# Project Statement

# BC Coastal Forest Sector Development Initiative

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| Program | Bioenergy and Biorefining Program |
| Project Title | Bioenergy and Biorefinery Opportunities for the Coastal BC Forest Sector |
| Project Number | B.01 |
| Project Leader(s) | Thomas Browne; Douglas Singbeil |
| Project Team | Ibrahim Karidio, Mike Paice, Mike Paleologou, Doug Singbeil |
| Start Date | April 1, 2009 |
| Completion Date | March 31, 2008 |

## Rationale:

One pathway to novel products starts with gasification of biomass residues. Gasification involves breaking organic material down into constituent molecules such as carbon monoxide and hydrogen. These can then be burned in equipment which cannot function on a solid fuel, such as a lime kiln or a generator set, or can be used as a feedstock for various synthesis processes to generate novel fuels and chemicals. The process is well established for coal, but has not been proven on a large scale for biomass as a feedstock. Gasifier designs and syngas quality for novel products need to be evaluated, especially in the case of bark and other forest material from coastal BC that may contain significant chloride residuals from salt-laden air and salt-water transport.

## Key Objectives:

Identify unique characteristics of BC Coastal biomass when gasified, in particular a comparison of coastal salt-laden hog fuel with other sources of biomass. Determine the effect of salt on operation of biomass gasifiers and evaluate means of removing salt from the biomass prior to combustion.

## Project Methodology:

- In the first half of the 2008/2009 fiscal year, gasification trials of a typical coastal fuel (salt-laden hog fuel) will take place at the CanMET combustion labs in Ottawa. Process streams will be sampled to identify the concentrations of key constituents. Results will be collated and compared with other biomass fuels gasified in the same reactor. A report detailing specific issues to be concerned with when gasifying BC Coastal residues will be issued.
- A brief review of the value of keeping logs out of salt water to reduce chloride intake for bioenergy and biorefinery plants will be undertaken.
- Identify products that would be feasible for a coastal-based biorefinery and establish interest amongst existing coastal producers

Project Milestones:

| Activities | Planned completion date |
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| Gasification trial with salt-laden biomass | August 2008 |
| Review of means to remove salt from biomass | December 2008 |
| Discussions with interested coastal producers | March 2009 |

Key Deliverables:

Identification of key gas cleanup challenges when operating a gasifier on salt-laden hog fuel.

Expected Long-term Outcomes:

New products from residual material will provide economic benefits for the coastal forest sector.

Potential Impact:

Identification of key gas cleanup challenges when operating a gasifier on salt-laden hog fuel is a critical step in identifying new products from the Coastal BC biomass supply.

Collaboration:

CanMET Combustion Lab, Ottawa