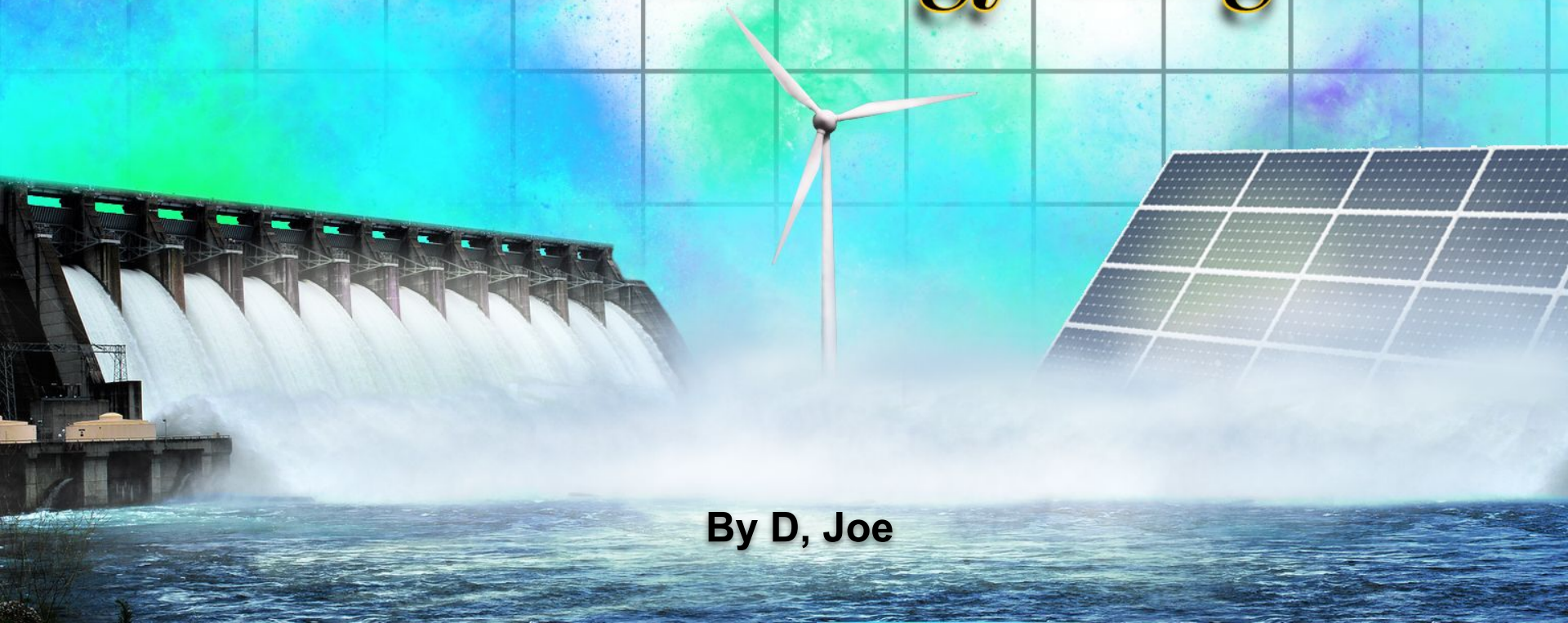


What it means to be a
Renewable Energy Engineer



By D, Joe

Job Title and General Description

Renewable Energy Engineer Robotician

- A *Renewable Energy Engineer*'s task is pushing the world towards a future where humanity depends less on coal and oil and more on renewable resources.
- They use their knowledge of math and physics to design products that harness renewable energy.
- They use their knowledge of physics and chemistry to test and build renewable energy using products.
- They use their marketing skills to build and sell machines and systems that harness wind, hydro, solar and geothermal energy.



