2012 VT Wood Chip & Pellet Heating Conference

January 16, 2010
9:00 a.m. to 3:00 p.m.
National Life Group
Montpelier, Vermont

FORESTS, PARKS & RECREATION
VERMONT
AGENCY OF NATURAL RESOURCES

Vermont Superintendents Association
School Energy Management Program

BERC
Renewable • Reliable • Resourceful
Biomass Energy Resource Center

Operator's Track

AGENDA:

10:00 Pellet & Chip Supply Update and Trends in the Market:
Paul Frederick, VT Dept. of Forests, Parks & Rec.

10:25 Update on Emissions & Proposed EPA Rules:
John Hinckley, Resource Systems Group, Inc.

10:45 New Technology Developments Panel:

- Carl Bielenberg, Better World Energy
- Roger Wallace, Addison Biomass Energy, LLC
- Karl Bissex, KAB Enterprises, Inc.

12:00 LUNCH!!!!

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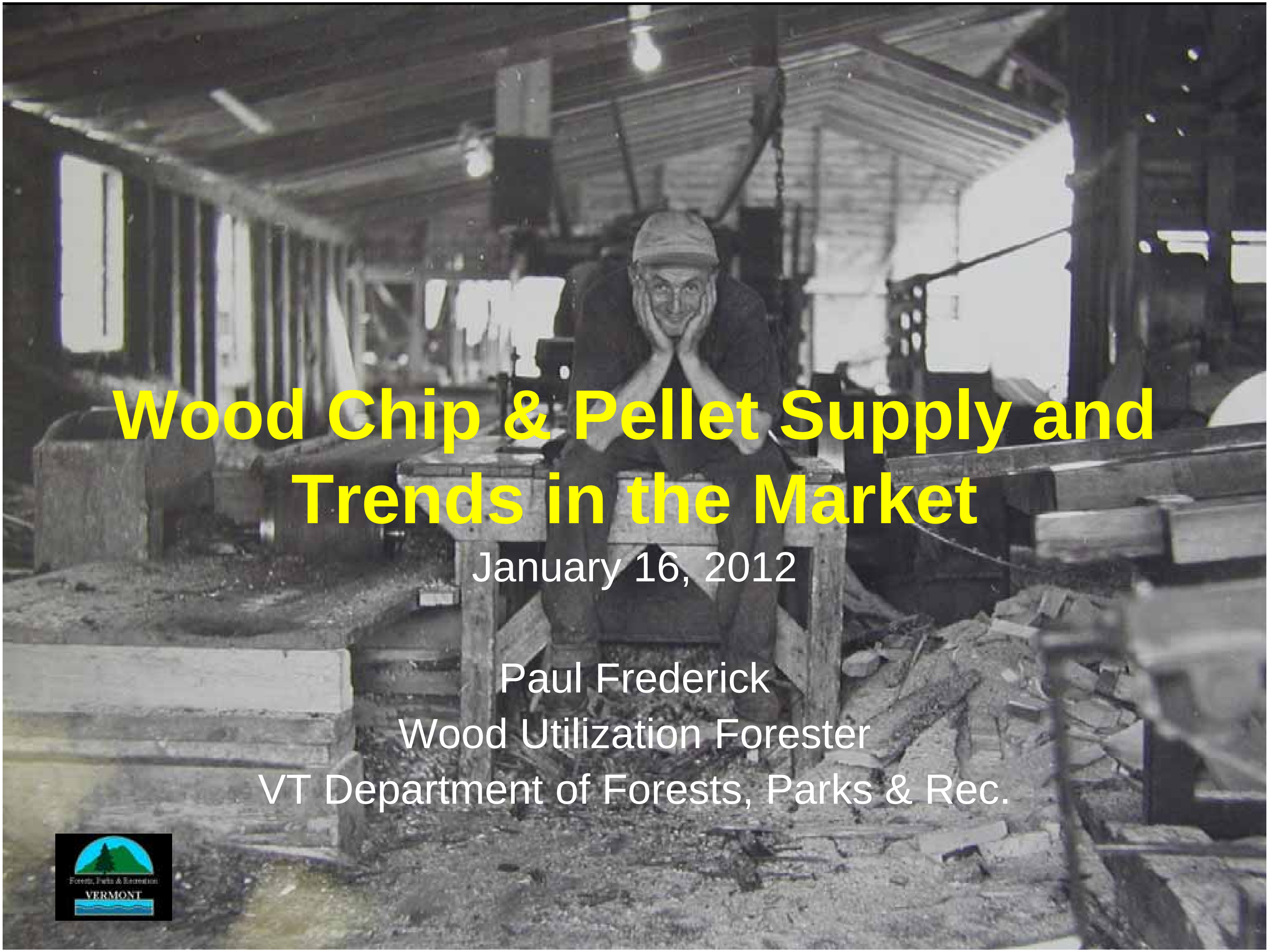


