

2013 Heating the Midwest with Renewable Biomass

The Biomass Initiative at Providence



PROVIDENCE
UNIVERSITY COLLEGE
THEOLOGICAL SEMINARY



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Director

BullerCentre.com

What is Providence?

- Christian
- small
- rural



PROVIDENCE
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THEOLOGICAL SEMINARY

Providence Creation Care

actions **about energy**

- carpooling
- recycling
- energy retrofits
 - windows
 - insulation
 - boilers
- community garden
- geothermal
- wind research
- biomass ——— ■ **distributed biomass heating**
- rural transit
- campus redesign



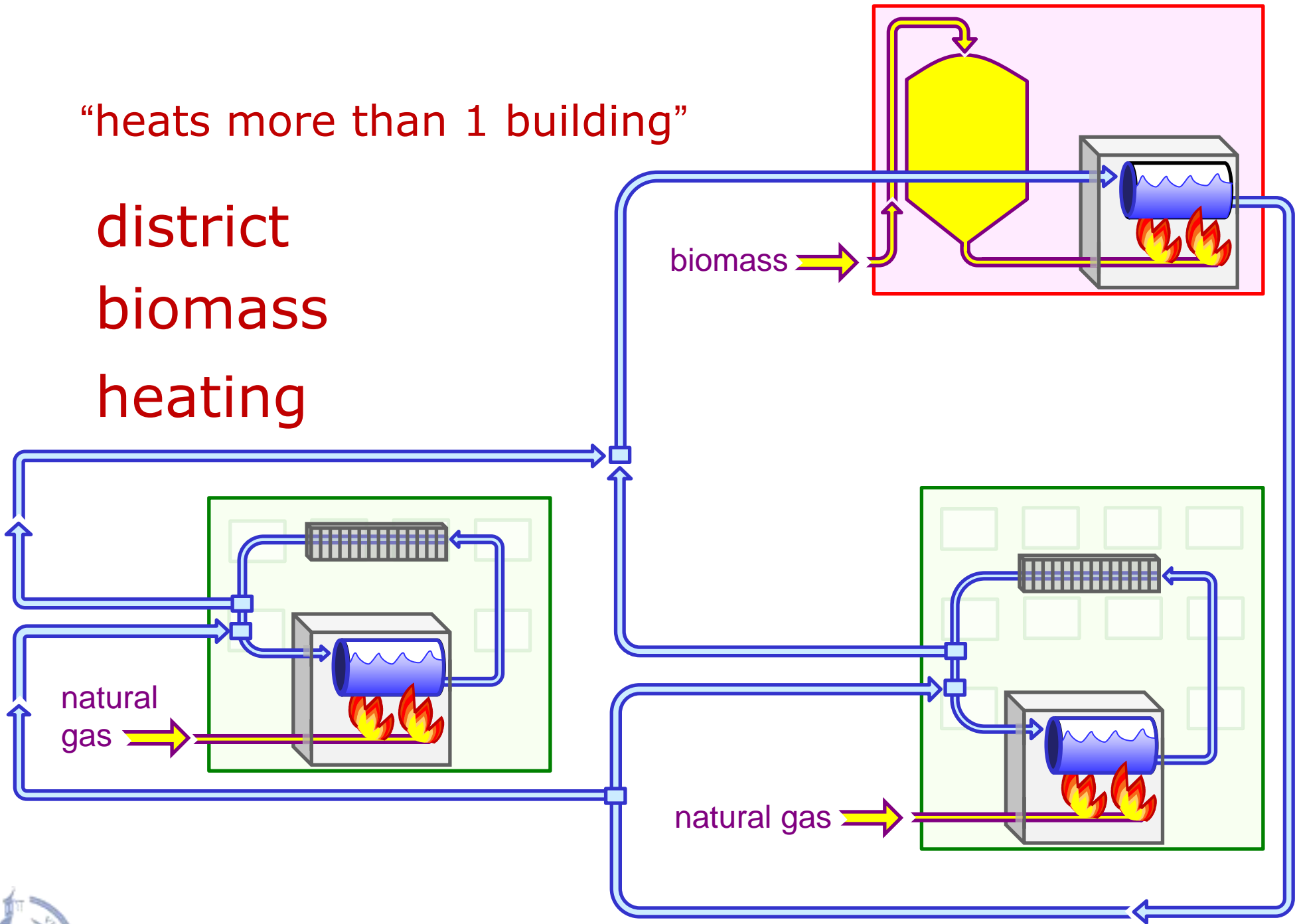
DLF Consulting

- Renewable Engineering Technology, Business, Project Management
- Technical and Economic Feasibility Analyses
- Author of the "*Biomass Heating Feasibility Guide*" – AURI
- Feasibility Analysis for Providence
