ENVIRONMENTAL CONSULTING CASE STUDY

Driving Decarbonization Strategy with Technical Report Expertise

CHALLENGE

A leading global mobility operator sought to electrify dozens of its diesel fleet vehicles as part of its decarbonization strategy with a limited availability of site-specific data.

SOLUTION

Trinity developed the GHG and climate resilience assessment reports and in cases where project-specific data were unavailable, Trinity applied engineering estimates informed by its extensive technical knowledge base and prior project experience.

RESULT

Trinity's deliverables enabled the client to submit a comprehensive and technically rigorous grant application, significantly advancing its fleet electrification initiative and broader decarbonization goals.

CHALLENGE

A leading global mobility operator and integrator with a significant presence in Canada engaged Trinity Consultants for a novel project. The company sought to electrify dozens of its diesel fleet vehicles as part of its decarbonization strategy and aimed to secure federal funding through Government of Canada grants. The client needed a technically proficient partner to work with them in preparing the greenhouse gas (GHG) reports necessary for a successful application. Compounding this challenge was the limited availability of site-specific data.

After a thorough review of the grant application requirements, Trinity determined that two technical reports were critical to success:

1. GHG Assessment Report
2. Climate Resilience Assessment Report

SOLUTION

Trinity developed the GHG assessment report in alignment with Infrastructure Canada's technical guidance. The primary objective was to quantify emissions and reductions associated with the proposed project, thereby demonstrating the net environmental benefit.

The analysis encompassed the full lifecycle of project-related GHG emissions, including upstream material production, construction-phase emissions, transportation, and both baseline and project operational emissions. In cases where project-specific data were unavailable, Trinity applied engineering estimates informed by its extensive technical knowledge base and prior project experience. Emission factors were derived using industry averages and life cycle analysis (LCA) databases. Net reductions were calculated by comparing baseline emissions to projected future emissions under the electrification scenario. Trinity also extended the analysis to include non-GHG air contaminants—such as carbon monoxide, nitrogen oxides, particulate matter, volatile organic compounds, and sulphur oxides—providing a comprehensive view of the project's air quality benefits.

Trinity also prepared a climate resilience assessment report, following Infrastructure Canada's methodology. The process began with identifying climate-related risks to the proposed project and study area. Key climate parameters were identified using publicly available datasets, including projections from the Coupled Model Intercomparison Project Phase 6 (CMIP6), which aggregates results from more than 100 climate models. The assessment considered multiple global emission scenarios, from low to high, to ensure robust planning. Each climate parameter was evaluated through a risk assessment matrix that combined likelihood and consequence of occurrence. High-risk parameters were then examined further, with recommended mitigation measures proposed to strengthen project resilience.

RESULT

The client was highly satisfied with Trinity's structured approach and resourcefulness, particularly given the limited availability of detailed input data. Trinity's deliverables enabled the client to submit a comprehensive and technically rigorous grant application, significantly advancing its fleet electrification initiative and broader decarbonization goals.

ABOUT TRINITY CONSULTANTS

Founded in 1974, Trinity Consultants helps organizations overcome complex, mission-critical challenges in EHS, engineering, and science through expertise in consulting, technology, training, and staffing. We support clients in geographies worldwide and across a broad range of sectors including industrial, energy, manufacturing, mining, life sciences, and commercial/institutional.