

# Emissions Measurement Professionals

Emissions Measurement Professionals support the energy industry through emissions data collection, tracking, analysis and reporting. This can be done by helping to develop and monitor a company's carbon strategy. Another way is to support improved emissions performance using knowledge of operations and facilities. These professionals help companies set up measurement and record-keeping systems and processes. This is an important first step for companies that want to reduce their greenhouse gas (GHG) emissions, improve air quality and other ways to minimize their carbon footprint.

Emissions Measurement Professionals need to stay on top of federal and provincial regulations and policies to reduce emissions. This helps companies comply with these regulations and demonstrate a commitment to environmental responsibility.

Each company has a different approach to emissions management – it can be internally developed systems, or third-party emissions management software. Part of an Emissions Measurement Professional's responsibility is to manage the company-specific system and data. These systems identify the best ways to understand, quantify, monitor, and verify GHG emissions.

You might like this career if you enjoy working with a complex set of rules and standards and investigating and developing solutions. Other interests include environmental, process or chemical technologies and sustainability solutions. If you are interested in joining this emerging field, it will give you central role in the sustainability of the energy industry. There are diverse opportunities across Canada's energy industry to contribute to sustainability and environmental protection.

## Established Energy Sectors:

[Oil and Gas](#)[Offshore Oil and Gas](#)[Oil Sands](#)[Energy Services](#)[Pipelines](#)[Refining](#)

## Emerging Energy Sectors:

[Biofuels](#)[Hydrogen](#)[Liquefied Natural Gas \(LNG\)](#)[Carbon Capture and Storage \(CCS\)](#)

For energy sector definitions, go to [CareersinEnergy.ca](https://careersinenergy.ca)



# What Emissions Measurement Professionals Do



## Measure, Classify, and Track

Emissions Measurement Professionals apply their data management skills to a company's GHG emissions. This includes keeping track of GHG inventories and sources. They evaluate GHG risks and opportunities. They perform quantification of emissions and apply their evaluations to government reporting. The reports help to determine whether GHG reductions are necessary for compliance or strategic purposes.



## Evaluate Responses to Identified GHG Risks and Opportunities

Emissions Measurement Professionals are focused on emissions data management, tracking and identifying opportunities to reduce GHG emissions. They help to develop reduction targets and action plans. These plans consider information about operational processes, technology solutions, costs, risk, regulations and impacts to communities.



## Put Action Plans in Motion and Track Performance

Emissions Measurement Professionals track Key Performance Indicators (KPIs) of action plans. By measuring and tracking the KPIs, these professionals help companies account for emissions from their facilities and operations. These KPI's help companies achieve reduction targets and compliance.



## Assess Performance of GHG Emissions Reduction Activities

Emissions Measurement Professionals report on how well the GHG reductions compare to the targets or goals. Companies invest money and time to meet these targets. It's important for the companies to know if their investments are worth it. The Emissions Measurement Professionals help companies see the results of their efforts. To do this, they set up systems and company controls for monitoring and managing GHG emissions data and KPIs. They provide advice to their companies on ways to address performance gaps.



## Prepare GHG Emissions Reports

Emissions Measurement Professionals prepare mandatory regulatory reports. These professionals analyze federal, provincial, and international regulatory programs. They also prepare voluntary reports set up by the company. Their activities contribute to company sustainability reporting. This allows them to bring important information into the company's responses to government. They also use the data to help form the company's compliance strategy, which is a plan for meeting government targets for GHG emissions reduction.

# Key Skills and Abilities Emissions Measurement Professionals Need

This chart shows the skills, certifications, and personal attributes Emissions Measurement Professionals need to enter and advance in the energy industry. Each occupation, job level, and responsibility will require a different mix of these skills and abilities.

## Core Knowledge

Federal and provincial regulations and programs that are drivers of emissions management

Environmental management issues related to emissions, permits, approvals, and reporting

Emissions quantification methods

Air quality considerations for permits and environmental impact assessments

Best practices:

- Emissions management
- Pollution prevention
- Carbon markets to buy and sell credits and offsets

