

Introduction: Part 1

1.1 PROBLEM STATEMENT

What problem is your project trying to solve? Use non-technical jargon as much as possible. You may find the Problem Statement Worksheet helpful.

The United States has increasingly become more aware of its carbon footprint and has been taking measures to minimize its emissions. Local utilities have contracted Black & Veatch to implement more ways to generate renewable energy into their electrical systems, specifically solar power plants. Although this issue is continuous across the United States, our project will focus on Roswell, New Mexico to implement a new generation and transmission system. One step towards solving this problem is that a large-scale 60 MW utility solar power plant must be designed along with a 115/34.5 kW substation to provide more clean energy to neighboring areas.

1.2 INTENDED USERS AND USES

Who will use the product you create?

Our product will be tied in with the existing National Grid, and will be available to anyone connected to the utility grid.

Who benefits from or will be affected by the results of your project? Who cares that it exists? List as many users or user groups as are relevant to your project.

- Anyone who uses electricity
 - Homeowners
 - Renters
 - Small businesses
- Utility companies
- B&V

For each user or user group, describe (1) key characteristics (e.g., a persona), (2) need(s) related to the project (e.g., a POV/needs statement), and (3) how they might use or benefit from the product you create. Please include any user research documentation, empathy maps, or other artifacts as appendices.

- Utility
 1. Values clean and viable energy. Values a substation and solar field that consistently produces electricity and sustains the load produced. Motivated by money along with the strength of the design of the solar field and substation
 2. The utility needs a sturdy built substation that can withstand the load going through it so there is minimal maintenance that needs to be done. They also need a location to build the solar plant that has high sunlight, low humidity, low land value cost, and flat ground.
 3. The utility will benefit because it will increase the load they are able to distribute and give them a new source of clean energy to distribute to their customers. Alongside receiving tax credits.

- The common person living near the substation and using the electricity produced there
 1. Values reliable electricity to power devices within their home. Wants the plant and substation built in a short time so there is not long term constant construction going on in the area. Wants cheap energy produced in the plant because they are going to be the ones purchasing the electricity from the utility to use.
 2. The common electricity user needs cheap, reliable, and clean electricity to power their residence.
 3. The common person will benefit from the plant and substation because it will bring clean and reliable electricity to their residence.
 4. The common person will benefit from the solar plant because it will bring their utility bill costs down.