



Energy Engineer

Job Description

Energy Engineers monitor, improve, and evaluate utilities to make energy processes more efficient. These engineers often work with facilities that consume a lot of energy and support them in making energy processes more sustainable and effective. Energy Engineers may spearhead initiatives to replace old equipment with more energy-efficient options that support a facility's goals.

Salary

Entry — \$56,000
Middle — \$72,000
Top — \$96,000+

Core Tasks

- Conduct audits to understand existing energy utilities
- Suggest sustainable alternatives to improve energy-efficiency
- Monitor energy consumption within a facility
- Review building specifications and upgrades to plan for energy systems
- Present findings to other staff members, engineers, and architects

Workplace / Environment

- **Work hours**
Approx. 40 hours/week
(At key milestones overtime work may be required to meet deadlines)
- **Environment**
Mix of time spent conducting **on-site inspections** and collaborating within a team in the **office** to strategize for energy improvements
- **Travel**
Occasional visits to **conferences** or **outside meetings**

Education / Prerequisites

Education Level

Bachelor's Degree in Electrical, Mechanical, Environmental, or Chemical Engineering

Licensing

Often requires P.E. (Professional Engineer) License

Pre-Job Preparation

Science courses and hands-on experience on engineering or energy-related projects

Experience

Soft Skills

- Project Management
- Budgeting
- Collaboration

Technical Skills

- Microsoft Suite and other data display and assessment tools
- Understanding of energy processes



Career Path: Dayana Friedman

About Me

Process Intern at King County Wastewater Treatment Division

General Engineering Associates from Bellevue College
BS Civil Engineering from University of Washington

Early Education Experiences

"I finished my high school in **Costa Rica**, and I came to Washington State to learn English and pursue a major. My second language learning journey started in Bellevue **Community College**, currently known as Bellevue College."



"I started taking general classes and exploring majors that were acceptable for my father — law, medicine or engineering related. Unfortunately, I did not get the chance to explore more, but in the process I found something that really resonated with me and that was **science**, **math** and the **environment**. This is how I ended up choosing **civil engineering**, which was the only program that was able to bring me closer to environmental engineering. Once I completed the prerequisites for civil engineering, I transferred to the University of Washington where I graduated."

Utilizing Resources



"In college, I was very fortunate to find different **groups that help first generation and low income students** throughout their college experiences, offering them a good support system, and, as a **first generation-low income student**, I needed all the help I could get."

"I found the **TRIO program**. They were like the parents and the **family** that I didn't have here, guiding me through **financial aid**, **scholarships**, **classes** and other things. When I transferred to the University of Washington, I found more support groups such as **LSAMP** and **WISE**. They are wonderful groups, and they can help with a lot of things. If you're considering PhDs or Masters, they can get you the right tools so you can complete your education with minimal financial burden."

Defining Interests

"I took an **English writing course** at Bellevue College. The professor chose to center it around environmental crises, so I decided to write about coral bleaching. As I researched this topic, I became more aware about the urgency of improving water and air quality, and our world as a whole for my generation and future ones. This is the reason I took the engineering path — I wanted to help seek better **solutions to our environmental problems.**"

"I learned that many students avoid engineering because it requires a lot of math. This is very unfortunate, because engineering can give you the tools to design and shape your future world in so many different ways. I personally do not consider myself great at math, but **I like numbers.** Nobody's born great at math or bad at math — it's just how much you **practice.**"

"I knew I enjoyed doing math and science and I deeply **love the natural world.** My passions, combined with my desire of helping to make this world **healthier** and a **better place** to be, is what got me to where I am today."

About My Job

"Energy conservation is a big thing so you have a big impact"

Pros

- "Something really interesting about my job is that I get to **wear different hats**, not only the energy engineering hat. Sometimes I get to be a project manager, planner, project control engineer, etc. It **broadens my experience** in a way."
- "Energy engineering doesn't necessarily mean one thing or one field. **You can go anywhere with it** because energy is part of our lives and is needed almost for everything. It's about how we can get energy in another way shape or form that won't affect the environment and is sustainable."
- "It's a **high salary... Job security** is good."
- "Energy conservation is a big thing so you have a big impact. Reducing your energy consumption **helps the planet a lot.**"

Cons

- "I'm an outdoor person. My job right now is more **office based.** For some, this can be a plus, but for me it's not. If it was up to me, I'd be out in the field most of the time."

Fieldwork

- "I'd say **outdoor work is about 10%** of my work."
- "Sometimes I'm attending indoor **presentations, meetings, and site walkthroughs**, so I go outside of my office, but not necessarily outside."
- "I do **data gathering** for projects and also for incentives. We have to estimate the amount of energy that we're going to save, and then that's how we decide which project to do first or do at all."
- "I share energy saving estimates and project information with the utility, along with actual **data collected** before and after the project has been completed to verify the energy savings."

Skills

- "It's great if you can get to be a leader in a project or **work with people** on a project, no matter how big or small it is. **Leadership skills** and team-work skills are very important."
- "**Project management** is a very important skill that can take you a long way and can be utilized in any sort of industry."
- "**Communication, communication, communication.** A large percentage of my job is about sharing ideas, developing a plan and implementing those ideas. This takes a lot of verbal and written back and forth communication amongst several groups and disciplines. Communication classes or **public speaking** are a must, especially with engineering."

Office Work

- "About 90% of my work is indoors."
- "I'm working with **spreadsheets and data**, or just **reaching out to other folks** to ask questions or share information. I'm **organizing tasks** that need to be done and trying to keep every discipline **engaged** on the various projects we are working on."
- "I take input from operations and maintenance on how to optimize the process so we can run the plant more effectively. I'm working to **reduce the energy** that we use, but also **improve efficiency.**"
- "A part of my work is working with a utility to be able to **carry ideas through** and make it happen."
- "I provide **quarterly energy data** to show the plant's normalized energy usage."

Education/Experience

- "To be an energy engineer, consider going the **mechanical, electrical, or civil engineering** route, or even **architecture.**"
- "In addition, consider completing certifications such as Certified Energy Management Training, which will give you the knowledge you need to assess, plan and implement energy projects."
- "Look for energy or sustainability related **volunteering, work, and internships opportunities.**"
- "You can learn a lot from Energy Engineers Association courses."

The Future of **Energy Engineering**

"Jobs are going to be everywhere"

"Energy is costly and goes into everything we make and operate, so I think there will be a **higher demand** in the field. You can **work everywhere**. You can work in wastewater. You can work in drinking water. You can work in an aerospace firm or mechanical firm. You can work for civil companies. You can even work abroad — these courses and majors are **recognized everywhere in the world**."

"Jobs are going to be everywhere because natural resources are being depleted and **energy demand is rising** due to the rapid rise in infrastructure, housing and transportation demand. Energy engineering doesn't necessarily mean one field or one thing, because energy goes into everything."