Wood Chip & Pellet Supply and Trends in the Market

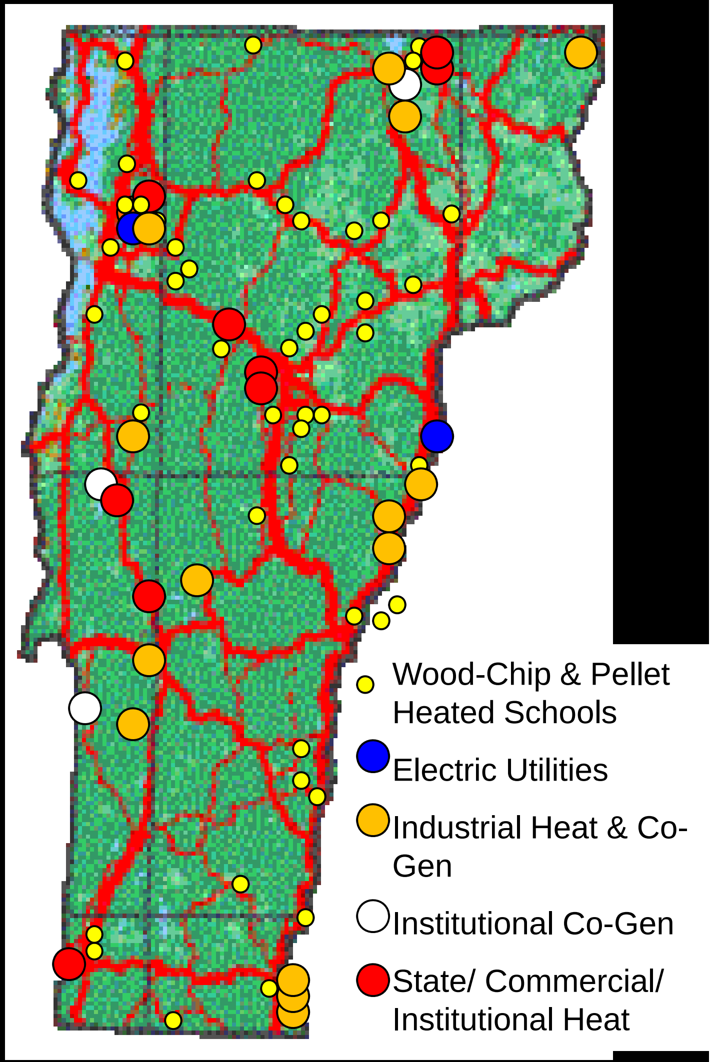
January 16, 2012

Paul Frederick
Wood Utilization Forester
VT Department of Forests, Parks & Rec.

