Future Skills Centre

Presented by
The Conference Board of Canada

Future Skills Centre Podcast

Episode 5: Skills for the Clean Economy

In the face of the climate crisis, shifting to more carbon-neutral economic activities is a necessity. The growth of this clean economy can also be an opportunity—for individuals to have in-demand and meaningful careers, and for Canada to become a global leader in this area. In this episode, we hear from three Canadian organizations. Our guests tell us about the growing clean technology and blue economy sectors, and about the skills needed in these sectors, and share their insights on what needs to happen to support the development of a strong workforce in the clean economy.

Guests
Darren Gresch, Senior Research Associate, Innovation and Technology, The Conference Board of Canada
Jeanette Jackson, CEO, Foresight Canada
Yogendra Chaudhry, Vice-President of Professional Services, ECO Canada

Host
Linda Nazareth

Links

Future Skills Centre and Conference Board of Canada links, such as recommended articles and webpages, social media handles, etc.

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Transcript

Linda Nazareth:
You're listening to Season Two of the Future Skills Centre Podcast, gathering experts from all over Canada to explore the most crucial challenges to the future of work. I'm your host, Linda Nazareth. This podcast is brought to you by the Future Skills Centre and the Conference Board of Canada.

Canada is facing wide demographic and technological changes, and the COVID-19 pandemic has accelerated these disruptions to our work environment. Our economy is changing fast, and this means we have to change fast too.

Linda Nazareth:
Today, we're talking about Canada's clean economy. The climate crisis is here and calls for urgent action in all sectors. Reducing our carbon emissions is not only the right thing to do to protect our planet, it's also the right thing to do to grow our workforce and build a future of shared prosperity.

Canada's current emissions targets call for the reduction of CO2 emissions by 40-45% below 2005 levels by 2030. Our workforce will need to adjust its skills to support industries that drive progress towards these goals.

Current research suggests that the transition to a net-zero economy is expected to create many new employment opportunities both here in Canada and globally. But different regions, populations, and sectors will experience this transition differently. There is an opportunity through our response to this crisis to develop Canada's global leadership in the clean economy, as well as create new exciting and well-paying careers for Canadians. Here's a story from Jeanette Jackson, CEO of Foresight Canada, that highlights this situation we face as a country.

Jeanette Jackson:
On June 30th, 2021, the town of Lytton was devastated by wildfire that burned the entire town down to ashes. And we were seeing heat record heat of over 50 degrees, something that no Canadian community had ever seen. Of course, that didn't stop there. In the past several months, we've also seen atmospheric rivers that have rolled through the lower mainland causing floods. And at the end of the day, there just will continue to be devastation with natural disasters.

For Kanaka Bar, Lytton, the Foresight team partnered with the Southern Alberta Institute of technology to launch a challenge to source resilient and sustainable commercially available building material technologies. So that when the community is rebuilding, it's building back better. It's going to have sustainability practices embedded in all the buildings that are rebuilt from the ground up.

And it's also going to be a great opportunity to train community members, individuals who want to be part of the solution to learn about these technologies, to learning about these best business practices and these building materials. So that they can become experienced and help other members of the community grow and hopefully even build businesses around that knowledge.

Linda Nazareth:
We'll hear more from Jeanette Jackson in a bit. She tells us more about her vision for Canada's clean technology sector, and what she thinks needs to happen to support more individuals into in-demand jobs in the clean economy. We'll also hear about similar opportunities in the blue economy from Yogendra Chaudhry at ECO Canada. First though, we'll hear from Darren Gresch, a Senior Research Associate on the Conference Board of Canada's Innovation & Technology team. The Conference Board has recently put some work into defining exactly what is meant by the clean economy. Darren spoke with us about the work to categorize clean economy occupations.

Darren Gresch:
So, we define the clean economy as a combination of industrial and governmental activity that produces goods and services with an environmental benefit or adds value to such goods and services through supply chain linkages. So, we focused on industries that fell into three buckets: clean energy production, energy efficiency, and environmental management.

The clean energy production is really about activities related to producing, transmitting, and distributing clean energy. These are things like wind or solar farms. Energy efficiency includes things like manufacturing, energy saving products, constructing energy efficient buildings, and providing services that reduce energy consumption. And environmental management component is really about activities that involve conservation and natural resource regulation. So, this could be an activity from a consulting firm, advising on controlling environmental contamination or pollutants, for example. And within each of those three buckets, there's about 20 to 40 specific industries that we look at. And we've tried to capture as much of that accurate economic activity, that culmination of industrial and governmental activity that I mentioned at the top, within those industries.

Some of the occupations in the clean economy are fairly new. And part of the challenge with trying to look at things from a systemic macro point of view is they don't necessarily fit neatly into existing structures. With that said, we have been able to map where we think they'd fit in and based on our projections, the fastest growing occupation, for example, is the energy auditor.

