PROJECT GROUNDBREAKING

HYDRO

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01

THE CHALLENGE

We are proposing a Hydropower Structure in order to use water as a renewable source of energy instead of electricity. We will assess the waters near the dam to make sure we don’t cause any harm to the water and the sea life within it .

WHAT TO EXAMINE:

1

SOIL

We need to examine the soil and mineral content so see if it holds the dam effectively.

2

RAINFALL

We need to examine the rainfall to in the rivers nearbys to see how much power it is providing to the facility

3

SEISMIC ACTIVITY

We also need to observe the site for any potential hazards magnitudes and earthquakes or flooding

CAUSES OF FAILURE:

#1

Where the site is located and the geographic location of the site. Some locations are not as good as others. The Hydropower Dam can then cause damage to the surrounding environment.

#2

Seismic activity can cause the Hydropower Dam to collapse or fail. It can also increase the river activity giving too much water power or too little water power.

NSD AND QUALITY

- This will have geo-referenced data and tests to ensure it is a NSD.
- This i will have ensured quality control through the whole phase of testing, assessing and building the dam.
- This approach presents a solution pathway for increasing hydropower
- Guideline for those in the future that want to build more hydropower facilities.

02

VIABILITY

How will the solution improve the state of the art?

RISKS OF THE DAM:

RISK #1

Dams can have is it can cause environmental damage to the homes, and natural habitats in the area

RISK #2

Hydropower is heavily dependent on precipitation and water.

RISK #3

The quality of the water can change so it can impact fish or sea animal life in the waters that are around the dam.

INFORMATION

Length

First it will take 4 to 7 years to construct a full operation hydropower dam.

Costs

Safety protocols, construction and analysis will be between $4,000-$8,000 on mountainous terrain

Quality

Quality assurance are higher in mountainous terrain due to the foundational system cost is very low.

Treatment

Subsurface treatment is a little more costly in valley terrain due to additional seepage in the soil.

PROTOCOLS:

Protocol #1

Warning signs around the area of the dam to ensure that people know what is going on around the dam.

Protocol #2

Boat restraining barriers all around the dam to prevent any potential hazards from interrupting or even damaging the area of construction.

Protocol #3

Meteorologist to watch for any climate changes for rainfall, and flooding,

Protocol #4

Geological Engineers will watch for water seepage in the terrain.

03

Innovation

How viable is the proposed solution?

TIME PERIOD & COST

TIME

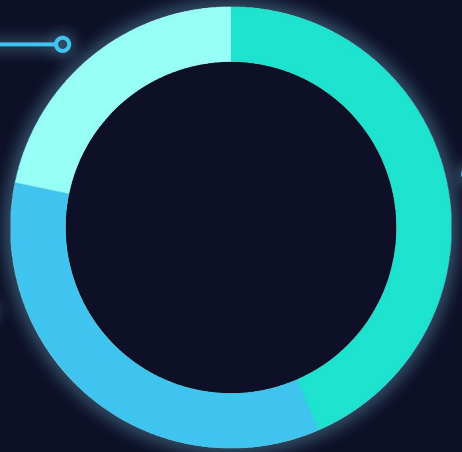
The solution will be built over the next 5 years with the previous assessments on the geological location, the landscape, and site assessment. It can be built the fastest on mountainous terrain

COST

The range for small hydropower projects is between $1,300/kW and $8,000/kW. U.S., hydropower is produced for an average of 0.85 cents per kilowatt-hour (kwh). Cheapest on mountainous terrain

PRODUCTION COST GRAPH

U.S., hydropower is produced for an average of 0.85 cents per kilowatt-hour (kwh).



25%

25% of the cost of natural gas

40%

40% of the cost of fossil fuel

50%

This is 50% of the cost of nuclear

SAFETY GUIDELINES

#1

Follow the basic safety guidelines.

#2

There needs to be warning signs so people are aware.

#3

Boat restraining barriers around the dam to prevent any potential hazards.

MATERIALS NEEDED

- Generator, a turbine, a reservoir,
- Safety regulation workers, construction workers
- Meteorologist, Geological Engineers
- Concrete, masonry, steel, timber, plastic and rubber

04

Summary

Why is our Geotechnical Site Assessment better than the others proposed?

CHECKLIST

- [x] Cost efficient
- [x] Produces energy for cheap
- [x] Constant evaluation of site
- [x] Won't harm the environment
- [x] Won't contaminant the water
- [x] Very safe and secure
- [x] Will last for a long time
- [x] Produces new jobs

THANK YOU!