Familiar with emissions software and data collection technologies

Field experience including data collection

## Technical Skills

Evaluate the effectiveness of emissions reduction strategies

Ability to select the most suitable GHG reduction approaches

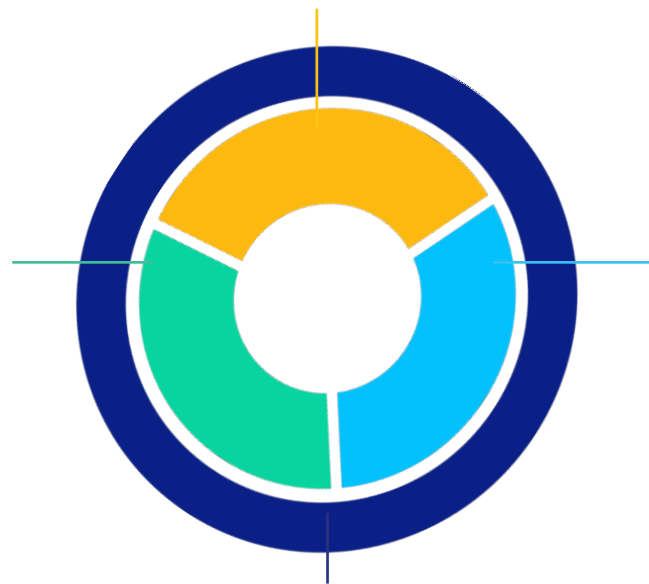
Quantify GHGs using various measurement and engineering estimation methodologies

Monitor and model to evaluate effects of GHG emissions on air quality

Use digital and analytical tools for decision-making

Manage large data sets

Use emissions accounting to understand the extent of company carbon emissions



## Beneficial Certifications

Emissions management, reporting, and accounting micro-credentials

Specific health and safety certifications determined by job requirements

## Personal Attributes

Active learning

Innovativeness

Adaptability

Collaboration

Analytical thinking

Independence

Attention to detail

Leadership

Stress tolerance

# Emissions Measurement Careers in the Energy Industry

There are different types of education requirements for the emissions measurement career. Entry to a career as an Emissions Measurement Professional usually starts with relevant education or education combined with relevant job experience. These careers require technical knowledge from other disciplines.

The chart shows how roles and educational requirements change for each career level. As you advance in your career, your education and experience can help you move across the various sectors of the energy industry. Roles described below are generally consistent across all energy sectors.

Career Level	Entry	Mid	Senior
Types of Jobs	<ul style="list-style-type: none"> <li>Biological and environmental science</li> </ul>	Environmental Emissions Specialist	Environmental Engineer
Education and Areas of Study	<ul style="list-style-type: none"> <li>Engineer</li> <li>Technologist</li> <li>Environment, health, and safety</li> <li>Finance /business analyst</li> <li>Regulatory /policy analyst</li> <li>Data analysis and management</li> </ul>	Greenhouse Gas Project Manager	Senior Environment and Regulatory Advisor/Consultant
Helpful disciplines:		Emissions Consultant	Environment and Regulatory Manager/Director
Environmental science, biology, engineering, geology, natural resource management, accounting, finance, data science, public policy	<p>Combinations of education and experience are supplemented by additional on-the-job learning and specialized certifications</p> <p>1 – 3-year college diploma</p> <p>4-year university degree</p> <p>Specialized micro-credential courses to supplement experience and education</p>	<p>Combinations of education and experience are supplemented by additional on-the-job learning and specialized certification</p> <p>1 – 3-year college diploma</p> <p>4-year university degree</p> <p>Specialized micro-credential courses to supplement experience and education</p>	<p>Environment and Regulatory Manager/Director</p> <p>Sustainability Manager/Director</p> <p>Combinations of education and experience are supplemented by additional on-the-job learning and specialized certifications</p> <p>4-year university degree</p> <p>Specialized micro-credential courses to supplement experience and education</p>

# Transferring Emissions Measurement Skills from One Energy Sector to Another

There are core skills and knowledge that all Emissions Measurement Professionals need for their careers. These building blocks are needed in all energy sectors and for all specializations.

The following flow chart presents the core skills and knowledge as building blocks. It will also identify evolving skills needed to address the needs in each energy sector. Each energy sector uses the building blocks in similar ways.

New entrants to an emissions measurement career can use the diagram to understand the building block skills needed to work in sectors across the energy industry. Experienced Emissions Measurement Professional can use the diagram to explore how each building block is applied across the energy sectors.

