GHG Professional

Specialization Guide

Identifying Your Occupation Within the GHG Profession

Updated: June 2026

eco canada

ghg management institute

GHG Professional Specialization Guide

Table of Contents

1. Introduction

Greenhouse gas (GHG) management is multifaceted and engages professionals from fields as varied as engineering, environmental science, finance, law, policy, and data science. GHG professionals have a shared foundation of knowledge and skills in GHG science, measurement, accounting, and management. This knowledge can be applied to inform, support, or advance efforts to understand, report, reduce, regulate, or finance GHG emissions and their climate-related impacts. Thus, within their shared identity, GHG professionals differ substantially in what they do day to day, where they work, and what expertise they bring to their roles.

This guide is designed to help you see where you fit in this field. Whether you are already working in the GHG field and want to better understand where your work fits within the broader profession, or you are considering a career in GHG management and want to identify which direction best matches your interests and background, this guide offers a map of the landscape. This guide will also help you complete your EP®(GHG) application.

The Global Occupational Standards for GHG Professionals define nine functionally distinct categories of GHG professionals, which are called *specialization* for the purposes of the EP®(GHG) program.

> A **specialization** is a unique practice area that reflects distinct types of work, skills, and professional contexts for a GHG professional. This guide describes each specialization, highlights specific jobs that would fall under the specialization, and provides guidance on how to select your specialization as an EP®(GHG) or EPt(GHG) applicant.

Within the EP®(GHG) program, the selection of a specialization guides the level of knowledge you will be assessed upon within the exam and the competencies required within your work log experience. Appendix A describes the demonstrated competencies evaluated within each specialization. Appendix B describes the specific expectations for level of knowledge evaluated by the exam by specialization. This guide should be used by EP®(GHG) applicants to select a specialization.

2. How to Use the Specialization Guide

This guide defines nine (9) GHG professional specializations and suggests the key steps when selecting a specialization under EP®(GHG).

Selecting a Specialization under EP®(GHG)

1. Read the definitions in Section 3 and identify the one(s) that seem closely related to your current work or your desired future work.
2. Next, go to Section 4 and find the specialization(s) you identified. Review the expanded definition and occupational examples. Find a job that is similar to yours or to your desired job. Check the details of what people with this job do, where people with this job typically work, and what kind of education and background is typically required for this job. If you see yourself in one of these positions, this is likely your specialization. If you are struggling to find a perfect match, select the specialization closest to the dominant aspects of your work profile.

3. Finally, make sure to review the critical competencies of the specialization(s) in Appendix A to see if you perform these competencies frequently in your work. And check that your knowledge meets the level of knowledge expected for professionals within the specialization(s) in Appendix B.

Overlap in Specializations

The specializations in this guide are general categories, not rigid boundaries. In practice, many GHG professionals work across specializations, and the most experienced practitioners often bring depth in one area and meaningful competency in several others.

For example, a carbon project developer must understand verification processes (Specialization 3). An ESG analyst draws on GHG inventory concepts (Specialization 1). A corporate decarbonization strategist needs to navigate policy and regulatory landscapes (Specialization 6). And nearly every GHG professional contributes in some way to capacity building simply by sharing knowledge with colleagues and clients. Pick the specialization that has the most in common with your current knowledge and work experience (competency).

Specializations are non-hierarchical

A specialization applies to the type of GHG management work you perform in your job, not the level of your position on your team or in your workplace. For example, an Associate, Analyst, Manager, Supervisor, CEO, or Executive Director can all identify as having the same specialization. Regardless of what specialization you select, you will receive the same certification, EP®(GHG). The only difference is the criteria you are evaluated against, because GHG Management is a broad profession requiring specialized knowledge and skills for certain occupations.

New Specializations

If after referring to this guide, you are not able to identify a specialization that you feel is a good fit for you, request assistance from certification staff at GHG@eco.ca who will help you find a specialization. If there is still not a good match after consulting with staff, the GHG Certification Committee may consider whether it is necessary to define a new specialization.

The specialization tracks are updated and expanded periodically to accommodate trends within the GHG management profession.

Status of Specialization Availability

The new era of the EP®(GHG) designation launched in March 2026. At the time of launch, a limited number of specialization exams are available for EP®(GHG) applicants (see Section 3 for status of availability). More specialization exams will be made available in the coming months as they are adopted. This specialization guide will also be updated as exams become available. Applicants may begin their application at any time and then finalize their application by sitting their exam for their specialization when it becomes available.

3. Specializations Defined

The nine (9) specializations reflect major functional areas of GHG practice. They are not mutually exclusive, but they provide a useful framework for understanding the different kinds of expertise and roles that make up the GHG management profession. Below are the definitions of the nine (9) GHG professional specializations.

1. GHG Inventory Accounting and Reporting

Status: Available

Quantify and report GHG emission and removal information using accepted protocols to ensure accurate, transparent, consistent, complete, credible, and appropriately comparable disclosures.

Individuals selecting this specialization will further select as having knowledge and competency within:

I. Organization inventory accounting or
II. National inventory accounting

2. GHG Project/Intervention Development, Accounting, and Reporting

Status: Available

Analyze, design, and implement projects using accepted protocols to avoid GHG emissions or enhance removals, usually for the purpose of being issued carbon credits for uses such as offsetting or contributions to global mitigation.

3. GHG Validation, Verification, and Auditing

Status: Available

Conduct independent and objective evaluations of GHG quantification, accounting, and reporting assertions using accepted protocols to assess accuracy, completeness, consistency, transparency, and conformance and ensure credibility of reporting outcomes.

