

NWT Biomass week

SIZING AND OPERATING BIOMASS BOILERS



Jonathan Levesque, General Manager,
BSB
February 1st, 2024

Fueling a Greener Tomorrow!
La solution de chauffage écologique!
bsbheating.com

WHO WE ARE...



- Following the first RFP for pellet project
- Biomass Solution Biomasse (BSB) was created in late 2011
- BSB is a partnership between Groupe Savoie and Compact Appliances in Sackville NB

WHO ARE THE SHAREHOLDERS... FISHER FAMILY

- Family owned since 1878
- Territory covered
 - All 4 Atlantic provinces (NB, NS, PEI, NL)
 - North Eastern USA (ME, MA, NH, NY, VT)
- Specialties:
 - Distributor of wood stoves, pellet stoves, bbq, heat pumps, etc
 - Use to manufacture wood stove until 1999



COMPACT 

WHO ARE THE SHAREHOLDERS...SAVOIE FAMILY

- Family owned since 1978
- Process over 600 000 m³ of hardwood annually
- 3 sawmills in NB and NS
- 1 pellet mill producing 90 000 tonnes
- Motivation is to maximise utilization of all wood fiber by doing second and third manufacturing such as pallets, kitchen components, etc.
- Also a shareholder in 3 other mills in Quebec.



GRUPE
SAVOIE



FROM THE FOREST TO THE CUSTOMER...

- BSB was the first one in Canada to own and operate a pellet vacuum delivery truck with weighing scale.





**GRAND FALLS NB, GENERAL HOSPITAL
WE ALSO SELL HEAT (HOT WATER) TO
CUSTOMER AS AN OPTION.**

WHO WE REPRESENT...

- These are the brand we represent in different region of Canada.



MABRE FORCED AIR FURNACE



MABRE
Air Systems

- Capacity: 140 to 1760 kW
- Indoor, outdoor and containerized units
- Wood chips, wood pellets and other biomass



HERZ BOILERS



- Boiler size (120-180 kW, 350-500 kW, and 1250-1500 kW). (45-60 kw coming soon!)
- They can all burn wood chips and wood pellets. (Chips @ 40% moisture for 500 kW and less, 50% moisture for 1250 – 1500 kW)
- All ASME certified
- Step grate feed system and automatic cleaning and de-ashing. No downtime needed for cleaning during heating season.



BINDER BOILERS



- Warm water, hot water and steam application
- Can burn non standard fuels such as landfill wood waste, chicken manure, agricultural biomass, etc
- Tell us what you want to burn and Binder will design a boiler for you!

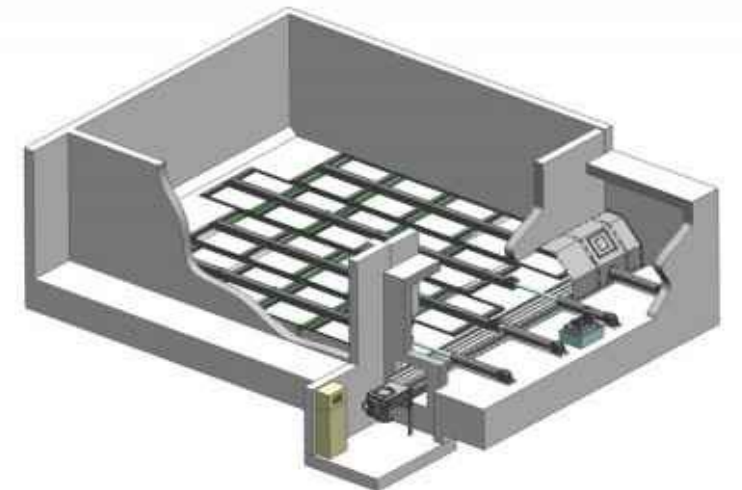
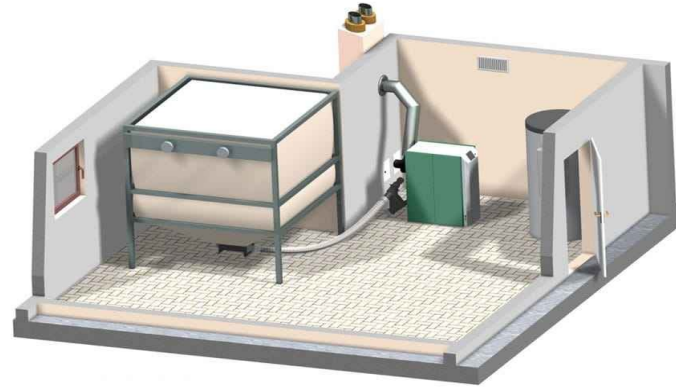




**UNIVERSITÉ DE MONCTON
SHIPPAGAN CAMPUS
FIRST PELLET STEAM BOILER IN NORTH
AMERICA**

FUEL STORAGE SIZING (WOOD CHIPS AND PELLETS)

- Who is your supplier? How far? Is it available year round?
- delivery truck capacity? Partial load delivery possible? (Ex: 5 tonnes vs 40 tonnes?)
- We recommend a storage volume to operate 6 weeks for pellets (during colder months) and for wood chips it varies based on the supplier (keep in mind spring road closures)
- As we all grow this industry, sufficient storage is key!



BUFFER TANKS

- Capacity varies based on application (min 10 liters per KW). Green house vs warehouse vs apartment building, etc...
- Ensures that the biomass boiler operates at its optimal efficiency
- Stores excess heat during periods of low demand and releases it during peak demand
- Reduces the frequency of boiler cycling
- Keep in mind it needs to be insulated!



BOILER SIZING

- New building vs old building
- Actual heating system (forced air, warm or hot water, steam). Some existing distribution systems are not well balanced.
- For existing steam system, check if steam is really needed. (many have a heat exchanger to convert steam to hot water)
- Biomass boilers don't like to cycle too much, so copying your existing boiler capacity is not the way to go.



OTHER THINGS TO CONSIDER....

- Don't size your boiler based on peak
- Check the historical heating load (liters of oil, propane, etc)
- Playing with thermostat (Day vs night temperature) could impact your boiler size and get your back up system running (using oil, propane or electricity)
- Proper maintenance and cleaning by a certified technician is strongly recommended
- Don't forget your chimney cleanup, its a must! (once a year minimum)



IN CONCLUSION...



DO YOUR HOMEWORK, ASK FOR REFERENCES!



BUY A PRODUCT NOT A PRICE

QUALIFIED INSTALLERS AND MAINTENANCE PEOPLE. DO IT RIGHT OR DON'T DO IT!



CUSTOMER SERVICE IS KEY

PROPER OPERATION BY CLEANING, MAINTENANCE, REMOTE ASSISTANCE AND MONITORING.

ANY QUESTIONS?

Thank you!