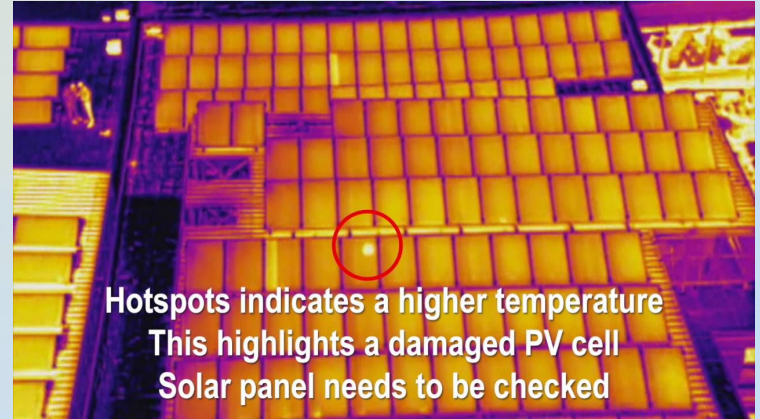
Contents/overview

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Responsibilities

- Perform inspections on new and old renewable energy sites.
- Electronically mock-up new and innovative designs.
- Provide proof that their design will produce more energy as well as ensuring it complies with the laws and regulations of their region.



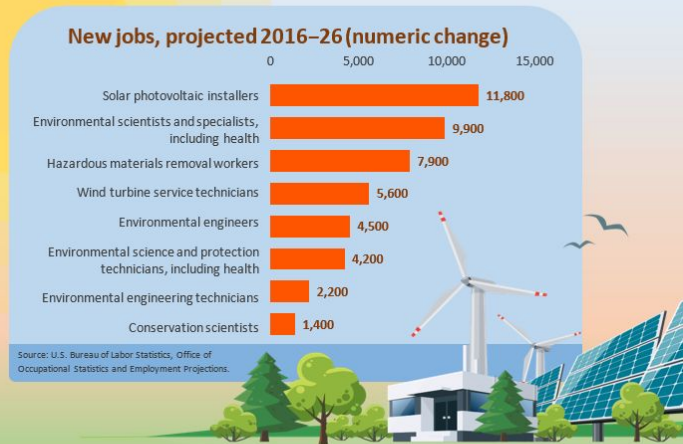
Responsibilities

- **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.**



Salary/Wage Levels

- Mechanical engineers, on average, gain 4% more as *Renewable Energy Engineers*
- The median annual salary for a *Renewable Energy Engineer* is CAD 93,444
 - About 60% more than the typical Canadian yearly salary: \$55,806.40



Occupation	Median annual wage, 2017 ¹	Employment, 2016	Employment, projected 2026	Typical entry-level education
Environmental engineers	\$86,800	53,800	58,300	Bachelor's degree
Environmental scientists and specialists, including health	69,400	89,500	99,400	Bachelor's degree
Conservation scientists	61,480	22,300	23,700	Bachelor's degree
Wind turbine service technicians ²	53,880	5,800	11,300	Postsecondary nondegree award
Environmental engineering technicians	50,230	17,000	19,100	Associate's degree
Environmental science and protection technicians, including health	45,490	34,600	38,800	Associate's degree
Hazardous materials removal workers ³	41,400	46,200	54,100	High school diploma or equivalent
Solar photovoltaic installers ³	39,490	11,300	23,100	High school diploma or equivalent

¹ Excludes self-employed workers.
² This occupation typically requires long-term on-the-job training for a worker to attain competency.
³ This occupation typically requires moderate-term on-the-job training for a worker to attain competency.
 Note: None of the occupations listed typically requires work experience in a related occupation for entry.
 Source: U.S. Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections.

Salary/Wage Levels

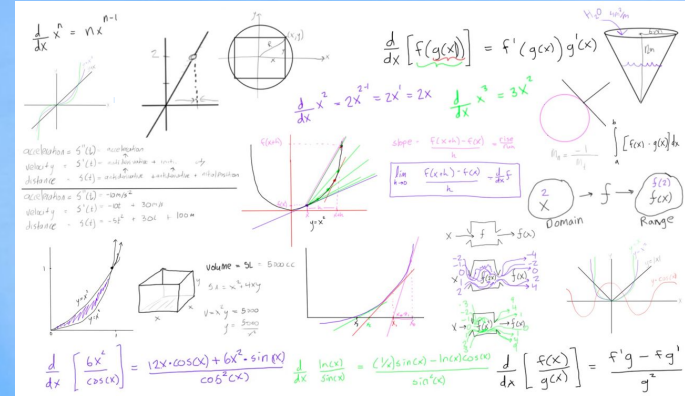
- Earnings of a fledgling *Renewable Energy Engineer*: \$34,079 - \$43,373.
- Earnings of a moderately accomplished *Renewable Energy Engineer*: \$61,961.
- Earnings of a expert *Renewable Energy Engineer*: up to \$100,000.