## Skill: Emissions regulations and policies and government and internal reporting requirements

Skill attributes

Sector

Emissions regulations and compliance required by federal, provincial and international jurisdictions

Impact of these regulations on:

- operational processes and technologies
- financial risk
- internal emissions reporting

All sectors

## Skill: Carbon accounting and credit management including offsets and carbon taxes

Skill attributes

Sector

Understanding of product lifecycle accounting and standards for reporting inventories of GHG emissions

All sectors

## Skill: Company sustainability goals and ESG (environment, social and governance) risk management

Skill attributes

Sector

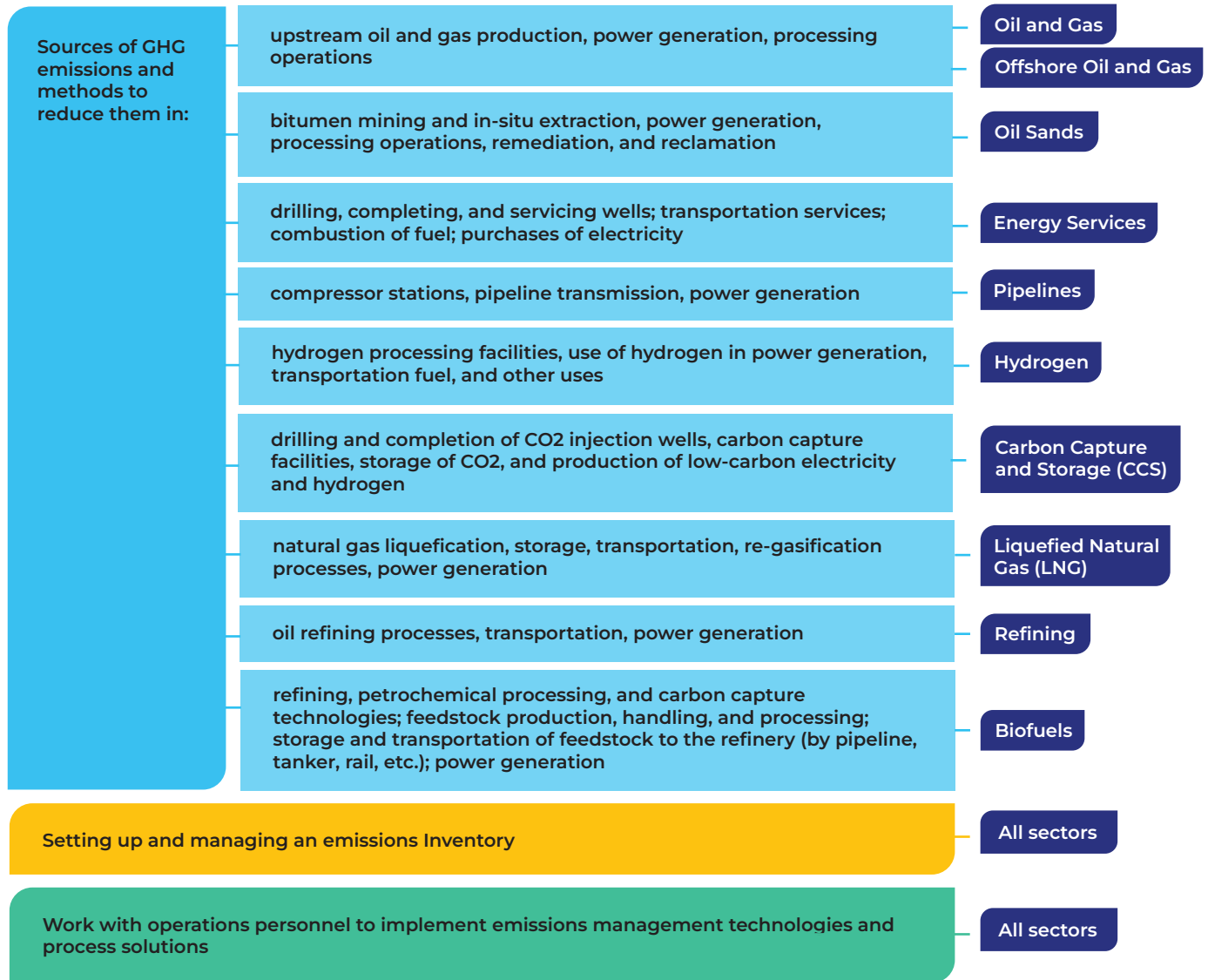
Sustainability and ESG risk issues and goals and their impact to day-to-day responsibilities and operational processes

