

Sample Student Rough Report (for Careers)

1. Job Title and General Description

- Job title: Renewable Energy Engineer Robotacist
- Description: A *Renewable Energy Engineer* contributes their various skills and abilities to the long and arduous task of pushing the world towards a future where humanity depends less on coal and oil and more on renewable resources and their ever efficient energy. They use their knowledge of math and science to design, test and produce machines and systems that harness wind, hydro, solar, biomass, and geothermal energy.

2. Contents/overview

3. Responsibilities

- Perform inspections on new and old renewable energy sites.
- Electronically mock-up new and innovative designs.
- Provide proof that your design will produce more energy as well as ensuring it complies with the laws and regulations of your region.
- Certify that the installation and running of renewable energy systems complies with the laws and regulations of your region.
- Contract and manage other engineers as well as contractors and energy providers.
- Schedule work and provide cost estimates.
- Integrate new systems into old ones.
- Write detailed reports.
- Test new technologies in a lab.

4. Salary/Wage Levels

- Mechanical engineers, on average, gain 4% more if they become *Renewable Energy Engineers*.
- *The median annual salary for a Renewable Energy Engineer is USD 71,730 or CAD 93,444.46*
 - *They earn about 60% more than the typical Canadian yearly salary: \$55,806.40.*
- A fledgling *Renewable Energy Engineer* is likely to earn approximately \$34,079 - \$43,373.
- As they gain experience and notoriety, a moderately accomplished *Renewable Energy Engineer* will likely earn about \$61,961.
- As a *Renewable Energy Engineer* becomes an expert in their field, they begin to gross up to \$100,000.

5. Related Skills

- A *Renewable Energy Engineer* must:
 - Have a deep understanding of complex mathematical concepts like calculus.
 - Be able to embrace and adapt to ever-changing modern technologies.
 - Enjoy the challenge of the ever-developing industry.
 - Understand finance and how to budget projects and pay people.
 - Understand the efficacy of the systems used to manage the people you will contract and oversee.
 - Understand the properties of life and physics; be able to predict how things will move and interact with each other.
 - Be able to remain organized and efficient.

6. Interests

- The ideal *Renewable Energy Engineer* may have interests such as
 - Puzzles and mysteries
 - Engineers typically like investigative interests; puzzles and mysteries challenge their critical thinking skills and are rewarding when completed.
 - Building and making models
 - Engineers are fascinated by realism and understanding how the physics of the world works is a large part of their field so they would likely enjoy recreating real life. They also seem to enjoy hands-on work.
 - Informational content
 - As previously stated, engineers are typically fascinated with how the world works and strive to explain it.
 - Art and other creative hobbies
 - Engineers love the reward they feel from finishing manual tasks. They also have to be creative/inventive to conceive of new ways to save the environment.
 - Politics
 - R.E.Engineers work for the wellbeing of the planet and would hence, be interested in whether the people in charge want to focus on climate change.

7. Values

To be an R.E.Engineer, one must:

- Be versatile and able to improvise as R.E.Engineers rely on many people who often make minute errors and cancellations.
- Be adaptable as their industry is always developing.
- Have a logical and intelligent mind as R.E.E's must be able to find ways to improve on old products.
- Have a creative mind as R.E.E's must be able to invent new products.

- Always have safety in mind to avoid getting killed or fatally injured while working.
- Be organized as R.E.E's must calculate workflow and manage many individuals.

8. Schooling

- To be recognized as an R.E.Engineer by most employers, one must first obtain a bachelor's degree.
- One would have to get a degree in either mechanical, electrical or chemical engineering as their curricula all include calculus, physics or chemistry.
- Many colleges implore *Renewable Energy* courses where students learn how to convert energy, study energy economics and are taught the environmental regulations they will have to follow during their future careers.
- Some great R.E.Engineering schools are:
 - University of Texas
 - Oregon Institute of Technology
 - University of Alberta

9. Preparation

- Work to improve organizational skills by identifying one's goals, prioritizing tasks and creating schedules.
- Work to improve problem-solving skills by finishing puzzles and logic tests then rewarding oneself.
- Draw, sketch and invent products to hone one's inventiveness.
- Research the modern developments in the field to better understand the swiftness of the changing scene.

10. Requirements

- To begin engineering professionally, one would need a bachelor's degree in an engineering field that covers calculus, physics or chemistry.
- After obtaining their degree, one would need a licence to begin practice.
- To earn licensure in Canada, one would need to demonstrate these qualities to engineering regulators.
 - Their engineering degree
 - Their work/apprentice experience (if one has it)
 - Knowledge of laws and standards
 - The ability to communicate in either English or French
- Engineering regulations are provincial engineering consultants.

11. Future forecast/outlook

- Countries and companies are imploring increasingly environmentally friendly ways to get their energy.
- Demand for green energy businesses will continue to increase.
- Green company employment has already gone up by 5% globally.

- The leading *Renewable Energy Engineer* field on the upswing is solar energy who's employment increased by 11%.

12. Summary/Conclusion

Renewable energy engineers are resilient, logic-minded people who always look towards the future with excitement. They work hard and compete against others in their ever-expanding industry -- all vying to find the new innovative way to process resources. They create using their skill, gained by years of university and experience, and become great leaders as a result. Renewable energy engineers work hard and get paid very well for their service.

13. Resources and Further Support

<https://www.vault.com/industries-professions/professions/r/renewable-energy-engineers>

<https://www.planitplus.net/JobProfiles/View/780/53>

https://study.com/articles/Renewable_Energy_Engineer_Job_Information_for_Recent_Graduates_Pursuing_a_Career_in_Renewable_Energy_Engineering.html

<https://engineerscanada.ca/become-an-engineer/overview-of-licensing-process>

<https://www.stoodnt.com/blog/top-masters-renewable-energy-us-canada/>

<https://newengineer.com/advice/the-best-postgraduate-schools-for-renewable-energy-engineering-1033231>