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.



Related Skills

A Renewable Energy Engineer must:

- Understand the efficacy human management systems.
- Understand the properties of life and physics.
- Be able to remain organized and efficient.

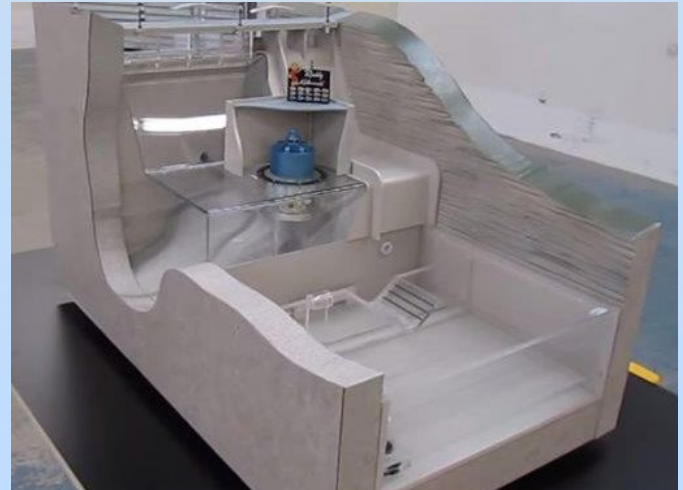
Interests

■ Puzzles and mysteries

- Engineers typically like investigative interests; puzzles and mysteries challenge their critical thinking skills and are rewarding when completed.

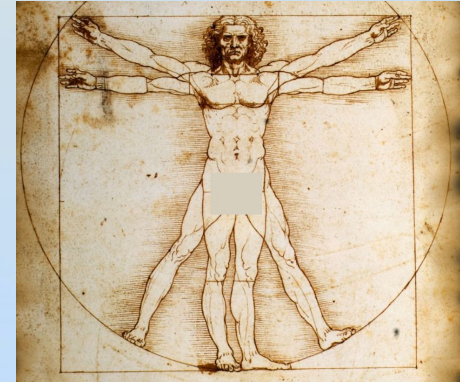
■ Building and making models

- Engineers are fascinated by realism and understanding how the physics of the world works.



Interests

- Informational content
 - 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.



Values

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

- Value organization as they are responsible for many people.
- Value the development and contest of their career as the industry is very competitive.
- Value safety in order to avoid getting killed or fatally injured while working.
- Value the longevity and prosperity of humanity / the health of the planet.



Schooling

- To be recognized as an R.E.Engineer by most employers, one needs a bachelor's degree.
- The degree must be in either mechanical, electrical or chemical engineering.
- 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.

Track One Engineering	195 Spots
Chemical Engineering	125 Spots
Civil Engineering	100 Spots
Mineral Engineering	35 Spots
Computer Engineering	100 Spots
Electrical Engineering	130 Spots
Engineering Science	285 Spots
Mechanical Engineering	110 Spots
Industrial Engineering	65 Spots
Materials Science Engineering	60 Spots

Schooling

- Some great R.E.Engineering schools are:
 - University of Toronto, Master of Science in Sustainability Management
 - University of Alberta, Master of Forestry, Renewable Resources
 - Canadore College, Ontario College Advanced Diploma in Environmental Technology



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.
- 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.