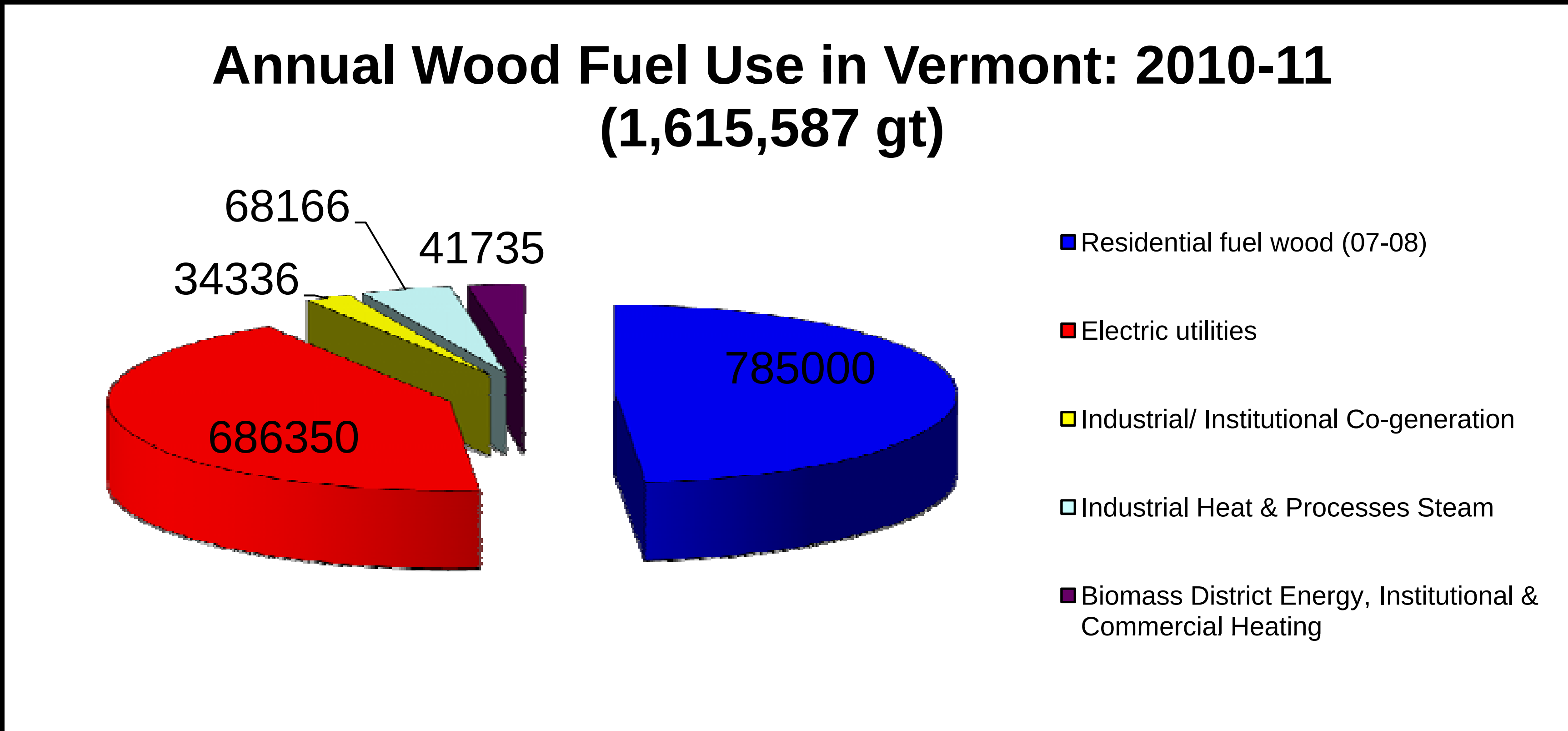
Wood Fuel Markets 2012

Current Users:

- **Electric Utilities**
  - 2 Plants, 70 MW
- **Industrial Heat & Process Steam**
  - 12 Plants
- **Industrial & Institutional Co-Generation**
  - 5 Facilities
- **Biomass District Energy & Institutional/ Commercial Heating**
  - 58 Facilities (including chip & pellet using schools & multi-family housing)
- **Residential Firewood**
  - +/- 81,000 VT Households



Wood Fuel Markets 2012

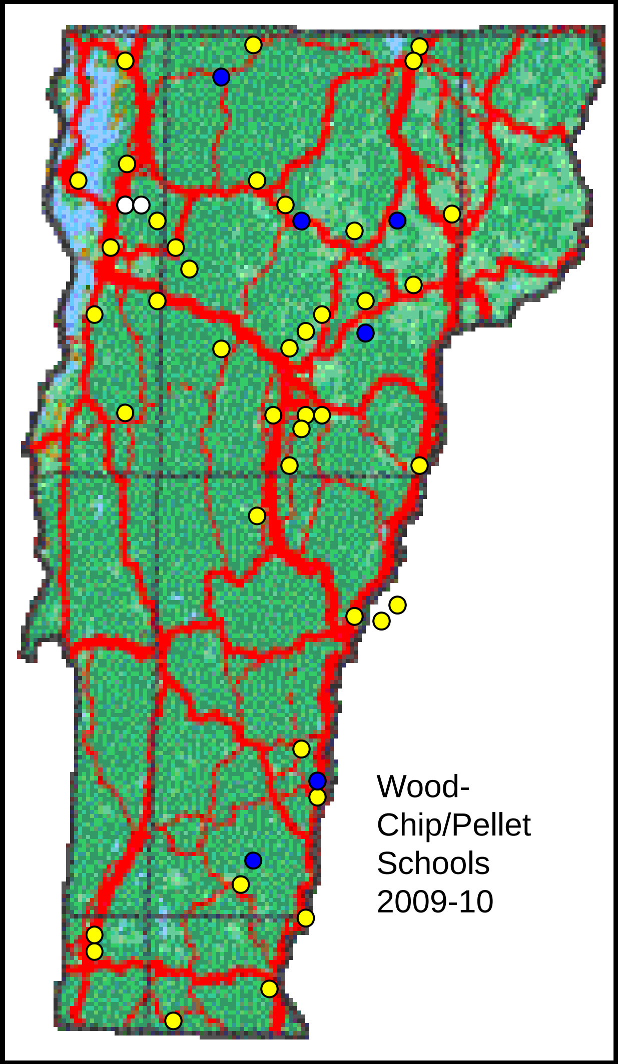


Net use increased by +/-108,000 tons from 09-10 and is up from 1,449,000 in 2005.