And for anyone that signed up for the greener homes grant, they'd probably agree that the occupation does seem to be in extremely high demand. Solar energy installation managers, energy brokers, and even training and development specialists are also growing quickly.

Linda Nazareth:
Taking a step back, Darren told us about broader work the Conference Board has done to identify jobs in Canada at risk of being lost due to automation. Part of this work is to identify transitions that can be made from these vulnerable jobs to other, related and in-demand jobs. The clean economy is one of these proposed destinations for displaced workers.

Darren Gresch:
One concept that we at the Conference Board have spent a lot of time and effort looking at is automation. Not so much in the sense of understanding the technical details behind it, but in terms of the impact across Canadian society, labor markets, industries, and economies. And what we found is that one in five workers across Canada are in an occupation that's at high risk of automation where transitioning into a lower risk occupation or adapting to the transformations in their current role, they're going to require a significant retrain. So, to put it short, there's a significant number of Canadian workers that are going to need to up-skill such that they'll be able to continue earning a livelihood while also ensuring that the Canadian economy has the labor resources that it needs to thrive in the future and what that future state looks like is yet to be determined. But we know that there's a focus on certain sectors of the economy, like the clean economy, for example, and understanding how we upskill our labor force for these sectors is part of a larger stream of research that we're undertaking.

In trying to understand what sort of transition paths are available from high risk, low mobility workers to fast growing jobs in the clean economy, we really relied on our job transitions model, that is a core part of the OpportuNext website that we have. It's really about understanding what skills are similar between different occupations. What type of skill progression could we reasonably expect from an individual making a transition? And then also taking into account the new wage levels that they might have to adjust to. And using those three factors were able to identify what are

some feasible and desirable transitions between different occupations from more vulnerable parts of the Canadian economy into the fast-growing clean economy.

Importantly, most people don't require extended training to be able to up-skill into a green job. A year of training unlocks quite a few career pathways, from vulnerable jobs into fast growing ones in the clean economy. But workers are going to need some support and guidance to make that jump. They need to know what opportunities are out there through timely and effective labor market information.

They might need support from employers themselves in terms of upskilling for a transforming role or with new employees offering some sort of enhanced onboarding and training. So again, based on our understanding of the skills of the Canadian labor market, we do see a reasonable path forward for getting into these strategic and high growth sectors.

Linda Nazareth:
So, this research suggests that there are some very real opportunities for Canadians to transition from declining sectors to growing ones, with the right training and supports. This study also spoke with some of these workers themselves. How do they feel about making this change partway through their career?

Darren Gresch:
Most said that they were willing to undergo some level or effort of retraining to transition into a fast-growing occupation. Most said they'd consider transitioning into the clean economy specifically. But job security was a big reason that might deter someone from actually doing so. Some barriers that prevent people from switching to a different occupation include lacking the job specific skills that they would need to succeed at that new job, or the length of training time that would be required to make that transition. And to that last point, it might be that smaller training spells or even on the job training would be successful in getting past these real and perceived barriers.

At the end of the day, if workers don't have a good guarantee that the position into which they're moving has good benefits and long-term viability, they're unlikely to make the switch.

Linda Nazareth:
Jeanette Jackson, who we heard earlier, is the CEO of Foresight Canada, a clean tech accelerator based in British Columbia. Foresight is working on a Future Skills Centre—supported project. This project aims to identify opportunities and learnings that will help support a workforce transition to clean tech jobs, with the goal of a fair, inclusive transition. Jeanette told us earlier the story of a recent project that brought together municipalities, Indigenous governments, industry, and post-secondary institutions to support recovery and innovation in response to a climate disaster. Here she is again with some thoughts on how to make the transition an inclusive one.

Jeanette Jackson:
One thing that's really important is that we think about equitable access to training and skills development. There are certainly communities in Canada that have the potential to be impacted negatively by the green transition, such as those with high rates of employment in transition, vulnerable industries like oil and gas. So, providing educational incentives and access to training will really mitigate the effects of the low carbon transition. There also needs to be collaboration between different levels of government: federal, provincial, territorial, municipal, and Indigenous governments. Making sure that everyone's on the same page at the ground up on what it really is going to take to develop transition strategies that support workers in these communities. When we think about each region or community's transition, it almost needs to reflect on each of these communities, having a specific work transition plan where transition readiness is a factor that's implemented into these plans. It's not just investing every dollar into net zero. It's making sure that everyone is part of that story, and part of that journey, and is able to learn and be part of the solution.

Linda Nazareth:
Jeanette is enthusiastic about the potential of clean technology. In her case, she defines clean tech quite broadly—anything from hardware to software, to business models and strategies that help existing industries to reduce carbon emissions in their operations.