4. GHG Mitigation

Status: Forthcoming

Analyze, design, and implement strategies to reduce or avoid GHG emissions and increase or enhance removals to support climate goals and improve environmental performance.

5. GHG Data and Methods

Status: Forthcoming

Provide specialized support in areas such as data management, tool and methodology design, or emission factor development to enhance GHG management systems.

6. Climate Standards, Policy, and Regulations.

Status: Forthcoming

Develop, navigate, and interpret climate standards, policies, and applicable regulations to ensure compliance and inform strategic decision-making.

7. Climate Strategy

Status: Forthcoming

Align organizational objectives with climate action plans to support long-term decarbonization and climate resilience.

8. Climate Finance

Status: Forthcoming

Analyze investments to support climate mitigation.

9. GHG Capacity Building

Status: Forthcoming

Provide the training, tools, or institutional support to effectively carry out one or more of the previously described activities.

4. Specialization Profiles

Each profile includes a definition of the specialization and illustrative examples of occupations in the specialization. The examples include information on typical education requirements stated as Bachelor's, Master's, or PhD with the equivalent education level as defined by the UN International Standard Classification of Education (ISCED) published in 2011, a framework for classifying education activities into internationally agreed categories.

Specialization 1: GHG Inventory Accounting and Reporting

This specialization encompasses the foundational work of quantifying and communicating GHG emissions. Practitioners in this area develop the data and documentation that organizations, governments, and other entities use to understand and disclose their allocated emissions — the starting point for many other GHG management activities. Work in this area demands methodological rigor and familiarity with standards and protocols such as the GHG Protocol Corporate Standard, ISO 14064, the IPCC Guidelines for National Greenhouse Gas Inventories, and regulatory reporting frameworks.

Occupational Examples

GHG Emissions Analyst

Collects, calculates, and analyzes GHG emissions data for organizations, facilities, or sectors using established accounting methodologies and emissions factors. Prepares emissions inventories in accordance with standards such as the GHG Protocol or ISO 14064.

WHERE THEY WORK: Consulting firms, corporations (energy, manufacturing, utilities), government agencies, and research institutions. Often an entry- to mid-level role.

EDUCATION AND BACKGROUND: Typically, a Bachelor's degree/ISCED level 6 in environmental science, engineering, chemistry, or a related field. Familiarity with GHG accounting standards is often more important than a specific degree discipline.

GHG Inventory Manager

Oversees the development and maintenance of organizational or national GHG inventories, ensuring data quality, consistency over time, and alignment with applicable reporting frameworks. Coordinates data collection across departments, facilities, or agencies.

WHERE THEY WORK: Corporations, national and subnational government agencies, intergovernmental organizations (e.g., UNFCCC, UNEP), and environmental consulting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental science, engineering, public policy, or a related field. Several years of experience in GHG accounting is typically required. Knowledge of national inventory guidelines (e.g., IPCC) is essential for government roles.

GHG Reporting Specialist

Prepares GHG emissions reports for submission to regulatory bodies, voluntary disclosure platforms, or corporate stakeholders. Ensures reports meet applicable legal, methodological, and formatting requirements.

WHERE THEY WORK: Corporate sustainability or environmental departments, environmental consulting firms, and law firms with environmental practices.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in environmental science, business, finance, or a related field. Detailed knowledge of specific regulatory reporting requirements (e.g., EU ETS) is critical and often distinguishes applicants more than degree type.

Carbon Footprint Specialist

Calculates the carbon footprint of organizations, products, supply chains, or events using standardized methodologies, and communicates results to internal and external stakeholders.

WHERE THEY WORK: Sustainability consultancies, consumer goods and retail companies, marketing and communications firms, and certification bodies. Frequently a client-facing role.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in environmental studies, sustainability, business, or engineering. Competency in life cycle assessment tools and GHG accounting standards (e.g., GHG Protocol Product Standard, ISO 14067) is important.

Life Cycle Assessment (LCA) Analyst

Quantifies GHG emissions and other environmental impacts across the full life cycle of products, materials, or processes — from raw material extraction through end of life — to support low-carbon design and procurement decisions.

WHERE THEY WORK: Consulting firms, product manufacturers, chemical and materials companies, packaging companies, and government research agencies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental engineering, industrial ecology, chemical engineering, or environmental science. Proficiency in LCA software (e.g., SimaPro) distinguishes this role from other GHG accounting positions.

Sustainability Reporting Manager

Leads the development of corporate sustainability and climate disclosures, integrating GHG emissions data with broader ESG metrics in accordance with frameworks such as International Sustainability Standards Board (ISSB) and the Global Reporting Initiative (GRI).

WHERE THEY WORK: Large publicly traded companies, financial institutions, and sustainability consulting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in sustainability, business administration, environmental science, or finance. Familiarity with multiple ESG reporting frameworks and experience managing cross-functional reporting processes is essential. Master's in Business Administration (MBA) or graduate sustainability credentials are common at senior levels.

Environmental Disclosure Analyst

Analyzes and prepares climate and emissions-related disclosures for investors, regulators, and the public, ensuring accuracy, consistency, and compliance with evolving mandatory and voluntary disclosure requirements.

WHERE THEY WORK: Corporate legal and compliance departments, investor relations teams, financial regulators, and ESG consulting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in environmental science, finance, law, or business. Growing demand for knowledge of mandatory climate disclosure regulations and standards (e.g., International Sustainability Standards Board (ISSB) makes regulatory literacy especially important in this role.