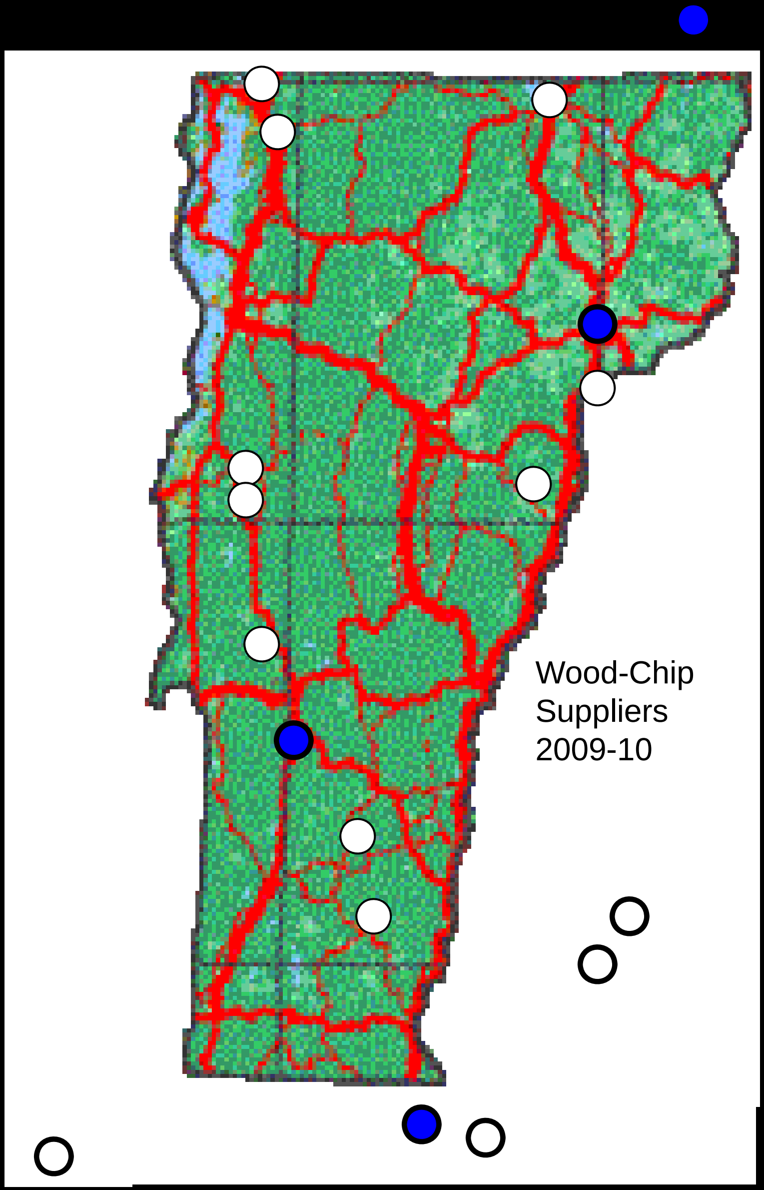
Wood Fuel Markets 2012

Schools & Multi-Family Housing: 2010-2011 season

- **43 Schools operated wood chip systems.**
- **6 Wood pellet systems.**
- **Total usage of wood chips: 25,420 green tons. (23,271 in 2009-10 and 7,900 in 2000-01)**
- **Total usage of pellets: 666 tons**



