



ArticCan

ENERGY SERVICES

ENVIRONMENTAL SERVICES

**PROVIDING ENVIRONMENTAL ENGINEERING
AND ENERGY EFFICIENCY SERVICES**



OUR VALUES

INNOVATION

COST EFFECTIVENESS

QUALITY

PEOPLE

SUSTAINABILITY

ArticCan upholds its responsibilities to its employees, clients and communities it serves. ArticCan strives for the best balance between innovation, minimal cost, quality, sustainability and prompt delivery of services.

ABOUT US

ArticCan is a multi-disciplinary engineering services company. ArticCan has operations in North America and Africa. Our main office is located in Regina, Saskatchewan, Canada. ArticCan provides high quality and cost effective services to public and private sector companies in Canada and abroad.

ArticCan offers professional consulting and scientific research, as well as all aspects of engineering and construction, operations and maintenance, and project management services. The company has formed unique partnerships with other professional and scientific services companies leveraging its ability to remain innovative and competitive in the challenging engineering consulting business. The company's range of engineering services includes but is not limited to the following:

- Environmental, chemical, process, civil, municipal, mechanical, electrical and petroleum engineering consulting services;
- Engineering services (design, engineering, construction management)
 - Project management, feasibility studies, conceptual design, scope development, cost-benefit analysis; equipment and material selection, environmental and energy efficiency studies, project scheduling, procurement, HAZOP analysis and safety plans, construction management and commissioning.

ArticCan is known for its excellent reputation, high quality services and experienced personnel. ArticCan employs a diverse staff of engineering, business and marketing professionals. Our personnel include senior electrical, environmental, chemical, industrial, civil, and petroleum engineers with advanced degrees and significant experience in the field. ArticCan continues to upgrade our staff qualifications through professional training and health and safety programs.



OUR EXPERTISE

ArticCan serves all industrial and commercial segments. ArticCan's environmental department is comprised of a multi-disciplinary group with proven experience in conducting a full range of environmental engineering, emissions and waste management, energy efficiency, and alternative energy projects.

ENVIRONMENTAL ENGINEERING



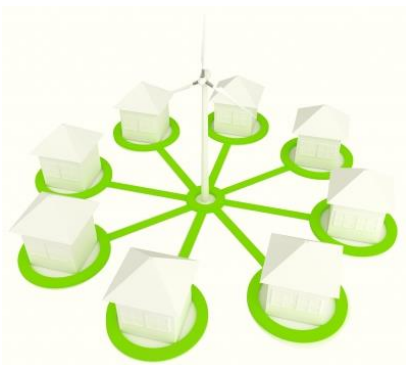
- Environmental studies and compliance
- Environmental Impact Assessment
- Life Cycle Assessment
- Environmental Risk Assessment
- Greenhouse Gas Accounting
 - Corporate
 - Project
 - Verification
 - Provincial and federal regulatory programs compliance
- Corporate Social Responsibility
- Environmental Management Programs
- Ecolabelling and Environmental Product Declarations

ENERGY EFFICIENCY



- Energy efficiency and conservation programs
 - Residential
 - Commercial
 - Industrial
- Programs development, delivery, marketing, and evaluation
- Energy audits
- Measurement and Verification
- Greenhouse Gas Accounting for energy efficiency projects
- Passive and net zero homes
- LEED certification
- Training programs

ALTERNATIVE ENERGY



- Renewable energy
- Gasification and pyrolysis of biomass and waste
- Anaerobic digestion
- Waste-to-energy systems
- Biofuels
- Combined heat and power
- Process optimization
- Benchmarking

ENVIRONMENTAL SERVICES

ENVIRONMENTAL ENGINEERING

This business unit uses state-of-the-art methods and tools to improve clients environmental performance, reduce impact on the environment and address corporate social responsibility. ArticCan's team provides a wide range of services to minimize environmental and compliance costs, reduce emissions and wastes, conserve energy, and optimize production processes. Our engineers conduct Life Cycle Assessments to evaluate environmental impacts of products, services, and processes. ArticCan also offers Greenhouse Gas (GHG) accounting services, including organizational- and project-level accounting, and verification. This includes development of the GHG inventories to ensure compliance with regulations, development and setup of corporate GHG data management systems, and data quality management procedures development. Our greenhouse gas accounting team is familiar with Canadian and international regulatory frameworks. ArticCan's team is skilled in environmental impact and risk assessments, development of emissions and waste reduction strategies, and policies analysis. Our environmental engineers conduct engineering studies, modeling, and simulations to determine the appropriate technology option and optimize an environmental performance of processes.

- Emissions and wastes management strategy development
- Emissions and waste policy analysis
- Emissions measurement, quantification, verification, and reporting
- Greenhouse gas reduction projects development
- Life Cycle Assessment
- Environmental impact and risk assessment
- Corporate Social Responsibility

ArticCan offers emissions and wastes strategy development and policy analysis services, including development and implementation of emissions management and greenhouse gas reduction programs and projects, analysis of policies and regulations and their impact on the client, and the facilitation of consultations with governments and other stakeholders.

