

YOUR FUTURE IN ENERGY EFFICIENCY

RESOURCE KIT

Energy Efficiency Alberta

CIET
SUSTAINABLE ENERGY TRAINING

WELCOME

In late January 2019, with assistance from the Canadian Institute for Energy Training (CIET), Energy Efficiency Alberta ran a series of events called Your Future in Energy Efficiency. The purposes behind these events were to educate the public as to the types of careers available in energy efficiency (EE) in Alberta, present the personal career paths and transitions of panelists representing various areas of energy efficiency, and help orientate individuals as to the skills, education and experience required to be a part of the industry.

Through these events, we also wanted to highlight the growth in EE opportunities, which is highlighted by the approximately 1,200 additional jobs that were created in the province of Alberta in 2018 alone.

Following up on strong public interest in these events, we have created a resource kit to further assist individuals looking for more information on how to join or further immerse themselves in Alberta's EE industry.

The Resource Kit is divided into the following categories:

1. Map of occupations across the key sectors in energy efficiency
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OCCUPATIONS

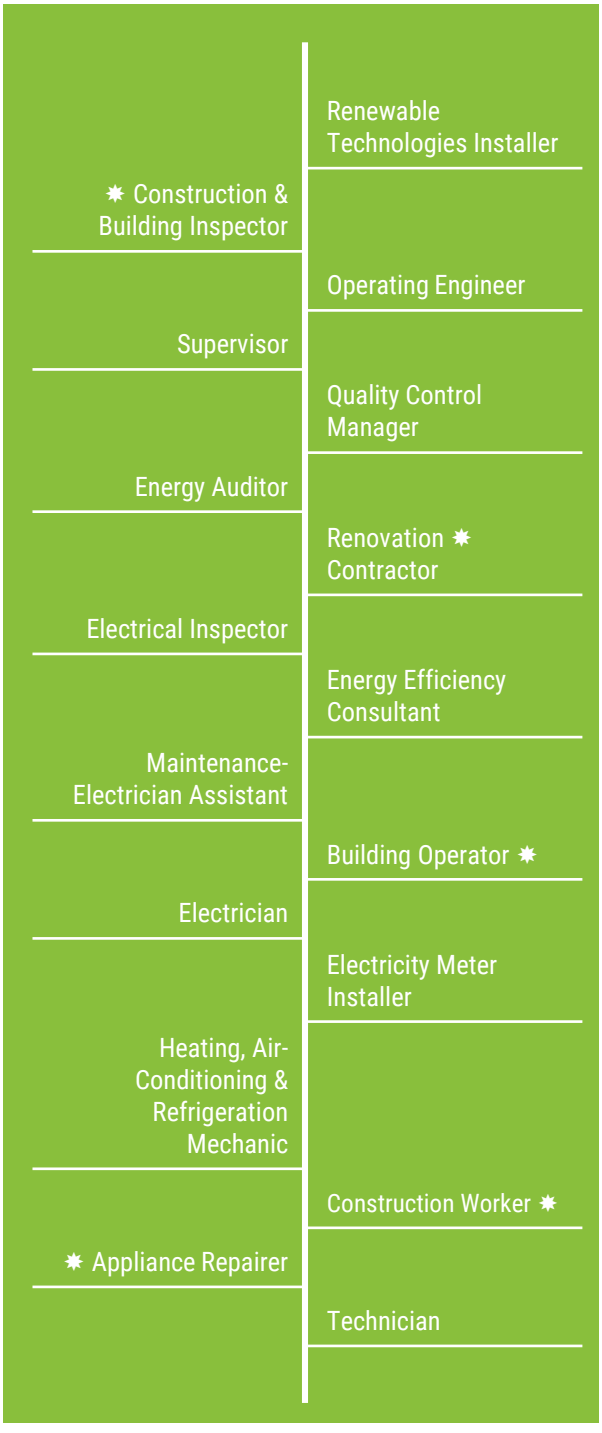
RESIDENTIAL SECTOR

- Residential energy efficiency professionals identify and implement savings opportunities in homes.
- Auditors and energy advisors use building science concepts and tools such as infrared cameras and blower door tests to assist homeowners in finding how and where their homes lose energy and developing solutions.
- Residential energy experts also work with architects and home builders to design and construct energy efficient new homes.
- Solar installation is another fast-growing sector of the residential energy market.
- Electricians have specific knowledge and work with control panels and lighting; they play a role in residential and building EE.

✸ Occupations with a star are specific to this sector.

Other positions can be found in multiple sectors.

Non-exhaustive visual list of job titles in the residential sector.

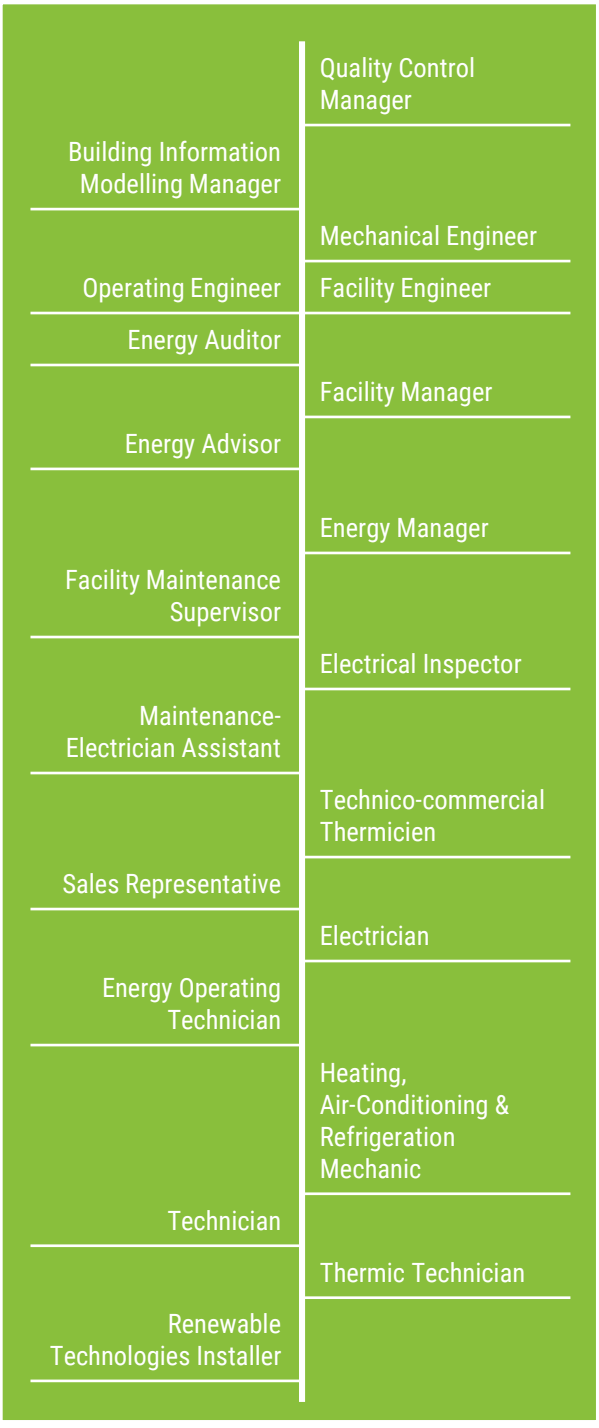


OCCUPATIONS

COMMERCIAL SECTOR

- Energy professionals in the commercial sector improve the performance of non-residential buildings, from small businesses to skyscrapers.
- Since there is so much variation among businesses and buildings, there is a wide range of roles and expertise among commercial energy efficiency professionals.
- Commissioning agents bring deep expertise in building controls and mechanical systems to ensure that new and existing buildings operate with the best possible performance, while auditors and energy advisors often provide holistic recommendations to improve energy efficiency in the small business sector.

Non-exhaustive visual list of job titles in the commercial sector.



OCCUPATIONS

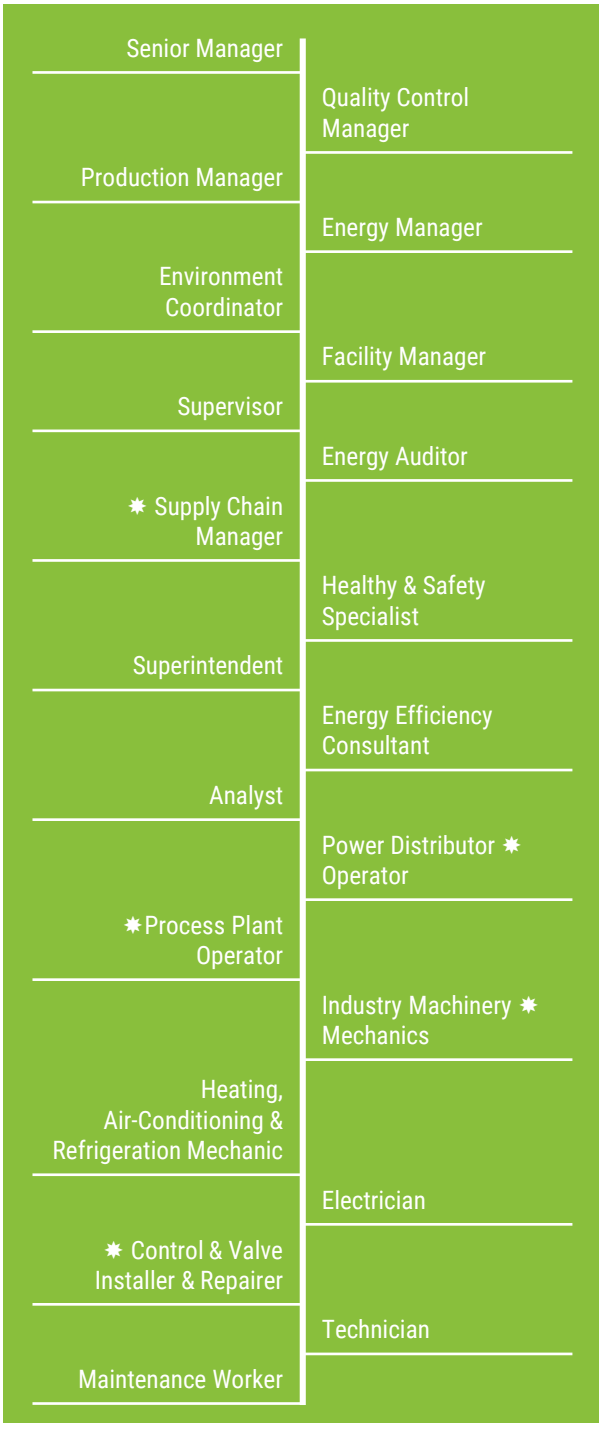
INDUSTRIAL SECTOR

- Industrial facilities consume vast amounts of energy in unique and highly sensitive processes.
- Successful energy professionals in these environments must command thorough knowledge of specific processes and equipment to identify energy savings opportunities and develop credible solutions.
- Effective energy managers also understand what motivates executives and decision makers – productivity, cost savings, environmental performance – and are able to frame energy efficiency activities and plans in terms of larger corporate objectives.