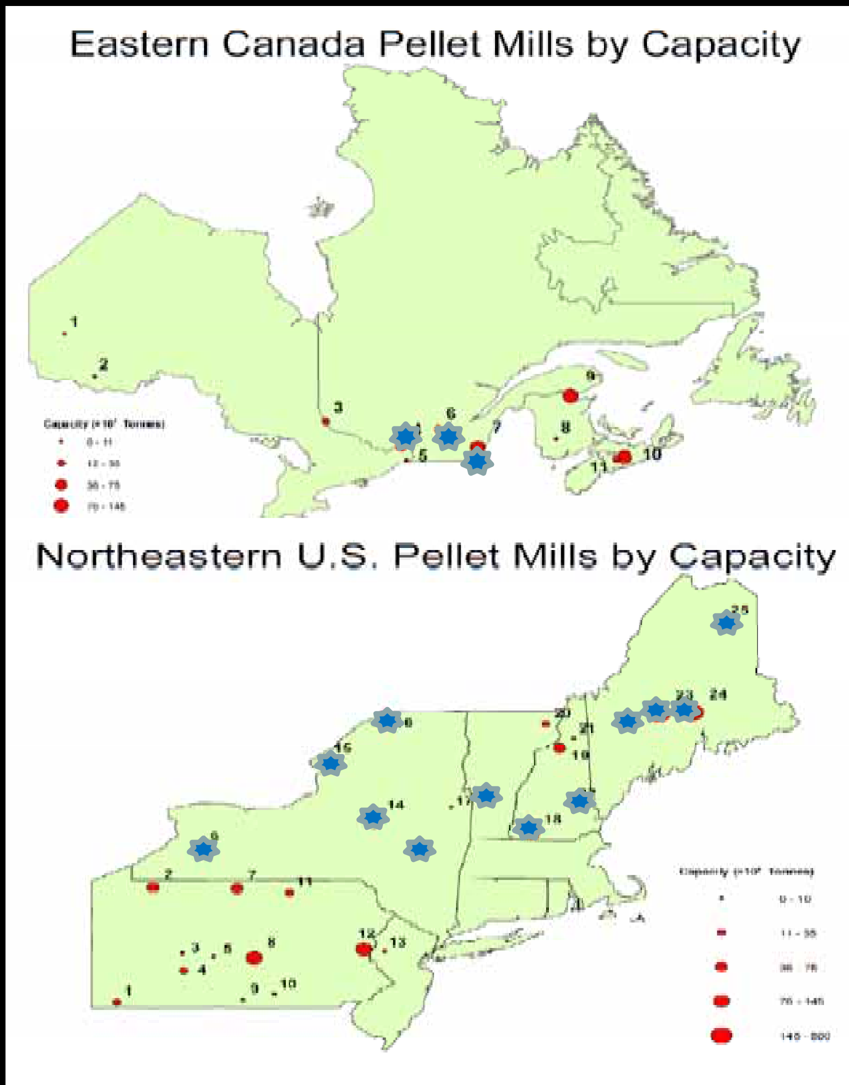
Wood Fuel Markets 2012



Wood Chip & Pellet Suppliers: 2010-11

- **14 wood chip suppliers serving schools (11 in 08-09).**
- **Of the 14 suppliers…**
  - **5 sawmills (1 in MA)**
  - **2 brokers/ truckers**
  - **6 bole-chip producers**
  - **1 landscape mulch producer**
- **Schools and multi-family housing used 4 different suppliers of bulk pellets.**

