



Taller Wind Turbine for Low Wind Speed Regions

Team 25

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Aim: To develop wind turbine for use in the Southeastern United States

INTRODUCTION

Current wind turbines are not effective to use in the Southeastern United States because the average wind speed is too low to provide adequate power.

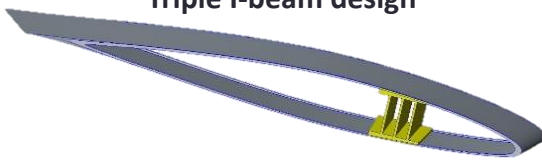
OBJECTIVES AND CONSTRAINTS

- Design a wind turbine 150-200% the height of current wind turbines
- Design lighter blades
- Build scaled prototype using \$2,000 budget

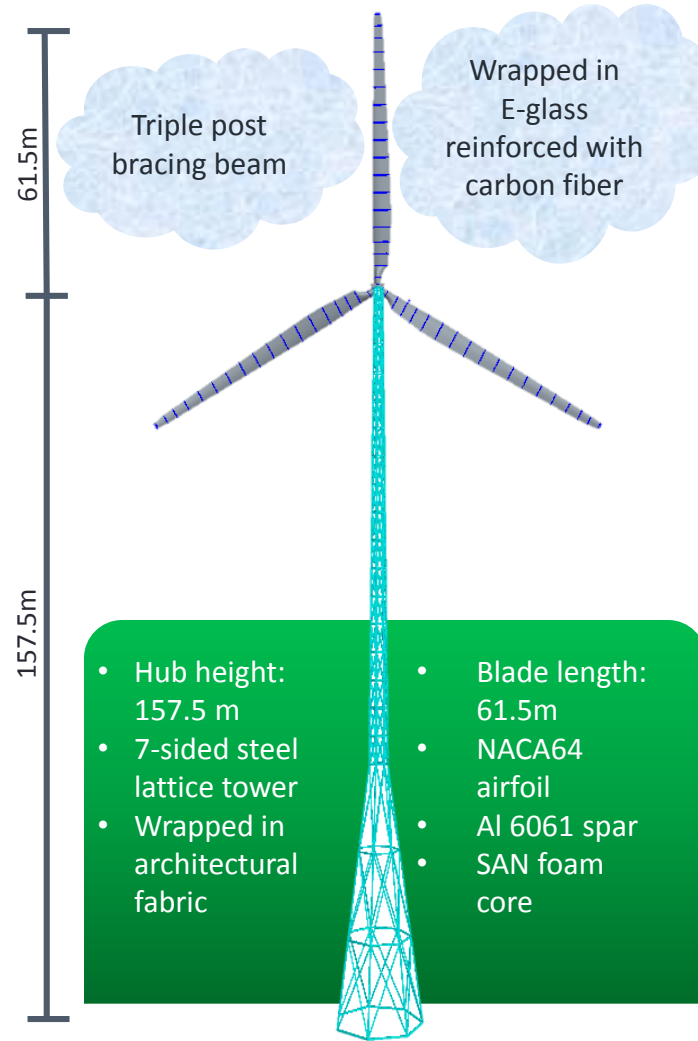
SELECTION OF BLADE DESIGN

Final blade design was selected based on weight, shape factor, and reliability.

Triple I-beam design



FULL SCALE DESIGN



PROTOTYPE

The team constructed a small scale representation of the full design.

Blades

- 3D printed
- 3-ft long
- Wrapped in fiberglass



Tower

- 8-ft steel tower
- 3 typical sections
- Heptagonal rings between sections
- Wrapped in fabric