Industrial Emissions Engineer

Assesses and quantifies GHG emissions from industrial processes, energy systems, and manufacturing operations. Designs and evaluates measurement systems and emissions estimation methodologies for complex industrial sources.

WHERE THEY WORK: Industrial companies (oil and gas, steel, cement, chemicals), environmental engineering firms, and regulatory agencies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in chemical, mechanical, or environmental engineering. A strong technical background in industrial processes and emissions measurement technology distinguishes this role. Experience with continuous emissions monitoring systems (CEMS) is often required.

Atmospheric Scientist / GHG Monitoring Specialist

Measures and analyzes GHG concentrations in the atmosphere using ground-based, airborne, or satellite instrumentation. Develops and applies methods for detecting and attributing emissions from natural and anthropogenic sources.

WHERE THEY WORK: Government research agencies (e.g., national science organizations, national meteorological institutes), universities, and private remote sensing and environmental monitoring companies.

EDUCATION AND BACKGROUND: Typically requires a Master's degree/ISCED level 7 or PhD/ISCED level 8 in atmospheric science, meteorology, physics, or a related discipline. This is the most scientifically specialized role in this category, often requiring expertise in instrumentation, atmospheric modeling, and statistical analysis.

Specialization 2: GHG Project/Intervention Development, Accounting, and Reporting

Professionals in this specialization design and implement projects or interventions whose primary purpose is to quantify and substantiate GHG avoided emissions or enhanced removals impact assertions. These outcomes are often quantified and reported in accordance with approved carbon market methodologies, producing carbon credits that can be used for compliance or voluntary offsetting purposes. Work in this area requires deep familiarity with carbon standards (such as Verra's VCS, Climate Action Reserve, Gold Standard, or American Carbon Registry), project-level GHG accounting, and the technical and ecological specifics of the project type being developed. It also often requires familiarity with carbon markets and offsetting schemes (e.g. CORSIA, emissions trading systems, and Article 6 of the Paris Agreement).

Occupational Examples

Carbon Project Developer

Designs and develops GHG mitigation projects such as avoided deforestation, methane capture, renewable energy, or soil carbon projects that generate verified project and baseline scenario emissions and removals estimates, typically resulting to the issuance of carbon credits in voluntary or compliance markets.

WHERE THEY WORK: Carbon project development companies, non-governmental organizations, energy companies, and private equity-backed climate investment firms. Project locations are often in developing countries or rural areas.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental science, forestry, engineering, or a related field. Deep familiarity with carbon market standards and approved methodologies is essential and is often acquired through professional experience rather than formal education.

Nature-Based Solutions Specialist

Develops and manages land-use projects, including reforestation, wetland restoration, and improved forest management that sequester carbon while delivering co-benefits for biodiversity and local communities.

WHERE THEY WORK: Environmental NGOs, land trusts, forestry companies, conservation organizations, and carbon project developers. Field work in forested or wetland environments is common.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in forestry, ecology, environmental science, or natural resource management. Remote sensing and GIS skills are increasingly expected. Understanding of co-benefit frameworks (biodiversity, community development) distinguishes this role.

Agricultural Carbon Specialist

Works with farmers and landowners to implement land management practices that avoid agricultural GHG emissions or enhance soil carbon sequestration and quantifies these outcomes using approved methodologies.

WHERE THEY WORK: Agribusiness companies, agricultural cooperatives, carbon project developers, and government agricultural agencies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in agronomy, soil science, agricultural engineering, or environmental science. Knowledge of soil carbon dynamics and agricultural GHG emissions is essential and distinguishes this role.

Carbon Capture and Storage (CCS) Engineer

Designs, evaluates, and oversees systems that capture CO_2 from industrial or energy sources and/or stores it in geological formations or other permanent sinks, quantifying associated emissions reductions.

WHERE THEY WORK: Oil and gas companies, power utilities, industrial manufacturers, engineering consultancies, and government energy agencies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6, Master's degree/ISCED level 7, or PhD/ISCED level 8 in chemical, petroleum, or mechanical engineering. Specialized knowledge of geological storage, CO_2 transport systems, and monitoring/verification protocols distinguishes this role. Advanced degrees (Master's and PhD) are common.

Clean Energy Project Developer

Develops renewable energy or energy efficiency projects with a focus on quantifying and monetizing their GHG mitigation benefits for compliance or voluntary carbon markets and climate leadership recognition programs.

WHERE THEY WORK: Renewable energy developers, energy efficiency companies, utilities, and carbon project developers.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in engineering, environmental science, or business. Experience with energy project finance and carbon accounting is important. Knowledge of relevant carbon market methodologies is often required.

Methane Reduction Specialist

Identifies, designs, and implements strategies to detect, measure, and reduce methane emissions from sources such as oil and gas operations, mining, agriculture, landfills, and wastewater treatment, and quantifies the resulting GHG benefits using approved protocols.

WHERE THEY WORK: Oil and gas companies, landfill operators, wastewater utilities, agricultural enterprises, and environmental consulting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental engineering, chemical engineering, or environmental science. Technical knowledge of methane measurement technology (optical gas imaging, continuous sensors) and sector-specific emission sources distinguishes this role.

Specialization 3: GHG Validation, Verification, and Auditing

Independent assurance is a cornerstone of the GHG profession's credibility. Professionals in this specialization conduct objective, often third-party evaluations of GHG claims, whether organizational inventories, regulatory reports, or carbon project outcomes, to determine whether they are accurate, complete, consistent, and methodologically sound. This work underpins trust in carbon markets,

regulatory systems, and voluntary disclosures. Practitioners must be technically rigorous, impartial, and deeply familiar with audit principles as well as the substance of the GHG claims they are assessing. Application of environmental auditing standard (e.g., ISO 19011 and ISO 14064-3) is sometimes required.

