INNOVATION
Papermaking in Maine
Harvest
Haul
Chip
Pulp
Market Pulp
Biofuels and Biochemicals
Papermaking

K. pneumoniae

Flow Box

Papermaking Machine

Press Section

Dryer Section

Size Press

Calendar

Reeling Up

Effluent Waste

K. pneumoniae, Acinetobacter sp., Enterobacter sp.
Wet End
Dry End
Rolls
Specialty Products
Maine Pulp and Paper Mills 2014
(Specialty Mills in Blue)
Printing Papers
Maine Pulp and Paper Mills
2014
(Printing Paper in Purple)
Digital Competition
Newspaper readership by age

Percent of individuals reading paper on prior day

Source: Pew Research Center
If you like Pulp & Paper in print...

you’ll love PPI online!
Foreign Competition
Sappi Print Innovations
Innovations in Energy
Process Changes

• Variable Speed Motors—slow pump speed to match need
  – AC to DC
  – New Technology
  – Efficiency Maine

• Modify shoe press to increase dryness and reduce drying cost
Heat Recovery

- Pinch Studies—Methodical way to get heat & use where most needed
- CHP—combine electricity generation with use of waste steam for heating
- Heat Pumps—pull heat from wastewater, use in steam production
- Reuse Wet End Hot Water
Reduce Fuel Costs

• Fuel Conversion
  – Biomass
  – Wastewater sludge
  – Tire Derived Fuel
  – Natural Gas

• Arbitrage (Fuel Switching)
  – Biomass/Purchased Electricity
  – Natural Gas/Oil
Demand Response

- Reduce Load During Peak Demand
- Take Down Entire Mill, One Machine, or One Process
- Sell Power to Grid or be Compensated by ISO-New England
LD 1792: Great Northern Paper

- Cate Street: Selling electricity necessary to keep East Millinocket mill viable
- Bill requires Brookfield to transfer demand response revenues to GNP (Cate Street) if no reduction in labor force or paper production.