

Consulting Engineering

**Introduction**

**Context**

The Gentilly nuclear power plant has been closed since December 28, 2012. The social, environmental and economical impacts are already being felt in the region. Along with the approximately 800 jobs lost, a financial strain has settled on the regional economy. This situation has indeed created a crisis in the Bécancour and Nicolet-Yamaska region. Since the province of Quebec does not foresee the use of increasing its production of energy, the Government has decided to launch an industrial development campaign. This campaign thus plans to use the disused land of the plant for industrial and manufacturing projects in 10 years. Hence, in 2024, all installations pertaining to the Gentilly power plant will be completely demolished and the land will be decontaminated. Considering the critical condition in which the region is in, and the support from the Government for the economical stimulus, a new beer brewery has decided to settle on the disaffected site. This brewery has appointed your firm for the project management and design of this new Bécancour Brewery.

**Technical Requirements**

**Energy**

In order to reduce the energy needs applicable to this project, the use of renewable energies must be integrated. Your team will have to design a system that will supply the industrial components in order for them to be autonomous energy-wise. Approximately 100 MW per day is needed for the whole of the brewery.

**Industrial Components**

The installation must have one brewery section including enough tanks to produce 250 000 hectoliters, one bottling section to produce 6 million 12 bottle packs, a distribution system for the product, all installations required for 800 employees and an energy supply system.

**Implementation Plan**

Considering that you have a limited area on which to place the installation, you must ensure that the geographical area will be used in the best possible way. Your client has also asked for a detailed plan of the installations and the placement of the components.

**General Instructions**

In teams of maximum 4 engineering students, you have 4 hours to find a solution and produce the required report and presentation. You must quote all sources of information and documents used. Any team not presenting this last information will be greatly penalized. Any document received after this period will not be accepted.

**REPORT**

A 3 to 5 page report, excluding any appendices, must be handed in before the end of the competition period. The following items must be found in the report:

* One complete solution for the site with a detailed plan;
* One detailed calendar presenting the projects steps;
* One financial analysis;
* One environmental impact evaluation;
* One plan for the involvement and approval of the public (social impact assessment).

**PRESENTATION**

Using the PowerPoint format as a visual aid, you will be giving a 10 minute oral presentation summarizing your complete solution, and presenting the information that your team decides is the most important to consider. A 5 minute question period will be given for use by the judges.

**Evaluation Criteria**

Solution (60%)

* Solution meets the requirements
* Justification of the solution
* Social, environmental and financial impacts
* Feasibility and real world application
* Innovation

Oral Presentation (20%)

* Voice, articulation and time management
* Visual aid
* Equal participation of team members
* Ability and easiness for answering questions

Written Report (20%)

* Language Quality
* Professionalism
* Structure

**Appendices**

**Site Coordinates**

46˚ 23’42” North 72˚ 21’21” West

**Site Plan**

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*Satellite view of site (Google Maps)*

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*Site Plan (Google Maps)*