Occupations with a star are specific to this sector.

Other positions can be found in multiple sectors.

Non-exhaustive visual list of job titles in the industrial sector.



OCCUPATIONS

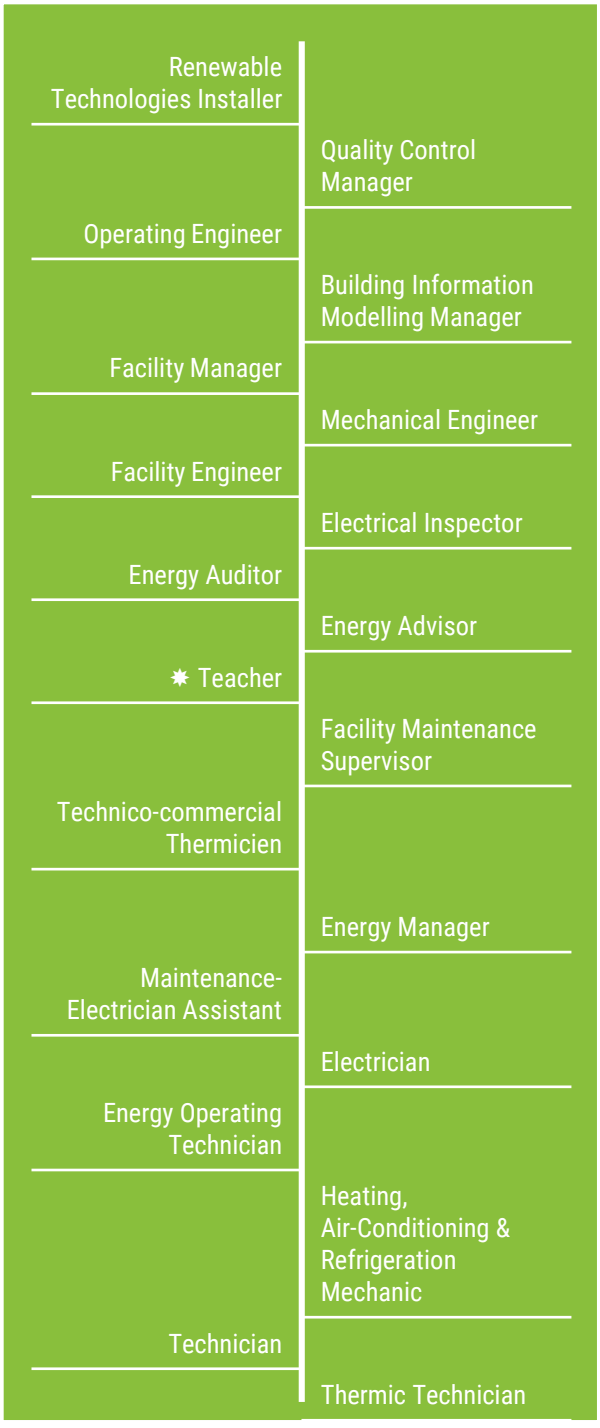
INSTITUTIONAL SECTOR

- The institutional sector includes large energy consumers such as hospitals, universities, and government facilities. These organizations often comprise a campus or portfolio of facilities made up of a diversity of space types and uses.
- Energy professionals working in institutional environments may be experts in a specific facility type and set of end uses – a trauma hospital energy manager for example – or may have broader expertise such as a university energy manager would need to improve performance across offices, labs, dormitories, and lecture halls.
- What effective energy managers in institutional settings have in common is thorough understanding of how their organization makes investment decisions and the ability to make energy a leading priority.

Occupations with a star are specific to this sector.

Other positions can be found in multiple sectors.

Non-exhaustive visual list of job titles in the institutional sector.

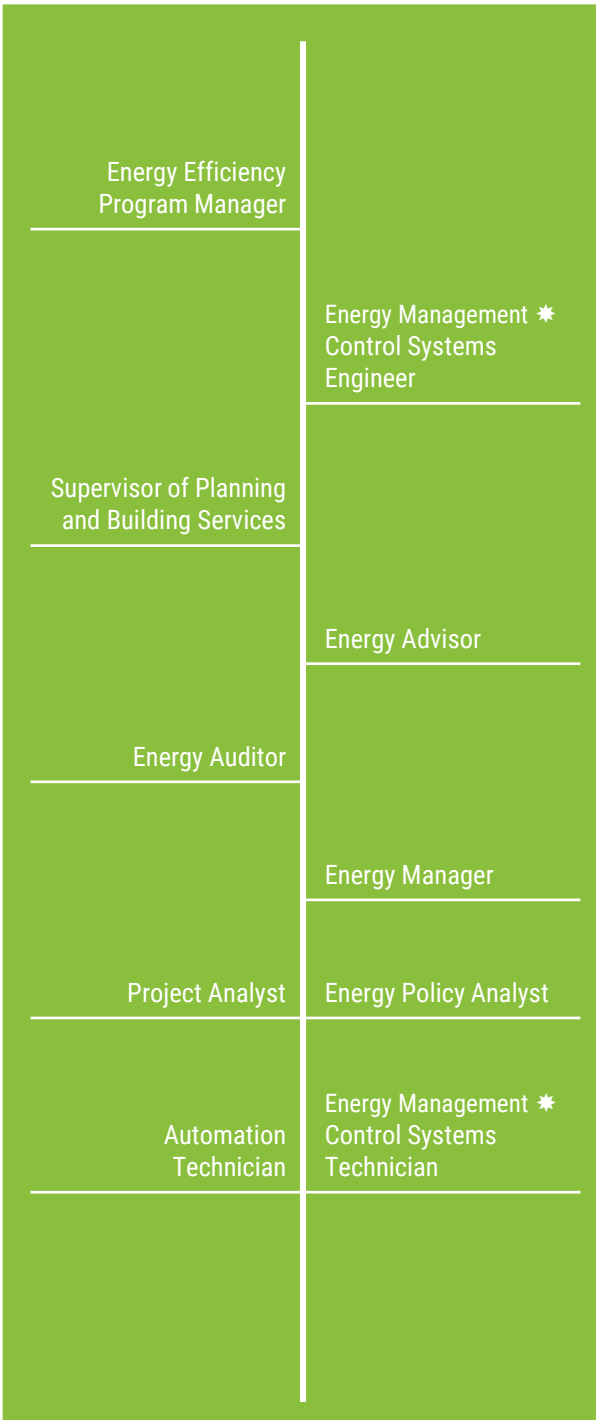


OCCUPATIONS

Non-exhaustive visual list of job titles in energy management.

ENERGY MANAGEMENT

- Energy management professionals are closely involved in planning and monitoring energy use at the organisational or facility level.
- Often technical leads, they are the drivers of EE projects, the authority on reporting and regulations, planners of retrofit projects and managers of renewable energy projects.
- Effective energy managers also understand what motivates executives and decision makers –productivity, cost savings, environmental performance –and are able to frame energy efficiency activities and plans in terms of larger corporate objectives.



✸ Occupations with a star are specific to this sector.

Other positions can be found in multiple sectors.

OCCUPATIONS

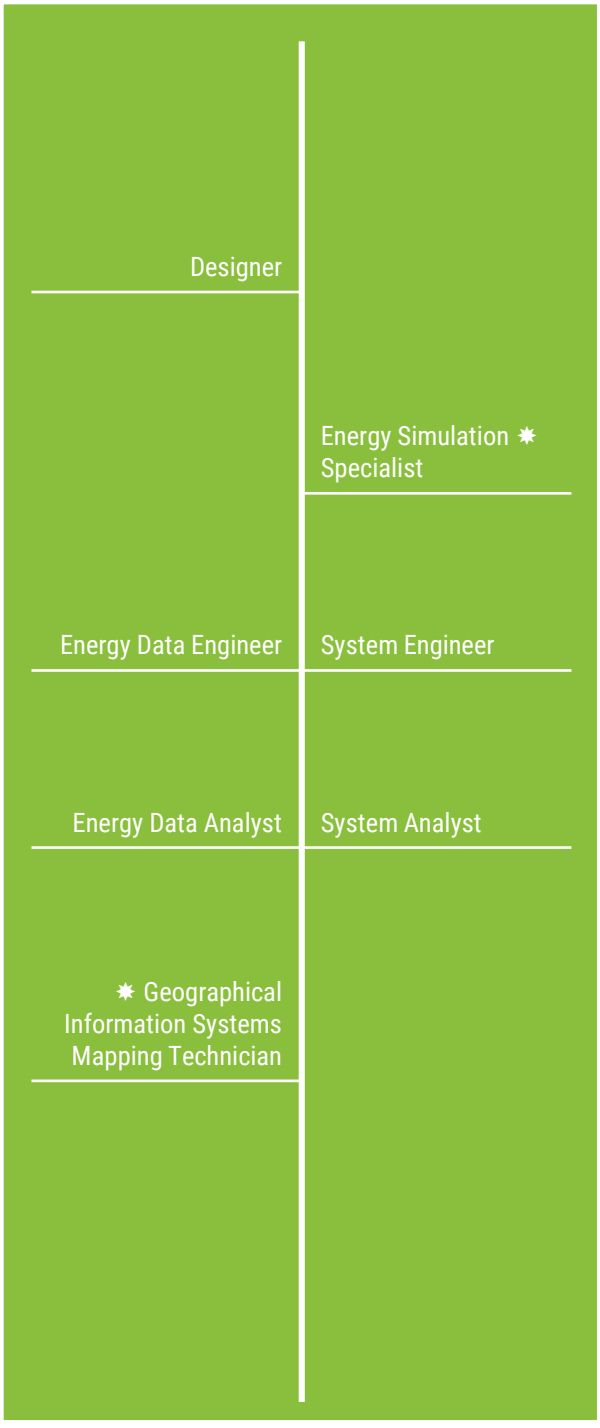
MODELLING

- Individuals involved in energy consulting and modelling are generally responsible for helping clients conserve energy and reduce operating costs by utilising a variety of tools.
- Consultants are often involved in forecasting and predicting energy use, as well as recommending EE and retrofit projects that can generate savings.
- Additional benefits to clients include setting and meeting energy and GHG reduction targets.