Wood Fuel Markets 2012

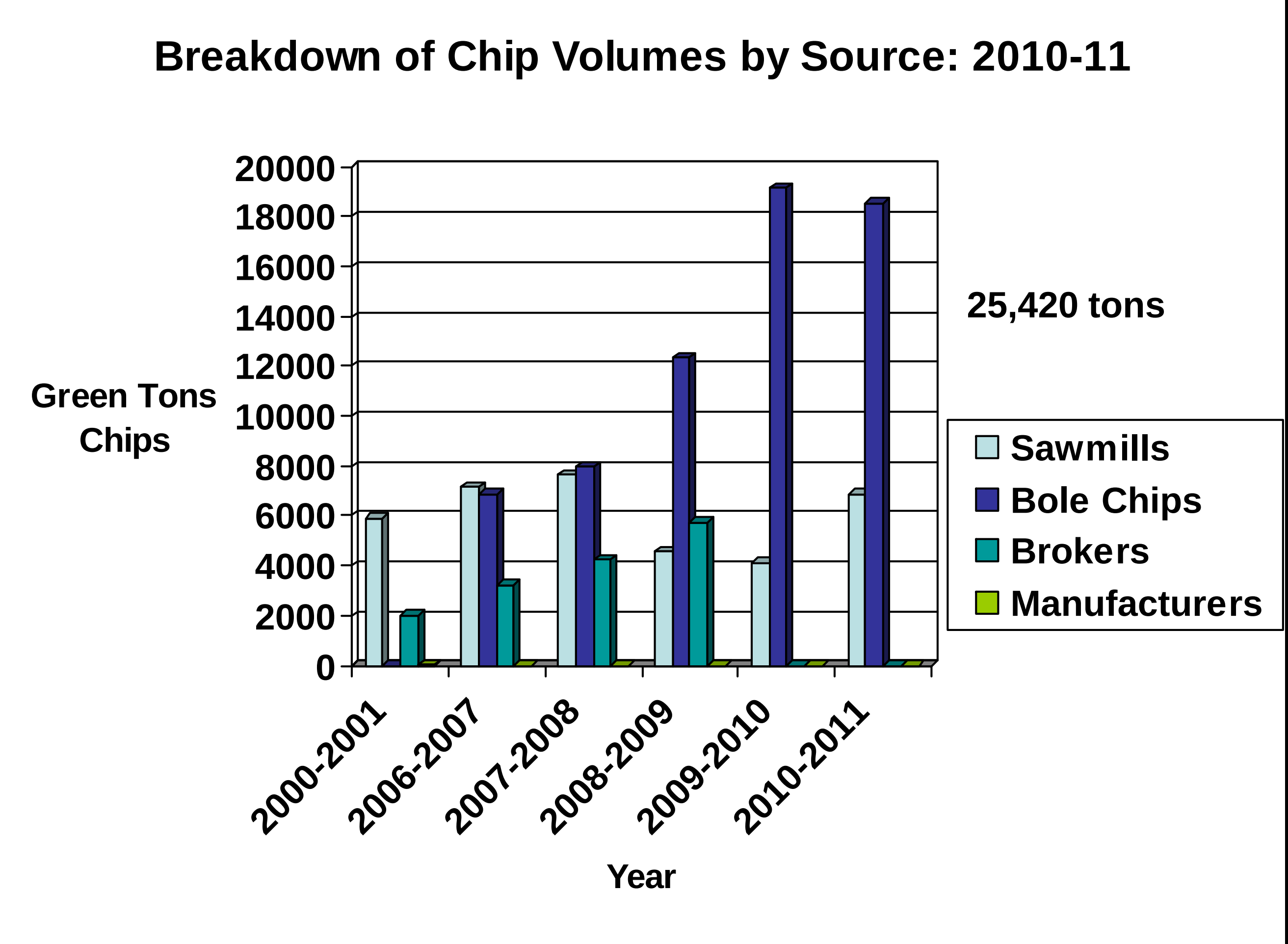


"Local" Bulk Pellet Suppliers:

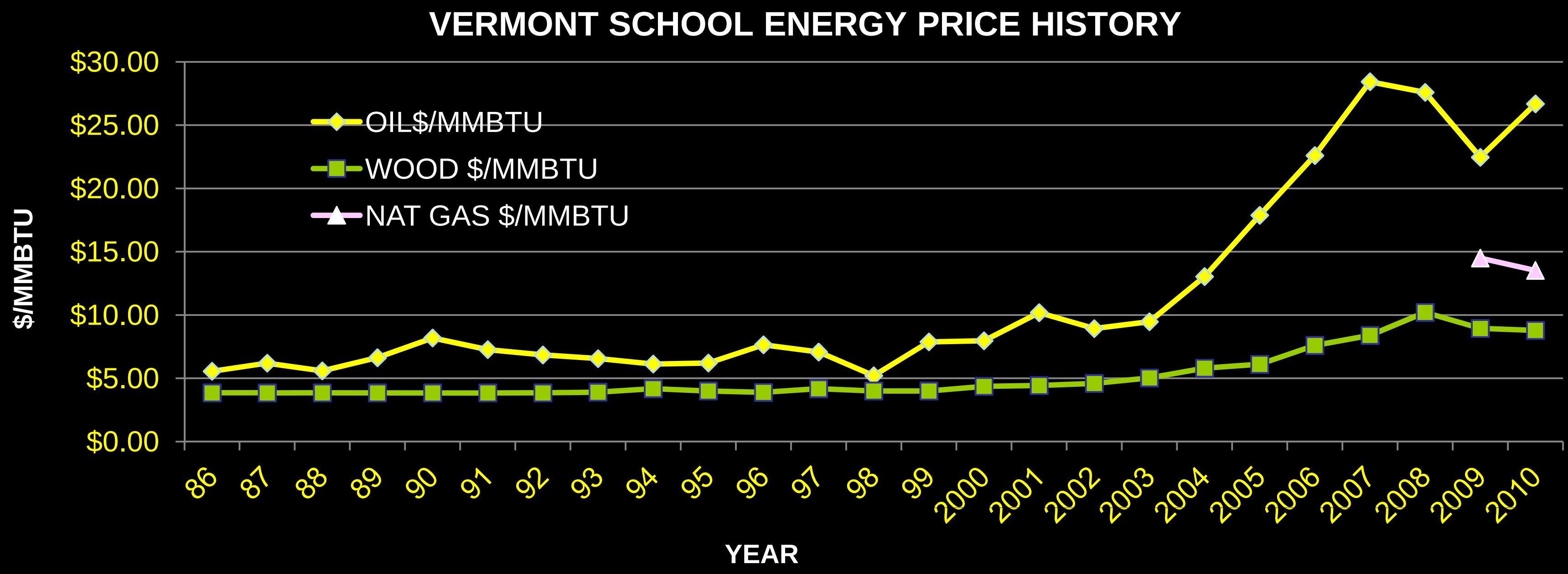
- **Vermont Wood Pellet***
  Clarendon, VT
- **Newton Pellet**
  Barre, VT
- **Pellets Now**
  Saint Johnsbury, VT
- **VT Renewable Fuels**
  Manchester Ctr., VT
- **Lyme Green Heat**
  Lyme, NH
- **Maine Energy Systems**
  Bethel, ME
- **New England Wood Pellet***
  Jaffrey, NH; Schuyler & Deposit, NY
- **Sandri Renewable Energy**
  Greenfield, MA
- **Clark et Fils Ltee**
  Sherbrooke, PQ

