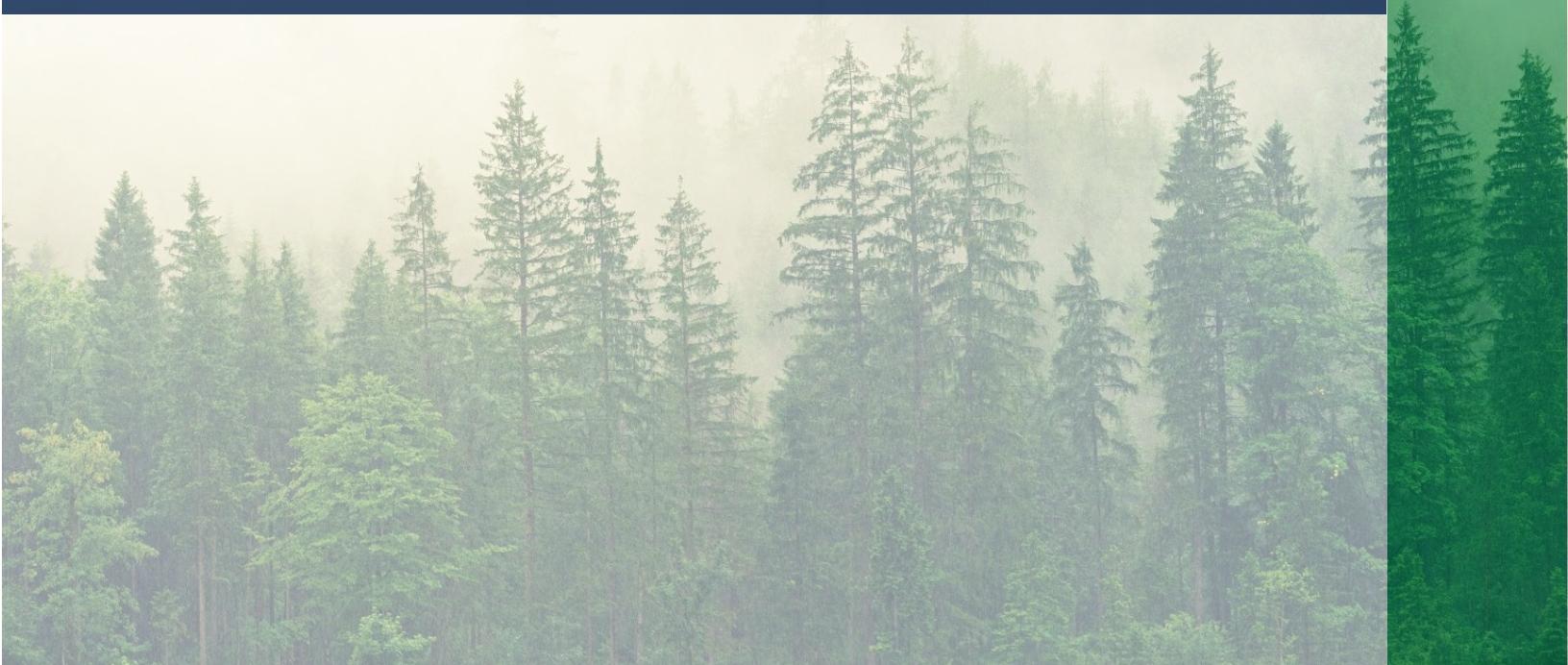


Tierra Resource Consultants Sustainability Qualifications



Tierra Resource Consultants, LLC

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About Tierra

Tierra Resource Consultants, LLC (“Tierra”) provides energy and carbon management consulting services to utilities, government agencies, regulatory bodies, and private sector clients across North America. Our senior staff have been at the leading edge of energy supply and demand side analysis and solution delivery for over three decades. Formed in 2014, Tierra has five main practice areas as shown in Figure 1.

Figure 1. Tierra’s Five Practice Areas.



We apply our collective experience to help our clients navigate the evolving energy and climate markets. Our work focuses on defining beneficial changes, implementing solutions and measuring and adjusting the course as needed to attain a sustainable future. For example, programs designed by Tierra staff have earned our clients the 2019 SEPA Innovative Partnership, the 2020 AESP Emerging Technology Program of the Year, and the 2020 PLMA Program Pacesetter Award. In March of 2022 Tierra received an award from the Energy Systems Integration Group (ESIG) of Institute of Electrical and Electronics Engineers (IEEE) for our work with Arizona Public Service to integrate distributed energy resources onto the grid.