Occupational Examples

GHG Verifier / Third-Party Auditor

Independently assesses the accuracy, completeness, and conformance of GHG emissions reports and inventories against applicable standards and protocols. Issues verification statements and opinions for use in regulatory compliance, carbon markets, or voluntary reporting and target setting. And/or, responsible for audit planning, evidence evaluation, and final determination of conformance.

WHERE THEY WORK: Accredited verification and certification bodies (VVBs), large accounting and professional services firms, certification organizations, and specialized environmental auditing companies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental science, engineering, accounting, auditing, or a related field. ISO 14065 lead auditor certification is often required or expected. Sector-specific technical knowledge (e.g., industrial processes, energy systems) is important for assessing complex operations.

Carbon Project Validator

Conducts independent validation of proposed carbon credit projects prior to their registration, assessing whether project design, baseline assumptions, and GHG accounting methodologies conform to applicable standards and are likely to deliver claimed outcomes.

WHERE THEY WORK: Accredited third-party validation and verification bodies (VVBs), approved for operating under specific carbon standards programs or government-run crediting programs.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in environmental science, forestry, engineering, or a related field. Requires both auditor qualifications and deep subject matter expertise in the relevant project category. Distinction from verifiers lies in the forward-looking nature of validation assessing project design before implementation.

Environmental Assurance Manager

Provides internal or external assurance over GHG and broader environmental data reported by organizations, applying audit principles to identify material errors, inconsistencies, or weaknesses in data management and reporting systems.

WHERE THEY WORK: Corporations (internal audit or sustainability functions), accounting firms, and specialized environmental assurance practices.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in accounting, environmental science, engineering, or business. Background in financial or operational auditing combined with GHG accounting knowledge is a distinguishing feature of this role.

Environmental Compliance Auditor

Assesses organizational compliance with GHG-related regulations and permit conditions through independent review of emissions data, reporting records, and management systems, and recommends corrective actions where gaps are identified.

WHERE THEY WORK: Regulatory agencies (conducting compliance inspections), consulting firms (conducting compliance assessments on behalf of regulated entities), and corporate environmental departments (conducting internal audits).

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in environmental science, engineering, law, or a related field. Knowledge of applicable GHG regulations, which vary by jurisdiction, is essential.

Specialization 4: GHG Mitigation

GHG mitigation professionals analyze emissions, identify opportunities to reduce or avoid them, and design and implement the strategies, technologies, and operational changes needed to achieve GHG reductions and avoid emissions. This specialization is broad, spanning corporate decarbonization, industrial process change, energy system transformation, and supply chain management. What distinguishes it from project-based carbon credit work (Specialization 2) is that the focus is on analyzing and achieving broader organizational or systemic changes in GHG emissions and removals, in addition to individual projects.

Occupational Examples

Corporate Decarbonization Strategist

Develops science-based emissions reduction targets and decarbonization roadmaps for organizations, identifying abatement opportunities across operations, supply chains, and value chains, and prioritizing investments accordingly.

WHERE THEY WORK: Sustainability consulting firms, corporations (in-house sustainability teams), and organizations such as the Science Based Targets initiative (SBTi).

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental science, engineering, business, or sustainability. Experience with emissions accounting and abatement cost analysis is key. MBA or graduate sustainability credentials are common at senior levels.

Energy Transition Analyst

Analyzes pathways for transitioning energy systems away from fossil fuels, modeling GHG

emissions trajectories under different technology, policy, and investment scenarios to inform planning and decision-making.

WHERE THEY WORK: Energy companies, think tanks and research institutes, government energy agencies, investment banks, and multilateral development banks.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in energy systems, economics, engineering, or environmental science. Proficiency in energy modeling tools, e.g., The Integrated MARKAL-EFOM System (TIMES), or the Long-range Energy Alternatives Planning System (LEAP), and scenario analysis methods distinguishes this role.

Sustainable Supply Chain Manager

Identifies and manages GHG emissions risks and reduction opportunities across corporate supply chains, working with suppliers to measure, disclose, and reduce Scope 3 emissions.

WHERE THEY WORK: Corporations in consumer goods, retail, food and beverage, manufacturing, and logistics sectors. Often embedded in procurement or operations functions.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in supply chain management, business, environmental science, or engineering. Knowledge of Scope 3 accounting standards (GHG Protocol Corporate Value Chain Standard) and corporate carbon accounting platforms with Scope 3 calculation capabilities.

Industrial Decarbonization Engineer

Identifies and implements technical solutions to reduce GHG emissions from energy-intensive industrial sectors such as steel, cement, chemicals, and manufacturing, including process optimization, fuel switching, and application of emerging low-carbon technologies.

WHERE THEY WORK: Heavy industrial companies, engineering consultancies, government industrial agencies, and research and development organizations.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6, Master's degree/ISCED level 7, or PhD/ISCED level 8 in chemical, mechanical, or industrial engineering. Technical depth in specific industrial processes is essential, distinguishing this role from higher-level strategy positions. Advanced degrees and research experience are common.

Built Environment Sustainability Specialist

Assesses and reduces GHG emissions from buildings and the built environment through energy efficiency retrofits, low-carbon material selection, and integration of renewable energy, applying GHG accounting to track and report progress.

