



# RENEWABLES STUDIES & STRATEGY DEVELOPMENT



Alberta's Climate Leadership Plan presents challenges to the Power and Electricity Industries. GPO & Associates' approach to scenario-based development plans assists industry with strategic decision making.

## BACKGROUND

Alberta's Climate Change Plan raises the bar to reduce GHG footprint. GPO & Associates has completed several renewable energy studies focused on developing scenarios for power generation based on the policies laid out by the Alberta Government. Increasing reliance on wind power within the province has been a key focus area within the studies conducted.

## WHAT WE DID

GPO & Associates studies include:

- Setting out strategies to deliver the Alberta Climate Leadership Plan's five key aspects:
  - Phasing out emissions from coal-generated electricity
  - Developing more renewable energy
  - Implementing a new carbon price on greenhouse gas emissions for heating and transportation
  - A legislated oil sands emission limit
  - A new methane emissions reduction plan
- Establishing a process for Wind Project Development based on:
  - Site selection
  - Capacity selection
  - Technology selection
- Technology Selection studies
  - Optimizing wind turbine selection against detailed wind profile data

## OUR IMPACT

GPO & Associates delivered:

- A robust economics model, allowing assessment of pool price sensitivities.
- Technical performance models for a wide range of wind turbine technologies.
- Integration of technology and economic models to ensure accurate predictions of wind project power delivery.
- Front-end loading processes for renewables and wind projects.
- GPO & Associates partnered with European Climate Change policy leading Consultants to apply lessons learned from Europe to strategy and development planning.



- Economics Model Development

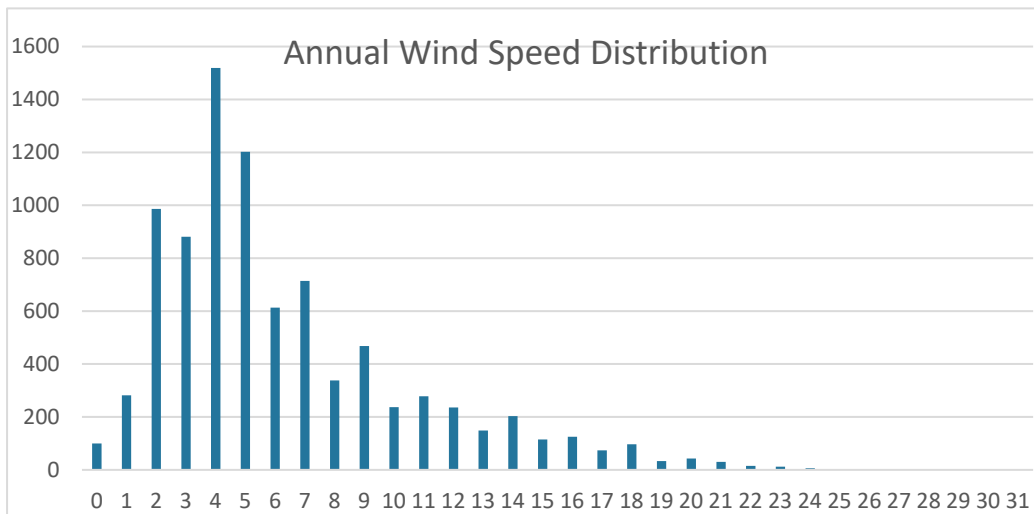
## SCENARIO DEVELOPMENT AND PROJECT PLANNING

GPO & Associates' approach to defining scenarios and project planning includes:

