



Energizing Communities to Build a Sustainable Future

Minas Energy leverages a creative online education strategy to make renewable energy a reality

With global energy production likely to peak around 2035, many organisations are making plans to transition to more sustainable energy supplies. Minas Energy partnered with D2L to create an online education program that shares Minas' expertise in renewable energy projects and helps companies and communities deliver those projects successfully.

Company

Based in Nova Scotia, Minas Basin Pulp and Power was founded in 1927 and supplied hydroelectric energy to its own pulp and paper activities. Today, the company's energy division, Minas Energy is an industry leader in sustainable energy solutions, education and public outreach. Minas offers a full range of project development services to support companies, communities and other clients throughout Maritime Canada.

AT A GLANCE

Client: Minas Energy

Employees: 5

Industry: Energy & Resources

CHALLENGE

- Share knowledge to help organisations transition to renewable energy
- Create a new line of business, adding education services to Minas Energy's portfolio
- Engage learners with compelling, interactive course content

SOLUTION

- D2L's Brightspace platform
- D2L's Learning & Creative Services
- Discussion boards
- Quizzes

OPPORTUNITY

- Build partnerships with universities to teach renewable energy project delivery
- Give communities the skills to assess, design and implement renewable energy sources
- Strengthen the business case for renewable energy in Canada and worldwide

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Chris Peters, Energy Project Manager, Minas Energy

The Challenge

Minas Energy can trace its history in the renewable energy sector back to the 1930s—long before the concept of renewable energy became a common idea. The company still operates a pair of hydroelectric power plants on the St. Croix River in Nova Scotia that were built in the 1930’s.

Building on its unique knowledge of running these facilities, Minas Energy has grown to become a recognized authority on sustainable energy initiatives. Over the past decade, it has developed a consulting practice that helps design, deliver, and manage hydro, wind, solar, and tidal energy projects for municipalities and companies.

“We’ve learned many important lessons about wind, solar and waste energy projects,” says Chris Peters, energy project manager at Minas Energy. “We were looking for a way to package up that knowledge and share it with others—as well as create a new revenue stream that would supplement our existing income.”

LEARNING TO PUT RENEWABLE ENERGY INTO PRACTICE

Although other providers were already offering courses on the technical aspects of installing and operating wind turbines or solar panels, Minas spotted a gap in the market.

“We realized that nobody was talking about the business perspective of transitioning to renewable energy—and that’s really important,” says Peters. “How do you know whether a wind or solar plant is going to be economically viable? Where should you site it? What do you need to do to attract financing? How can you win over all the stakeholders and influencers? If you can answer those kinds of questions, you can make renewable energy a much safer and more compelling investment.”

Minas Energy decided to build an education and certification program that people from academic, government and industrial backgrounds could study online. To attract as many learners as possible, the content needed to be highly interactive and engaging, so the Minas team began looking for a vendor that could help them deliver their vision. That led them to partnering with D2L.



The Solution

Minas Energy consulted several universities and colleges in Nova Scotia to learn about their experiences with online learning platforms.

“We started out just wanting to learn what products were available, but we kept getting strong referrals that we should work with D2L,” says Peters. “When we met with the D2L team, we immediately felt that they were a good fit, from both a technical and cultural perspective.”

TAKING A CREATIVE APPROACH TO BOOST ENGAGEMENT

Minas Energy saw the involvement of the D2L Learning & Creative Services team as a key aspect of the project. The plan was for Minas’ subject-matter experts to focus on creating the content for the course and then hand it over to the D2L team to turn it into an engaging, interactive experience.

“We were very much a project-oriented group, so this was a big transition for us. We’re thankful that the D2L Learning & Creative Services team was so easy to work with and encouraged such a collaborative approach. They deserve a lot of credit for their patience and leadership on the course creation.”

Chris Peters, Energy Project Manager, Minas Energy

The D2L Learning & Creative Services team worked with Minas Energy to create 13 course modules that would take learners through the entire renewable energy project development process. Every module breaks the content down into digestible sections and includes activities and quizzes to keep learners interested and involved.

“D2L’s expertise really came into play when deciding how to make the content come to life. They really understand how different types of content lend themselves to different activities. Nine times out of ten, we followed D2L’s recommendations.”

Chris Peters, Energy Project Manager, Minas Energy

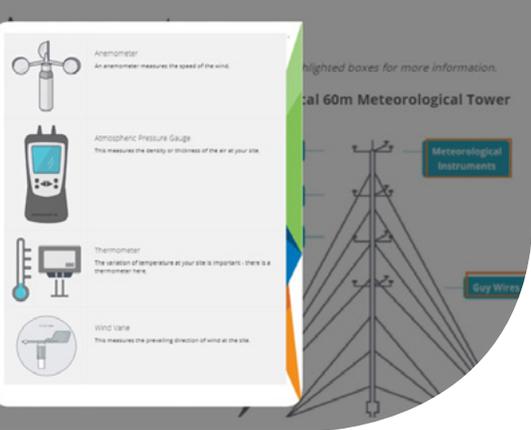
INTERACTIVE EXPERIENCE KEEPS LEARNERS INVOLVED

The course opens with an animated video that introduces the subject and leads into a survey, which helps Minas Energy understand who its learners are and why they are motivated to take the course. This will help the organisation review and refine the course content to align with learners’ needs.



