

Immigrants and the Clean Technology Sector



The Clean Technology Sector in Burnaby

The City of Burnaby has identified the Clean Technology industry as a key industry, with “Growing green” as a fundamental theme of its economic development strategy. The City has developed an Environmental Sustainability Strategy (ESS) and is on its way to become one of the greenest cities in the world⁵.

In many cases, companies operating within the sector have head offices located in other municipalities, especially the City of Vancouver, but maintain significant operations in Burnaby, BC Hydro being a prime example. According to the 2011 Census, Burnaby has more clean technology sector-related jobs than Vancouver, as well as a higher ratio of jobs to workers.

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The Clean Technology Sector in BC and Metro Vancouver

The clean technology industry is Canada’s fastest growing sector¹. In 2012, the industry grew by 9 percent, a rate outstripping every other sector in the country². Thirty-seven percent more Canadians worked in the renewable energy industry in 2013 than in 2009³. By 2013 the clean energy sector—encompassing manufacturing, energy efficiency, and biofuels—accounted for more direct jobs than the oil sands.

A wider definition of the clean technology sector encompasses several related fields, including utilities and related professional, science, and technical services⁴. KPMG’s CleanTech research mostly focuses on the following areas:

- Energy generation/Hydrogen and fuel cells
- Energy transmission and storage/Clean transportation
- Energy use in transportation
- Energy management and efficiency technologies
- Energy efficiency/Renewable energy technology
- Resource management/Water and waste resource management technologies

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FAST FACTS

Canada ranked 5th on the list of the most attractive nations to investors interested in renewable energy⁶

Vancouver ranked as the greenest city in the world in 2014⁷.

¹ <http://bcic.ca/news/blog/bc-clean-tech-companies-watch-greater-vancouvers-clean-tech-expo-january-28th/>

² <http://bcic.ca/news/blog/bc-clean-tech-companies-watch-greater-vancouvers-clean-tech-expo-january-28th/>

³ <http://cleanenergycanada.org/wp-content/uploads/2014/12/Tracking-the-Energy-Revolution-Canada-.pdf>

⁴ http://ballard.com/files/PDF/Media/Cleantech_Report_Card_for_BC.pdf

⁵ <https://www.burnaby.ca/Assets/city+services/policies+projects+and+initiatives/environment/ESSSC+public/Phase+2+ESS+Public+Consultation+Summary.pdf>

⁶ <http://cleanenergycanada.org/wp-content/uploads/2014/12/Tracking-the-Energy-Revolution-Canada-.pdf>

⁷ <http://www.greentown.com/get-to-know-the-top-ten-greenest-cities-in-the-world-for-2014/>



(The Clean Technology Sector in BC and Metro Vancouver continued from p. 1)

British Columbia, with more than 200 Clean Technology companies, a workforce of 6,400, and \$1.7 billion in revenues, is a leader both within Canada and internationally⁸. Green economy jobs in BC have grown on average two to three times faster than the economy as a whole over the past decade⁹.

Clean energy projects also create numerous “indirect and induced” jobs. A report estimated clean energy projects in BC created a total of 17,966 jobs in 2011: 5,094 direct jobs and 12,872 “indirect and induced” jobs¹⁰.

KEY FACTS (2014)

BC Clean Technology Companies **200**

Revenue **\$1.7 billion**

Workforce **6,400**

The clean technology industry is a young and rapidly growing sector in Metro Vancouver, which has one of the world’s top ten Clean Technology clusters. Approximately 70% of BC’s Clean Technology companies are based in the region. Metro Vancouver is also home to the world’s largest hydrogen and fuel cell industry, with a 16 per cent global market share¹¹. Metro Vancouver accounts for 19% of Clean Technology project value despite only having 7% of the Canadian population.

KPMG’s survey (2009) reported that 68% of BC Clean Technology firms responding to a survey have been in business for 10 years or less: 31 percent less than five years, 37 percent between six and 10 years. While still young, the Metro Vancouver Clean Technology sector shows tremendous opportunity for growth, especially with a higher concentration of talent and supporting policies and services. In general the employment outlook is considered good.

