

A renewable energy solution

Biomass

wsp



Our Practice Areas

Industry

Utilities

Independent Power Producers

Project Developers

Financial Asset Management Groups

Expertise

Business Case Development

Sales Strategy

CAPEX/OPEX

Site Evaluations

Fatal Flaw Analysis

Environmental Permitting

Detailed Engineering Design

Project Management

De-bottlenecking

Technical Due Diligence

Expert Witness

Sustainability

Optimization

Our Projects

ATIKOKAN GS CONVERSION TO BIOMASS

Ontario

Ontario Power Generation announced removal of coal from its power generation mix. In doing so, biomass pellets became the fuel of choice for the Atikokan GS. The plant is a 210 MW power station, now capable of achieving MCR utilizing wood pellets as fuel. The pellets are conventional white wood which required a new handling system to maintain their dryness as well as a new burner design. We completed the IESO acceptance test, requiring the facility to operate uninterrupted for four consecutive hours at full load.

BECKER COGEN

Ontario

We acted as Lender's Engineer throughout the project to verify the contractor's financial draws. The plant is a 10 MW net export facility that uses woody biomass as its feedstock. The project also qualified for the Ontario Feed-in Tariff rates since it exports 15 percent of its heat output to the adjacent Havaldsrud sawmill for lumber drying.

BIOMASS TO LIQUID BIOFUEL PRODUCTION PLANT

Wisconsin, USA

WSP acted as Owner's Engineer for CAPEX development. We also completed the detail design associated with the biomass feedstock handling system for a 1000 TPD biomass delivery system. The project uses ThermoChem Recovery International (TRI) gasification technology for biomass conversion to syngas followed by Fischer-Tropsch gas-to-liquid catalytic technology. The plant will produce 16 MGPY zero sulphur diesel and wax products.

BIOMASS TO GAS PLANT

Arizona, USA

WSP acted as Lender's Engineer through preliminary engineering design and construction. The project involves converting organic biomass into pipeline quality biogas. Raw biogas production from anaerobic digester technology and feedstock variety is approximately 3000 scfm, which converts to approximately 1800 scfm of pipeline quality biogas. Feedstock for the project consists of cow manure, food waste, slaughterhouse waste, and fats/oils/grease from the Phoenix area.



How we source, process and use energy, including accessibility to affordable and clean energy, is a topic of growing importance today. Biomass, the oldest source of renewable energy, is gaining popularity as the harvesting process is improved to enhance sustainability.

NEW ENERGY REALITY: TAPPING INTO BIOMASS

A vast majority of industries currently face a common challenge: relocating labour intensive manufacturing globally in order to ensure competitiveness while addressing environmental concerns regarding greenhouse emissions. Biomass is the biodegradable fraction of products, waste and residues from biological origin from agriculture, forestry and related industries that can be burned to produce energy. Some can be converted into another energy product like biofuel, and others can be anaerobically digested to produce methane.

Considered to be carbon neutral, biomass is an ideal source of renewable energy but it is also an underutilized or rejected product. Often the missing piece is sound economic trade-off studies to evaluate biomass conversion technology including the implication of carbon trading on

the industry. Such studies help keep the industry accountable while simultaneously optimizing efficiency and making production even more competitive. Tapping into renewable energy is the new reality in which we all live and work.

PROVIDING SUSTAINABLE ENERGY FOR GENERATIONS TO COME

WSP's energy specialists understand the fundamental parameters that drive business models and decisions. We are available and qualified to help our clients make the right decisions moving through the 21st century.

Specializing in biomass to generate thermal power, thermal heat, densified products, and synthetic hydrocarbons, our experts have completed feasibility studies to detailed engineering to successfully meet the clients' objectives. We are ready to provide a complete and comprehensive package of biomass energy solutions. Our multidisciplinary teams are located across the world with a strong local presence that adds value to our clients. We work with private as well as public energy sector clients, including utility companies, IPPs, funding agencies, contractors and manufacturers.



WSP™ is one of the world's leading professional services consulting firms. We are dedicated to our local communities and propelled by international brainpower. We are technical experts and strategic advisors including engineers, technicians, scientists, project managers, planners, surveyors and environmental specialists, as well as other design and program management professionals. We design and deliver lasting solutions in the Buildings, Transportation, Infrastructure, Oil & Gas, Environment, Geomatics, Mining, Power and Industrial sectors as well as project delivery and strategic consulting services. With over 7,500 talented people across Canada and 36,000 globally, we engineer projects that will help societies grow for generations to come.

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