Environmental Assessment of Three CO₂ Capture Technologies: Post-combustion Capture, Pre-combustion Capture and Oxyfuel

This project involved engineering modeling and evaluation of environmental performance and environmental risk of oxyfuel, post-combustion and pre-combustion CO₂ capture technologies. Energy efficiency and emissions from each unit process at the SaskPower's Boundary Dam Power Station were modelled. ArticCan utilized advanced engineering software packages to carry out engineering modeling and environmental impact and risk evaluation. Process improvements and best technological options were recommended, and the strategies to reduce emissions, energy consumption and environmental risks were proposed.

Preparation of GHG Measurement, Reporting and Verification, and GHG Credits Guidance Documentation

Six technical guidance documents were prepared for the Saskatchewan Ministry of Environment. Guidance documents will be used to guide greenhouse gas emitters through the process of measuring, quantifying, reporting and verifying their emissions and applying for GHG credit programs. This project involved review of the *Act* and *Regulations*, Canadian and international regulatory frameworks and assessment of current industry practices to measure, quantify and verify greenhouse gas emissions from operations. Interviews and site visits were performed with industry members to identify current practices and obtain feedback with respect to new legislation. A workshop for public and private organizations was conducted.

ENERGY EFFICIENCY

ArticCan has extensive experience in leading and participating in the latest North American and international developments of energy conservation, energy efficiency programs development, marketing and administration, energy audits, measurement and verification, evaluation of emerging technologies, implementation of energy efficiency projects, and greenhouse gas accounting for energy efficiency projects. ArticCan's personnel are knowledgeable in International Performance Measurement and Verification Protocol (IPMVP) and have Certified Measurement and Verification Professional (CMVP), Leadership in Energy and Environmental Design (LEED), Certified Energy Auditor, and other relevant designations.

ArticCan develops solutions that meet client's requirements. Our experts propose engineering options and develop strategies for optimum energy efficiency project planning and design, as well as cost, energy, and emissions reduction. ArticCan's team develops project concepts and action plans, and facilitates stakeholder engagement process. ArticCan works with our clients to select an optimum solution and maximize return on investment.

- Energy efficiency program design and delivery
- Energy audits
- Energy optimization
- Passive and net zero buildings
- Industrial, commercial and residential energy efficiency services
- Evaluation of emerging technologies
- Stakeholder engagement

ArticCan offers a diverse range of energy efficiency services that can be used as a complete program or just the parts our clients need. ArticCan's energy efficiency group provides clients with a complete suite of services for energy efficiency program or project implementation. Our technical specialists assist clients throughout all stages of the project, from the conceptual configuration of the system to the selection of system components. ArticCan's business, marketing and technical experts work together to develop business cases for new programs and projects, complete market characterization studies and statistical analyses of markets, products and energy savings opportunities, develop necessary program tools such as websites and clients databases, and develop marketing strategies and step-by-step program execution process. ArticCan applies advanced marketing and engineering tools to accomplish these tasks. ArticCan also monitors clients' progress in programs using a set of key performance indicators (KPIs). Our technical personnel develop and deliver energy conservation and energy management training. Administration and IT personnel performs different program delivery related services, such as processing of application forms and receipts, databases and website maintenance. ArticCan has technical capabilities and experienced personnel to work on any complex project.

Energy Efficiency Project Development for a Residential Apartment Building in Regina, Saskatchewan

ArticCan's energy efficiency team worked with a client in Regina, SK to develop an energy efficiency project for a multi-unit residential complex consisting of 160 apartments in 10 buildings. This included technical and economic feasibility analysis and installation of an energy efficient boiler, lighting technology, movement sensors, programmable thermostats, and windows. A comprehensive tenants' education program was also developed. Generated energy savings were measured and quantified. A greenhouse gas inventory was prepared.

ALTERNATIVE ENERGY

This business unit develops and implements alternative energy projects. ArticCan helps our clients to succeed in the dynamic and competitive business environment by providing cost-effective, innovative and safe solutions. Our experience and capabilities include feasibility studies, technology evaluation and recommendations, risk management assessment, asset and life cycle optimization, front-end engineering and construction of plants.

- Renewable energy
- Biofuels
- Combined heat and power
- Feasibility and optimization studies
- Waste-to-energy systems
- Gasification and pyrolysis of biomass and waste
- Anaerobic digestion

ArticCan provides a full range of services to help our clients shape their planned investment to get the optimum solution, and then to develop the right execution plan to give the best chance of delivering success once the investment has been approved.

Micro-Combined Heat and Power Feasibility Study

A micro-CHP feasibility study was conducted for a client in Saskatchewan. The project involved a technology review and an economic assessment related to the selection and installation of a low-cost, small-scale, and efficient combined heat and power system at an industrial facility. An optimum technological option was proposed and action plan was developed.

When it comes to delivering the project in the engineering, procurement and construction (EPC) phase, ArticCan has an excellent track record. Our experienced engineers and project managers ensure that the project proceeds as planned – on schedule and budget. From concept to commissioning, ArticCan develops and executes complex alternative energy projects safely and successfully.



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