All sectors

# Skill: Company processes and products, their emission sources, and methods of reduction

## Skill attributes

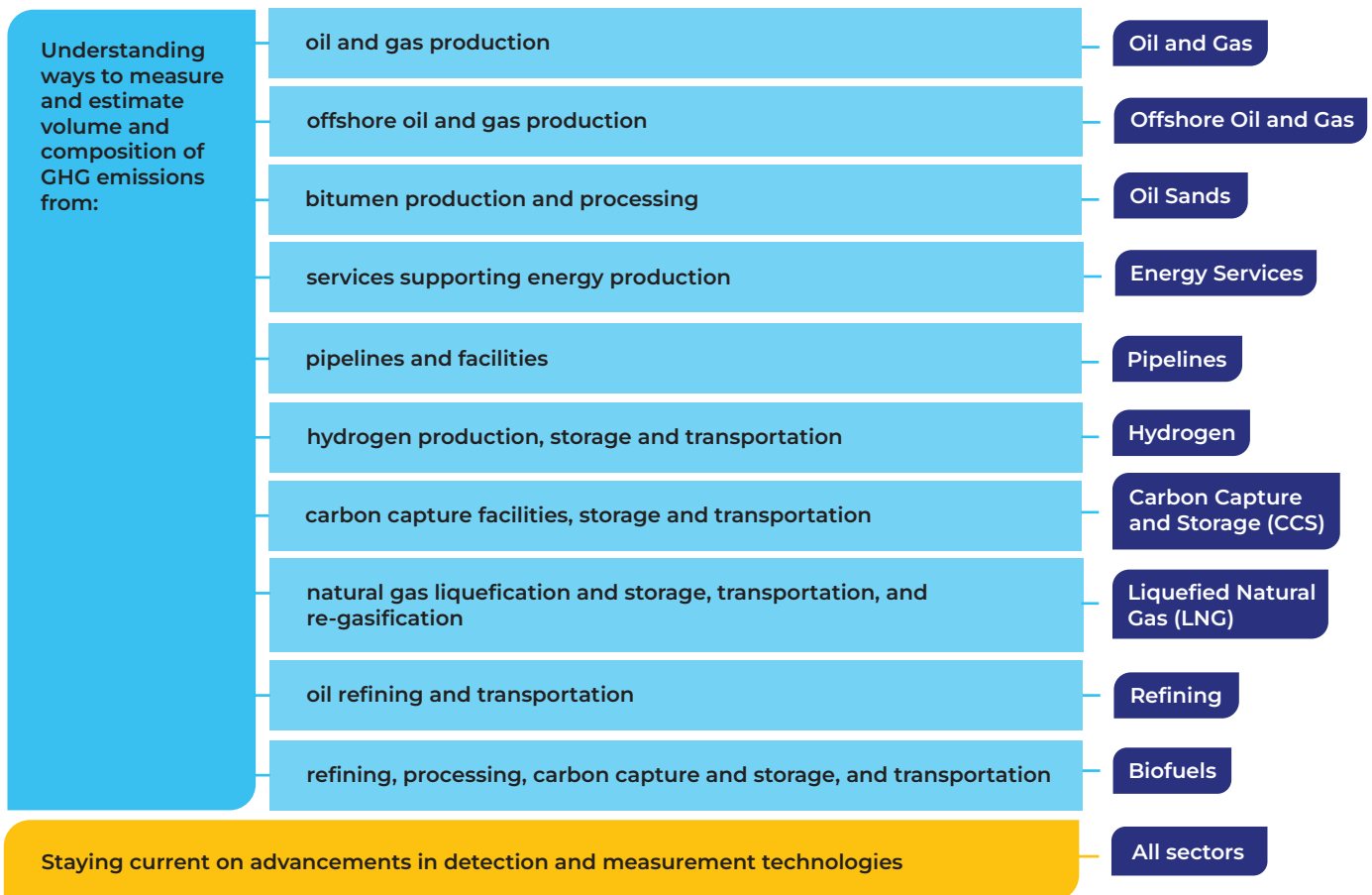
## Sector



# Skill: Estimation of emissions and maintaining and validating calculations and data for reporting requirements

## Skill attributes

## Sector



# Career Outlook for Emissions Measurement Professionals



## Emerging

These occupations are new, driven by the need for organizations to focus on and address evolving environmental, social and governance (ESG) opportunities and risks.



## Projected labour shortages

The demand for workers is projected to be greater than the supply of available workers.

Source: Careers in Energy, National Labour Market Outlook to 2035



CareersinEnergy.ca

---



@energycareersca



@energycareersca



/energycareers



/careersinenergy



Funded in part by the Government of Canada's  
Sectoral Workforce Solutions Program.