Wood Chip & Pellet Supply and Market Trends: 2012 and Beyond

Wood Chip Supply & Price Trends



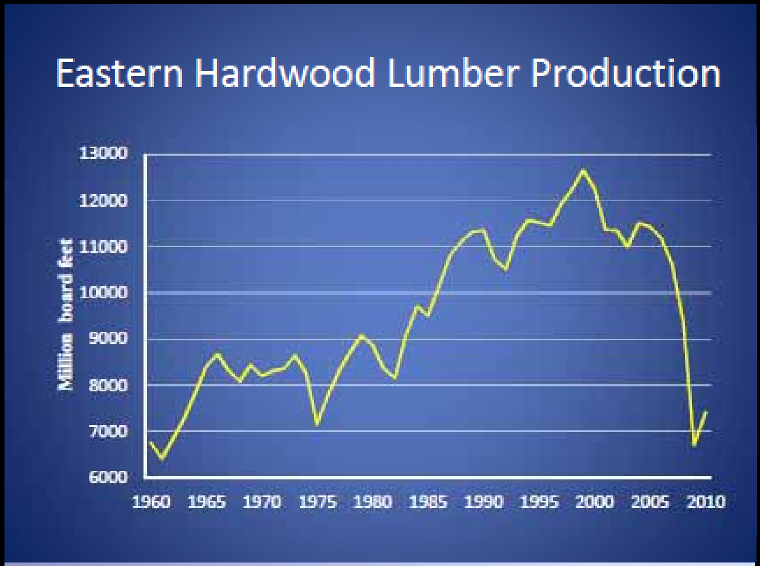
Wood Chip Supply & Price Trends



Schools paid an average of:

- 2006-07: Wood $44/green ton. #2 oil $2.31/gal.
- 2007-08: Wood $49/green ton. #2 oil $2.94/gal.
- 2008-09: Wood $59/green ton. #2 oil $2.86/gal.
- 2009-10: Wood $56/green ton. #2 oil $2.32/gal. Nat. Gas $1.16/ccf
- 2010-11: Wood $56/green ton. #2 oil $2.76/gal. Nat. Gas $1.08/ccf

Wood Chip Supply & Price Trends 2012



- **Regionally, hardwood lumber production remains below capacity.**
  - **Permanently lost as much as 1/3 of our hardwood lumber production capacity.**
  - **Surviving mills continue to run at less than capacity (+/-2/3 of 2007)**
  - **Mill chip production remains lower.**
- **Paper & pulpwood markets remain volatile due to complex factors.**
  - **Raw material cost is only 3-5% of cost of paper manufacturing.**
  - **Locally pulpwood prices have been strong through the fall and early winter.**
- **Number of logging contractors has declined drastically.**

Wood Chip Supply & Price Trends

- Oil prices rose sharply the first half of 2011 and have remained high.
- Fall rains and flooding resulted in reduced in-woods production. Improving winter logging conditions are helping to improve log supplies but the season will be short.
- "Lower" log prices are still causing some private landowners to hold their timber.

Increased Operating Cost + Tight Supply = Increased Competition = Increased Cost of Low Grade Wood