(The Clean Technology Sector in Burnaby continued from p. 1)

The City of Burnaby is also home to dozens of leading companies in the Clean Technology sector, including power technology, alternative/renewable energy (including bio fuels), green-related businesses in environmental services, providers of alternative transportation and designers and manufacturers of environmental equipment. Burnaby has been working towards attracting businesses whose philosophies, business practices and employees are environmentally oriented. Businesses that provide products and services that could be considered part of the green economy, such as green building technology and alternative fuels, are a specific focus.

Notable Clean Technology Employers in Burnaby	
Organization	Website
Aquasmart Technologies Inc.	www.aquasmart.com/
Ballard Power Systems	www.ballard.com/about-ballard/careers/
Associated Engineering	www.ae.ca/careers.html
BC Hydro	www.bchydro.com/careers/
Covanta Energy Corporation	www.covantaenergy.com/careers.aspx
CH2M Hill Canada	www.careers.ch2m.com/worldwide/en/
General Fusion	www.generalfusion.com/careers/
International Water-Guard Industries Inc.	www.water.aero/careers/
JWC Environmental	www.jwce.com
Legend Power	www.bctechnology.com/companies/Legend-Power.cfm
Maxxam	www.maxxam.ca/about-maxxam/laboratory-careers
Polar Battery Vancouver Ltd.	www.polarbattery.com/
Premier Lighting	www.premier-lighting.net/
Schneider Electric Canada Inc.	http://www.schneider-electric.ca/en/about-us/careers.jsp
Xantrex Technology Inc.	www.xantrex.com/about-xantrex/jobs.aspx

FAST FACTS

The province of British Columbia is a global leader in some facets of clean technology, including hydro-electricity and hydrogen fuel cells.

BC HYDRO ranked 2nd on the list of top Canadian utilities buying and producing clean power in 2013¹².

BC’s Clean Energy Act, enacted in June 2010, requires the provincial utility to source at least 93 percent of its power from clean or renewable energy sources. It also directs provincial utility B.C. Hydro to meet two-thirds of the province’s incremental electricity needs through efficiency and conservation by 2020¹³.

⁸ <http://bcic.ca/news/blog/bc-clean-tech-companies-watch-greater-vancouvers-clean-tech-expo-january-28th/>
<https://www.britishcolumbia.ca/invest/industry-sectors/technology/clean-technology/>

⁹ http://globe.ca/wp-content/uploads/2012/10/GLOBE_BC_Clean_Energy_Business_Opportunities_Analysis_FINAL_July-30.pdf

¹⁰ http://globe.ca/wp-content/uploads/2012/10/GLOBE_BC_Clean_Energy_Business_Opportunities_Analysis_FINAL_July-30.pdf

¹¹ <http://www.vancouvereconomic.com/vecs-focus-areas/clean-tech/>

¹² <http://cleanenergycanada.org/wp-content/uploads/2014/12/Tracking-the-Energy-Revolution-Canada-.pdf>

¹³ <http://cleanenergycanada.org/wp-content/uploads/2014/12/Tracking-the-Energy-Revolution-Canada-.pdf>



Employment Prospects for Immigrants Within The Sector

Employment in the Clean Technology sector has increased rapidly during recent years, within both Metro Vancouver and Burnaby.

For example, a Metro Vancouver employment survey shows job increases of more than 18% between 2012 and 2016 in relevant categories such as utilities and professional services¹⁴.

The City of Burnaby has what could be called a “deficit” of talent in the sector, in that Census 2011 shows Burnaby with 2,850 jobs (in the utilities sector), and only 915 residents working within it.

Despite factors such as the deficit, the rapid growth of the industry, and the high concentration of immigrant talent living in Burnaby, the clean tech sector appears to offer only moderate prospects for immigrant talent.

Numerous research projects have found that immigrants, especially new immigrants, face tremendous challenges in finding jobs in their professional areas because of foreign credential recognition, along with other barriers. This is especially applicable to Clean Technology sectors, which in many cases require Canadian certification and experience.

Census 2011 shows Burnaby immigrants account for 53.8% of the labour force, but immigrant workers made up only 40.4% of workers in the utilities sector. In the case of recent immigrants, the proportions were 8.4% and 4.9%.