✸ Occupations with a star are specific to this sector.

Other positions can be found in multiple sectors.

Non-exhaustive visual list of job titles in modelling.



OCCUPATIONS

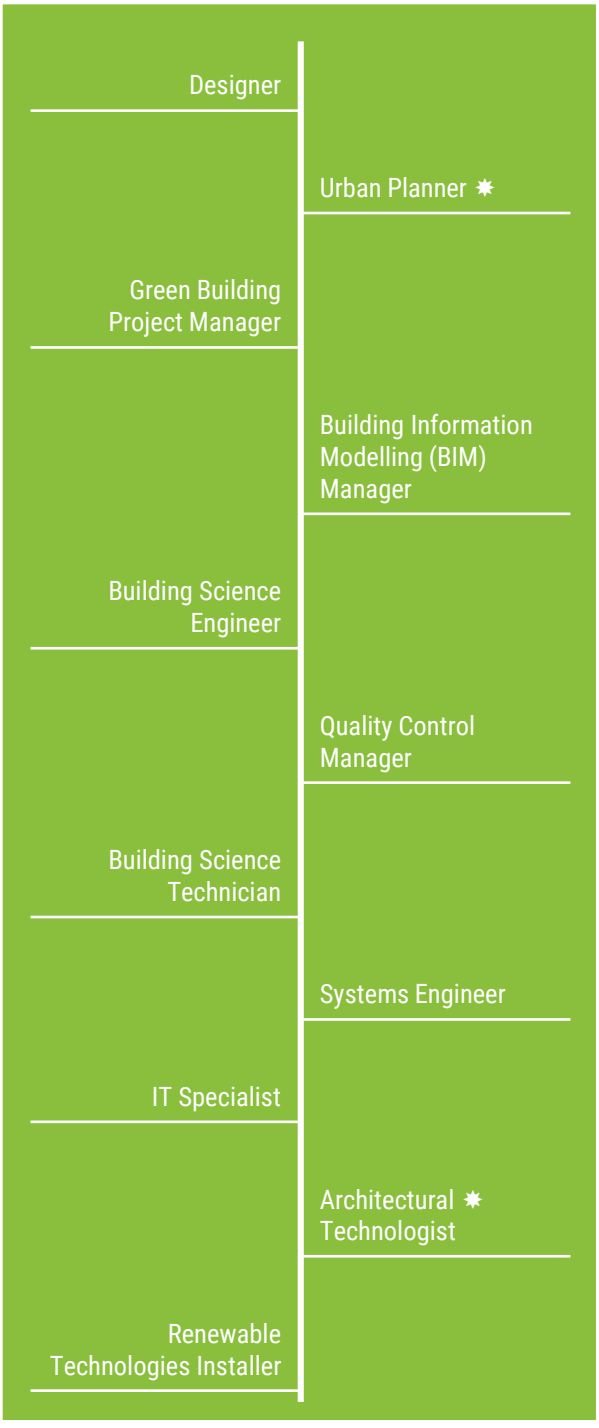
INSTALLATION & DESIGN

- Designers and installers play key roles in delivering energy performance solutions to homes, businesses, and industry.
- Professionals in these fields include electricians, HVAC contractors, solar installers, compressed air system experts, and others.

Occupations with a star are specific to this sector.

Other positions can be found in multiple sectors.

Non-exhaustive visual list of job titles in installation and design.



OCCUPATIONS

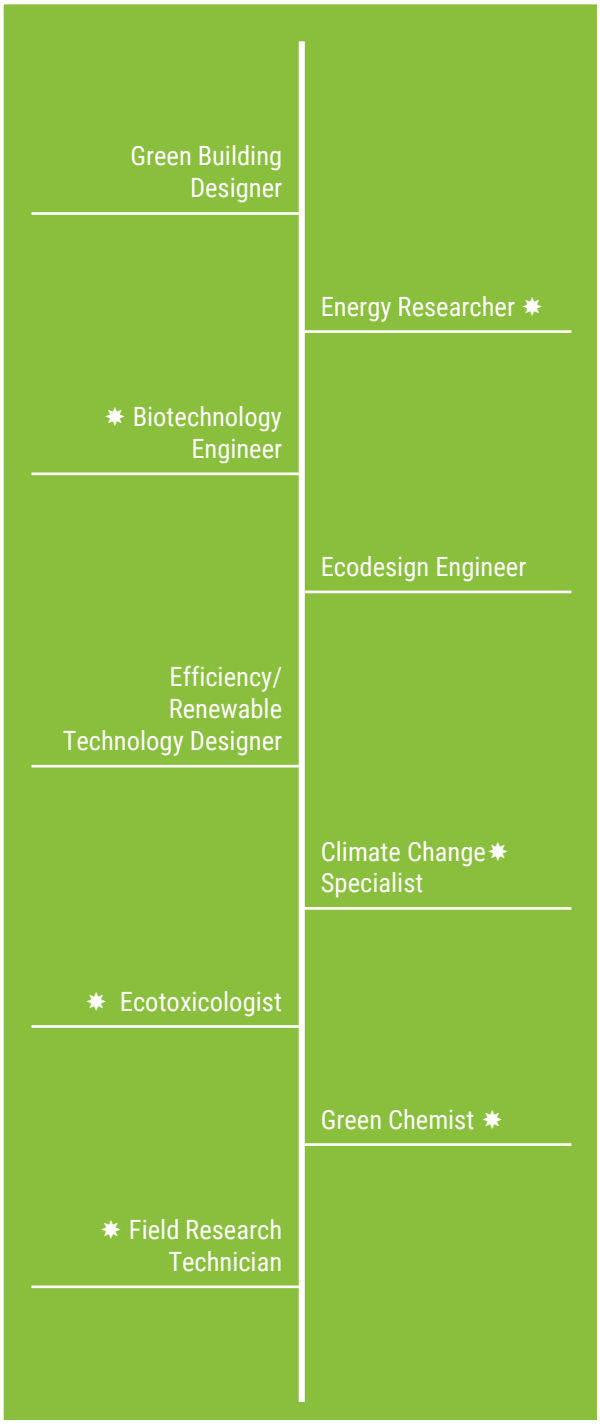
INNOVATION

- Those involved in innovation work on discovering and advancing new energy efficiency or renewable technologies while continuously improving the cost and capability of existing ones.
- Areas of innovation include EE equipment, building materials, software, data, analytics, and practices.
- Individuals working in innovation are also involved in monitoring technological trends, adapting technologies and software to fit regional regulations and requirements, and various aspects of installation.

Occupations with a star are specific to this sector.

Other positions can be found in multiple sectors.

Non-exhaustive visual list of job titles in innovation.



TRAINING & EDUCATION

PROFESSIONAL TRAINING

AVAILABLE TRAINING INCENTIVES

Click to learn more about each training incentive opportunity.

For Training | For E-Pro Members | Canada-Alberta Job Grant

CANADIAN INSTITUTE FOR ENERGY TRAINING (CIET)

Energy and GHG Training

CIET is the largest Canadian organisation solely dedicated to offering energy training. Since 1996, it has offered a wide range of sustainable energy education programs across Canada, and is specialized in high-quality energy management, energy efficiency, and sustainability training and certification programs.

CIET provides an array of professional certification courses, including: Certified Energy Manager (CEM), Certified Measurement and Verification Professional (CMVP), Certified Energy Auditor (CEA), and Advanced Recommissioning (RCX). It also provides capacity-building courses on topics such as energy modelling, RETScreen software, making the case for energy efficiency and many others.
See the Alberta training calendar.

cietcanada.com

CANADIAN GREEN BUILDING COUNCIL (CaGBC)

Green Buildings and Energy Efficiency Including Solar PV

CaGBC is the leading green building education provider in Canada, delivering education to over 45,000 green building professionals since 2004. Our online and in-person programs and courses are developed and delivered by expert industry professionals that can help further your career, professional development and knowledge of Canada's vibrant green building industry.

cagbc.org

TRAINING & EDUCATION

PROFESSIONAL TRAINING

CANADIAN HOME BUILDERS' ASSOCIATION

Net Zero Training

Includes three training courses: CHBA Net Zero Building Science Training; CHBA Net Zero Energy Advisor Training; CHBA Net Zero Sales Training.

chba.ca

GRID WORKS ENERGY

CSA Certified Course

Theoretical, social, environmental, and practical application of solar PV design and installation.

gridworksenergy.com

HES PV

Building Solar Business

Design, install, electrical code issues for Grid-Tie Installations and Off-Grid Installations.

hespv.ca

LETHBRIDGE COLLEGE

Wind Turbine Technician

Once certified, the skills learned will be extremely marketable in this burgeoning industry. Many students are hired within days of graduation.

lethbridgecollege.ca

TRAINING & EDUCATION

PROFESSIONAL TRAINING

MOUNT ROYAL UNIVERSITY

Strategic Sustainability & the Energy Industry

This program is designed to provide professionals literacy in energy and stakeholder relations as well as the knowledge required to prioritize and effect strategic sustainability in their work and lives.

mtroyal.ca

OAK LEAF TRAINING

Alternative Energy Technology

Multiple courses are available in: Oil and Gas; Natural Gas; Power Industry and Renewable Energy; and Business Analysis.

oakleaftraining.com

SOLAR ENERGY SOCIETY OF ALBERTA (SESA)

Solar PV Electrical Code Class

This class is designed for electricians, technicians, engineers, solar installers and sales people who want to ensure that their solar installations are up to current Canadian Electrical Code standards. It addresses the most crucial inspection points of the four typical solar photovoltaic system types.

