Commercial wind power in cold climate regions could be cheaper than traditional diesel generation.

In these regions, higher air densities and average wind speeds enable wind turbines to produce more power. However, rime icing presents a significant obstacle to achieving this power output.

**Effect of Rime-Icing**
- Affects optimal aerodynamic profile
- Causes rotor imbalance
- Reduces power output

**Design Goal**
To build an accurate, reliable sensor that measures rime ice accretion on the turbine blades and activates the de-icing system.

**Future Work**
- Test prototype on the leading edge of a turbine blade
- Refine design for full scale production
- Integrate sensor with turbine de-icing control system

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