

The Future of Wind Power in Finland

Advanced Energy Project

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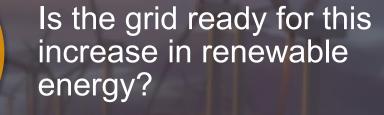
Henrietta Hirvonen

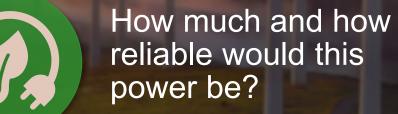
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What will wind power look like in the future?

Where should we expect higher wind power production?





Project workflow

Determining areas & spreading 30GW of power within each scenario

Simulating production over 10 years of past wind data

Analyzing production data

Choosing the locations



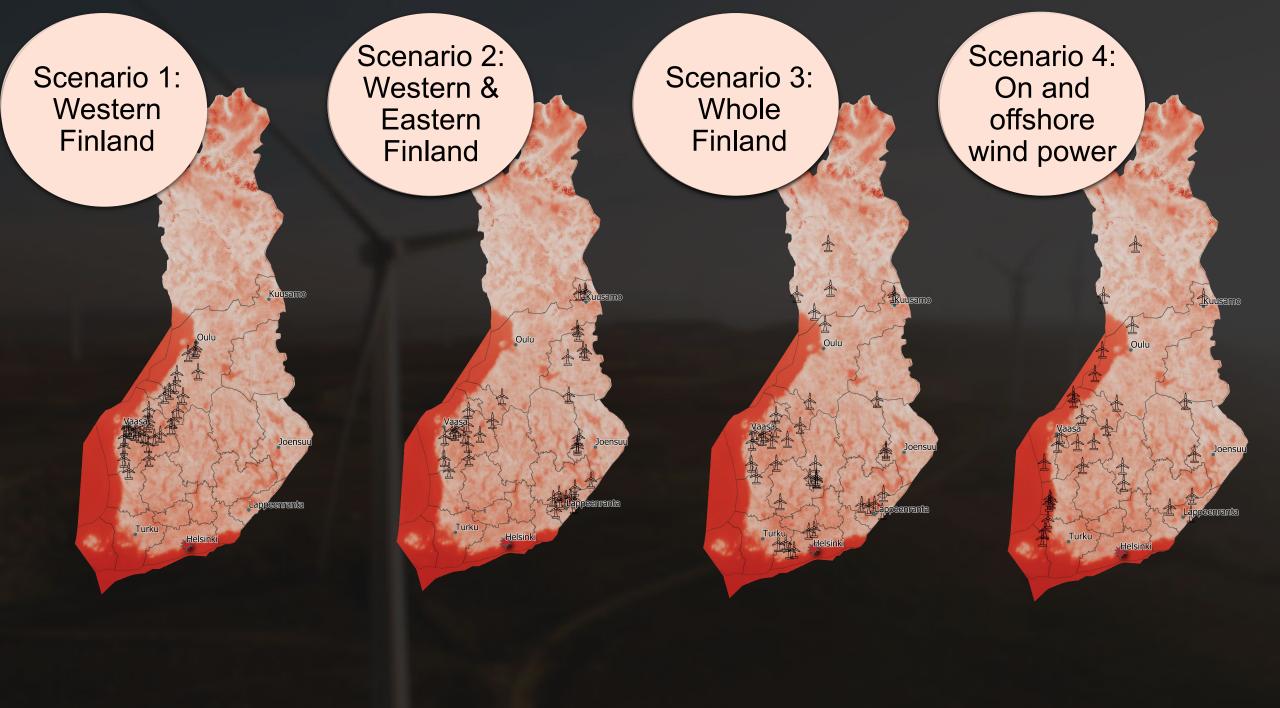
Focus on specific geographical location

Sufficient grid availability