solaralberta.ca

LAKELAND COLLEGE

Renewable Energy & Conservation Diploma

Become a leader in the evolving field of renewable energy and energy conservation including solar power. Gain practical knowledge and useable skills for a new career, or expand your abilities if you're already working in trades, engineering or architecture.

lakelandcollege.ca

TRAINING & EDUCATION

ACADEMIC EDUCATION

LETHBRIDGE COLLEGE

Bachelor of Applied Science in Ecosystem Management

Designed with input from environmental industry partners, this degree program builds on diplomas in Resource Management, Environmental Assessment and Restoration or environmental sciences.

lethbridgecollege.ca

LETHBRIDGE COLLEGE

Renewable Resource Management

With a comprehensive grounding in the applied science skills needed for this line of work, graduates will be prepared for a wide variety of environmental and natural resource management career opportunities.

lethbridgecollege.ca

NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY

Alternative Energy Technology

This program teaches how to design and apply alternative energy solutions that meet society's growing sustainable energy needs.

nait.ca

TRAINING & EDUCATION

ACADEMIC EDUCATION

UNIVERSITY OF ALBERTA

Energy Strategy and Finance

This oil and gas program is designed to meet education and career needs of middle to higher level professionals in firms or resource ministries worldwide. It aims at understanding the links between individual resource plays and global energy trends. The goal is to deepen awareness of risks, uncertainties, and challenges in the global petroleum environment.

ualberta.ca

UNIVERSITY OF CALGARY

Energy Engineering (BSc)

This program builds on students' engineering technology background from approved polytechnic institute programs with further engineering training and development at the University of Calgary in an engineering degree program. Courses: Alternative Energy Systems, Engineering Design and Energy Policy, Introduction to Reservoir Engineering, Life Cycle Assessment, Petroleum Production Engineering.

ucalgary.ca

UNIVERSITY OF CALGARY

Sustainable Energy Development (MSc)

This master's degree is an interdisciplinary graduate program providing a balanced education related to energy and environmental management. Outcomes and next steps include: renewable/ non-renewable energy, regulation, government relations, financial analysis, environmental/ social and LEED consulting, urban planning, sustainable design, environmental management, GHG reduction, reclamation of contaminated sites, clean air/ water tech, aboriginal and stakeholder engagement.

ucalgary.ca

EMPLOYMENT RESOURCES

EMPLOYERS

This non-exhaustive table contains a number of large employers in various energy efficiency sectors who are frequently hiring.

EMPLOYER	COMPANY FOCUS	WEBSITE Click to go to the career page	SIZE
AESO	Electricity system operator	aeso.ca	400-500 employees in Alberta
Alberta Energy Regulator	Regulate the development and use of Alberta's energy resources	aer.ca	13 offices throughout Alberta
Alberta Innovates	Clean energy, health innovation, bio sector and cross sectorial investments	albertainnovates.ca	600 employees in 10 locations
ATCO	Energy infrastructure planning and development, logistics, retail energy	atco.com	7,000 employees in Canada
CLEAResult	Energy efficiency program design and implementation	clearesult.com	2,500 employees globally
Ecofitt	Clean energy solutions	ecofitt.ca	200 employees
ICF	Energy consulting and analysis, program design, program implementation	icf.com	5,000 employees globally
Navigant Research	Research and analysis, energy consulting, demand side management program design and evaluation	navigant.com	5,500 employees globally
Summerhill	DSM program design and implementation	summerhillgroup.ca	115 employees in Canada & US

EMPLOYMENT RESOURCES

EMPLOYMENT AGENCIES

This table contains employment agencies have previously recruited staff for EE positions.

AGENCY	DETAILS	WEBSITE
EnerTech	Canadian Certified Aboriginal Business (CAB) who provides innovative talent acquisition and global workforce solutions to the Energy, Infrastructure, Environmental, Government and Natural Resources industries.	enertechstaff.com
Energy Resourcing	Specializes in energy recruitment agency to the oil & gas, power & renewable energy, chemicals, petrochemicals & refining, mining and construction industries.	energyresourcing.com
Design Group Staffing	Provides permanent, contract and temporary placement for engineering, technical, and technical sales roles in construction, EPCM, manufacturing, mining, oil & gas, alternative energy, and architecture & design, as well as specialist roles in real estate development across Canada.	en.dg.ca
Robert Half	Resource for job postings in a variety of industries, including EE.	roberthalf.ca

EMPLOYMENT RESOURCES

WEB RESOURCES

Online resources available for job seekers.

WEB RESOURCE	DETAILS	WEBSITE
Work Wild	Provides information on the diversity of employment choices in forestry. Website contains scholarships, career profiles, current job opening and classroom resources.	workwild.ca
EnergyNow	An online news and data service delivering recent energy information including upcoming events and energy jobs.	energynow.ca
GoodWork.ca	Canada's largest community of environmental changemakers, sustainability professionals, job seekers and volunteers.	goodwork.ca



PANELIST Q&A

EVENT PHOTOS













PANELIST Q&A



STEPHEN FARRELL | Residential Sector

President, VerdaTech Energy Management & Consulting Inc.

Stephen studied Mechanical Engineering and specializes in HVAC design and energy management. He is registered with APEGA in Alberta and EGBC in BC. He has extensive experience in energy management and consulting for both the commercial and residential sectors and has been actively involved with Natural Resources Canada as a service organization manager, QA specialist, and trainer for various programs. Since entering the industry in 1999, Stephen has managed and owned multiple companies, hired in excess of 100 energy advisors, and has personally been involved in training and certifiying those advisors.

How did you get started in energy efficiency?
In the late 1990s, Alberta was going through a significant spike in energy costs and there were numerous companies, presenting false and misleading advice and solutions, which were taking advantage of homeowners' inability to pay utility bills and lack of knowledge on how to understand truth from fiction. Using my engineering knowledge, I started VerdaTech to provide unbiased, honest information to help homeowners and businesses make informed decisions that were right for them and their futures.

What should people know about the energy efficiency sector before jumping in?
A lot of work in the energy efficiency sector, especially on the residential side, is driven by government grants. There are up and down cycles, depending on current government policies. My advice is to not rely on one service offering, but diversify so that, when government policies change, there are other complimentary services that will sustain you and your employees. The skills required to be in this industry are very diverse and include mechanical engineering, building envelope analysis, electrical engineering, controls, commissioning and people skills. The ability to apply so many skills within one industry makes this very fulfilling and challenging.

What skills are key to your job?
Key skills to my job include a sound understanding and knowledge of the construction industry, how energy is used within a building, and understanding all aspects of buildings, including home construction, building codes, commercial construction, building materials, mechanical systems, lighting, and controls. My job requires lots of mathematical principles and logical thinking. I continue to strive to keep current on the latest construction and energy efficiency trends. Particularly in the residential sector, it is very important to like

This Q&A continues on the next page...

PANELIST Q&A



STEPHEN FARRELL | Residential Sector

President, VerdaTech Energy Management & Consulting Inc.

interacting with people and have a keen interest in empowering them with the knowledge to make decisions that are right for them.

What's the best training or course you have ever taken?

I enjoy learning, it's hard to pick out one particular course. However, the one that stands out for me was the RETScreen Expert energy modelling software. The presenters were very personable and worked to ensure that the students understood how to use the software to its full extent and used real world examples. The knowledge and understanding I learned during the course are regularly applied in my day-to-day operations.

Where do you see the energy efficiency industry evolving in the next 5 years in Alberta?

I have witnessed increased consumer demand for energy efficient products, particularly from the younger generation that has an increased interest in sustainability and their impact on the planet. I also see energy efficiency being driven by more stringent building codes and potential future mandatory labelling. With more stringent codes, builders will have an increased requirement to engage with the energy efficiency industry to optimize their buildings at minimum cost.

What do you enjoy about working in the EE sector?

I get great satisfaction when I see that I can help people improve the comfort levels in their homes and provide them with the best advice to achieve this in the most cost-effective manner. I enjoy helping homeowners make informed decision that are based on fact, and not on sales pitches. I also enjoy training new entrants to the EE sector and help them succeed in the industry and it gives me great pleasure to see them being passionate about their careers. My goal is to apply my knowledge and skills to my personal life and eventually build a sustainable home for my family, to live a life with the least amount of harm to the environment and to know that I have done the best I can to minimize my impact on the planet.

Jump to Stephen's Presentation

PANELIST Q&A



DANIEL KLEMKY | Provincial Agency
Program Manager, Energy Efficiency Alberta

Daniel has worked as an energy manager for commercial property owners for almost a decade, and was an active member of numerous provincial, municipal and federal sustainability advisory groups, including QUEST BC, and the City of Vancouver's Zero Waste advisory panel. Daniel is a Certified Energy Manager, holds an advance certificate in Sustainable Energy Management, and a Master's Degree in Environment and Management.

How did you get started in energy efficiency?
For almost a decade I worked in the financial software industry; it was a challenging and interesting job, but I began to feel unfulfilled by it, like I could be doing something more for my community. I started looking at different career paths that created a positive impact. The sustainability industry immediately jumped out as a great option. After some research, I found that energy efficiency was a growing industry and it combined improving business, environment and community. Once I decided to pursue energy efficiency, I registered for the Sustainable Energy Management program (SEMAC) at BCIT and, once I graduated, I took an energy management internship with a non-profit association, which eventually turned into a full-time role.

What should people know about the energy efficiency sector before jumping in?
The energy efficiency industry is extremely diverse; there are roles in numerous sectors (e.g. transportation, industrial and commercial, technology, finance, research) for people with all kinds of backgrounds (e.g. business professionals, trades people, sales managers, property managers, engineers, policy analysts). Because of this variety, I would encourage anyone who is interested in the industry to really focus on a role that will complement their skills and interests. This will help make their career an enjoyable one.

What skills are key to your job?
My current role as Program Manager of an energy efficiency incentives program requires a multitude of skills, from budget forecasting and financial analysis to industry engagement, education and outreach. The role also requires the ability to use systems thinking to connect all the necessary internal departments and external stakeholders to create and implement an energy efficiency incentive program that the public wants/needs and will participate in.

This Q&A continues on the next page...

