

PROJECT TWO: MILESTONE 2 – COVER PAGE

Team Number: **Mon-31**

Please list full names and MacID's of all *present* Team Members

Full Name:	MacID:
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MILESTONE 2 (STAGE 1) – REFINED PROBLEM STATEMENT FOR A WIND TURBINE

Team Number: Mon-31

The Title of The Assigned Engineering Scenario

EWB: Humanitarian Aid Mission

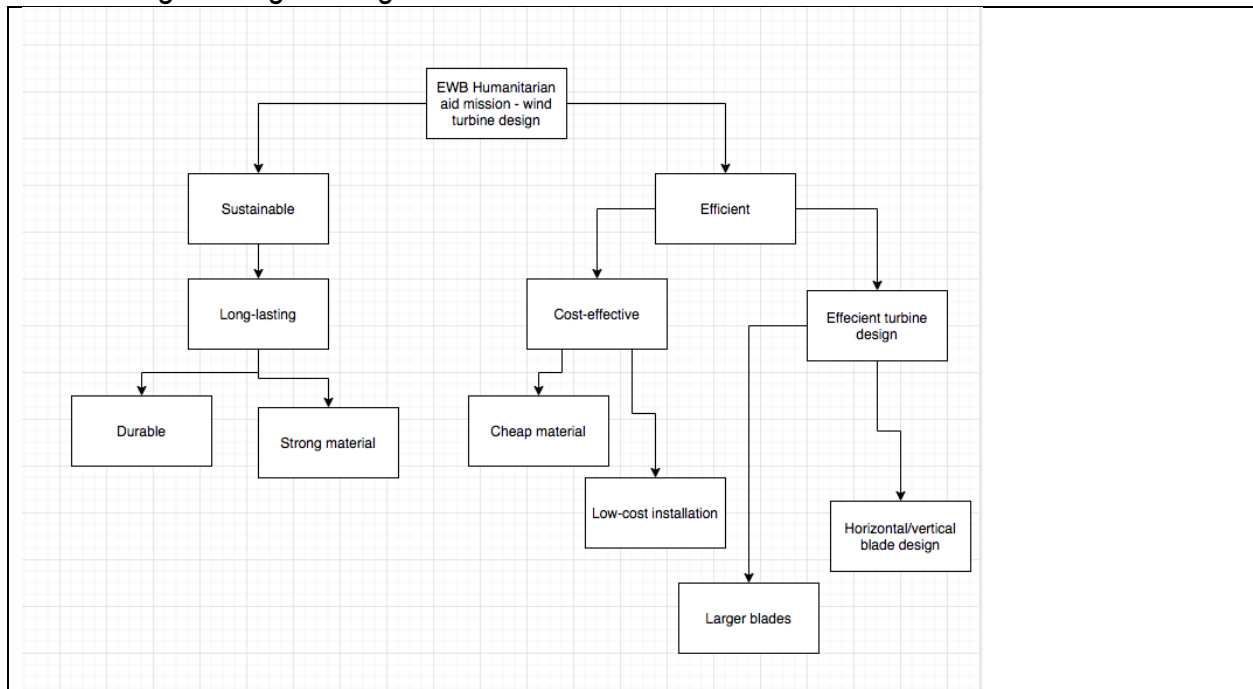
Write the Initial Problem Statement Below

→ This is a *copy-and-paste* submission of what you submitted for Milestone 1

Create a wind turbine that fully utilizes all its components in order to maximize the production of wind energy and is durable enough to withstand environmental conditions.

Finalized Objective Tree of Wind Turbine for Your Assigned Engineering Scenario

→ Please have a copy of your finalized team objective tree of wind turbine for your assigned engineering scenario.



Refined Problem Statement:

→ Write the refined problem statement for the design of wind turbine based on your assigned scenario.

Create a simple-designed, durable, and long-lasting wind turbine that fully utilizes all its components to produce a sufficient amount of energy and is easy to set up with materials that are readily available.