- Project Management – District Biomass Heating



“heats more than 1 building”

district
biomass
heating



Providence Biomass District Heating System

- Area Heated: 144,100 sf
- Natural Gas Annual Average: 194,000 m³
- Natural Gas Cost per year: \$79,000
- Peak estimated heating load: 3.3MMBtu
- System Cost: \$750,000
- Size: 5 MMBtu (1.4 MW)
- Densified biomass per year: 3-500 tons
- Biomass Cost Estimated:
 - \$50-60/ton (oat hull pellets)
 - \$100 (wood pellets)
- Biomass Supply Issues









What Now?



- carpooling
 - recycling
 - energy retrofits
 - windows
 - insulation
 - boilers
 - community garden
 - geothermal
 - wind research
 - **biomass**
 - rural transit
 - campus redesign
- replicate in other institutions
 - distributed biomass heating
 - industry infrastructure – a brokerage

Biomass
Brokerage
Manitoba



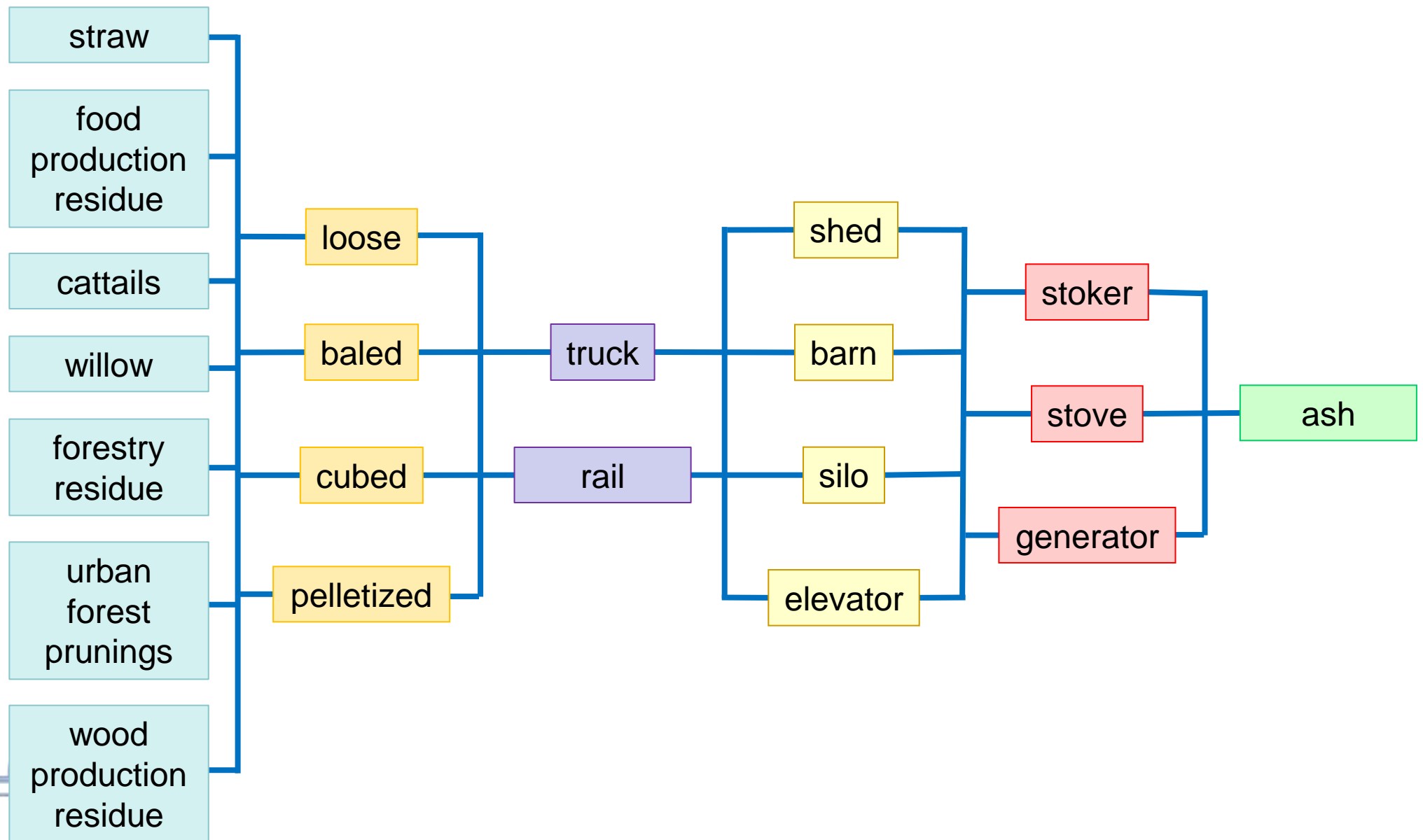
A Brokerage?

