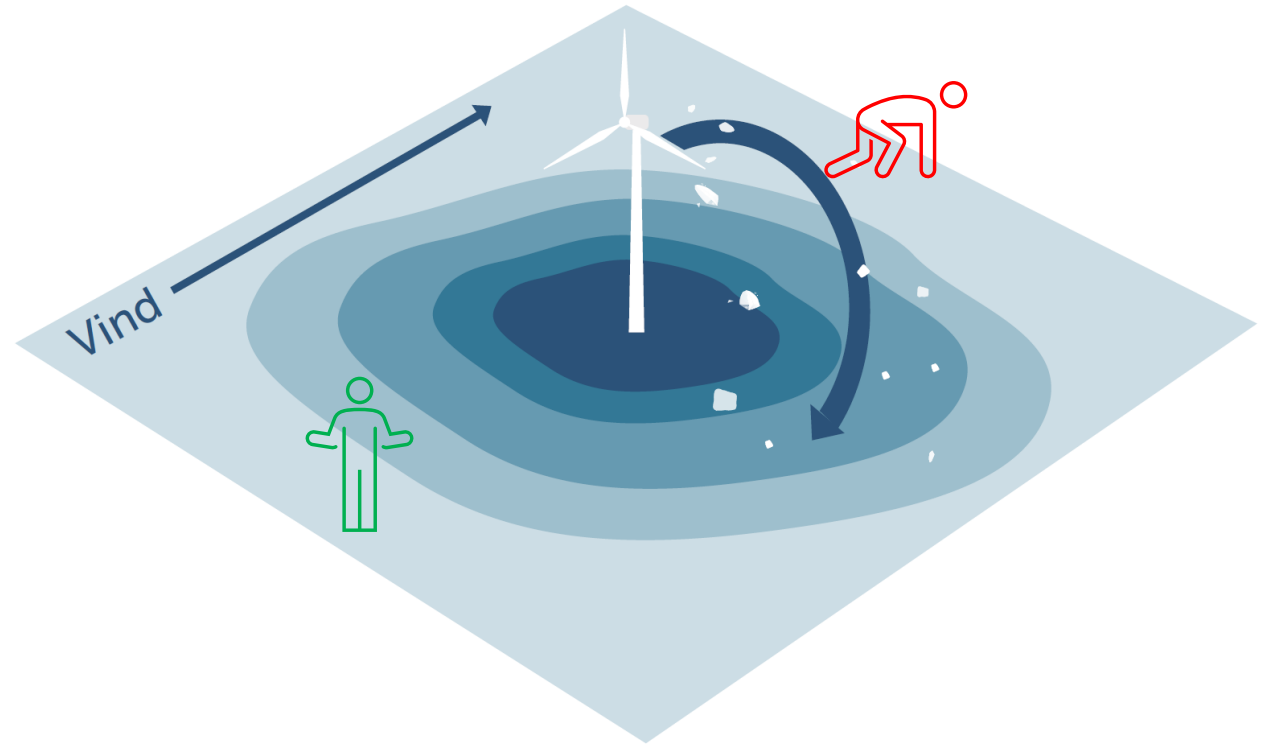
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# Probability of events and consequences of events

- ▶ Risk implies that events may occur that have consequences for something that is of value to us humans.
- ▶ The consequences may be related to, for example, life and health, the environment or economic values.
- ▶ There is always at least one outcome that is perceived as negative or undesirable.



# Risk communication – more than statistics and small numbers

- What factors determine the perception risk and acceptance of risk?
  - Feelings, reason and cultural factors
  - Personal, social, economic and political influences
- Technical risk assessments are based on theoretical models, are subjective and full of assumptions.
- Will the risk analysis consider uncertainty, fear, disastrous potential, controllability, risk to future generations, etc
  - Or
- are these considerations excluded from technical risk analyses focused on probabilities, statistics and expected losses?