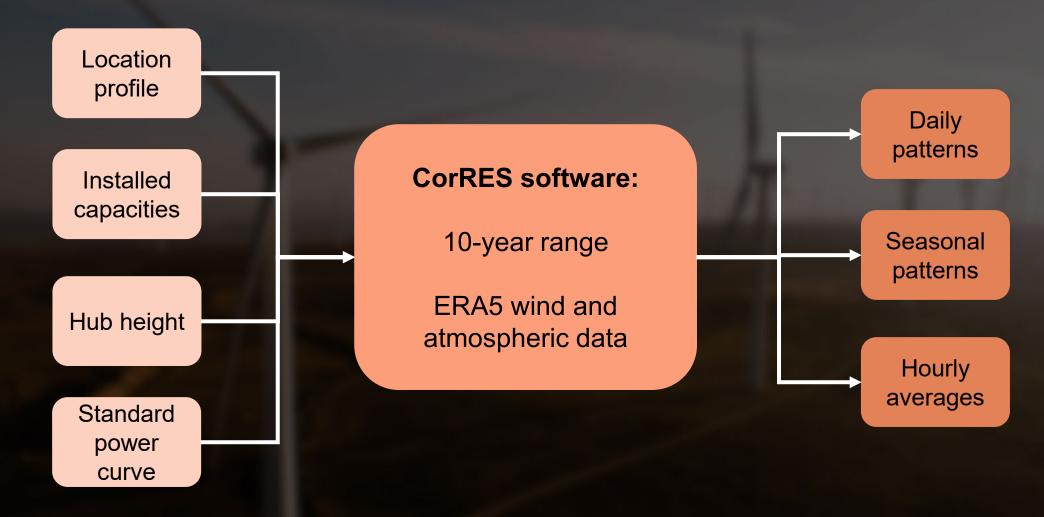
Electricity demand

Wind speed and power generation potential

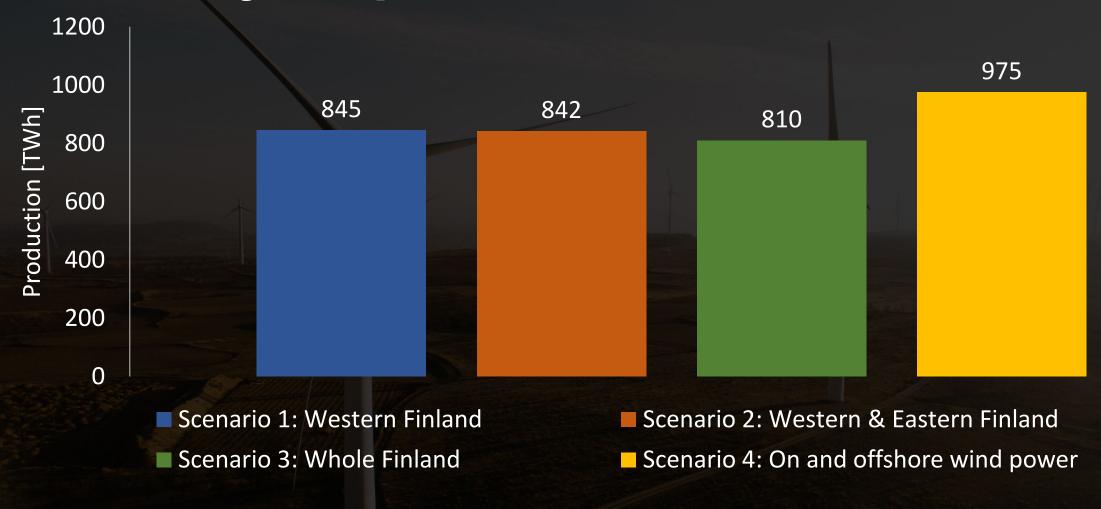
Land use



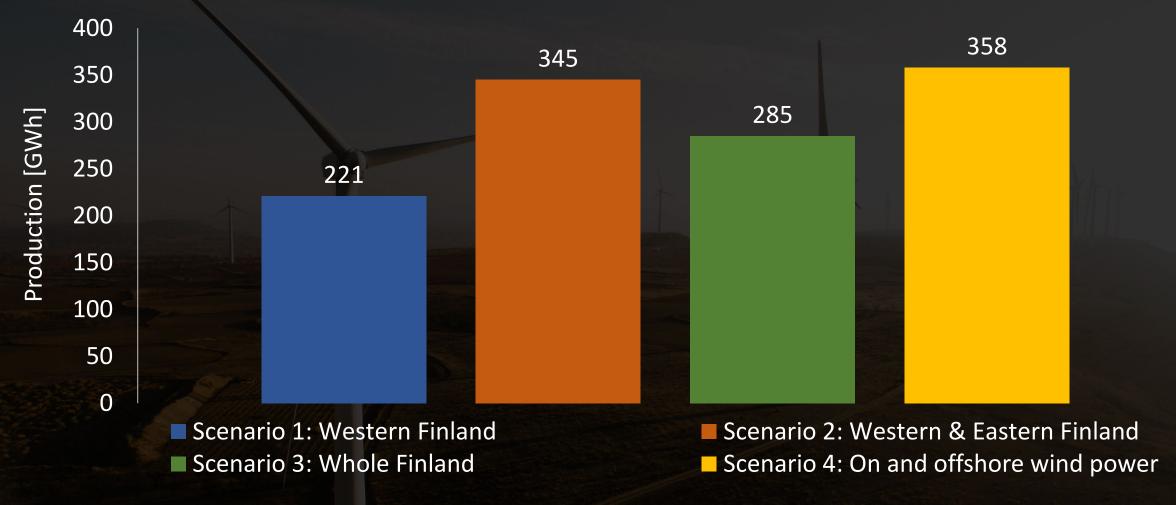
Modeling process



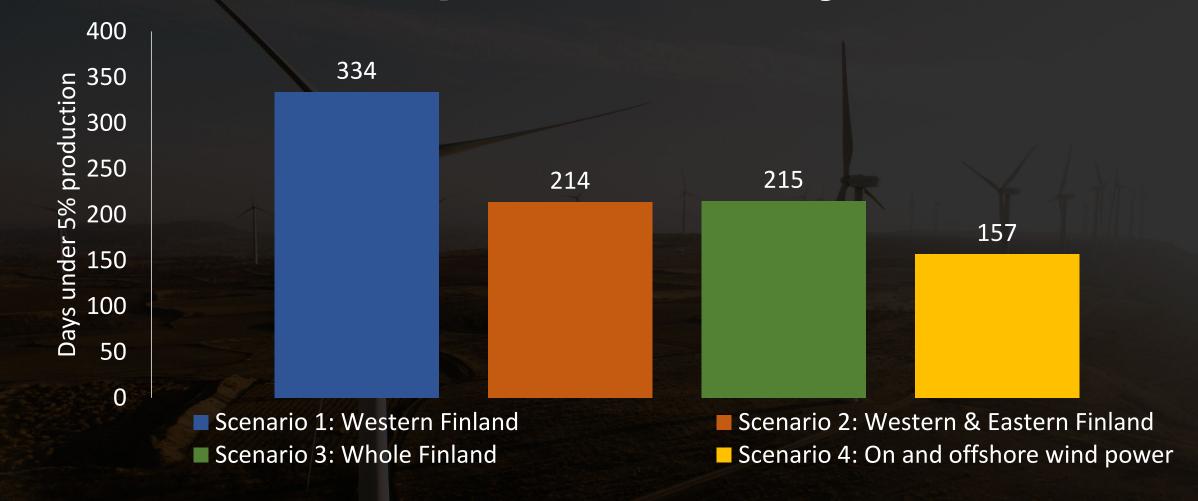
Total 10-year production



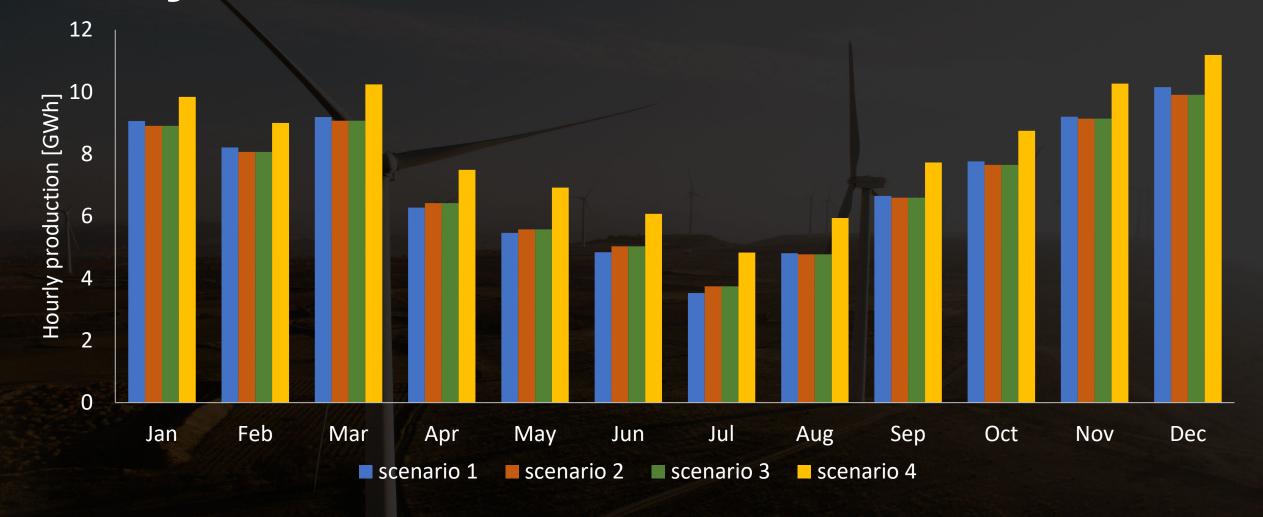