$$\text{Watermelon Slice} + \text{Watermelon Slice} + \text{Watermelon Slice} = 36$$

$$\text{Watermelon Slice} + \text{Orange} + \text{Orange} = 28$$

$$\text{Orange} - \text{Banana} = 3$$

$$\text{Orange} = ? \quad \text{Watermelon Slice} = ? \quad \text{Banana} = ?$$

StudyGizmo Spring 2019

	Monday	Tuesday	Wednesday	Thursday	Friday
11:00AM					
11:30AM					
12:00PM	Lunch 12:00PM-12:30PM	Lunch 12:00PM-12:30PM	Drive Even to Work 12:00PM-12:30PM	Introduction to Mechanical Engineering Lab 12:00PM-1:30PM ENG 2112	Lunch 12:00PM-12:30PM
12:30PM					
1:00PM	Introduction to Psychology Lecture 1:00PM-1:50PM CHASS 1143	Tutoring Aberdeen Inveness 1:00PM-2:00PM	Introduction to Psychology Extracur 1:00PM-1:50PM CHASS 1143		Introduction to Psychology Lecture 1:00PM-1:50PM CHASS 1143
1:30PM				Lunch 1:40PM-2:10PM	
2:00PM	Introduction to Mechanical Engineering 2:00PM-2:50PM ENG 1143		Introduction to Mechanical Engineering 2:00PM-2:50PM ENG 1143		Introduction to Mechanical Engineering 2:00PM-2:50PM ENG 1143
2:30PM					
3:00PM		Calculus 1 3:00PM-4:30PM ENG 1123		Calculus 1 3:00PM-4:30PM ENG 1123	
3:30PM					
4:00PM					
4:30PM					
5:00PM					

Settings

- Add Item
- Edit Item
- Delete Item
- Save Image
- Print
- Export
- Import
- New Schedule

Requirements

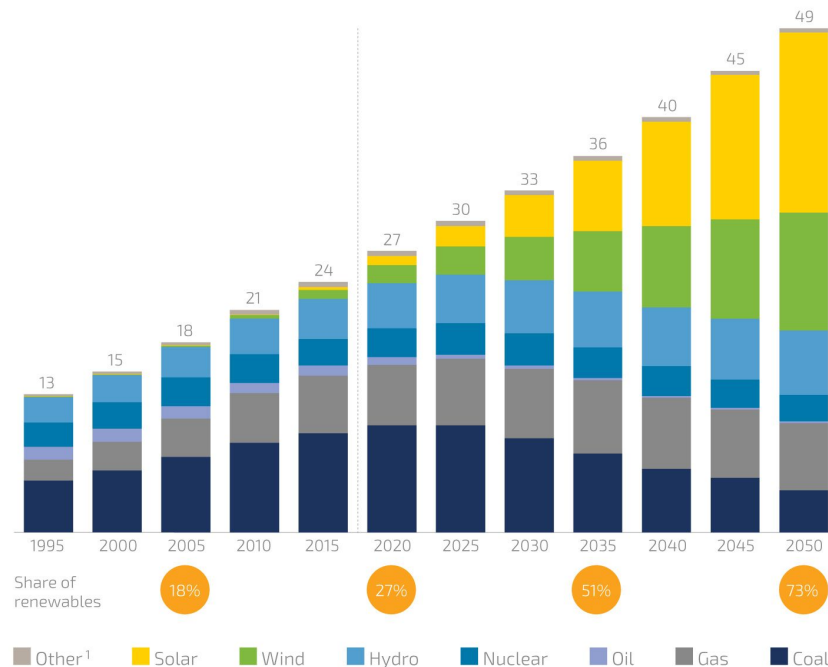
- To begin engineering professionally, one would need a bachelor's degree in an engineering field that covers calculus, physics or chemistry.
- After obtaining their degree, one would need a licence to begin practice.
- To earn licensure in Canada, one would need to demonstrate these to engineering regulators.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



Future forecast/outlook

- Countries and companies are imploring increasingly environmentally friendly ways to get their energy.
- Demand for green energy businesses will likely continue to increase.
- Green company employment has already gone up by 5% globally in the past year.
- Solar energy employment increased by 11% in the past year.

Global power generation, (thousand TWh)



¹Other includes biomass, geothermal, and marine

Summary

- Renewable energy engineers are inventive, logic-minded people
- They work with developing technology and make strides in their field in order to market their product
- They work hard and compete against others in their industry
- They create using their skill, gained by years of university and experience
- Renewable energy engineers get paid very well for their service



Resources

<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>