PANELIST Q&A



DANIEL KLEMKY | Provincial Agency
Program Manager, Energy Efficiency Alberta

What's the best training or course you have ever taken?
The Certified Energy Manager (CEM) training through CIET was very impactful on my understanding of energy management and significantly helped me advance my career. The SEMAC course at BCIT was instrumental in my career transition and really set me up to successfully complete the CEM. I would recommend both courses for anyone interested in energy efficiency.

Where do you see the energy efficiency industry evolving in the next 5 years in Alberta?
I see energy efficiency becoming a more widely adopted factor in business decisions here in Alberta. Energy efficiency has been consistently proven to be a sensible and fiscally responsible strategy to reduce operating expenses, environmental impacts, as well as improve occupant comfort and organizational brand recognition (in terms of sustainability). Many organizations have already integrated energy efficiency into their business processes (e.g. school districts, municipalities, large property management firms), and I would love to see that continue with every organization in Alberta.

What do you enjoy about working in the EE sector?
One of the best parts of this industry are the people. The energy efficiency sector seems to be disproportionately filled with positive, intelligent and forward-thinking individuals and organizations. This makes it easier to find an organization you'll be happy with and makes networking a very enjoyable experience.

Jump to Daniel's Presentation

PANELIST Q&A



JIM SANDERCOCK | Renewable Sector
Chair of the Alternative Energy Program, NAIT

Jim works in the alternative energy industry, overseeing the instruction of energy efficiency and renewable energy courses at NAIT. Jim holds a PhD in Microbiology and Biotechnology (University of Alberta) and studied the production of biofuels and bioplastics.

How did you get started in energy efficiency?
My career was primarily focused on the production of sustainable energy sources. Once I joined the NAIT program, I was able to interact with people who were looking at whole-system designs, which focus on reducing a client's energy consumption as well as providing sustainable generation.

What should people know about the energy efficiency sector before jumping in?
A career in this sector is highly technical and technologies are changing rapidly. Success also involves a significant amount of stakeholder engagement – seeing the issues through the client's eyes.

What skills are key to your job?
Interpersonal communication, stakeholder engagement (concerns, needs, budget), determining project feasibility.

What's the best training or course you have ever taken?
Solar Energy International's solar lab courses.

Where do you see the Energy Efficiency industry evolving in the next 5 years in Alberta?
It is hard to pinpoint specific trends for Alberta because consumer activity is so tied to politically driven policies and incentives. However, we will continue to see the cost of solar PV decline globally, perhaps low enough that homeowners and businesses will buy systems even in the absence of incentives. The conversion of low-grade heat to electricity will increase in the industrial sector. With declining battery prices, we will likely see more stationary-battery applications.

What do you enjoy about working in the EE sector?
The degree of technology innovation means that the energy efficiency sector is never boring!

Jump to Jim's Presentation

PANELIST Q&A



BRANDON SANDMAIER | Solar Sector Operations Manager, Generate Energy Ltd

Brandon Sandmaier is a partner and Operations Manager of Generate Energy Ltd., a company specializing in energy efficiency and renewable energy. He has worked in the energy efficiency industry since 2015 and has 10 years experience as a tradesman in the Alberta oil and gas sector.

How did you get started in energy efficiency?
My journey to this industry started with completing the Alternative Energy Technology program from the Northern Alberta Institute of Technology (NAIT). I was exposed to energy auditing though a capstone project with the University of Alberta. From there I was fortunate enough to co-found a company that specialized in energy auditing and solar PV design and installation.

What should people know about the energy efficiency sector before jumping in?
I think that taking time to get trained in some aspect of the industry is important and will prepare them for entry level jobs or help them transition and focus existing skill sets on core concepts.

What skills are key to your job?
Understanding the relationship between power, energy, carbon reduction, and finance are key to my job. Our clients need us to advise them on strategies to reduce their operation costs and environmental footprint by recommending the right mix of energy efficiency and renewable energy to meet their goals.

What's the best training or course you have ever taken?
The NAIT Alternative Energy Technology program would be the most impactful, followed up by the Fundamentals of Energy Auditing training seminar and Certified Energy Auditor (CEA) examination.

Where do you see the energy efficiency industry evolving in the next 5 years in Alberta?
I see potential for decreasing energy costs for end users and an increased demand for energy efficiency services. I also see more stringent building codes and planning being introduced to existing and new building stocks.

What do you enjoy about working in the EE sector?
The people working in the EE sector have the right motives and are very driven to find innovative solutions to reduce energy consumption. The industry is very willing to work together because companies all know they have a common goal.

Jump to Brandon's Presentation

PANELIST Q&A



ADAM TROVATO | Commercial Sector Operations Manager, 3D Energy Ltd

Adam Trovato is the Operations Manager of 3D Energy. He has spent his career streamlining energy projects, most notably for Alberta indigenous communities and not-for-profits. Adam's passion for energy efficiency is rooted in the simple belief that we no longer need to pollute to achieve the lifestyle we desire; we must simply change the way we build and implement technologies.

How did you get started in energy efficiency?
I went to school at NAIT's Alternative Energy Technology program, which drew me into the efficiency side of the industry as it is iron-clad. I believe that no one should have a valid argument against why making buildings more efficient is negative. Energy efficiency is rooted around data, building performance, and financial transparency, which is something that everyone should appreciate.

What should people know about the energy efficiency sector before jumping in?
The people in this industry are smart! (Way smarter than me!) People are passionate about buildings, the environment, technology, data, and regulations. It seems like everyone got here from a different path, so it's always interesting hearing everyone's stories and experience.

What skills are key to your job?
Soft skills such as people management, communications, adaptability, resiliency, presenting, organization. Hard skills such as energy modelling, energy auditing, building fundamentals, Excel, software literacy, energy literacy.

What's the best training or course you have ever taken?
The Certified Energy Manager (CEM) from CIET.

Where do you see the energy efficiency industry evolving in the next 5 years in Alberta?
To large scale projects, industrial, mandatory energy modelling/ labelling, stricter codes.

What do you enjoy about working in the EE sector?
Everything! It's always evolving!

Jump to Adam's Presentation

PANELIST Q&A



ALICE YU | Municipal Sector

Business Strategist, Climate Program, The City of Calgary

Alice Yu is a Business Strategist with the Climate Program at The City of Calgary, supporting the Calgary Climate Resilience Strategy and actions plans. Her background is in energy efficiency, specializing in greenhouse gas emission reductions, and she has managed energy efficiency, low carbon and clean technology development projects and initiatives, provided guidance on air pollutant regulations and climate policy, and led the carbon offsets and credits portfolios.

How did you get started in energy efficiency?
Nine years ago, I started my career in energy efficiency when I started working at my previous company on the energy efficiency initiatives. I managed the Employee Energy Efficiency Rebate Program and the Energy Efficiency Fund, both of which provided capital allocations to rebates and projects to achieve greenhouse gas emission reductions.

What should people know about the energy efficiency sector before jumping in?
The energy efficiency sector has been evolving dramatically in the last 10 years beyond the oil and gas sector – this is about all sectors: commercial buildings, residential, renewable energy, oil and gas, etc. Energy efficiency is embedded across all industries.

What skills are key to your job?
In both my previous and current role, technical skills/knowledge on current technologies and communication skills are key to sharing good news stories about energy efficiency to explain technical information to people without technical knowledge. Also, genuine interest and understanding of the energy market, including renewable energy sources and related legislations are important attributes.

What's the best training or course you have ever taken?
The Certified Energy Manager (CEM) Course.

Where do you see the energy efficiency industry evolving in the next 5 years in Alberta?
I'm hoping to see more public awareness about the energy efficiency industry – this helps to enable the public to initiate energy efficiency actions not only at work, but also at home and in their communities.

What do you enjoy about working in the EE sector?
I enjoy working in the sector as I always have opportunities to work with passionate people and share best practices within the industry to achieve cost-effective emission reductions. I'm also excited to see more jobs created to diversify our economy in order for us to transition to a low carbon economy.

Jump to Alice's Presentation

PRESENTATIONS

PANELIST PRESENTATIONS

Presentations on the following slides are displayed as presented by the panelists at the Your Future in Energy Efficiency events.

QUICK LINKS

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PRESENTATIONS

DAVE CARSCADDEN

DAVE CARSCADDEN – HOW I BECAME INVOLVED IN EE

- Graduated from the University of Waterloo majoring in Environment and Business
- Worked at Ozz Solar Inc, in Vaughan Ontario on a co-op work term in 2011 focusing on supporting their engineering and sales team
- Upon Graduation I worked at two residential solar companies in Ontario focusing on 10kW roof-top projects: Sales, Project Management, Installations
- Started working at Saturn Power in March 2016 as a Project Developer and have been focused on business development for our Canadian, US and International solar projects with a focus on Alberta, Saskatchewan and Pacific Northwest in the US.

saturnpower

SATURN POWER – WHAT WE DO





- Saturn Power develops, owns and operates solar, wind and energy storage projects.
- We pay close attention to both financial and environmental sustainability, while thoroughly exploring the needs of our stakeholders and their communities.
- Whether we are working with governments or utilities, we bring highly developed expertise, a perspective of environmental stewardship and innovative solutions to each project.

saturnpower

PRESENTATIONS

DARREN COOPER

Energy Efficiency Alberta

Introduction

renteknikgroup

Darren Cooper, P.Eng.

- Licensed Professional Engineer in Alberta and Ontario with Consulting Engineer Designation in Ontario
- Long-time Member of the Association of Energy Engineers and serve on the Executive of the Southern Ontario Chapter
- Numerous professional designations and memberships
- Partner and President at Renteknik Group Inc.