examples

- Manitoba Buy & Sell
- kijiji
- eBay
- Manitoba Hay Registry
- Pellet Zone
- Stick Man



A Brokerage Makes a Market



A Brokerage Makes a Market

The screenshot shows a Microsoft Access window titled "Microsoft Access - [OldSwitchboard]". The menu bar includes File, Edit, View, Insert, Format, Records, Tools, Window, and Help. A search bar on the right says "Type a question for help". Below the menu is a navigation bar with tabs: Companies, People, Details, combo Boxes, Reports, Producers, Consumers, Shippers, Storers, Equipment, and Related. The main area displays the text "Biomass Brokerage Manitoba" in a large, blue, serif font. To the right of this text is the logo for "PROVIDENCE BULLER CENTRE FOR BUSINESS", which features a stylized building icon. At the bottom right of the main area, the text "(c) BULLER CENTRE FOR BUSINESS" is visible. The bottom of the window shows a taskbar with the Windows Start button and several open applications: "Inbox - Microsoft ...", "Dropbox - Files - ...", "biomass1 : Datab...", "COMPANIES", "OldSwitchboard", "Final Flow chart 1...", and "Biomass Brokerag...". The system clock in the bottom right corner shows "11:09 AM".

A Brokerage Makes a Market

Microsoft Access - [COMPANIESlist]

File Edit View Insert Format Records Tools Window Help

Type a question for help

Companies People Details combo boxes Reports Producers Consumers Shippers Storers Equipment Related report