Wind Resource

A meteorological tower should be installed in a wind resource. Ideally, the tower is at least 10m higher than the tallest trees or buildings in the area. Different heights that allow for correlation with turbine hub height (typically 100m or higher) are increasing and so to different heights, meteorological towers must be installed.



Meteorological instrumentation

- an anemometer that gathers data per second
- a wind vane to determine the direction of the wind
- thermometer and atmospheric pressure gauge

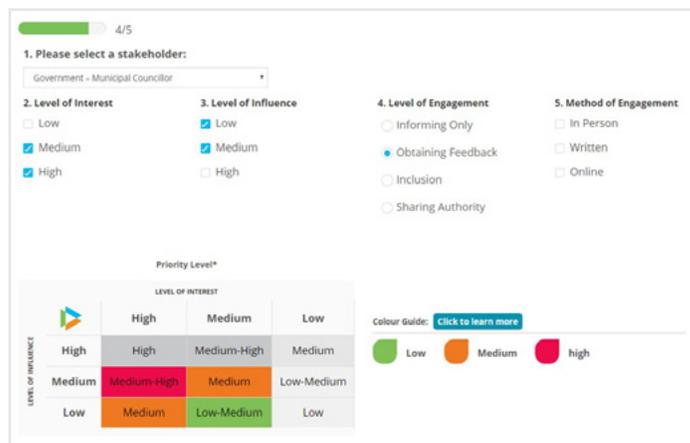
A robust measurement campaign requires anemometers at three or more different heights.

Next comes a section explaining the different types of renewable energy projects and how the installations work. The D2L team built a set of interactive infographics to help visualise different physical assets, such as meteorological towers, solar installations and bio energy plants. Users can click on different parts of the graphics to learn more about what all the components do and how they work.

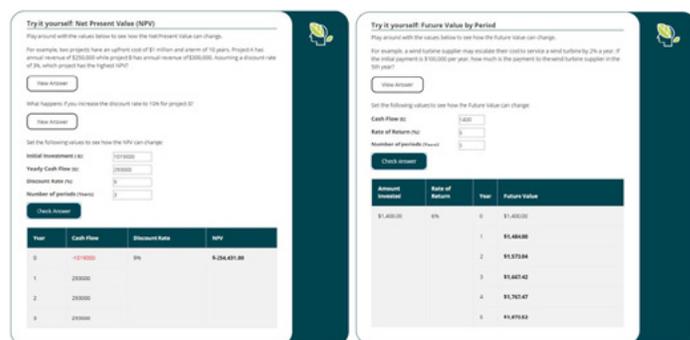


The ensuing set of modules helps learners identify opportunities for renewable energy projects and assess the resources available to them. For the module that focuses on site selection, D2L created an interactive map that helps learners understand the trade-offs of different decisions. For example, choosing a site near the transmission grid might reduce installation and maintenance costs. On the other hand, it's better to avoid building noisy wind farms near residential areas.

Community engagement is another extremely important aspect of renewable project development, so D2L worked closely with Minas Energy's experts to design a stakeholder mapping activity that helps learners identify the key stakeholders and influencers within a company or community, and then understand their motivations.



Financing is also critical. D2L built a series of interactive calculators for vital metrics such as net present value and internal rate of return. The interface presents learners with a sample financial model and allows them to tweak the different variables to see the impact of their decisions on the project's financial sustainability.



The last segment of the course includes modules focusing on practical concerns such as equipment supply, construction and operations, before the learners take a final exam and receive their certificates.

“During this project, there were really two moments that stood out for me. The first was D2L’s demonstration to our team on what we could do with the platform and we suddenly realized the potential to build a really innovative and interactive learning experience.”

John Woods, Vice President of Energy Development, Minas Energy

The Opportunity

TRANSFORMING EXPECTATIONS WITH INTERACTIVE LEARNING

Minas Energy has already trialled the course with master’s level and engineering students at Dalhousie University in Nova Scotia for feedback and used the initial comments to further refine the content. The next step is to find partner institutions that want to include the course in their curriculums.

“The D2L platform is such a powerful tool for interactive learning,” says Peters. “It’s not just about the course material—as an instructor, you can post new and different items every day and monitor your class’s progress. The ability to manage assignments, discussion boards and quizzes within a single platform makes learning truly interactive.”

Initial feedback from students has been positive; they enjoy the interactivity of the content, as a contrast from traditional textbook-based teaching methods.

“During this project, there were really two moments that stood out for me,” says John Woods, vice-president of energy development at Minas Energy. “The first was D2L’s demonstration to our team on what we could do with the platform and we suddenly realized the potential to build a really innovative and interactive learning experience.

“The second was the reaction from users when we started rolling out the Renewable Energy Project Development Toolkit. People were genuinely impressed. They were saying things like ‘I didn’t realize we could learn this way,’ and ‘I didn’t know this kind of platform even existed.’ It really confirmed that we made the right decision to explore this new business model.”

TRAINING LEARNERS TO BECOME LEADERS

With the D2L platform in place, Minas Energy is eager to work with higher education institutions, associations, and municipalities to educate and certify learners in renewable energy. The ultimate goal is to share the company’s hard-earned knowledge about how to build and support sustainable energy projects—a topic that becomes ever more critical for the future of the planet.

“We’re hearing credible predictions from pundits that global energy production is likely to peak around 2035,” says Woods. “Transitioning to renewable energy is going to be an absolute necessity. The course we’ve built will give our learners the knowledge they need to become leaders, transforming their industries and communities and building a more sustainable future.”