Market Barriers in Canada

Monetary & Sector related Barriers

Price sensitive market

- Low energy prices: fossil fuel prices less than in Europe
- BUT $100 per barrel of oil psychological thershold
- Capital costs of wood energy plant: Potential clients not willing to invest more for a wood boiler, even if operating costs are lower
- Lack of capital: target sectors often suffer from lack of capital
- Clients open to wood energy solutions tend to buy low-cost options
- Clients that are willing to pay for European technology, are not willing to pay for top-notch equipment like MAWERA

Fluctuating and unpredictable markets

- Entire forestry sector subject to extreme market fluctuation that requires payback of less than 18 - 24 months
- Mills shutting down (Pope & Talbot, Domtar, Tembec, Mac tara filed for bankruptcy protectio)
- Management intrinsically short-term focused
- Expectation that wood waste will become a pricey commodity
- **Waste removal** (no dumping costs; dumping fees $10 - $30 per tonne)

Underdeveloped Infrastructure

- Wood fuel costs seen as unpredictable

Awareness & Policy related Barriers

Public's perception / lack of knowledge / misinformation

- Wood as a fuel perceived as backwards and polluting
- Local air quality more of a concern that global CO2-emissions
- Biomass energy technology viewed as non-reliable, labour intensive
- North-American technology perceived as "behind", European suppliers associated with poor service, not dependable
- architects, engineers, and designers unaware / unfamiliar with automated wood energy systems
- Future availability of fossil fuel not (yet) a concern
- Natural gas a local resource just as wood is
- Public favours high-tech solutions such as cellulosic ethanol

Emission thresholds

- Strict to unattainable requirements in urban areas (e.g. Greater Vancouver Regional District)
- Some cities have banned wood as a fuel (e.g. Golden, BC)

Lack of references / experience with wood energy

- Public and parts of the non-forest sector reluctant to invest into a "new" technology
- Public sector intrinsically slow and bureacratic („late adopters")

Commercial availability of fuel/ fuel supply chain

- Small, widely separated wood sources, often far from where they are needed
- Wood chips / energy supply chain under- or undeveloped
- So far wood only available as a by-product or residue, rarely as a commodity

Main challenges

1. **automated wood boilers unknown technology – lack of experience**
2. **equipment cost – simple, cost-effective technology required**
3. **perception of wood fuel as polluting, "backwards"**
4. **network (**fuel supply chain, planners & engineers, advocacy groups) **underdeveloped**