



# European Project Semester

## PROJECT OUTLINE

**Project dates:** October 2022– January 2023

**Title:** Local Electricity Production

**Project activity areas:**  
*Mechanical design, CAD design, Electrical engineering,*

**Keywords:**  
ski lifts, mechanical design, Onshape CAD,

**Tutor's name and coordinates**  
Client : Grand Tourmalet  
(site : <https://www.tourmaletpicdumidi.fr/>)  
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**Project origin**  
Response to a request from the "Grand Tourmalet"

### Project technical background:

At the top of the ski lifts there is a hut which houses a tracker responsible for the safety of skiers. This hut is heated by a gas system which is hazardous and which requires the transport of gas cylinders. The client want to replace this system with electric heating, but since there is no electricity at the top of the slopes, we therefore have to come up with a local production system.



The basic idea of this project is to invent a system capable of recovering the rotational movement of the pulley to generate enough electricity to operate the heating of the cabin.

The Customer is "Grand Tourmalet", the company that manages the ski lifts in the "La Mongie-Barege area" , the largest area in the Pyrenees.



The project consists in equipping 3 ski lifts with this system.

The goal of this project is to design and if possible produce a prototype showing the possibility of creating electricity by using the rotation of the upstream pulley

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**Studied topics:**

- Needs study
- On-site travel for measurements
- Choosing an electricity generator
- Proposals for design solutions
- Creation of the digital model on "Onshape"
- Calculation of the mechanical resistance of the parts
- Realization of prototype in 3D printing if necessary

Si possible

- Ordering and purchasing standard parts
- parts manufacturing
- Assembly and tuning of the system.