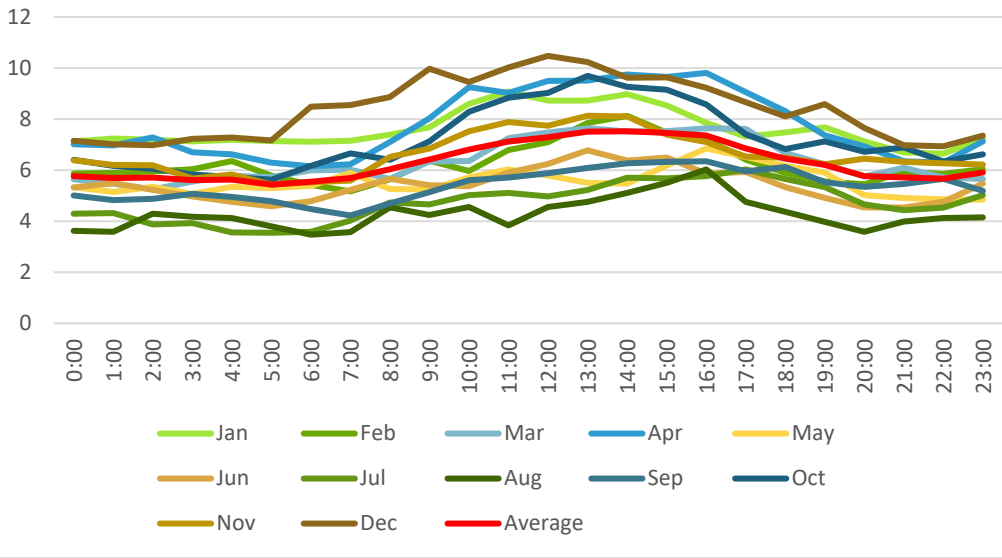
- Power Demand Modelling
- Site Selection and Wind Profile Data Modelling
- Wind Turbine Modelling and Selection
- Project Cost Estimation and Economics
- Pool Price Sensitivity Assessment
- Application of Front-End Loading Principles
- Project Development Planning
- Project Management Services

### Example Study Output Data for Wind Project Planning

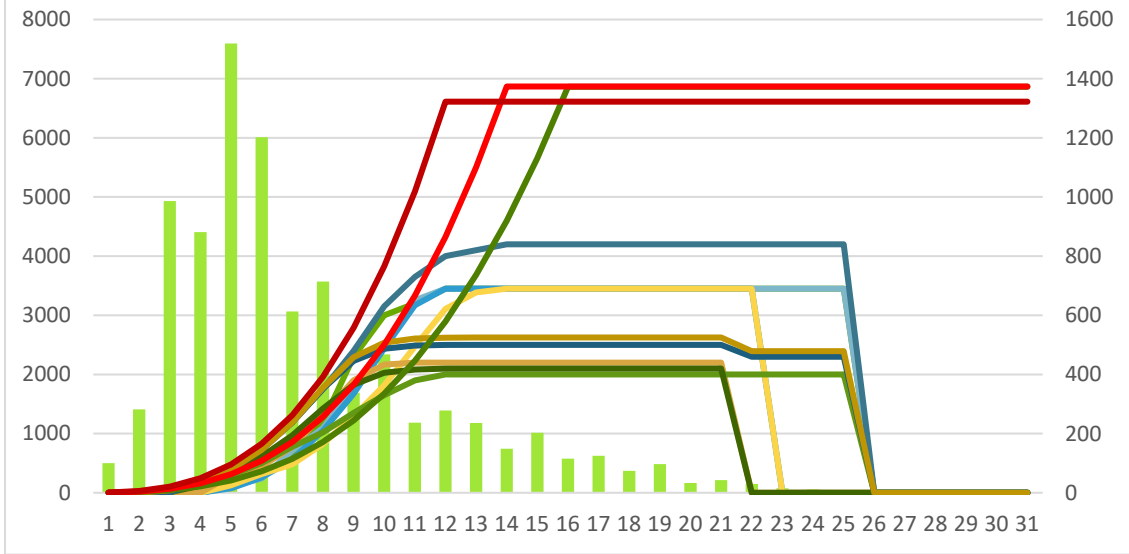
Development of wind profile data for sites under study is used with wind turbine performance envelopes and capacity scenarios to select the optimum economic turbine for the project under assessment.



Average wind speeds for each hour by month



Turbine Performance



Average price per MW for each hour by month