Tierra is a CARB-accredited verification body and regularly employs [CARB’s Mandatory GHG Reporting Regulations \(MRR\) verification standards](#), as well as protocols defined in the [Carbon Disclosure Project’s \(CDP\) Climate Disclosure Framework](#). We have validated or verified numerous projects for the [Climate Action Reserve](#) (CAR), the [Verified Carbon Standard](#) (VCS), and the [American Carbon Registry](#) (ACR). Tierra’s lead verifier staff are also accredited by ANSI as an assessor for companies applying for accreditation to the [ISO-14065](#) and [ISO-14006](#) standards. Tierra’s staff are also experienced in verifying GHG emissions inventories consistent with [ISO 14064-3](#) guidelines and have developed inventories that follow the [GHG Protocol Corporate Reporting & Accounting Standard](#) for reporting through the [Global Reporting Initiative \(GRI\)](#). For more information about Tierra and our work, contact our Sustainability practice area leads or visit us at tierrarc.com. Tierra provides design and project implementation support and has been approved by the [Investor Confidence Project](#) as an [ICP Project Developer](#) and an [ICP Quality Assurance Assessor](#).



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GHG Accounting, Verification, and Planning Experience

Numerous Clients

GHG Emissions Verifications: As accredited verifiers of the California Air Resources Board (CARB), Tierra staff have demonstrated expertise across the breadth of greenhouse gas (GHG) emissions data reporting standards that we have successfully performed for our clients over the past three years. Our clients, include Expedia, EDP Renewables, HL Power Company, Tucson Electric Power, Inspire Energy, etc. Tierra staff and our partners have jointly completed hundreds of verification projects over the past decade. We recently completed a unique carbon footprint analysis of process chemical waste (Scope 3 Indirect, Category 5 – Waste Generated in Operations) for a global semiconductor manufacturing corporation.

GHG Emissions Management Accreditations: Tierra Resource Consultants is a [CARB-accredited verification body](#) that actively participates and contributes towards the mandatory GHG reporting verification program. In this role, Tierra collaborates with our clients to ensure the appropriate application of CARB's Mandatory GHG Reporting Regulations (MRR) verification standard which is recognized by the Carbon Disclosure Project (CDP). Tierra staff maintain numerous industry-pertinent credentials, including our recent Carbon Auditing Professional (CAP) certification through the Association of Energy Engineers. Many of our team members are accredited CARB MRR Lead Verifiers and have validated or verified numerous projects for CAR, CARB, the Verified Carbon Standard (VCS), the American Carbon Registry (ACR). Tierra's lead verifier staff are also accredited by ANSI as an assessor for companies applying for accreditation to the ISO-14065 and ISO-14006 standards. Importantly, all of Tierra's staff specializing within this practice area have cross-cutting experience across multiple sectors. Tierra is also experienced in verifying GHG emissions inventories consistent with ISO 14064-3 guidelines and have developed inventories that follow the GHG Protocol Corporate Reporting & Accounting Standard and reporting through the Global Reporting Initiative (GRI). A core partner of Tierra's within this practice area offers complementary expertise across the breadth of GHG accounting protocols and has been an assessor for ANSI in their GHG accreditation program for third party Validation/Verification Bodies for over 13 years.

Developing Low Carbon Transition Plans: The Tierra team has decades of cross-cutting experience developing and implementing low carbon transition plans and strategies for clients in almost every sector. We believe that detailed carbon neutrality roadmaps are critically important to efforts that make significant progress toward challenging carbon neutrality goals. Our plans cover both quantitative and qualitative goals with strategies that are calibrated to meet climate-related scenarios for various facility locations. To complete our low carbon transitioning plans, we evaluate the full breadth of influencing factors and strategies pertinent to our client base, including anticipated financial returns, project delivery methods, decision-making frameworks, employee development, stakeholder engagement, cost-effectiveness, and internal reporting methods.

Serving CDP Climate Change, A-List Clients: Tierra team members have delivered a variety of sustainability services to 11 of the firms on CDP's "A List 2020", including clients in the following sectors: Banking and Financial Services; Chemicals; Logistics; Pharmaceuticals; Waste; Technology; Utilities; Automotive.

For more information about GHG Accounting and Verification, please contact Mark Wilhelm at or Mike Yim.