Professional Experience

- Energy Efficiency and Energy Management
- Operational Efficiency and Sustainability
- Commissioning and Re/Retro-commissioning
- IAQ/Mould
- Renewable Technologies and Micro-grids
- New Construction and Renovation



Energy Efficiency Alberta

Personal Highlights

renteknikgroup

- Constructed an **EnviroHome** (Oakville, Ontario - Sponsored by NRCan) – R-2000 high efficiency construction - focus on energy efficiency, recycled and recyclable materials
- Over 3MW of **Solar Thermal Systems** (hot water) installed in Ontario
- Over 13MW of **Solar PV Systems** (electricity) installed in Ontario
- Canada's first **Triple-State Absorption Cooling** Project using **Solar Thermal Power** (Shouldice Hospital – Toronto)
- Canada's first **Triple-State Absorption Cooling** Project using a 5kW micro-cogen waste heat for regeneration energy (TRCA Kortright Centre – Toronto)
- Design, Procurement and Project Management for the **Energy Lab** at Sheridan College (Brampton, Ontario) – Solar PV/Thermal, Batteries, In-stream hydro generator, Wind turbine with Micro-grid controller for the Energy Lab/Grid/Tim Horton's loads (capacity for future Hydrogen Fuel Cell addition)
- Over 150,000 tons of **Chiller Plant Recommissioning** (10-20% energy savings)

PRESENTATIONS

DARREN COOPER





PRESENTATIONS

PAYAM ESMAILI

PAYAM ESMAILI-3D ENERGY

MASc, CEM



- Project Manager at 3D Energy
- Have worked to expand the 3D Energy service offerings to a wider range of energy-centric services
- MASc in Mechanical Engineering – Alternative Energy Systems
- Career Highlight: Delivered various energy efficiency projects in the last 7 years – Energy Modeling – LEED Compliance – Energy Code Compliance – Energy Auditing – Cx and Retro Cx – Measurement and Verification

3D ENERGY LIMITED

3D ENERGY



- Member of the Vital Group of Companies
- Employs 25+ energy professionals
- Specialize in:
  - Commercial Energy Audits
  - Residential Energy Assessments
  - Energy Management Plans/Community Energy Plans
  - Solar Feasibility Studies
  - Green Building Certification
  - National Energy Code Compliance
  - Sustainable Design
  - Retro-Commissioning
  - Project Management and Project Development

3D ENERGY LIMITED

PRESENTATIONS

STEPHEN FARRELL

ACACIA ENGINEERING VERDATECH

Company Background

- VerdaTech Energy Management & Consulting Inc:
  - Founded in 1999
  - NRCan registered Service Organization since 2001
  - Commercial and residential energy evaluations
  - Operates in AB and BC
  - Over 50,000 residential evaluations to date
  - Energy Code Compliance
  - Building Envelope Testing & Consulting
- Acacia Engineering Ltd.
  - Founded in 2012
  - Energy management consulting for commercial and code compliance
  - Mechanical Engineering Design and Consulting
  - Heat Loss / Gain Calculations
  - Hydronic and hybrid mechanical systems design



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ACACIA ENGINEERING VERDATECH

My Career Path

- Graduated Nelson Mandela University in South Africa with major in mechanical engineering
- Project manager for large HVAC contract company in South Africa
- Moved to Canada in 1995
- Founded VerdaTech in 1999 and Acacia Engineering in 2012
  - Used knowledge to help provide unbiased information and solutions to Albertans
  - Apply skills to try make the world a more sustainable place
  - Increase access to a career in energy efficiency
    - Provide training to all Albertans who express interest in this career path





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PRESENTATIONS

STEPHEN FARRELL

ACACIA ENGINEERING VERDATECH

The Future of Energy Efficiency

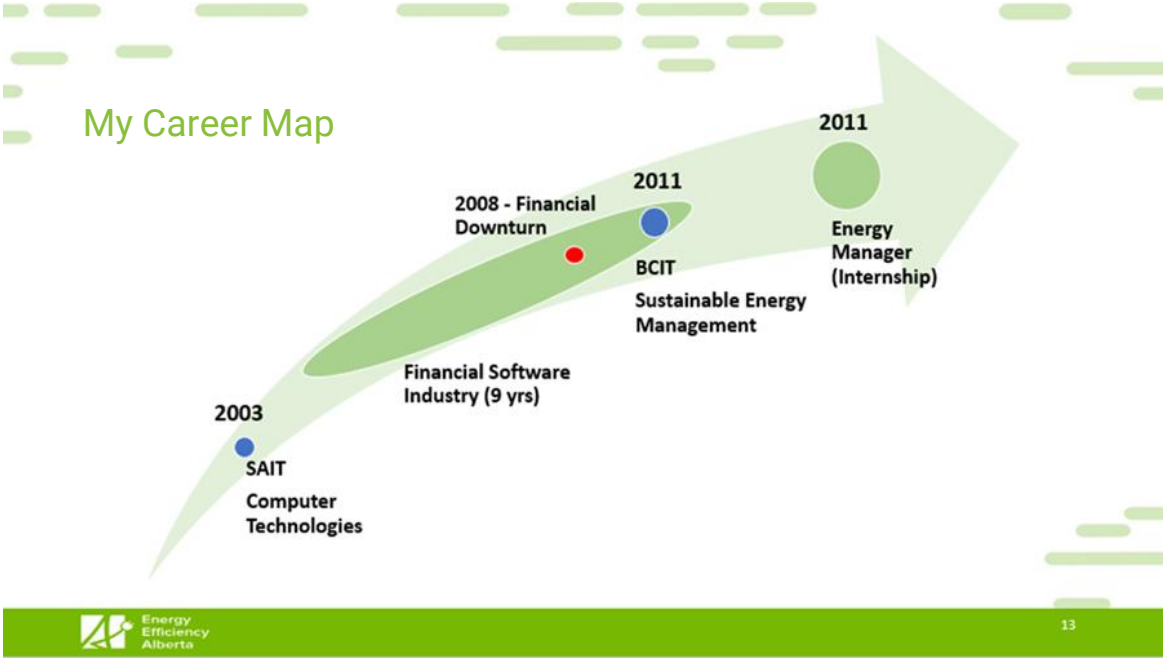
- Government regulation – more stringent building codes
  - Future mandatory labelling
- Consumer demand for energy efficient products – younger demographics increased interest in sustainability and their impact on the planet
- Building operating expenses
- Incentives
- Carbon Tax
- Competitive advantage
- Funding currently available from Province for energy efficiency training

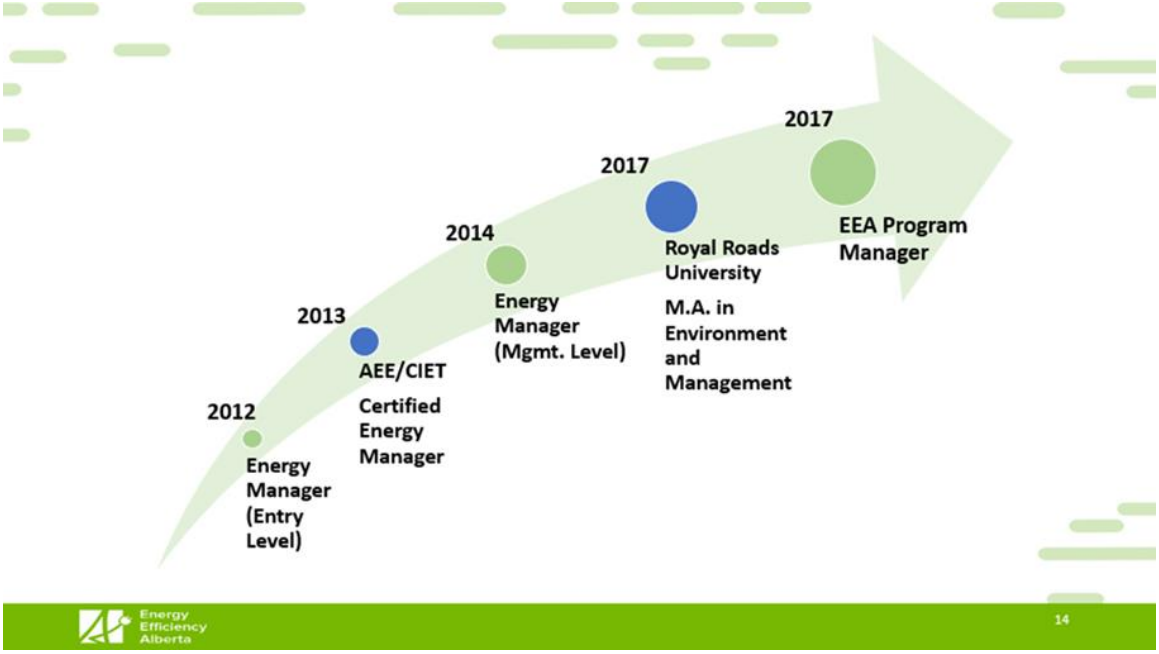


46 | 3/20/2019 | Copyright VerdaTech Energy Management & Consulting Inc.