Jeanette Jackson:
At the end of the day, every major Canadian industry is facing the challenge of meeting ambitious emissions targets by 2050. We need to connect industry with the future generation of workforce, which are all about innovation and sustainable practices, policy, infrastructure. How do we ensure that the next generation of leaders in these corporations have the tools and experience to really dig into sustainability and not just sustainability, but social aspects of sustainability as well, inclusive sustainability?

As an organization in terms of jobs, we've supported innovators to reach over 6,800 new green jobs in Canada. And these are high paying jobs. It can be on the engineering side, engineers, both digital and hardware, product managers. It can be on the business side, business development, marketing communications. But at the end of the day, sustainability and clean tech creates competitiveness for our sectors. And we need to make sure on both the business and technology side, that the new workforce knows how to embed that in the operations and communicate that to their prospective customers.

We see this as an enabling conversation across all sectors. So again, whether it's the resource sector, mining, forestry, ONG, transportation, built environment, agriculture, AgriFood, municipalities. Really what we have in Canada is the opportunity to become a global leader in clean tech.

For the last several years, we have punched well above our weight on the global clean tech 100 list, which is published every year. We range between 10 to 13 Canadian companies on that list after an extensive global search for the world's top clean tech innovation. And not only are we seeing now domestic adoption start to increase, we're seeing that ventures are really scaling because they have the opportunities to export their knowledge through IP and licensing their technologies, their platforms, their products. And that means that it will have an exceptional economic impact of higher paying jobs, of greater exports, of foreign direct investment, bringing capital into the country. To put a number on the size of that opportunity, I was at COP26 in October of 2021. And Mark Carney announced a collective of financial institutions were committing to over $130 trillion of investment to help the net zero transition. And if Canada can showcase its capacity and talent and skill in the space, we have the opportunity to attract a lot of those dollars to the country.

In terms of numbers on green jobs, we have an ambitious goal at Foresight that by 2030, 2 million jobs in our country will be around climate, clean tech and sustainability. And so, it's a big number. It's a lofty number. But we think if you really reflect on how organizations need to evolve and the type of skills and capacity that they need to compete on the global scale that these green jobs, sustainability jobs are going to be front and center in high in Canada's hiring practices, moving forward.

Linda Nazareth:
Next, Jeanette shares what type of education, training and supports are needed, in her view, to make possible the development of this strong Canadian workforce.

Jeanette Jackson:
If we really imagine this big, hairy, audacious goal of Canada, having over 2 million green jobs by 2030, by the end of the day, it's going to take a lot of support for education, skill development, and worker transition to get us there, as well as an investment to ensure that all of this training is thinking about best practices, both domestic and global best practices that we're bringing in the best learnings and education that we can to transition this workforce.

So, for us to really be ready, there's a few things that need to happen. The first I would say is collaboration. We need to see more collaboration among training institutions and academia, so that we're building on best practices. We get contacted quite frequently to feed in some of our ideas into different programs and it would be great to see institutions collaborating to build standardized curriculum that all institutions can access. I understand the need for competitiveness and institutions would like to say that they've done something first or that they're the only organization offering, but the net zero transition can't wait.

And the pace that we need to educate people, can't wait. Everyone needs to be able to have some tools and funding to support embedding those programs into their curriculum and offering it to as many people as possible. Because the faster we educate all Canadians on the opportunities in these careers, in these organizations, I think that the reality that we can become that global leader and sustain that global leadership role will come to fruition.

The second piece is investment. The federal government has done lots of work for future skills. Canada is really leaning in to help organizations like ours identify training opportunities. That's been incredible. There's also a new call, I believe it's $250 million for academic institutions to develop a whole new level of curriculum. People are learning differently, so they need to be engaged differently and we need to invest in these new tools and this new pace at which students, if you will, want to learn and acquire information. And so, seeing these investments is really, I think, going to take the foundation of our training and skills development to the next level.

Linda Nazareth:
Next, we talk to Yogendra Chaudry, at ECO Canada. ECO Canada is an Alberta-based organization dedicated to environmental careers and workforce development. The organization is currently undertaking a project on the blue economy. Simply put, the blue economy is the sustainable use of oceans for economic growth. This can include fisheries and aquaculture, marine-enabled energy, shipping and transportation, tourism, conservation, offshore minerals, and more. Here's Yogendra to tell us more about their project.

Yogendra Chaudhry:
This FSC project is focused on developing the national occupational standards for the blue economy. We'll develop the occupational standards for blue economy, identify certain sub-sectors for which we'll be focusing on. And then we are also looking at the future jobs and future skills, which is required for the sector to be sustainable – because like every sector, the sector is also evolving very fast.