WHERE THEY WORK: Architecture and engineering firms, real estate companies, property developers, local governments, and building certification bodies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in architecture, mechanical or civil engineering, or environmental science. Familiarity with green building standards, e.g., Leadership in Energy and Environmental Design (LEED) and Building Research Establishment and Environmental Assessment Method (BREEAM), and building energy modeling tools (e.g., US DOE's EnergyPlus building energy simulator) distinguishes this role.

Integrated Assessment Modeler

Develops and applies models that link GHG emissions, climate dynamics, economic systems, and policy interventions to evaluate long-term emissions pathways and inform mitigation strategy and policy design.

WHERE THEY WORK: Academic research centers, intergovernmental organizations (e.g., IPCC, IEA), government planning agencies, and think tanks.

EDUCATION AND BACKGROUND: Master's degree/ISCED level 7 or PhD/ISCED level 8 in economics, environmental science, engineering, or a related quantitative field. Advanced modeling skills and familiarity with established integrated assessment models, e.g., the Global Change Analysis model (GCAM), are the primary distinguishing requirements.

Specialization 5: GHG Data and Methods

The work of GHG professionals depends on the quality of the underlying data, tools, and methodologies they use. Professionals in this specialization often work behind the scenes to design and maintain the systems, methods, and scientific foundations that make accurate GHG accounting possible. This includes developing and managing data platforms, creating and validating emission factors, designing new accounting methodologies, and applying advanced data science techniques to GHG datasets. These roles tend to be more technical and less client-facing than other specializations, with their outputs foundational to the rest of the profession.

Occupational Examples

GHG Data Manager

Designs and maintains systems for collecting, storing, processing, and reporting GHG emissions and removals data across complex organizations or programs. Ensures data integrity, traceability, and accessibility for reporting and analysis.

WHERE THEY WORK: Corporations with complex GHG reporting obligations, government agencies managing national inventories, and carbon market program administrators.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in information systems, environmental science, engineering, or a related field. Proficiency in database design, data governance, and GHG reporting software platforms is essential.

Emissions Data Systems Analyst

Implements and manages software platforms and databases used for GHG accounting, reporting, and performance tracking. Develops data workflows, quality controls, and user documentation.

WHERE THEY WORK: Technology companies providing GHG software solutions, corporations, and sustainability consulting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in information technology, environmental science, or engineering. Familiarity with GHG software platforms (e.g., Salesforce Sustainability Cloud, Persefoni) is a key distinguishing competency.

MRV Systems Specialist (Measurement, Reporting, and Verification)

Designs and operationalizes MRV frameworks for GHG programs, carbon markets, or government reporting systems, ensuring that emissions data is collected, managed, and verified consistently and transparently.

WHERE THEY WORK: Government agencies, international development organizations, carbon standards bodies, and multilateral institutions (e.g., World Bank, UNDP).

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental science, engineering, public policy, or a related field. Experience working with national or program-level MRV systems, often in developing country contexts, is a key distinguishing feature.

Environmental Data Scientist

Applies statistical modeling, machine learning, and data analytics to large GHG and climate datasets to identify emissions patterns, improve estimation methods, and support decision-making.

WHERE THEY WORK: Research institutions, government agencies, technology companies, and large corporations with sophisticated data operations.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 (or PhD/ISCED level 8) in data science, statistics, computer science, or environmental science with strong quantitative training. Programming proficiency (e.g., able to program in Python and/or R) and experience with large geospatial or time-series datasets distinguishes this role.

Research Scientist

Researches and develops emissions factors — the coefficients used to convert activity data into GHG estimates — for use in national inventories, corporate accounting, and offset project methodologies, drawing on measurement studies and scientific literature.

WHERE THEY WORK: Government agencies (e.g., national environmental ministries, national energy agencies), research institutes, and intergovernmental bodies such as the World Meteorological Organization (WMO) or International Energy Agency (IEA), for example.

EDUCATION AND BACKGROUND: Master's degree/ISCED level 7 or PhD/ISCED level 8 in environmental science, chemistry, engineering, or a related discipline. This is a highly specialized research-oriented role requiring strong scientific and statistical skills.

Specialization 6: Climate Standards, Policy, and Regulations

The frameworks that govern how GHG emissions are measured, reported, and avoided are designed by standards bodies, legislators, regulators, and negotiators. Professionals in this specialization create, administer, and navigate these frameworks. Some develop the technical standards and protocols that underpin GHG accounting globally. Others design and implement policy instruments such as carbon taxes, trading schemes, or sector regulations that drive emissions reductions at scale. Still others help organizations understand and comply with the growing body of GHG-related legal requirements. This specialization sits at the intersection of technical GHG knowledge, law, economics, and political processes.

Occupational Examples

GHG Policy Analyst

Researches, develops, and evaluates policies designed to reduce GHG emissions, such as carbon pricing mechanisms, emissions trading schemes, fuel economy standards, and sectoral regulations. Analyzes policy effectiveness, economic impacts, and equity implications.

WHERE THEY WORK: Government agencies, think tanks, academic institutions, environmental NGOs, and multilateral organizations.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in public policy, environmental economics, environmental science, or a related field. Quantitative analysis skills and familiarity with policy evaluation methods are important distinguishing competencies.

Climate Legislation Advisor

Provides technical and strategic advice to governments or legislators on the design of climate laws and GHG reduction frameworks, drawing on GHG science, economics, and international agreements.

WHERE THEY WORK: Legislative bodies, executive government agencies, international organizations, and policy consulting firms.

EDUCATION AND BACKGROUND: Advanced degree (Master's degree/ISCED level 7 or PhD/ISCED level 8) in environmental law, public policy, or environmental economics. Deep familiarity with

international climate agreements (UNFCCC, Paris Agreement) and national legal systems is essential.