MILESTONE 2 (STAGE 2) – DESIGN REQUIREMENTS FOR A TURBINE *BLADE*

Team Number: **Mon-31**

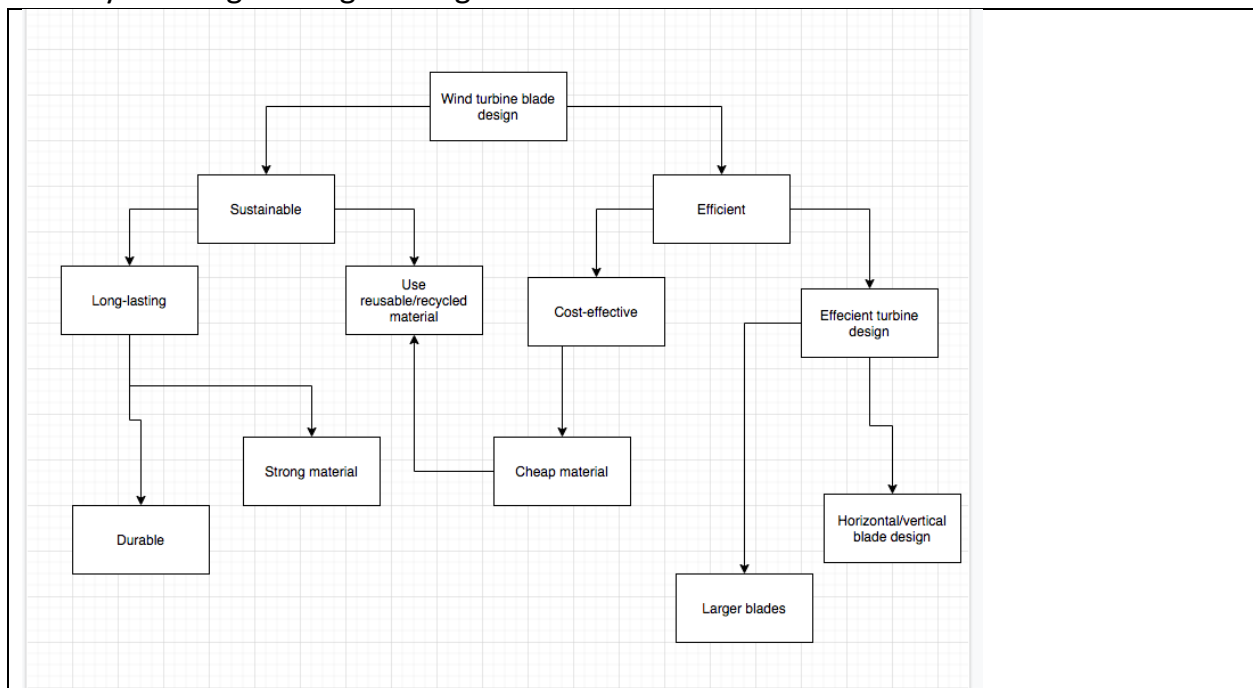
Turbine Blade Problem Statement:

→ Write a complete problem statement for the design of turbine *blade* based on your assigned engineering scenario.

Create an efficient blade that is made of easily accessible and/or reusable material that requires fewer parts to assemble.

Objective Tree of turbine blade for assigned engineering Scenario

→ Please have a copy of your team objective tree for the design of turbine blade of your assigned engineering scenario.



MILESTONE 2 (STAGE 3) – SELECTION OF TOP OBJECTIVES FOR A TURBINE BLADE

Team Number: **Mon-31**

List the top three objectives of a turbine blade for your assigned engineering scenario

- 1: design must be simple and easy to set up
- 2: accessible, durable, long-lasting material
- 3: low-cost

Include a rationale for selecting each of these objectives

→ Write *maximum* 100 words for each objective

Objective 1: simple design

Rationale: The turbine blade must be designed in a way that can be easily replicated with any materials that is available to the local village workers. This way, the workers do not have to worry about the material affecting the design and efficiency of the turbines. Along with this, the design of the blade should be simple enough for anyone to be able to recreate it. This would enable the locals to be able to carry out installations on their own rather than calling professionals to help set them up which in turn leads to additional expenditures.

Objective 2: accessible, durable, long-lasting material

Rationale: The turbine blade must be made from easily accessible material to the village locals because the village is off the grid and doesn't have access to every type of material. Along with this, the blade must also be durable and long-lasting so that there would be minimal maintenance required. If the blade were to be repaired very often, the locals would have difficulty replacing the material, and the turbine wouldn't be very helpful.

Objective 3: low-cost

Rationale: Since this village is off the grid, transportation of experts and materials will be costly. So, the materials used must be relatively cheap, to enable locals source for replacement parts easily in order to carry out routine maintenance. In addition, workers should not need to call professionals to help them set up the turbine.

MILESTONE 2 (STAGE 4) – METRICS

Team Number: **Mon-31**

For your selected top three objectives fill out the table below with associated metrics (including units) for each objective.

Objective 1:	Simple design
Unit/Metric:	Design Simplicity: ☆☆☆☆☆☆☆☆ (1=very simple, 10=very complex) Parts: number of parts

Objective 2:	Accessible, durable, long-lasting material
Unit/Metric:	Accessibility: scale of 1-10 (1 = inaccessible, 10 = readily available) Durability: scale of 1-10 (1 = weak, 10 = very strong)

Objective 3:	Low-Cost
Unit/Metric:	Quetzal (Guatemalan currency)