FLL Innovation Project script

Cast

Engineer 1: Ahan

Engineer 2: Nolan

Scientist 1: Shreyas

Scientist 2: Caleb

Scientist 3: Krishaa

Scientist 4: Alex

**Engineer 1**: Hello, we are engineers with the City of Smallville. We take care of power needs for all the residents and businesses in our city. We source our power from various suppliers. About 20% of our power comes from renewable sources like wind and solar.

**Engineer 2**: But we have a problem. Our renewable power supplies are unpredictable sometimes. For ex: On a very hot day when everybody has cranked their A/C ’s to the max, the demand for power is way more than average. When we don’t get enough renewable power from our suppliers, we need to fire up our diesel generators to make up for the shortfall.

**Engineer 1**: That is not eco-friendly at all. Not to mention the current high prices of diesel and the dangers of storing a huge amount of it onsite.

**Engineer 2:** We wish we had a renewable power source which was consistent and predictable. For this we started talking to a bunch of smart innovators and scientists.

**Scientist 1**: Hello. As a matter of fact, that is something we have been researching about. And we think energy from Tidal waves might be the solution.

**Scientist 2**: If you think about it, humans have been able to accurately predict ocean Tides since ancient times. If we harness Tidal energy through turbines, we can generate clean and predictable energy.

**Scientist 1:** Presenting our latest innovation, the Tidal turbine.

*(Scientist 1 and Scientist 2 place the Tidal Turbine model; either the cardboard one or the 3D printed one or maybe both in front of the judges)*

**Scientist 1**: To be clear, there are similar solutions being applied out in the market today. Our solution is different because it introduces the following innovations,

The ocean is a rough place. Our innovation has a built-in mechanism which uses ballast and motors to retract the whole platform below the surface of the water during a severe weather event and bring it back up once weather is clear.

**Scientist 2**: The main body of our platform is made of carbon nano tubes which makes our platform lighter to manufacture.

**Scientist 1**: Finally, we will cover the main body with solar panels which will be used to power the onboard electronics of our platform.

**Scientist 3**: To build our project, we consulted with some of the experts in the field of marine energy. Our greatest sources of information were Professor Brian Polagaye of the University of Washington and director of Pacific Marine Energy center.

**Scientist 4**: Also, Ms. Abigale Snortland, Graduate research assistant at University of Washington and engineer at the Pacific Marine Energy Center.

**Scientist 3**: Abigale talked to us about things that we need to consider for our retraction mechanism. She told us about factors that we need to consider like, buoyancy, gravitational acceleration or resistance.

**Scientist 4**: Or how much force is needed to stop the device from floating up once it has been retracted.