# What are we supposed to protect ourselves from?

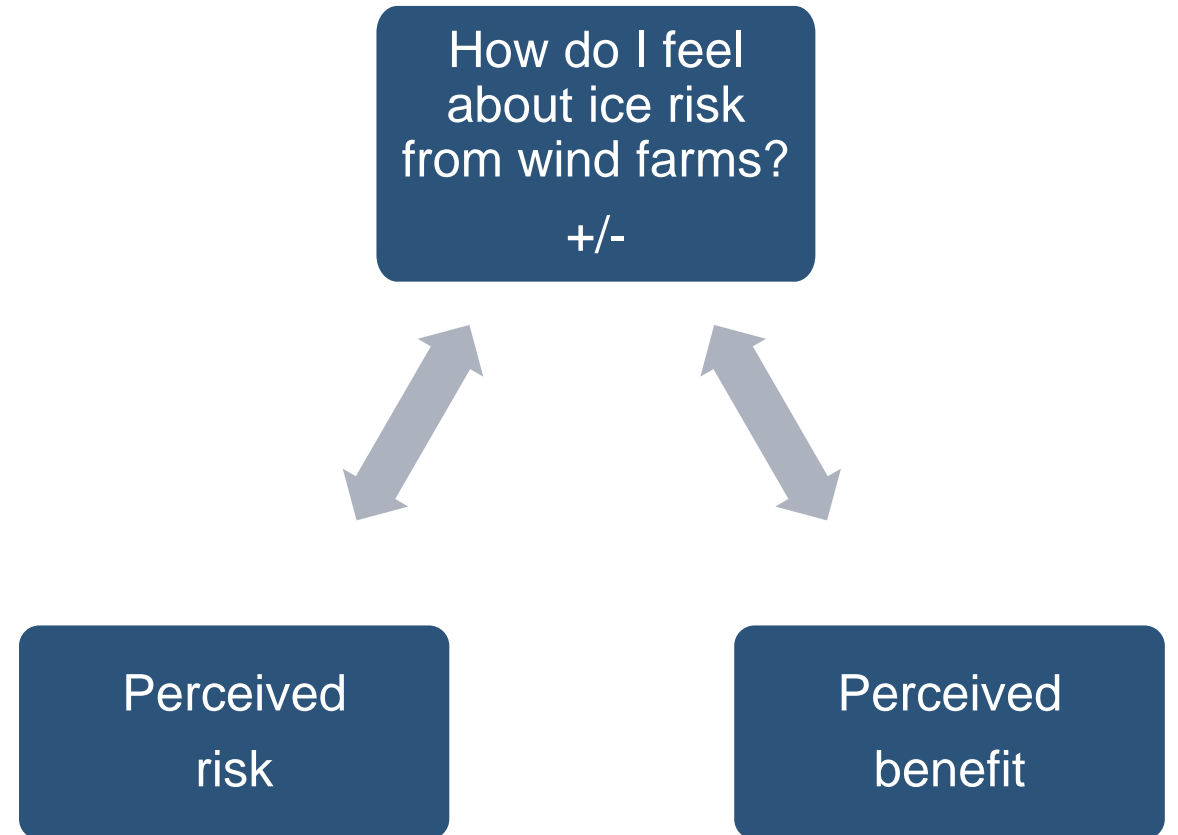
- Danger (Consequence)
  - ice or snow causing a damage (person, animal, object)
- What to consider – level of risk
  - Exposure (presence)
  - Probability of icing
  - Probability of ice on the ground (location)
  - Probability of being hit (at risk)
  - Energy causing injuries or fatalities (consequence)



# Prof. Paul Slovic

## Decision Research and University of Oregon

- ▶ An important implication of the affect heuristic:  
(Mental shortcut which uses emotion to influence the decision)
  - ▶ Risk and benefit blend in the mind as feelings.
  - ▶ High benefit hazards will be perceived as low in risk and low benefit hazards as high in risk.
  - ▶ Thus, acceptance of risk for a particular product, activity, or technology will depend strongly on perceived benefits.



# Perceived risk – driving in winter

**KNOW SNOW!** **TOP TIPS FOR WINTER DRIVING**

**SLIP AND SLIDE: TEST ROAD CONDITIONS FREQUENTLY**

Periodically, check traction (available grip) when driving in challenging conditions. Road conditions can change drastically in a short period of time/distance in winter. Apply the brakes with moderate pressure to determine the available grip and modify your driving, if needed, to respond to ever-changing road conditions.

**GRIP IT GOOD!**

It's best to avoid braking or acceleration when negotiating a turn.

- 1 Brake before the turn
- 2 Negotiate the turn
- 3 Accelerate after the turn

**YOU CRUISE, YOU LOSE**

Avoid cruise control in wet, icy or snow conditions to maintain control of acceleration and deceleration at all times.

<https://www.riskmanagementmonitor.com/safe-driving-in-the-winter-weather-bomb/>

# Risk reduction actions

- ▶ Reduce probability
  - ▶ For ice throw
    - ▶ Operational actions
    - ▶ Design actions
  - ▶ For being exposed
    - ▶ Forecast
    - ▶ Training and competence
- ▶ Reduce consequences
  - ▶ Protections



# The Story of beeing safe

- ▶ How to stay safe in a wind farm area
  - ▶ Information
- ▶ How to understand the danger of ice throw
  - ▶ Competence
- ▶ Wind farm mind set - golden rules
  - ▶ Look for danger
  - ▶ Check the issued warnings
  - ▶ 0 deg. – look for challenges
  - ▶ Noise
  - ▶ Respect safety distances

## Information

This could take the form of engagement with groups on social media channels or creation of flyers for use in tourism information points, hotels and B&Bs.

Making the wind farms a point of local interest will make it easier to provide advice during hostile weather conditions.

The idea is for the wind operators to speak to the community as part of that community.



## Current signage

A warning which shows wind turbines as a threat to be avoided, with unclear advice and broken link.



## New signage

Bespoke signs for each wind farm will create a more local, tailored message.

- Friendly, welcoming message.
- Contains information that shows local knowledge and care.
- Positions the wind farm as somewhere to visit rather than a place to avoid.
- Simple, clear advice in the form of a safe path during inclement weather.
- A QR code which takes people to the right place to gain more detailed knowledge.





# Trust

- ▶ Trust is essential for effective communication, and acceptance of risk.
  - ▶ Trust is something that needs to be worked up, but easy to lose.
  - ▶ Understanding how risk is perceived is essential for effective risk communication.
- ▶ ISO 31000 Risk management guidelines
- ▶ Knowledge of the "real" risk conditions
  - ▶ It's a risk to drive a care in snow / ice ..... but
  - ▶ It's a risk to enter a wind farm ..... but
- ▶ "Acceptance of risk is more dependent on trust in risk management than on quantitative estimates of risk" (C. Starr)



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