



A leader
in the **development and production**
of **second generation biofuels**

Transforming biomass into biofuels and green chemicals : A business perspective

BIOP Conference (Montreal, Canada)

November 5th, 2008



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Company Background

- Founded in 2000; Based in Montreal and Sherbrooke, Quebec
- Privately owned and backed financially by US and Canadian investors: Rho Ventures, Braemar Energy Ventures & The Solidarity Fund QFL.
- Proven team, internationally recognized in low severity gasification and gas to liquids catalytic synthesis technology
- Seasoned managers with strong entrepreneurial & project development skills and experience in managing large industrial companies and projects
- Three plants in operation or under construction: Sherbrooke, Westbury and Edmonton.
- Government assistance at the Canadian Federal (NRCan, SDTC) & Provincial levels (Natural Resources Qc, AERI, Alberta)
- 45 employees





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Sherbrooke Pilot Plant and Research Center (2003)

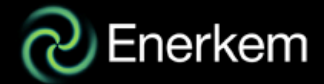
First-Class Pilot and R&D Facility

- Over 3,500+ hours of operations across 20+ feedstocks
- Fully instrumented with 125,000 gallons/y alcohols capacity
- Producing methanol and ethanol
- Close relationship with the University of Sherbrooke, Quebec
- R&D focus on novel catalytic formulation





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Westbury Plant (2008)

Among World's First Second-Generation Ethanol Plant

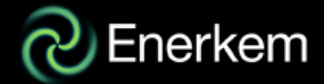
- Will produce 1.3 million gallons of ethanol per year from treated wood (decommissioned power poles)
- First plant to use negative-cost materials that are usually land-filled
- Conditioned syngas island's commissioning to begin in next few weeks
- Ethanol production to follow in 2009 with hook-up of sequential catalytic conversion islands
- Plant's second phase expansion will include residues from pulp and paper mills as well as municipal solid waste



Gasifier and Gas Conditioning
Equipment - August 2008



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Edmonton Plant (2010)

A Model for Urban Centers

- 25-year contract between City of Edmonton and Enerkem/GreenField Ethanol
- 100,000 tons / yr of sorted municipal solid waste will be diverted from landfill. Edmonton will achieve 90% waste diversion rate.
- Enerkem and GreenField Ethanol will build, own and operate the plant
- Will initially produce 10.4 million gallons of ethanol per year
- Phase 1 construction starting in 2009. Operations start-up at the end of 2010.





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Near Term Pipeline – Edmonton (Alberta, Canada)

- 20.7 MMG per year capacity
- 50 / 50 JV with GreenField Ethanol; 25 year supply of sorted waste from City of Edmonton
- Groundbreak of 10.4 MMG phase 1 in 2009





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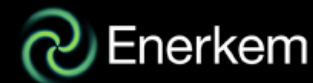