Emissions Trading Scheme (ETS) Administrator

Manages the operational and regulatory aspects of cap-and-trade or carbon market programs, including setting and tracking emissions caps, overseeing allowance allocation, and ensuring participant compliance.

WHERE THEY WORK: Government regulatory agencies and environmental ministries administering emissions reporting and trading policies and programs.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental policy, economics, law, or engineering. Operational knowledge of specific ETS program rules and registry systems is the primary distinguishing competency.

GHG Regulatory Compliance Manager

Ensures that organizations meet all applicable GHG reporting, permitting, and reduction obligations under local, national, or international regulations. Monitors regulatory developments and manages compliance programs and documentation.

WHERE THEY WORK: Industrial companies, energy utilities, transportation companies, and any organization subject to mandatory GHG reporting or emissions limits.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in environmental science, engineering, law, or business. Detailed knowledge of applicable regulations in the jurisdiction(s) of operation is the primary distinguishing requirement, making legal and regulatory literacy as important as technical GHG knowledge.

Carbon Border Adjustment Specialist

Advises on the implementation and compliance requirements of carbon border adjustment mechanisms, helping importers and exporters quantify embedded emissions and manage associated regulatory obligations. The European Union's Carbon Border Adjustment Mechanism (CBAM) is currently the leading example of such a measure. This job works at the intersection of GHG accounting, customs compliance, and international trade law.

WHERE THEY WORK: Trade law firms, customs and trade compliance teams at multinational corporations, government trade agencies, and specialized consulting firms. This is an emerging role growing rapidly in importance.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7. Background in environmental science or engineering, combined with trade law or international economics. This role requires a rare intersection of GHG accounting and international trade expertise.

International Climate Negotiator

Represents governments or organizations in international climate negotiations, applying expertise in GHG accounting, national inventories, and emissions reduction frameworks to advance positions under agreements such as the Paris Agreement and UNFCCC processes.

WHERE THEY WORK: National government delegations, intergovernmental organizations, and large NGOs engaged in international climate processes.

EDUCATION AND BACKGROUND: Advanced degree (Master's degree/ISCED level 7 or PhD/ISCED level 8) in international relations, environmental law, public policy, or environmental science. Significant experience in international climate processes and deep knowledge of UNFCCC frameworks, NDCs, and Article 6 mechanisms are distinguishing requirements.

GHG Standards Developer

Designs, drafts, and maintains the technical standards, protocols, and guidance documents used to govern GHG accounting, reporting, and verification across corporate, national, or market contexts. Engages stakeholders to ensure standards are scientifically sound, practically applicable, and broadly accepted.

WHERE THEY WORK: National governments, organizations involved in developing standards and operating reporting platforms, e.g., Science Based Targets initiative (SBTi) and Carbon Disclosure Project (CDP); oversight bodies, e.g., Integrity Council for the Voluntary Carbon Market (ICVCM); and consulting firms with standards development practices.

EDUCATION AND BACKGROUND: Advanced degree (Master's degree/ISCED level 7 or PhD/ISCED level 8) in environmental science, engineering, or a related field. A combination of technical GHG accounting depth and experience in multi-stakeholder consensus processes distinguishes this role.

Specialization 7: Climate Strategy

Climate strategy professionals focus on aligning organizations with the broader realities of a changing climate, including the physical risks of climate change itself and the transition risks associated with shifting to a low-carbon economy. Practitioners in this specialization help organizations understand their climate-related exposures, set long-term direction, and build resilience into their operations and strategies. This specialization draws heavily on GHG scenario analysis and climate science and sits at the intersection of environmental expertise and organizational strategy and governance.

Occupational Examples

Climate Strategy Officer (Chief Sustainability Officer)

Leads organizational climate strategy at the executive level, setting vision and targets for GHG reduction, overseeing reporting and disclosure, and integrating climate considerations into business strategy and governance.

WHERE THEY WORK: Corporations and financial institutions, typically at the C-suite or VP level. Increasingly common across sectors as climate accountability expectations rise.

EDUCATION AND BACKGROUND: Advanced degree (Master's degree/ISCED level 7 or PhD/ISCED level 8) in sustainability, business administration, environmental science, or a related field, often combined with substantial professional experience. Leadership and governance experience is as important as technical GHG knowledge.

Climate Risk Analyst/Scenario Analyst

Assesses physical and transition risks associated with climate change and GHG emissions trajectories for organizations, asset portfolios, or infrastructure systems. Quantifies potential financial or operational impacts under different climate scenarios. Develops and applies climate and GHG emissions scenarios to stress-test organizational strategies, investment plans, and policy frameworks against a range of plausible future climate and transition outcomes.

WHERE THEY WORK: Financial institutions (banks, insurers, asset managers), energy companies, corporate risk departments, consulting firms, and government infrastructure agencies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in finance, environmental science, economics, engineering, finance, or risk management. Proficiency in quantitative modeling and familiarity with climate scenario frameworks, e.g., IPCC Representative Concentration Pathways (RCPs) and Shared Socioeconomic Pathways (SSPs) and IEA scenarios; and with financial and corporate risk scenarios, e.g., Network for Greening the Financial System (NGFS) scenarios distinguishes this role.

Climate Disclosure Specialist

Leads implementation of climate-related financial disclosures in accordance with established frameworks such as the Task Force on Climate Disclosure (TCFD) and International Sustainability Standards Board (ISSB), integrating GHG scenario analysis with risk governance, strategy, and target-setting reporting.