Sustainability and ESG Advisory Services

Multiple Projects

Challenge: Environmental, social, and governance (ESG) reporting is a nascent industry, with an abundance of standards, guidelines, rating agencies, reporting platforms and frameworks to consider. Navigating this growing area of corporate focus can be confusing. This is especially the case regarding an organization's environmental sustainability goals. More than 2,400 companies worldwide have submitted science-based, greenhouse gas (GHG) emission reduction targets to the Science Based Targets initiative (SBTi)¹. Targets can be recognized by the SBTi if submitting companies follow the [GHG Protocol Corporate Accounting and Reporting Standard](#), the [GHG Protocol Scope 2 Guidance](#), the [Corporate Value Chain \(Scope 3\) Accounting and Reporting Standard](#), other required criteria, and the SBTi's [Target Validation Protocol for Near-Term Targets](#). Firms may also choose to pursue the SBTi's [Net-Zero Standard](#) to help enable the transformational actions required to reach important decarbonization goals.

Approach: The focus on reducing GHG emissions – and increasing climate resilience – will continue to grow in importance for corporations. This trend is moving beyond an emphasis on brand image and achieving a competitive advantage in the marketplace. It is now becoming a core requirement for most stakeholders. The Tierra Team has experience in all aspects of corporate energy and carbon accounting, management, performance, and reporting. We help clients to sort through the myriad standards, guidelines, and strategies needed to make progress in corporate sustainability initiatives. We have the knowledge, wisdom, and insight needed to drive corporate ESG initiatives to success. Our approach is customized depending upon client needs, along the [Process-driven ESG Approach to Reduce GHG Emissions](#) presented in the graphic below:



¹ The SBTi enables transformational climate action in the private sector by enabling companies to set science-based emissions reduction targets that are aligned with the IPCC Special Report. These targets are intended to limit global warming to 1.5°C and prevent the worst effects of climate change. [Ambitious corporate climate action - Science Based Targets](#)

Sustainability and Climate Change Advisory Services

Mohawk College – Hamilton, Ontario, Canada

Challenge: Mohawk College has long been a leader in sustainability education and practice in the Canadian higher education sector. In 2016 Mohawk leadership recognized the importance of more aggressively confronting climate change by preparing students for jobs in the low carbon economy; transitioning to zero carbon operations; partnering with community stakeholders on GHG mitigation and climate change adaptation; and competing successfully for federal, provincial, and alternative funding. Leaders at Mohawk engaged Mark Wilhelm to provide sustainability advisory services to assist with these initiatives.

Project Highlights:

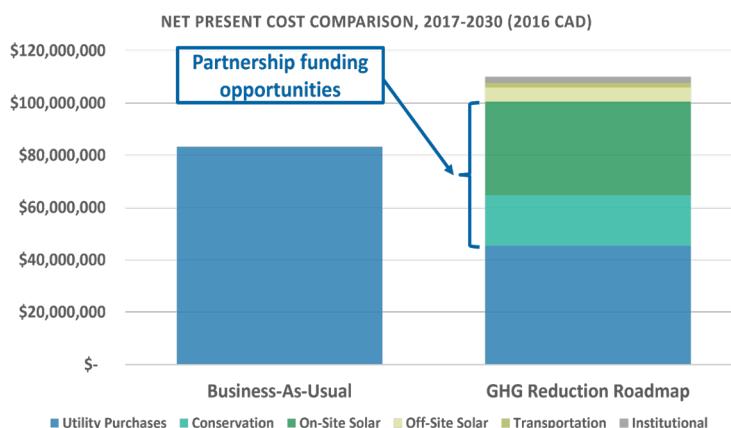
- GHG emissions assessment: baseline and projections through 2030
- GHG emissions reduction roadmap: strategies, projects, and funding initiatives
- Compliance and funding strategies for Ontario Climate Change Action Plan
- E-Wing Redevelopment Project: Interviews, Strategies, and Visioning Report

Approach: Through an ongoing, five-year collaboration, Mark and his team provided strategic and tactical support to meet these goals. They interviewed dozens of stakeholders to identify obstacles, opportunities, strategies, and tactics to meet objectives. They completed site, sector, and competitive research to target high potential initiatives. They assessed GHG emissions and identified integrated strategies to reduce emissions, lower utility costs, reduce deferred maintenance backlog, link with curriculum and applied research, and attract new students and corporate sponsors. They evaluated approaches to engage strategic partners from within the community and across North America. They considered opportunities to secure funding from Federal, Provincial, and alternative financing methods. They engaged various sector and trade associations to share leadership experiences and develop networks of like-minded climate change leaders.