So, what we anticipate is as the sector is evolving, there will be a lot of new jobs and new skills would be required. So, under this project, when we develop up the occupational standards, we are also trying to identify the emerging skills and how do we prepare the workforce to be ready for those new jobs that will be coming as the sector evolves.

We have the longest coastline globally, and we are surrounded by three oceans, and we have the potential to be a global leader in sustainable blue economy.

But despite this potential, Canada is behind many other countries in the share of GDP generated from ocean related activities. We are still at 1% compared to an average of 2-5% across the other OECD countries. Norway is a great example, which is a leader in ocean sector with almost 25% of its GDP coming from ocean-based sectors.

Now, although Canada is not currently reaching its the leadership potential in the sector, but we do employ over 350,000 Canadians in the oceans. Ocean technology sector is primarily, I would say a very promising area for potential growth. If we are able to provide the technology needed to support sustainable economic activities around the world, ocean tech opens up new markets and supports and environmental

objectives. So, I would say Canada has a significant potential to grow in this area and increase our economic share towards the GDP.

Linda Nazareth:
Yogendra shared a few challenges the sector is facing – and how these challenges can be addressed. This includes helping existing businesses develop strategies to adjust to the sustainable ocean economy and recruiting and training new workers to the sector. As in many areas, they are having a very hard time securing enough workers with the right skills.

Yogendra Chaudhry:
First of all, of course, we need to do more to expose the Canadian companies to a wide area of opportunities that are available in the sector. So, ocean literacy is really a first step that needs to be done. So, ocean literacy is basically creating more awareness on the type of opportunities and jobs and resources that are required for this sector. So, a lot of times when we were working with the businesses or industry in the sector, many of those companies are working in one sub sector, they were not aware of opportunities or maybe intersections, which could be there with other sub-sectors; that information was missing.

I would suggest increased collaboration between various sub-sectors of blue economy would be also very critical because if we are able to create pathways for workers mobility from one sub sector to another sub sector that is going to help the ocean economy. Absorbing any labor shocks, which are very often encountered in various sub sectors. For example, if the workers have the skills to move from one sub sector to another sub sector, that could be a very good opportunities for bridging any labor market shortages.

It's really critical to attract more workers to the blue economy sector. One of the constant findings that we had was many young professionals they have very limited idea or awareness about the job opportunities in this sector.

The other one we identified, there are a number of barriers for young professionals or newer entrants. So, providing the co-op opportunities or internship opportunities for new workers would be very critical for the growth of this sector. Building relationships between industry and post-secondary institutions is another area which we can focus on because very often we have heard from employers that students are not job ready, so we need to bridge some of those gaps.

The other one I would say is the high-tech or STEM related jobs are most in demand and followed by the management occupations. Engineering, technology-related jobs are growing very fast in the sector. The blue economy employers are challenged to keep up with the wages, to the other Canadian regions and industries. And that's perhaps one of the key findings from other, I would say business associations in this sector as well. This sector is also facing the challenge in attracting and retaining workers from other sectors, and the transition to more sustainable practices in traditional ocean sectors will also take time. And that will require a lot of up-skilling of workers.

Constant upskilling is definitely one of the most important things which employees and employers they need to focus on. And things like digital technology, data analysis, project management, stakeholder relations, these are some of those areas which we have identified are critical to a sustainable employee economy.

Linda Nazareth:
Thanks to our guests, we learned more about the emerging clean economy in Canada. The clean economy ranges from green building to ocean technologies and contains in-demand jobs ranging from engineering to energy auditor, from management to marketing communications. Work is being done to identify and describe the sub-sectors, occupations and skills that comprise this broad sector.

For Canada to grow this clean economy sector—to meet emissions reductions targets as well as to become a global leader in this area—we need to build a strong workforce. This includes the development of in-demand skills for young workers entering the job market. It also means training workers already in the workforce to develop new skills on the job. Career awareness initiatives, educational innovation, and investment are all tools that can aid in this exciting and pressing journey to clean economies.

As we strive to fulfill these goals, it's important for all levels of government to come to the table to reinforce and expand labour and skills policies and practices.

Building our human capital to meet the impending race for talent and skills is necessary to ensure we have the capacity to adequately embrace transitioning to a net-zero economy. A priority in all of this is ensuring that no one gets left behind in this transition, focusing on individuals and communities working in declining industries and offering supports to help all Canadians, workers and employers alike, successfully transition into the new clean economy.

Linda Nazareth:
If you enjoyed this episode, please subscribe, and recommend the podcast to others who might enjoy it. And join us next time for our final episode of Season 2, on the digital economy. Thanks for listening to this episode of the Future Skills Centre Podcast. I'm your host, Linda Nazareth, talk to you soon.

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Blueprint

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