WHERE THEY WORK: Publicly traded companies, financial institutions, sustainability consulting firms, and accounting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in finance, environmental science, accounting, or sustainability. Detailed knowledge of TCFD or ISSB frameworks is the primary distinguishing competency, often combined with financial reporting experience.

Specialization 8: Climate Finance

Climate finance professionals sit at the intersection of GHG expertise and financial analysis, using emissions data, carbon market knowledge, and climate risk frameworks to guide investment decisions,

structure financial instruments, and manage carbon assets. As GHG-related financial disclosures become mandatory and carbon markets grow in depth and complexity, demand for professionals who can bridge GHG and finance expertise is increasing rapidly.

Occupational Examples

ESG Analyst — Climate and Emissions

Evaluates companies' GHG emissions performance, targets, and transition strategies as part of environmental, social, and governance assessments used to inform investment decisions and portfolio management.

WHERE THEY WORK: Asset management firms, investment banks, ESG data and ratings providers, and pension funds.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in finance, economics, environmental science, or sustainability. Credentials for investment analysis, portfolio analysis, and related financial roles, e.g., the Chartered Financial Analyst (CFA) designation, combined with sustainability credentials is an increasingly common distinguishing characteristic.

Carbon Market Trader

Buys and sells carbon allowances or credits in compliance or voluntary carbon markets, using knowledge of GHG accounting, market mechanisms, and policy frameworks to manage positions and identify opportunities.

WHERE THEY WORK: Energy trading companies, commodity trading firms, large emitters with compliance obligations, and carbon brokerage firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in finance, economics, environmental science, or engineering. Trading experience combined with knowledge of carbon market rules and GHG accounting is the key distinguishing profile; formal financial training is often more important than environmental credentials.

Sustainable Finance Specialist

Structures and evaluates green bonds, sustainability-linked loans, and other climate finance instruments, using GHG emissions data and transition frameworks to assess eligibility, set performance targets, and measure impact.

WHERE THEY WORK: Investment banks, development finance institutions established by governments of intergovernmental agreements to provide climate financing, corporate treasury departments, and sustainability consulting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in finance, economics, environmental science, or engineering. Knowledge of green bond and

sustainable debt standards, e.g., the International Capital Markets Association (ICMA) frameworks and Climate Bond Initiative (CBI) taxonomy and standards; ESG rating and index frameworks (e.g., MSCI ESG Ratings); and GHG impact measurement tools for financial instruments e.g., methodologies developed by the Partnership for Carbon Accounting Financials (PCAF) distinguishes this role.

Climate-Aligned Fund (Portfolio) Manager

Manages investment portfolios with explicit consideration of GHG emissions exposure, climate risk, and alignment with emissions reduction pathways, applying tools such as portfolio carbon foot printing and climate scenario analysis.

WHERE THEY WORK: Asset management firms, sovereign wealth funds, pension funds, and insurance companies.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in finance, economics, or environmental science, typically combined with credentials for investment analysis, portfolio analysis, and related financial roles, e.g., the Chartered Financial Analyst (CFA) designation. Advanced knowledge of portfolio construction combined with climate risk assessment tools is the primary distinguishing trait.

Carbon Asset Manager

Manages portfolios of climate investments, carbon credits, or offset projects on behalf of institutional clients or project developers, overseeing quality assessment, due diligence, pricing, and market positioning.

WHERE THEY WORK: Carbon-focused investment funds, commodity trading firms, large corporations with voluntary carbon purchasing programs, and carbon project aggregators.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in finance, environmental science, or engineering. Deep knowledge of carbon credit quality standards, voluntary carbon market dynamics, and carbon project due diligence methods is the primary distinguishing competency.

Climate Finance Analyst

Evaluates the financial viability and climate impact of mitigation investments, clean energy projects, and low-carbon infrastructure, integrating GHG performance metrics into financial modeling and investment appraisal.

WHERE THEY WORK: Development banks, climate-focused investment funds, government climate finance agencies, and infrastructure consulting firms.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in finance, environmental economics, or engineering. Ability to integrate GHG performance metrics

with financial modeling and valuation methods like using discounted cash flow to analyze financial viability of GHG projects, distinguishes this role from both pure finance and pure GHG accounting positions.

Specialization 9: GHG Capacity Building

The GHG profession's ability to deliver on its potential depends on a growing, skilled, and well-supported workforce. Capacity builders are the professionals who make that possible by training practitioners, designing the tools and systems that others rely on, and helping institutions in developing and emerging economies build the foundations needed to participate fully in global GHG management. Capacity building work often draws on expertise across multiple specializations, and practitioners in this area typically have a broad command of GHG concepts combined with strong communication, pedagogical, or institutional development skills.

Occupational Examples

GHG Training and Capacity Building Specialist

Designs and delivers training programs that build technical GHG accounting, reporting, verification, and management skills among professionals in industry, government, or developing-country contexts. Adapts content to diverse audiences and institutional settings.

WHERE THEY WORK: International development organizations, national government agencies, GHG standards bodies, professional associations, and specialized training providers.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 or Master's degree/ISCED level 7 in environmental science, education, or a related field, combined with strong applied GHG expertise. Instructional design and adult learning skills are a distinguishing competency alongside technical GHG knowledge.

Climate Communications Specialist

Translates complex GHG science, data, and policy into accessible communications for public, media, and non-specialist audiences, supporting informed public discourse and organizational climate messaging.

WHERE THEY WORK: Environmental NGOs, government communications offices, media organizations, PR and communications agencies, and corporate sustainability departments.