Lowest producing 10-day period



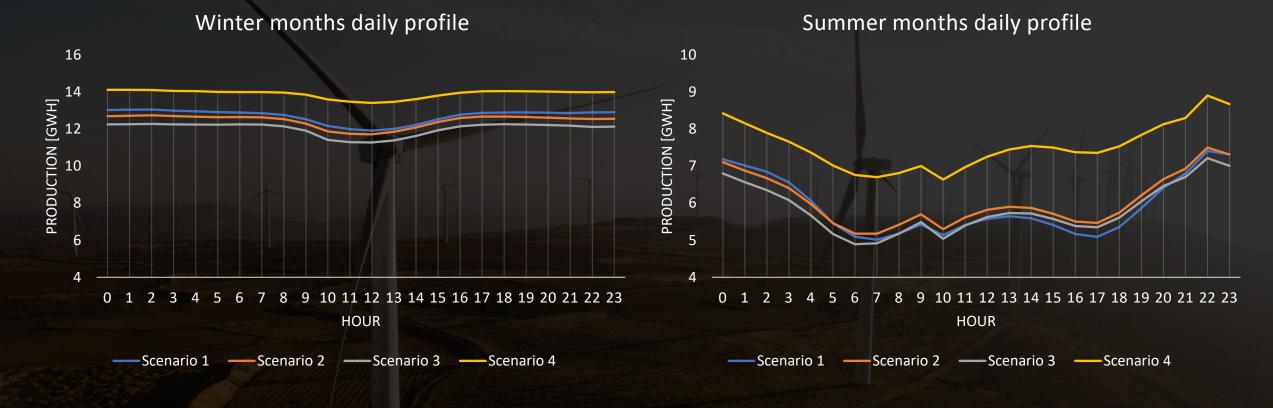
Number of low production days



Yearly trends



Seasonal trends



What will wind power look like in the future?



Best potential in offshore wind power & west of Finland



Higher reliability with a wider spread of points



Prioritize grid investments and back-up power sources