

Santiago Rodríguez-Anderson, Energy Efficiency Analyst

Job Description

Energy efficiency analysts **help clients understand** potential opportunities for **energy-efficient improvements** to their buildings. They measure efficiency, analyze data on energy use, develop energy models, recommend improvements, and assist contractors with technical support.

Salary

Entry — \$83,000
Middle — \$104,000
Top — \$131,000

Core Tasks

- Gathers specific data, including inspecting the efficiency of building construction, mechanical systems, and electrical systems.
- Test buildings and work closely with building owners, contractors, engineers, and financiers to complete projects while monitoring energy transactions throughout all stages.
- Identify customer needs and maintain knowledge of the energy market while collecting and analyzing data.

Workplace / Environment

- **Work hours**
Approx. 40 hours/week
(During key seasons overtime work may be required to meet deadlines)
- **Environment**
Typical **office setting**, site visits will require **some outdoor work**.
- **Travel**
Typically **within PNW**, to meet with customers, complete site analysis, etc.

Education / Prerequisites

Education Level

Bachelor's or Post-graduate degree in mechanical engineering, electrical engineering, or related fields.

Licensing

EIT (Engineer in Training) then P.E. (Professional Engineer)

Pre-Job Preparation

A few years of prior experience in energy engineering and/or consulting engineering required.

Experience

Soft Skills

- Excellent Communication
- Reading Comprehension
- Problem-Solving

Technical Skills

- Research Skills
- Data Analysis
- Critical Thinking



Career Path: Santiago Rodríguez-Anderson

About Me

Consulting Energy Efficiency Engineer at SBW Consulting Inc.

Master's of Science in Mechanical Engineering from Portland State University

High School Life

"When I was a teenager I thought journalism actually was the direction that I wanted to go, but science was really what ended up grabbing me. When I was in high school, I **liked science and math a lot**. I wanted to make a career of some kind out of science, but I didn't know what to do. I knew that I liked applied science and applied math, so **engineering felt like a good fit**. Because engineering is, by definition, applied physics, applied chemistry and applied math. So that seemed like it would be a good fit for me."



Internship Influence

"In college, I had a chemistry research internship at the University of Oregon, I took on another internship at Portland State University that was an **engineering research internship**. While I was there, I studied fluid mechanics and heat transfer, which became something I actually **really enjoy**. That helped me decide to go to Portland State University, so I transferred from Portland Community College. There I had another internship in the Green Building Research Lab, where I really developed this understanding and knowledge of **building science and energy**. That's, that's really what drew my focus from all of my studies into a few specific places, like the field that I'm in now. After that, I was able to study for my Master's degree and continue working at the university doing engineering research. Then, I got **recruited out of my Master's program** to work at the current consulting firm that I'm at."

Interests and Inspirations

"To an extent my father's work, and my mother's work were all about serving the community, helping people, and doing science. So, because of that, consulting actually ended up being **a good fit for me**. But also working in a field that **I felt was important**, that also matters. As an engineer, you could do a lot of different things, this was the one that felt right, because it was doing something that I felt was important."

About My Job

"Be curious. It's good for you."

Pros

- "One of my favorite things about my job is getting **to do and learn about a lot of different things**. We don't just learn about engineering, I've learned a fair amount about econometrics and statistics, just as part of our job. We do evaluations and research for our clients so we **delve into a lot of different topics**."

Cons

- "I think the downside is that I have to **know a lot** of different things. We have to know the **bureaucracy and the minutiae of a lot of different things**. We have to get really familiar with energy codes and different organizations' policies. For example, you would only need one employee handbook if you worked at a company, I have to get familiar with the rules of every company that I work with and consult for. I don't have to know it as well but I **have to understand** what their limitations are."

Fieldwork

- "Our company **does work all over the United States**. Primarily, we're focused in the Pacific Northwest."
- "We could **travel anywhere**. Basically, anywhere where there is electricity being transmitted to businesses and homes, there is a need for energy efficiency."
- "I **travel 10%** of the time. One of the things that I've specialized in is **collecting data** to verify energy efficiency or to understand it better. Occasionally, I get to go out to a conference, or some kind of meeting with clients."

Office Work

- "My day to day work happens mostly at my home office. I **manage a lot of engineering work** for my clients."
- "We have to understand energy policies. And not only that but how they fit into state and regional and national policy. So **we do a lot of research**."

Skills

- "I think one of the most important skills is **reading comprehension**. That's something you can learn in a lot of coursework and disciplines outside of engineering, but it's a **very applicable skill**. So that's a great skill to develop."
- "Math and science you can learn almost all of that through just pedagogy and sitting through class, but **research is a learned skill** that you have to take time to develop."

Education/Experience

- "**Great starting points are math, physics, chemistry**. A lot of schools now offer design classes which are applicable to engineering sciences. The next most important thing would be learning how to do research."
- "Science research has a very specific structure to it, which **takes time to learn**, it's not something that you just know how to do. Getting a **research internship, matters a lot**. Design and build is a different discipline altogether than research."

The Future of **Energy Efficiency**

"There's a lot of different strategies being developed."

"Energy efficiency right now is focussed **demand efficiency**. At any one time you are consuming kilowatts in your devices, think about air conditioners or heaters, they're going to be using the most electricity during one particular time of the year. That produces periods of **very high demand**, where our electric grid has to be able to supply all of it all at once. It's not enough to just say, 'over the whole year, we can generate that much energy.' You **have to generate enough all at once** when **everybody needs it**. And in the industry we call it demand side response (demand side management), being able to develop your infrastructure to handle that. There's **lots of different strategies being developed**, battery capacity, load shifting strategies, basically if we're using a lot of electricity for our cooling, we can dim our lights so that we don't draw as much load there. It can reduce the incidence of blackouts. You may have heard in recent years, California had some blackouts during the summertime because of peak cooling use and undersized infrastructure. So that's, that's the way that **our industry is changing and shifting**."

About Sustainability Ambassadors

We are here to **RAPIDLY ADVANCE A SUSTAINABLE FUTURE**. Empowering **YOUTH** to catalyze community sustainability, **TEACHERS** to integrate rigor with relevance for real-world impact, **COMMUNITY** to drive collective impact.

We support a year-round training program for over 60 highly motivated middle and high school youth, a Teacher Fellows Program, City-County CAP internships, and college-level interns, and work with hundreds of educators to design new models of problem-based, place-based learning around **a shared vision of educating for sustainability**.

Your Green Jobs Future

Ready to explore your future in green jobs? Use [Map your Career](#) to map your trajectory!

Find career opportunities near you now! Use [Career Connect - Washington's](#) tool to find programs to build your career skills.

Interested in a future in solar? Take a look at the [Solar Jobs Census](#) to track solar job growth nationwide.

Explore [RVC's opportunities](#) to work with organizations led by communities of color.

Dive into the [Center of Excellence for Clean Energy's](#) robust career tools in the sustainable energy sector.

Grow your professional sustainability skillset with the [Seattle Youth Good Program](#).

See Seattle's [Clean Energy Resources Map](#) to examine what the city is planning for a greener energy future.

Check out the [U.S. Green Building Council](#) to explore the sector's current opportunities. :

Funder Acknowledgement



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

