

ENGINEERING SERVICES

ELECTRICAL
INSTRUMENTATION
CONTROLS



Clean Energy
CONSULTING INC.



Engineering Services Electrical, Instrumentation & Controls

Clean Energy Consulting (CEC) provides comprehensive engineering and project services for capital and maintenance projects to our clients in Canada and internationally. Our team is experienced with green field design, but also welcomes the unique challenges of managing upgrades in operating facilities and have a track record of field proven designs and successfully implemented projects.

CEC's engineering group brings decades of practical, real world experience with all facets of industrial automation and electrical systems from project concept, through to commissioning and start-up, and with on-going operational and maintenance support. We believe it is important to produce optimized design packages that balance construction, operations, and maintenance requirements.

For confidence in project outcomes, trust CEC with your engineering needs!

Industries Served:

- Pulp & Paper
- Mining
- Renewable Energy
- Chemicals
- Forestry
- Infrastructure



Design Services

- Industrial Automation
- Electrical Engineering
- DCS, PLC & HMI Programming
- Instrumentation Specification & Design
- Process Control Networks
- System Integration
- SCADA System Design

- Substation Design
- Protection & Control
- VFD, MCC & PDC Specification & Design
- Power System Studies
- Transmission & Distribution
- Plant Optimization
- Arc Flash Analysis

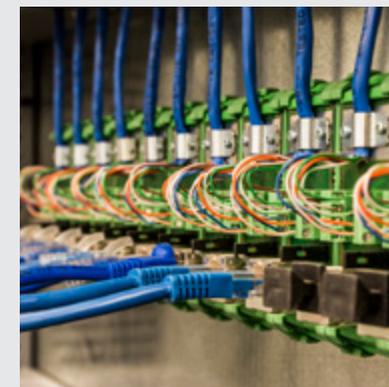
Project Services

- Project Development
- Studies & Estimates
- Project Management
- Cost & Schedule Control
- Construction Management
- Procurement
- Commissioning

Project Profiles

Control System Supply

CEC provided the PLC-based control system for a 25 MW run of river, small hydro project. The project scope included platform selection, development and design, documentation, construction oversight, start-up, and coordination of WECC testing. CEC was also responsible for overall project management, procurement, transmission line design, and facility commissioning. The system provides the ability to remotely control the plant operation and has provided significant benefits in reduced operating costs and increased generation.



Electrical, Instrumentation & Controls Design

Two 13 MW ORC Biomass Power plants were built to utilize wood waste from the adjacent sawmill for power generation. CEC was responsible for the overall electrical, instrumentation and control system design for the project. This included integration of the major vendor packages, technical interface with the utility, design and drawing production, specification and procurement of equipment, construction support, electrical commissioning oversight, and start-up support. The plants have exceeded performance expectations and CEC continues to provide technical support to the operations and maintenance teams.



Power System Upgrades

A hospital required upgrades to the main and emergency power system to improve reliability and increase capacity. CEC performed a site survey and a complete review of the power system from a code compliance, capacity, and reliability perspective. The power system components included 12.5 kV service entrance, transformers, emergency generators and controls, medium and low voltage switchgear and distribution system including automatic transfer switches, and power factor correction. Deliverables included site surveys, regulatory compliance verification, capacity and reliability studies, design of modifications, scope of work description, and cost estimates.





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Corporate Profile

Clean Energy Consulting (CEC) is passionate about developing and implementing practical projects that will have a meaningful, positive impact on the tremendous challenges facing our global community. From sustainable power generation and industrial efficiency improvements to extracting value from waste, our team of consulting professionals can help transform your project from concept to reality. We provide comprehensive project services and multi-discipline engineering to a wide range of industries and have a track record of delivering outstanding results on demanding projects.

We understand the importance of exploring options when developing a project to select the optimal configuration for further definition. The right balance of technical, business and economic factors needs to be attained before the project can proceed. To accomplish this our development team is able to evaluate alternative technology configurations and implementation methods rather than defaulting to what has been done before.

CEC believes the likelihood for success on a project can be significantly influenced during the early stages before decisions are locked in. With a full understanding of financing, regulatory, consultant and contractor expectations, CEC ensures that the elements necessary for success are embedded from the start so changes at later stages are minimized.

The CEC team is motivated by challenges and looks for innovative ways to achieve outstanding results. Combined with integrity, humility and a strong sense of ownership, our people are committed to success with all facets of a project – design optimization, efficient construction, and exceptional plant performance. We are dedicated to continuous improvement by listening and applying the lessons learned on previous projects.

Our focus on sustainability and renewable energy allows us to maintain intimate relationships with key stakeholders in this small and passionate network of professionals. We can assist with advising and facilitating regulatory shifts, utility negotiations, and accessing specialized services for key aspects of your project.

Clean Energy Consulting is the right strategic partner to transform your vision from concept to reality!

Ask us about

- Run of River and Small Hydro
- Project Development
- Biomass Conversion
- Transmission & Distribution Line Engineering
- Heat Recovery
- Process Optimization

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