All Companies

	primary contact	primary location	Production		Consumption		Ship - Store - Equip etc.					
			product supplied	average price (per tonne)	production (tonnes per year) current potential	product preferred	consumption (tonnes per year) current potential	interest in shipping	interest in storing	provide biomass equipment?	related business	
▶▶ 17 Wing Air Force	Laura Barz	Winnipeg					0	2,000	none	none		
▶▶ 3529941 Manitoba Ltd									none	unknown		
▶▶ 4559569 Manitoba Inc		Morris							none	unknown		
▶▶ 60977 Manitoba Ltd.		Steinbach							none	unknown		
▶▶ A.J. Bat									none	none		
▶▶ Acadia Colony	Leonard Hofer	Carberry							none	none		
▶▶ AgQuest		Minto							none	none	Don't handle biomass ec	bio-fertilize
▶▶ Airport Colony	Tom Maendel	Portage La Prairie							none	none		
▶▶ Aspenheim Colony	Jake Waldner	Bagot							none	none		
▶▶ Baker Colony	Josh Maendel	MacGregor										
▶▶ Barickman Colony	Ben Hofer	Cartier										
▶▶ BFI Pellets	Ken Bicknell	St Boniface	wood pellets		0	300,000			none	none		
▶▶ Bifrost Bioblends		Arborg							none	none		bio-fuels
▶▶ Bio-Heat Resources		Winkler							none	none	Sell stoves	
▶▶ Biomass Power and Thermal		Grand Forks							none	none		
▶▶ Bison Transport	Don Streuber	Winnipeg							unknown	none		
▶▶ Bloomfield Colony	Joe Hofer	Westbourne										
▶▶ Blooming Prairie Colony	Tom Maendel	Graysville										
▶▶ Blue Clay Colony	Mike Maendel	Arnaud										
▶▶ Blue Flame Stoker	Eugene Gala	Winnipeg							none	none	Manufacture stokers/bo	
▶▶ Blumengart Colony	Tim Waldner	Plum Coulee										
▶▶ Bon Homme Colony	Albert Waldner	Elie										
▶▶ Boundary Lane Colony	Elie Kleinsasser	Elkhorn										
▶▶ Brantwood Colony	Johnny Waldner	Oakville										
▶▶ Brightstone Colony	Tim Waldner	Lac Du Bonnet										
▶▶ Broad Valley Colony	Richard Wipf	Arborg										
▶▶ CanAm Colony	William Waldner	Margaret										
▶▶ Can-Dat Milling	Trevor Pizzev	Southport	pelletized oat hulls	\$55	130,000				unknown	unknown		animal feed

Record: 1 of 201

Form View

NUM

start Inbox - Micros... Dropbox - File... biomass1 : Da... COMPANIES OldSwitchboard COMPANIESlist Final Flow cha... Biomass Broke... 11:13 AM

add new confidential to Biomass Brokerage Manitoba (c) BULLER CENTRE FOR BUSINESS

A Brokerage Makes a Market

Microsoft Access - [COMPANIES]

File Edit View Insert Format Records Tools Window Help

Companies People **Details** combo boxes Reports Producers Consumers Shippers Storers Equipment Related report

company **Providence University College & Theological** notes about company has Blue Flame stoker website www.providencecollege.ca

produce? Not intending to produce consume? **Currently consuming biomass** storing interest? low in related field? process? May process biomass in shipping interest? none equip? date information last updated: 01-Mar-11

LOCATIONS

primary location	shipping location	street address	mail (if different than street address)	city	province	postal code	country	latitude	longitude
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10 College Crescent		Otterburne	MB	R0A 1G0	Canada		
<input checked="" type="checkbox"/>	<input type="checkbox"/>				MB		Canada		

CONTACTS

primary contact	first name	last name	email	phone	cell phone	position	location	notes
<input checked="" type="checkbox"/>	Heath	Holden	heath.holden@prov.ca	(204) 433-7488 e 296		Vice President for Facilitie		
<input type="checkbox"/>	Bruce	Duggan	bruce.duggan@prov.ca	(204) 433-7488 e 305		Director, Buller Centre for E		
<input type="checkbox"/>	Andrew	Friesen	business@prov.ca	(204) 433-7488 e 314		Coordinator, Buller Centre		

Production Processing Consumption **Shipping** Storing Equipment Related

PRODUCTION and/or PROCESSING

product produced	product notes	source materials	form	average price (per tonne)	production (tonnes per year) current	potential	Storable?	Augerable?	primary product?	moisture content	ash residue
										%	%

CONSUMPTION

product consumed/desired	product notes	source preferred	form preferred	desired price (per tonne)	demand (tonnes per year) current	potential	How likely?	years away	Can they pick up?
densified ag or wood		Ag straw	densified	\$0	300	300	already u	already u	no

add new company show all records

confidential to Biomass Brokerage Manitoba (c) BULLER CENTRE FOR BUSINESS

Record: 142 of 201 (Filtered)

Form View NUM

start Inboxes - Micros... Dropbox - File... biomass1 : Da... COMPANIES OldSwitchboard COMPANIESlist Final Flow cha... Biomass Broke... 11:12 AM