PRESENTATIONS

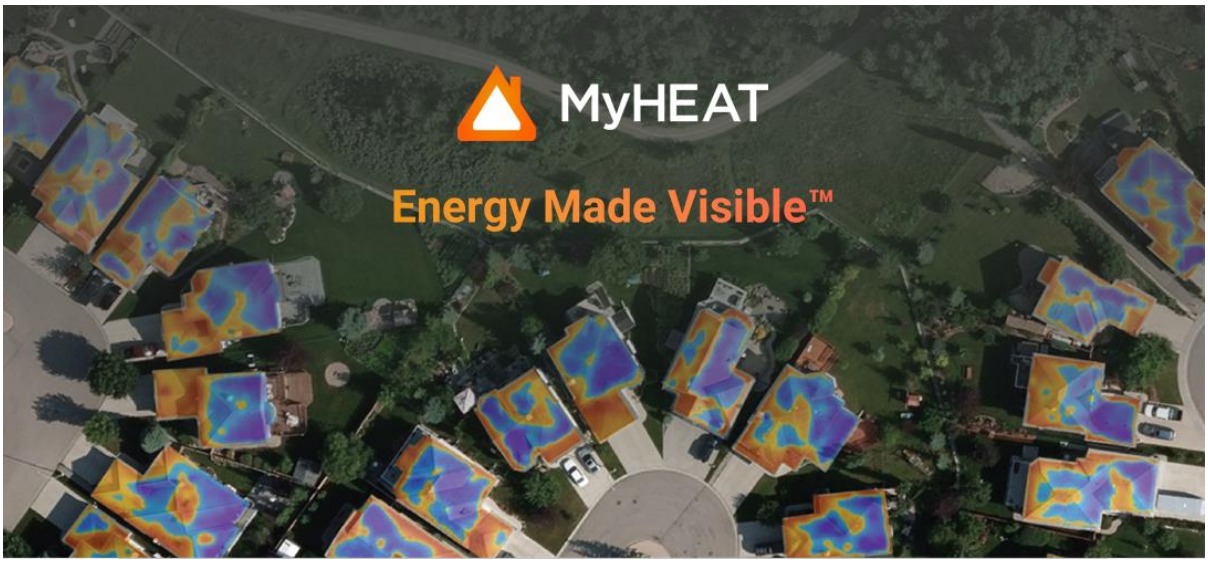
DANIEL KLEMKY

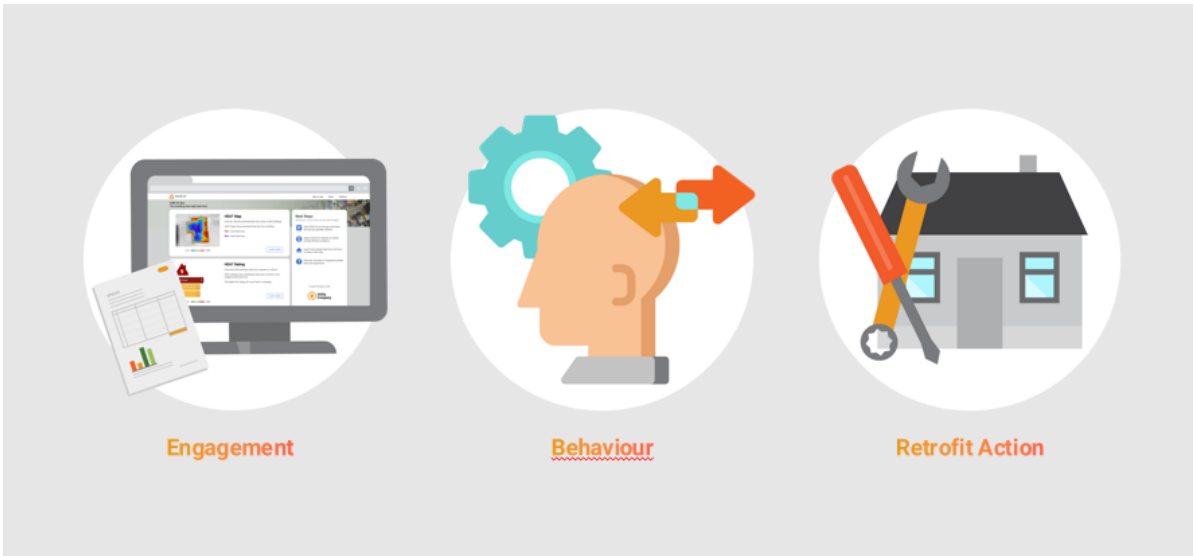




PRESENTATIONS

IAN MADDOCK



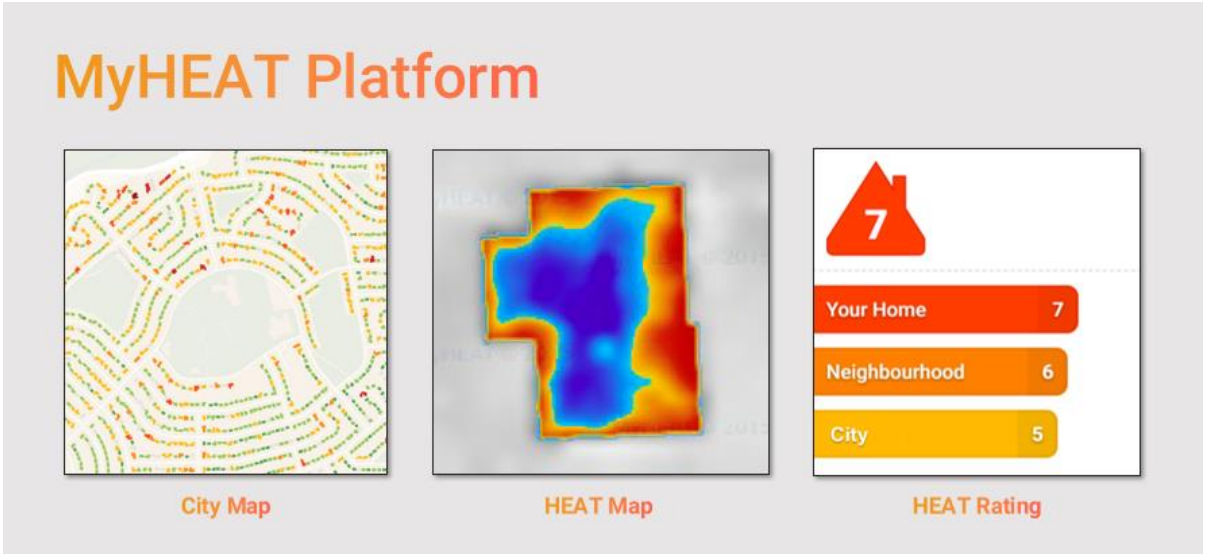


PRESENTATIONS

IAN MADDOCK



MyHEAT myheat.ca



MyHEAT myheat.ca

PRESENTATIONS

JIM SANDERCOCK

Renewable Energy

- Less GHG emitted for each unit of energy

Usual Suspects:

Solar PV (electric)

- utility >5 MW
- community 1-5 MW
- commercial kW
- residential kW



Alternative Energy Technologists (dipl)

Four Pillars of Alternative Energy:

Energy Efficiency/Built Environment

2D/3D CAD, advanced construction
Modeling Heating/Cooling loads
Ground & Air source heat pumps
Cogeneration, Fuel Cells

Sustainability in Business & Society

Electricity Policy
Energy Auditing, Management
Local and Global (Climate) Impacts
Business practices/management

Renewable Power

Solar, Wind, Hydro, Storage design
System Assembly & Commissioning
Energy & Financial Modeling
Hybrization & Feasibility

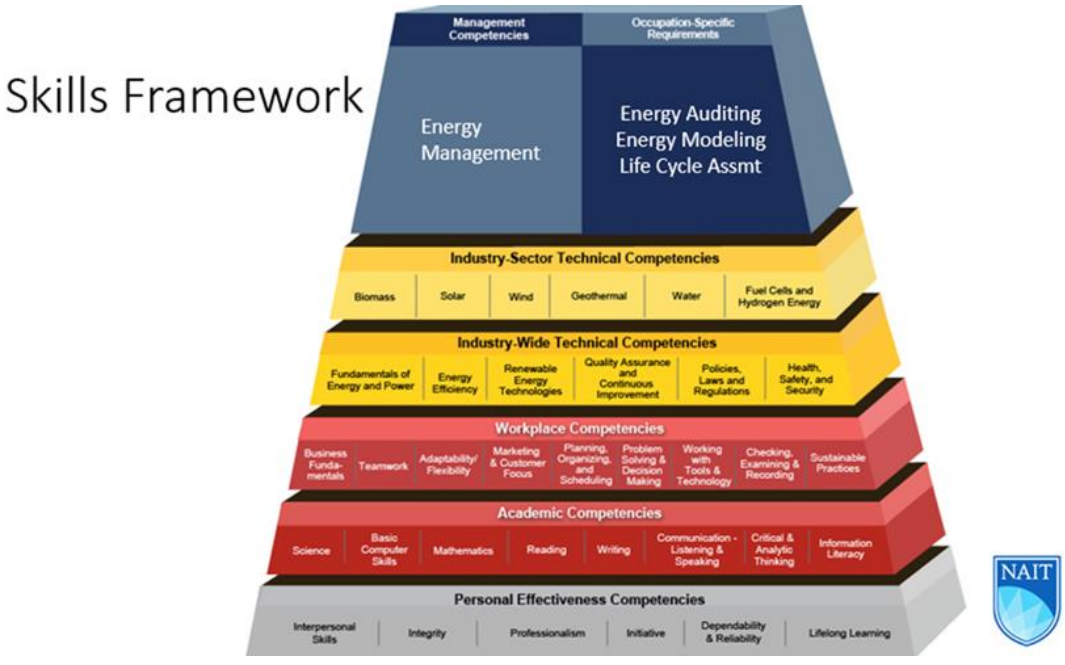
Biorefining (Biofuels, Biomass, WtE)

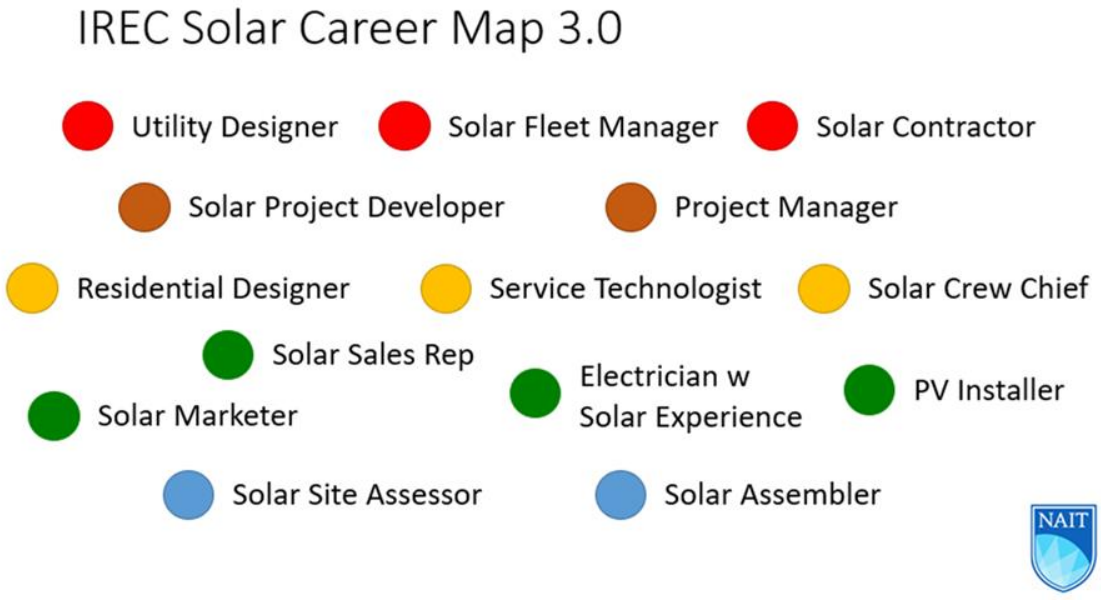
Renewable Liquid Fuel Production
Bio-based Heat and Power
Materials Handling and Processing
QA/QC methods