KEY OCCUPATIONS IN THE CLEAN TECHNOLOGY(S) SECTOR

Biochemists and
Biophysicists

–

Biomedical Engineers

–

Biological Technicians

–

Biological Science Teachers,
Postsecondary

–

Civil Engineers

–

Electrician

–

Environmental Scientists
and Specialists

–

Geoscientists

–

Natural Sciences Managers

Labour Force and Jobs in Selected Municipalities and Industry Sectors, 2011 NHS¹⁵

REGION <i>(Five municipalities with greatest labour force)</i>	LABOUR FORCE (WORKERS)				JOBS (EMPLOYMENTS)				JOB TO WORKERS RATIO	
	TOTAL LABOUR FORCE POPULATION AGED 15 YEARS AND OVER	% MUNICIPAL SHARE OF LABOUR FORCE	UTILITIES	PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES	TOTAL JOBS	% MUNICIPAL SHARE OF JOB	JOBS UTILITIES	JOBS PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES	UTILITIES	PROF. AND TECH.
Metro Vancouver	1,273,335	100.0%	7,465	120,590	1,030,125	100.0%	6,930	106,030	0.9	0.9
Vancouver	349,145	27.5%	1,640	43,855	352,385	34.21%	1,635	52,665	1.0	1.2
Surrey	245,640	19.2%	1,190	14,535	139,150	13.51%	1,515	8,590	1.3	0.6
Burnaby	120,285	9.4%	915	12,290	120,890	11.74%	2,850	12,550	3.1	1.0
Richmond	99,910	7.8%	455	9,230	109,945	10.67%	155	8,940	0.3	1.0
Coquitlam	69,720	5.5%	670	6,015	38,885	3.77%	225	2,210	0.3	0.4

¹⁴ <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/EmploymentbyIndustry.pdf>

¹⁵ <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/LabourForcebyIndustryNHS2011.pdf>



Occupations and Forecasted Job Openings to 2025

OCCUPATION	JOB OPENINGS IN BC (2015-2025)	PROVINCIAL MEDIAN HOURLY WAGE
Civil Engineer	3,160	\$36.05/hr
Utilities managers	840	\$45.26/hr
Electrical and electronics engineers	1,970	\$40.00/hr
Electrical power line and cable workers	400	\$35.00/hr
Power engineers and power systems operators	1,420	\$28.50 /hr
Biochemists and Biophysicists	1,300	\$32.31/hr
Biological Technicians	390	\$26.56/hr
University professors and lecturers	5,570	\$39.90/hr
Geoscientists	890	\$36.92/hr

Useful Links and Resources

Burnaby Immigrant Programs and Services

Burnaby has numerous employment programs and services for immigrants and refugees. A complete listing of currently available and free programs and services can be found on BIPT's Inventory of Resources for Immigrants (bipt.ca). Select Employment under categories and browse through the various programs to find one that meets your needs.

Occupational Guides and Profiles

Organization	Website
WelcomeBC Job Profiles for Immigrants	https://www.welcomebc.ca/Work-or-Study-in-B-C/Job-profiles-for-immigrants
WorkBC Career Profile	https://www.workbc.ca/careers/
Skilled Immigrants InfoCentre – Vancouver Public Library	http://pwp.vpl.ca/siic/
National Occupational Classification 2016 -	http://noc.esdc.gc.ca/English/noc/welcome.aspx?ver=16

Regulatory Bodies and Professional Associations

Organization	Website
Applied Science Technologists & Technicians of BC	www.asttbc.org/
Association of Professional Biologists of British Columbia	www.professionalbiology.com/
Association of Professional Engineers & Geoscientists of British Columbia	www.apeg.bc.ca/
BC Environmental Industry Association (BCEIA)	www.bceia.com/
BCTECH Association	www.wearebctech.com/
BCIC (BC Innovation Council)	www.bcic.ca/
BC Bioenergy Network	www.bcbioenergy.com
BC Community Energy Association	www.communityenergy.bc.ca
BC Sustainable Energy Association	www.bcsea.org
BC Utilities Commission	www.bcuc.com
Clean Energy BC	www.cleanenergybc.org
Fraser Basin Council	www.fraserbasin.bc.ca/
Ocean Renewable Energy Group	www.oreg.ca/