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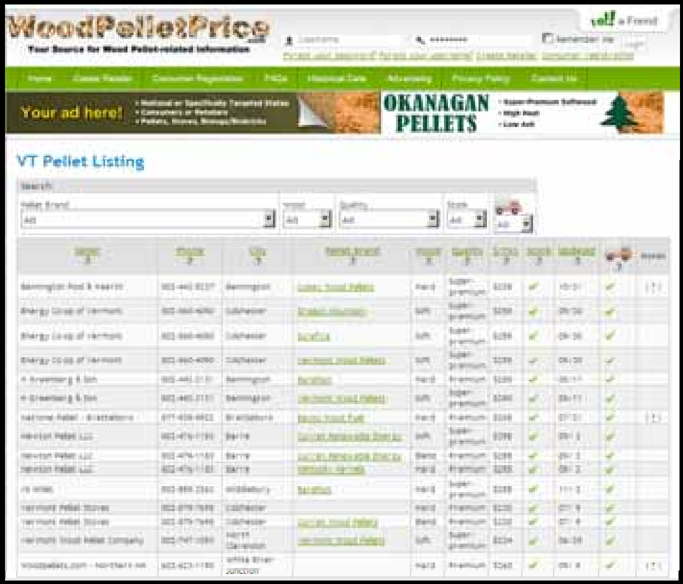
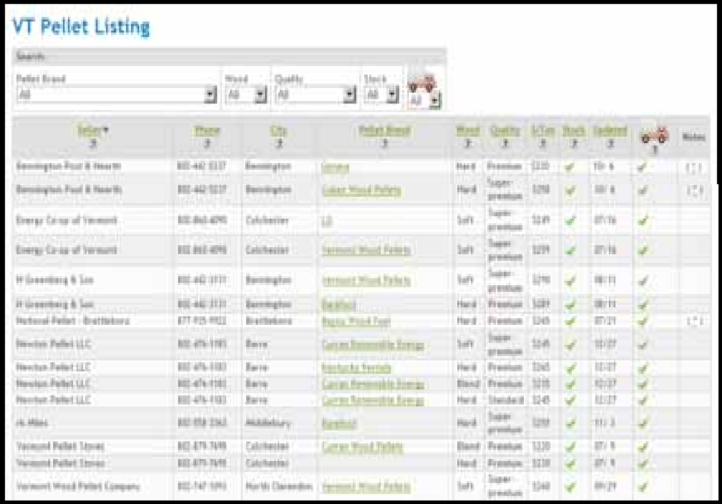
Wood Pellet Supply & Price Trends

Bagged, retail wood pellet prices:

- **January 2011… range $220-290/ton average $255**
- **January 2012… range $220-290/ton average $253**

Bulk price paid by facilities surveyed 2010-11 season… range $199-240/ton … average $221/ton





Wood Pellet Supply & Price Trends

- NA pellet production is expected to nearly double in next 5 years… Deepwater port facilities being built along the East Coast to load pellets for EU markets.
- Producers of super-premium pellets are expanding to meet increased product demand.
- Inexpensive wood residues are in short supply. More expensive round-wood will be the raw material for expansion.
- Bulk sales & delivery are increasing and available… now 10% of sales by VT Wood Pellet (just 2% one year ago).
- Longer term contracts are becoming more common. (1 yr +…?)

Future Market Influences?

NEW DEVELOPMENTS:

- **Interstate Weight Limits:**
  - **Chip vans with overweight permits for State highways can once again use the Interstates.**
  - **Congress extended the “pilot program” until Dec 31, 2031.**
  - **Included ALL interstate highways in VT this time…**

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Future Market Influences?

NEW DEVELOPMENTS:

- **Proposed New Wood Fuel Using Facilities:**
  - **Beaver Wood Energy proposing a power plants with co-located pellet mill in Fair Haven.**
  - **N. Springfield Sustainable Energy Project proposed for N. Springfield Industrial Park.**
    - **Combined wood demand of 750,000 gt/yr as proposed.**
    - **Both proposed facilities have begun the permit process.**
  - **Laidlaw Berlin Biopower, Berlin NH in construction and will use 750,000 gt/yr… expect to be online 2013.**

Future Market Influences?

NEW DEVELOPMENTS:

- Study Committee on Biomass Energy Development (VT Leg)
  - 3yr study committee charged to enhance growth of biomass industry while protecting forest health.
  - Final report due to the Legislature this month...
  - Recommendations in the final draft related to monitoring forests and harvesting, support & incentives for biomass users, measures to protect forest health.
    - Include a recommendation to lift moratorium on school construction aid.

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Wood Chip and Pellet Supply & Market Predictions

The Crystal Ball…

- Overall wood chip demand will remain relatively stable for at least the next couple of years.
- Sawmill residues will continue to be in short supply.
- Number of chip suppliers will remain relatively stable. Overall quality will continue to improve.
- Wood chip prices will likely rise due to production cost increases (ie. diesel fuel prices) and competition.
- Given competetive pricing, chip availability is likely to increase.

Wood Chip and Pellet Supply & Market Predictions

The Crystal Ball…

- **Global pellet demand will continue to be driven by non-market forces such as renewable energy portfolio requirements in Europe.**
- **Pellet production in NA will increase with the majority of the new production destined for overseas markets.**
- **Availability of bulk pellets will continue to improve.**
- **Increased cost of raw materials will lead to higher cost of production and prices.**

For more information or help in finding suppliers please call:

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