Outcome: Mark developed and published four studies throughout his on-going collaboration with the College, including a GHG Emissions Inventory, a Climate Change Legislation Impact Study, a preliminary GHG Emissions Reduction Roadmap, and an Engineering Wing Redevelopment Project Visioning Report. He helped the College target and secure millions of dollars of funding for efficiency, renewable energy, and decarbonization projects and to fund the innovative Centre for Climate Change Management at Mohawk College.

As Tierra's Director of Climate and Clean Energy, Mark continues his work with Mohawk College leadership. He provides insights to support Mohawk's leadership in the Canadian Colleges for a Resilient Recovery (C2R2) initiative. He works to establish strategic sustainability alliances for Mohawk with other higher education institutions, including ASU's Global Institute of Sustainability and School of Sustainability. He advances the mission of the Climate Change Leaders Hub at Mohawk, which he co-founded to connect the College with nine school districts and 270,000 students to focus on transitioning operations and creating capability, capacity, and capital for the low carbon economy.

Mohawk College: Integrated Demand- & Supply-Side GHG Reduction



5-Year Electrification Strategic Plan

Central Coast Community Energy (3CE)

Challenge: In 2019, Central Coast Community Energy (3CE) was a new community choice aggregator (CCA) looking to begin building a portfolio of energy programs to meet their goals of decarbonization, providing the lowest possible billing rates to customers, and supporting community emergency preparedness and grid reliability/resiliency. Tierra was tasked with creating a strategic framework and 5-year plan for developing a portfolio of customer-facing energy programs that support these goals.

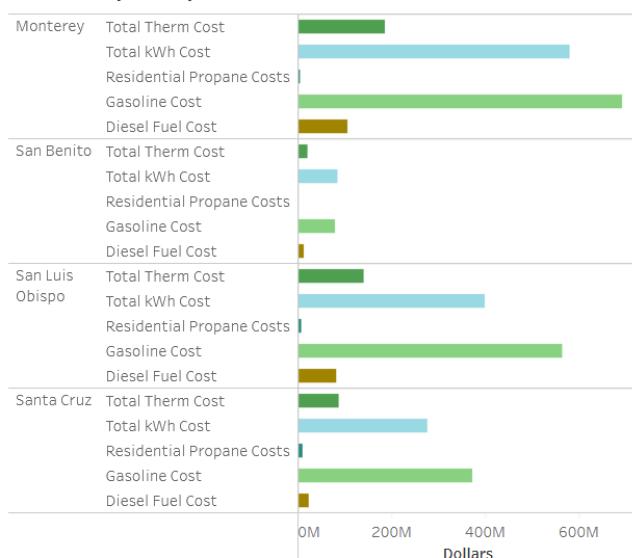
Project Highlights:

- Built a [public dashboard](#) that visualizes key demographic and energy metrics from the market assessment standpoint
- Forecasted energy program adoption, as well as GHG and energy impacts
- Wrote detailed program designs for a portfolio of beneficial electrification, demand response and DER initiatives

Approach: Tierra's approach to developing energy program portfolios begins with a market assessment of a utility's customer base, focused on profiling the demographic and key energy usage characteristics using our proprietary "County Metrics" database. Next, we facilitate a collaborative process between utility staff, and key stakeholders including local government agencies, community-based organizations, regional air quality management districts and other organizations. This process involves information and data exchange, screening of various program concepts, and the potential linkage of initial program concepts to statewide and local government and community sustainability initiatives. Key outcomes of this collaboration are the identification of leverage points and areas of cooperation with regional agencies and organizations for the delivery of programs as well as alignment with local Climate Action Plans. Tierra then assembles a "long list" of potential program design concepts based on this market assessment and community engagement. A qualitative screening of program ideas to assess which programs most closely align with utility goals is then used to narrow the field of candidate programs down to those that most closely met the utility's program selection criteria and that can be delivered within staffing and budget constraints. Qualitative screening is then followed by an assessment of potential program impacts and performance metrics.

Outcome: The result of our market assessment, community engagement, and program design was a 5-year strategic plan detailing how 3CE could build a portfolio of customer-facing energy programs that includes a balanced strategic blend of energy efficiency, demand response, renewable generation + storage, and electrification programs. The strategic plan has detailed program design descriptions that identify various customer markets that will be served by the programs, the incentives, services, and market intervention strategies that will be used by each program, and the technologies that will ultimately need to be deployed at customer sites to achieve 3CE's desired energy, GHG, and grid reliability impacts.

Fuel Cost by County



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