EDUCATION AND BACKGROUND: Bachelor's degree/ISCED level 6 in communications, journalism, environmental science, or a related field. The combination of GHG technical literacy with strong writing, media, and public engagement skills is the defining competency.

Sustainability Educator

Teaches GHG-related concepts, methodologies, and policy frameworks at academic institutions or in professional development settings, preparing the next generation of GHG professionals.

WHERE THEY WORK: Universities and colleges (often in environmental studies, engineering, business, or public policy programs), professional certification bodies, and corporate learning and development departments.

EDUCATION AND BACKGROUND: Master's degree/ISCED level 7 or PhD/ISCED level 8 in environmental science, engineering, public policy, or a related field is typically required for academic positions. Professional experience in a GHG specialization is often as important as academic credentials for professional development roles.

GHG Research Scientist

Conducts original research on GHG emissions sources, sinks, measurement methods, mitigation strategies, and climate impacts, producing scientific knowledge that underpins the methodologies, standards, and policies used by GHG professionals across all functional areas.

WHERE THEY WORK: Universities, government research agencies (e.g., national laboratories, meteorological institutes), and independent research institutes.

EDUCATION AND BACKGROUND: PhD/ISCED level 8 in atmospheric science, environmental science, chemistry, ecology, or a related discipline is typically required. This is the most academically credentialed role in the GHG profession, and research output (publications, grants) is the primary measure of professional success.

Institutional Capacity Development Advisor

Works with governments, development organizations, and institutions, particularly in emerging economies, to build the organizational systems, technical skills, and governance frameworks needed to effectively manage, report, and reduce GHG emissions at national or subnational levels.

WHERE THEY WORK: Multilateral development banks, bilateral aid agencies, UN agencies, and international environmental NGOs. Significant travel and long-term field assignments are common.

EDUCATION AND BACKGROUND: Master's degree/ISCED level 7 degree in environmental policy, public administration, international development, or a related field, combined with applied GHG expertise. Experience working in developing country contexts and cross-cultural communication skills are distinguishing requirements.

Appendices

The following appendices provide details on the critical competencies that must be documented and the expected levels of knowledge demonstrated by professionals in each specialization. Competencies (Appendix A) are recorded as performance statements in work logs. Knowledge elements (Appendix B) are assessed with exams. The rubrics for assessing work logs and exams, while uniform in what they require from applicants, are particular to each specialization to capture the specific expected competencies performed and levels of knowledge demonstrated by professionals in a specialization.

The Global Occupational Standards for GHG Professionals provide a complete library of professional competencies, divided into Technical Competencies, Personal and Professional Competencies, and Legal, Policy, and Regulatory Competencies, which take the form of performance statements. The full list of competencies is not meant to be applicable to each and every GHG professional, rather certain competencies are more important to some specializations than others. Therefore, the necessity (i.e., not necessary, desirable, or critical) of particular competencies as it pertains to a specialization has been assessed. Appendix A shows the necessity determinations of each performance statement across the three competency categories for the currently available specializations. The competencies that are rated critical are expected to show up regularly in work logs of professionals with the chosen specialization.

Competency Categories	**Definition**
Not Necessary (0)	Not applicable to the specialized profession
Desirable (1)	Indicates relevant experience and contributes to confirming comprehensive competency in GHG management
Critical (2)	Critical to demonstrate competency for a specialized GHG profession

Occupation Standards for GHG Professionals also include a complete set of "knowledge elements" that describe what a GHG professional should know to be competent in their job. In this case, all professionals are expected to have some degree of knowledge about each knowledge element. However, each specialization requires deeper knowledge in certain areas. Therefore, the knowledge elements have been categorized according to the expected level of knowledge needed to be a competent professional in a particular specialization. Knowledge elements were categorized separately within the GHG Inventory Accounting and Reporting specialization to provide unique assessments for national inventory and organizational inventory specialists for the purposes of the exam only. The table below defines the levels of knowledge used. Appendix B provides the level of knowledge determinations for each of the knowledge elements within the specializations currently available.

Knowledge Element Categories	Definition
Awareness (1)	General consciousness that something exists, without depth of detail
Recognition (2)	Ability to identify something when presented with it
Knowledge (3)	Possession of information, facts, or concepts (the “what”)
Understanding (4)	Comprehension of meaning, being able to explain or interpret knowledge (the “why” and “how”)

Appendix A: Necessity of Competencies

EP®(GHG) Work Log Competency Mapping

Appendix B: Levels of Knowledge

EP®(GHG) Exam Knowledge Mapping

Appendix C: Applicant Resources

The following resources are publicly available resources to support the application process and new members:

Resource:
ECO Canada Website
GHGMI Website
EP Code of Ethics
GHGMI Professional Code of Conduct
International Standard Classification of Education (ISCED)
EP®(GHG) Applicant Guide
EPt(GHG) Applicant Guide
Discount Fee Program Eligibility Attestation Form
EP®(GHG) Training Organization Eligibility Request Form
EPt(GHG) and EP®(GHG) Member Guide
EP®(GHG) Exam Study Guide
EP®(GHG) Work Log Competency Mapping
Exam Guidelines for Applicants and Proctors
Global Occupational Standards for GHG Professionals
Member Directory
Complaints Procedure
Complaint Form
Request for Suspension of Certification
Discount Fee Attestation Form
EP®(GHG) Applicant Guide

Contacting ECO Staff

If assistance is required in the application process, or applicants have questions after obtaining the designation, they can contact Certification staff at any time:

GHG@eco.ca

1-800-890-1924

eco canada

www.eco.ca

ghg management institute

GHG Management Institute