

# Bio-Energy in Ontario Overview of Environmental Regulatory Requirements

Transitioning from Fossil Fuels to Forests: Opportunities for Modern  
Wood Heating

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# Topics

- Importance of Pre-Project Regulatory Constraints Analysis
- Ontario Environmental Regulatory Considerations
- Federal Environmental Permitting
- Other Regulatory Considerations

**Information provided is general and high level – every project is different and must be assessed independently**

# Project Regulatory Constraints

- Constraints Analysis evaluates a number of factors to identify if there are any issues or potential constraints with;
  - Site location(s)
  - Chosen technology/fuel types
  - Process Inputs
  - Process Outputs
- This analysis should be conducted during project feasibility phase.
- Results will dictate:
  1. Project Location
  2. Project Technology/Layout
  3. Project Timeline
  4. Project Budget

# Project Constraints Analysis



# Input Analysis – Regulatory Considerations



Water

## Municipal Water Supply

- Municipal agreement or permit

## Raw Water

- Surface Water or Well?
- >50 000 litres a day requires a Permit to Take Water issued by MOECC



Fuel

## Fuel Type

- Does fuel must meet regulatory definition of ‘Biomass or Woodwaste’;
  - Any part of tree; doesn’t contain preservatives; cannot contain upholstery, hardware fittings etc

## Fuel Storage

- Where is biomass stored and for how long?
  - Regulatory exemptions on storage time and quantity
  - May require Waste Disposal Site ECA

Fuel Source: will it require MNRF licencing or allocation?

# Output Analysis – Regulatory Considerations



**Air/Noise emissions to atmosphere require permit under EPA (Section 9) unless listed as exempt source or 'prescribed activity'**

**Wood fired combustion exemptions:** 50kw heat output or less and onsite masonry fireplaces constructed on site are exempt!

**>50kw - 3MW Heat Output – Considered 'Small Woodfired Combustor'**

For SWFC there are 2 compliance paths; depends on facility NAICS code;

Eligible NAICS: Register under Environmental Activity and Sector Registry (EASR) process;

Not Eligible: Full ECA and conformance to Guideline A-14

# Output Analysis – Regulatory Considerations



Air/Noise

## >3MW Heat Input – Considered ‘Large Woodfired Combustor’

All LWFC require an Air Environmental Compliance Approval\* per Regulation 419 issued by MOECC;

ECA Application requires demonstration of compliance with Regulation 419 Point of Impingement and Acoustical Guidelines;

- Demonstration requires completion of a Emission Summary and Dispersion Modelling Report (ESDM) and an Acoustical Assessment Report (AAR);
- Demonstration of conformance with Guideline A-13; includes temperature/retention time, O<sub>2</sub>, CO

ECA will include equipment specific performance criteria (eg. Temperature, CO, O<sub>2</sub>), continuous emission monitoring, emission testing, record keeping, equipment performance audit etc;

\*LWFC associated with cogeneration require Renewable Energy Approval

# Output Analysis – Regulatory Considerations



Waste

## Solid Waste Generation (Ash/Clinker)

- Ash generation should be between 1 – 4% of biomass burned
- Woody biomass ash is regulated as a **solid non-hazardous waste** product in Ontario
- Ash must be handled by licenced carrier (**Waste Management System ECA**) and must be disposed of at a licensed non-hazardous landfill (**Waste Disposal ECA**)
- Beneficial use options as a Non-Agricultural Source Materials
- Also need to consider storage to address fugitive dust issues



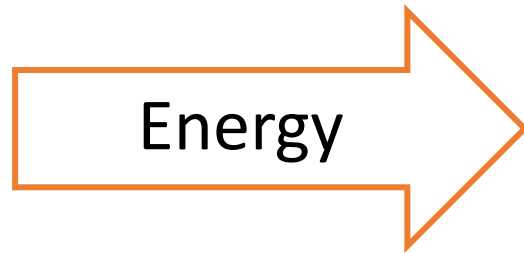
Wastewater

Any process wastewater (system draining, blowdown etc) and stormwater from storage piles would be considered ‘sewage’ and disposed of accordingly;

- Municipal treatment needs to comply with applicable sewer use bylaws
- Direct discharge to environment would require an **Industrial Sewage Works ECA** issued by MOECC and must meet provincial water quality guidelines



# Output Analysis – Regulatory Considerations



Is the project generating heat only or combined heat and power?

Heat Only project would simply comply with already noted environmental permitting requirements;

Biomass electricity or CHP projects would required a **Renewable Energy Approval (REA)**;

- No minimum threshold/exemption criteria
- Multi-media approval that requires extensive studies, investigations and public/municipal/first nation consultation
- Need to demonstrate compliance with Regulation 419 and Guidelines A-13 or A-14 (ie. full ESDM/AAR, equipment performance etc)
- Minimum 18 month process
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# Federal Requirements

- If a project is being constructed on federal land (including reserve lands) it is subject to the Canadian Environmental Assessment Act (CEAA 2012)
  - Typical bio-heat or CHP would be considered a ‘non-designated’ project
- Federal department which has designated authority over land must ensure projects don’t have significant adverse effects on the environment;
- No federally published rules/limits for biomass combustion:
  - In the absence of federal rules/limits – may default to provincial criteria (note Guideline A-13/14 and Reg 419 limits may be applied)
- Indigenous and Northern Affairs has jurisdiction for on reserve projects
  - INAC has an Environmental Review Process to assess projects
  - First Nations Commercial and Industrial Development Act may apply

# Other Considerations

- In addition to environmental regulatory requirements project proponents must take into consideration the following;
  - Technical Safety and Standards Authority (TSSA)
  - Electrical Safety Authority (ESA)
  - Canadian Standards Association (CSA)
  - American Society of Mechanical Engineers (ASME)
  - Ontario Fire Code
  - Ontario Building Code
  - Municipal Bylaws

# Conclusion

- Important to evaluate projects early in the design/feasibility stages
- Ensure permitting costs and approval times are built into project plan
- Government has moved forward with clarifying and streamlining small scale biomass approvals process
- Small scale biomass electricity permitting remains a challenge

# QUESTIONS & THANK YOU!

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