ENERKEM'S TECHNOLOGY

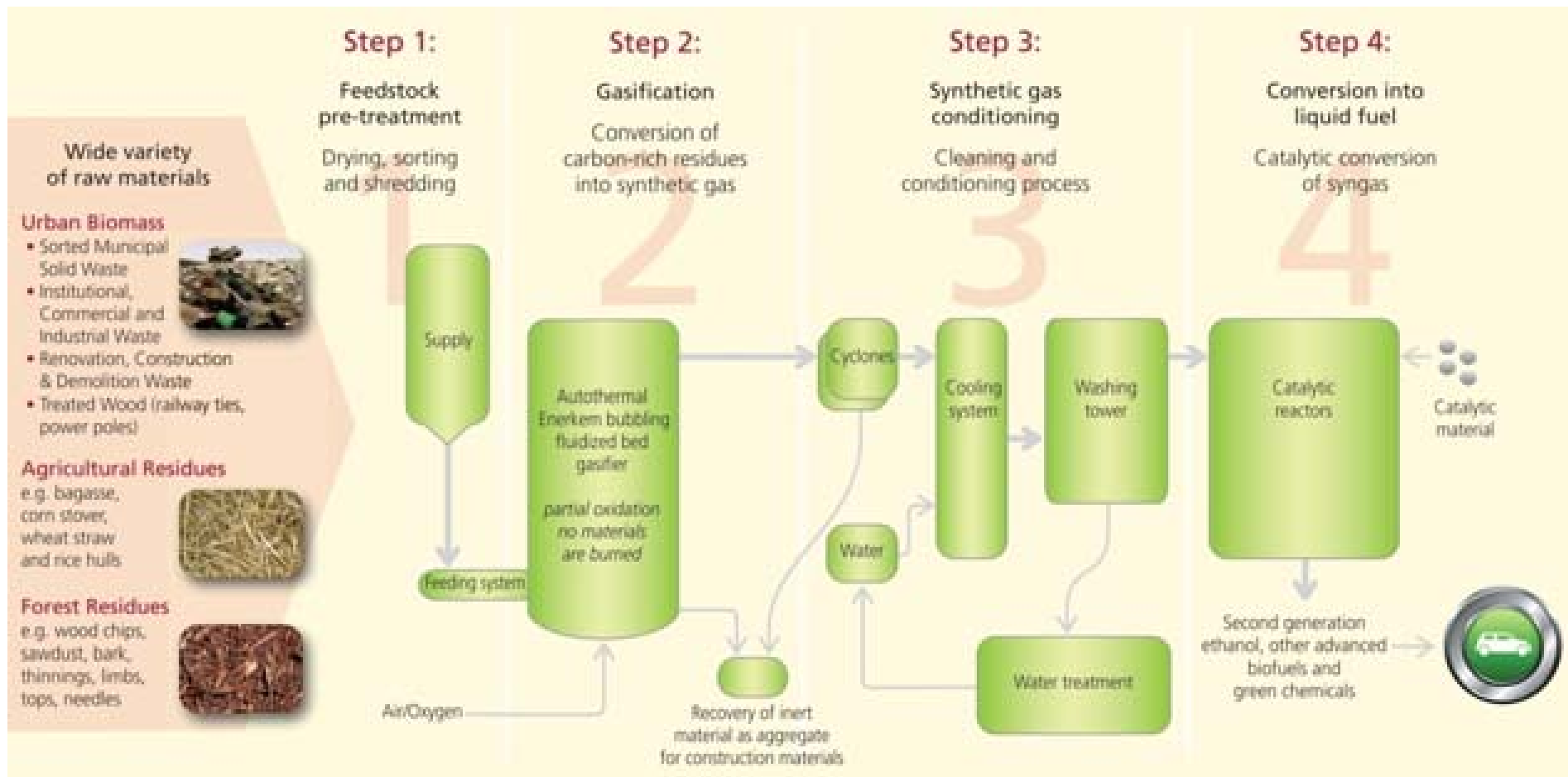




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Enerkem's Technology: Any Biomass to Biofuels and Green Chemicals





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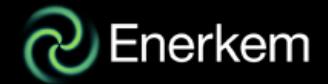
Types of Biomass: Cost vs Homogeneity

- High/Medium grade homogeneous biomass: \$\$\$
 - Forest, plantations, crops
- Residual biomass: \$\$
 - Forest and agricultural residues
 - Residues from process industries
 - Such residues can be chemically quasi- homogeneous (i.e. from a single species) or non-homogeneous (i.e. biomass from mixed species)
- Urban biomass: -\$
 - RDF from MSW (typically > 50 wt% biomass)
 - Construction / Demolition wood
 - Sludge or wet bio-solids
 - such feedstock is chemically non-homogeneous (obtained from WWT, manures, and meat processing plants)

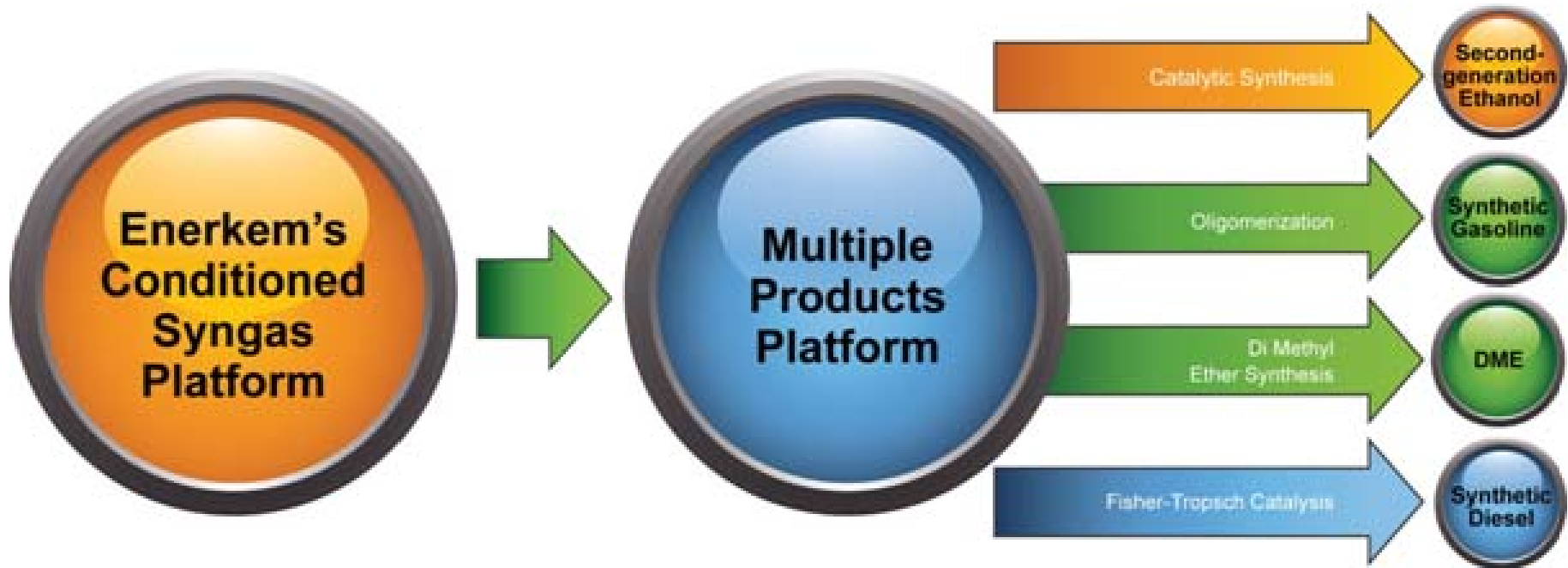




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Enerkem's Technology: Multi-Product Approach





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Contribute to Meeting Today's Energy, Economic and Environmental Challenges

- Meeting renewable fuels standard with locally produced advanced biofuels
- Reducing greenhouse gas emissions
- Contributing to economic development – particularly in rural area and improving competitiveness and sustainability of agriculture and wood industry

Efficient and Cost-Effective Technology

- Less capital intensive and is profitable at lower operating scales than other technologies ~ 100,000 dry tons/y modules
- Feedstock flexible - not limited to clean homogeneous biomass
- Low technology risk: all systems and catalysts are industrially proven
- Complete in-house team of process engineers; no dependence on third-party engineering or contractors
- Modular and skidable 10 M gal/y of ethanol production units - incremental capacity can be added with additional modules