NAIT

PRESENTATIONS

JIM SANDERCOCK

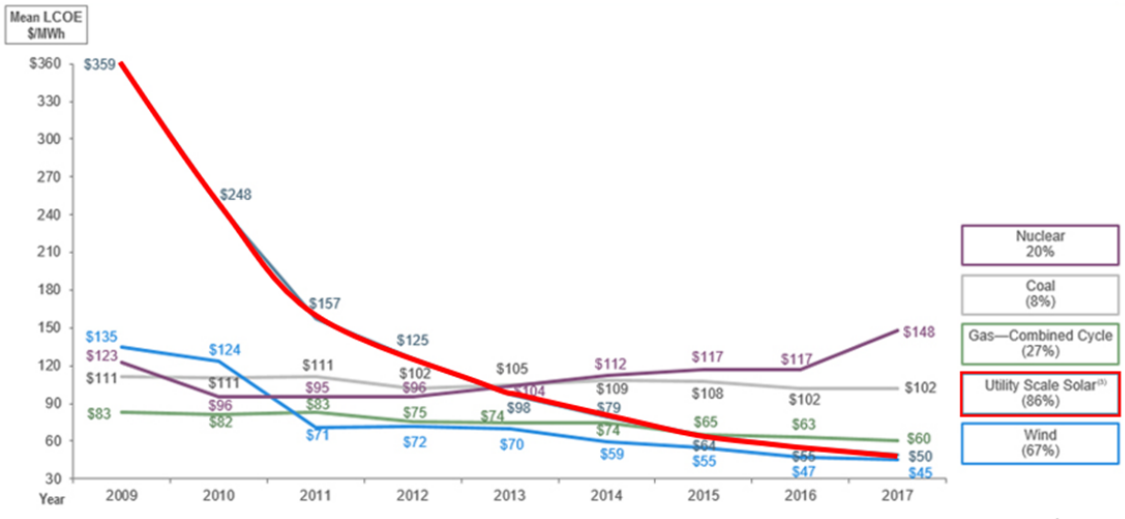




PRESENTATIONS

JIM SANDERCOCK

Dropping Renewable Energy Costs (LCOE, USA)



Lazard 2017

Renewables in Alberta?



REP-1 lower than average cost of new US wind, $45 USD/MWh



PRESENTATIONS

BRANDON SANDMAIER

Brandon Sandmaier

High Points

Married, Father of Four

- Previous Career in Oil and Gas Industry
- Currently Working in Solar and Energy Efficiency

Fun Points

Addicted to Mountain Biking Year Round

- Work in solar and energy efficiency to support bike habit (and help save the world)



Brandon Sandmaier - Background

Director & Operations Manager for Generate Energy Ltd.

- Heavy Equipment Technician (12yrs)
- NAIT Alternative Energy Tech. Program (2016)
- Certified Energy Auditor Course (2016)
- Co-Founded Generate Energy LTD. (2016)



PRESENTATIONS

BRANDON SANDMAIER

Brandon Sandmaier -Experience

2018 – *Generate Energy* becomes Part of Vital Group of Companies



- Commercial and farm energy audits
- Solar PV system design and installation
- LED lighting design and installation
- Energy monitoring system installation



PRESENTATIONS

ADAM TROVATO

ADAM TROVATO-3D ENERGY



- Operations Manager for 3D Energy
- Have worked to expand the 3D Energy service offerings to a wider range of energy-centric services
- Graduate of NAIT's Alternative Energy Technology Program and University of Alberta's Political Science/History Programs
- Developed Solar PV and Energy Efficiency Policy for the City of Edmonton
- Career Highlight: Have worked with 20+ Indigenous and Métis Communities throughout Alberta through Alberta Climate Leadership Programs

3D ENERGY LIMITED

3D ENERGY



- Member of the Vital Group of Companies
- Employs 25+ energy professionals
- Specialize in:
  - Commercial Energy Audits
  - Residential Energy Assessments
  - Energy Management Plans/Community Energy Plans
  - Solar Feasibility Studies
  - Green Building Certification
  - National Energy Code Compliance
  - Sustainable Design
  - Retro-Commissioning
  - Project Management and Project Development

3D ENERGY LIMITED

PRESENTATIONS

ADAM TROVATO

PROJECT EXAMPLES



Fishing Lake Métis Settlement
Communiplex
Energy Audit, Project Management, Mechanical Design, Lighting Installation



Allan & Jean Millar Centre
Energy Audit with several recommendations implemented



Emerald Tower
Energy Modelling

3D ENERGY LIMITED

PRESENTATIONS

TAMMY WAGNER

ecofitt™



- Starting in 2005, Ecofitt has grown into a Nation Wide company with over 200 employees
- A leading manufacturer and wholesaler of high-efficiency energy and water conservation products
- Service offerings now include, but are not limited to energy audits, retrofits, weatherization, custom energy saving kits and rebate programs

ecofitt™

- Ecofitt Focuses on Program Implementation across the Country
- In Alberta alone, Ecofitt has delivered 120,000 residential installs and 3,700 MURB (multi-unit building)
- Over 28,000 thermostats, 4 million light-bulbs and water savings equivalent to 1,200 Olympic Sized Pools



PRESENTATIONS

TAMMY WAGNER

ecofitt™



Tammy Wagner

Customer Service Operations Manager

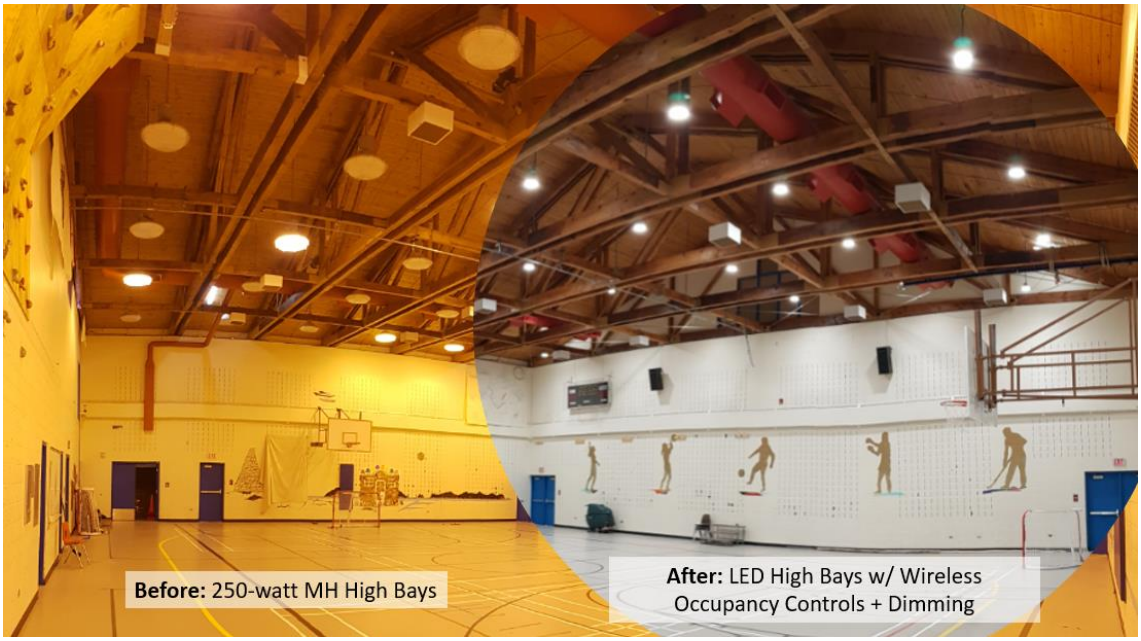
- Has gained over 15 years experience working extensively on environmental programs
- Starting as an installer in Nova Scotia, Tammy has proved that there is a potential for growth within the industry
- Part of ground zero start-up in over 6 programs and continues to work the front lines of providing great service to home and business owners

PRESENTATIONS

TAYBER YASTREMSKI

SPG
SUSTAINABLE PROJECTS GROUP



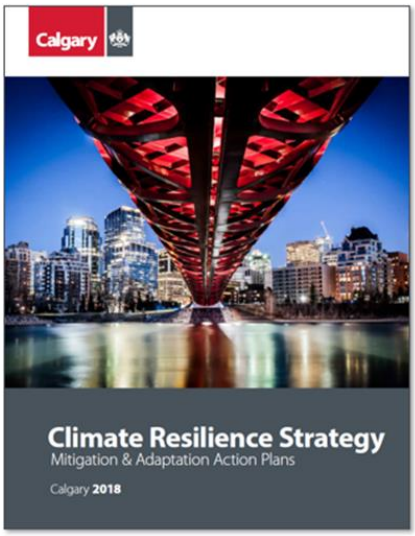


PRESENTATIONS

ALICE YU

Calgary

A little bit about myself…



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Calgary

Calgary Community-wide GHG Emissions (2017)

FIGURE 1 – CALGARY COMMUNITY-WIDE GHG EMISSIONS BY SECTOR (2017)

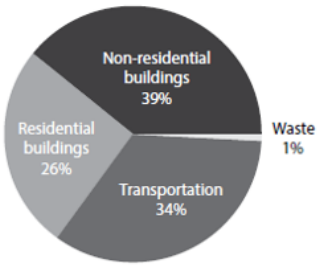
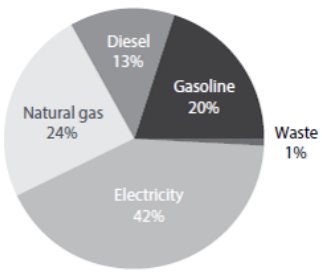


FIGURE 2 – CALGARY COMMUNITY-WIDE GHG EMISSIONS BY ENERGY TYPE (2017)



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YOUR FUTURE IN ENERGY EFFICIENCY

Careers | Networking | Connections

Energy Efficiency Alberta

efficiencyalberta.ca
hello@efficiencyalberta.ca

CIET
SUSTAINABLE ENERGY TRAINING

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info@cietcanada.com