# Greenlytics

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#### HEIMDALL POWER

#### The Problem



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#### The Status-quo

Line ampacity constraints are set using conservative calculations assuming zero wind speed and high temperatures and solar radiation conditions. This results in **redundantly high safety margins** for most hours of the year.



## The Opportunity



|            | Windy   | Winter                    |  |
|------------|---|---------------------------|--|
| Wind Power | Wind↑ Air density↑<br>Wind power↑ Wind power↑ |                           |  |
| Power Line | Wind ↑<br>Ampacity ↑                          | Temperature↓<br>Ampacity↑ |  |
| Synergy    |   |                           |  |

More and more wind farms built in cold climate.

## The Opportunity



|            | Windy                  | Winter                      | Windy<br>winter |
|------------|------------------------|-----------------------------|-----------------|
| Wind Power | Wind ↑<br>Wind power ↑ | Air density↑<br>Wind power↑ | Wind power ↑↑   |
| Power Line | Wind ↑<br>Ampacity ↑   | Temperature↓<br>Ampacity↑   | Ampacity↑↑      |
| Synergy    |                        |                             |                 |

#### **The Solution**

Our solution, **AmpacityBrain**, is a cloud-based application which provides real-time information and forecasts of actual ampacity of power lines for all involved stakeholders. It helps DSOs to send curtailment signals to wind farm operators and gives traders the transparency they need in order to make accurately bid the available power.



#### **The Solution**



#### **The Benefits**

Using **AmpacityBrain** for dynamic line rating increases line ampacity by 20% on yearly basis compared to static line rating that is currently used today. **Grid operator** (DSOs) Wind farm operator  $\Theta$ Energy traders

- Reduced need for capital investments
- Visibility of current grid status
- Safer power grid operations
- Reduction of maintenance needs

- Less wind power curtailment
- Lower need for capital investments
- Higher exploitation of wind farm permits
- Less wear on wind turbines

- Transparency into operations
- Being prepared for curtailment events
- Reduced imbalance costs in trading operations
- Less risk of market manipulation

#### The Ask



Then we want to talk to you!

# **Questions?**

# **Read more**

### <u>greenlytics.io</u> <u>heimdallpower.com</u>