



# Densified Biomass Market Development

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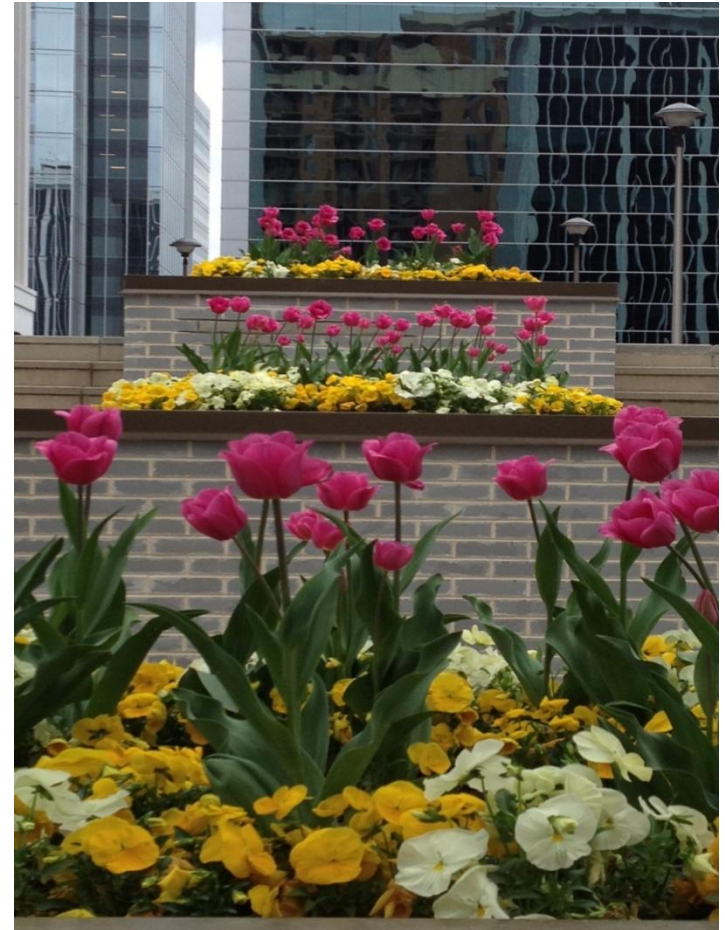
# Agenda

1. Introduction to PFI
2. History of Densified Biomass
3. Overview of Current Market
4. Opportunities for Market Development



# About PFI

- Founded in 1985 in Minnesota as the Fiber Fuels Institute
- A North American Trade Association Promoting Energy Independence through the *Efficient* Use of Clean, Renewable, Densified Biomass Fuel
- Focus is densified biomass for thermal applications
- Industry Advocate in Washington, DC
- Membership Comprised of:
  - Densified Biomass Manufacturers
  - Industry Suppliers
  - Associate Members (e.g. NGOs, universities)





# Early Milestones of the Densified Biomass Industry

- Advent of the industry in the Pacific Northwest region of U.S. following 1973 Oil Embargo
- Late 1970s: first pellet manufacturing plants came online to produce for larger commercial installations
- First pellet stove with an auger was developed for residential use

# Additional Milestones

1980s

- Increased focus on pellets for residential use
- Additional stoves designed and marketed by a growing number of companies throughout North America
  - Freestanding stoves
  - Inserts
  - Contained computerized control systems
- Within a few short years, stoves became more sophisticated
  - Push button ignition
  - Thermostatically controlled, self-igniting
  - Improvements in overall technology
- First pellet furnace built for residential use



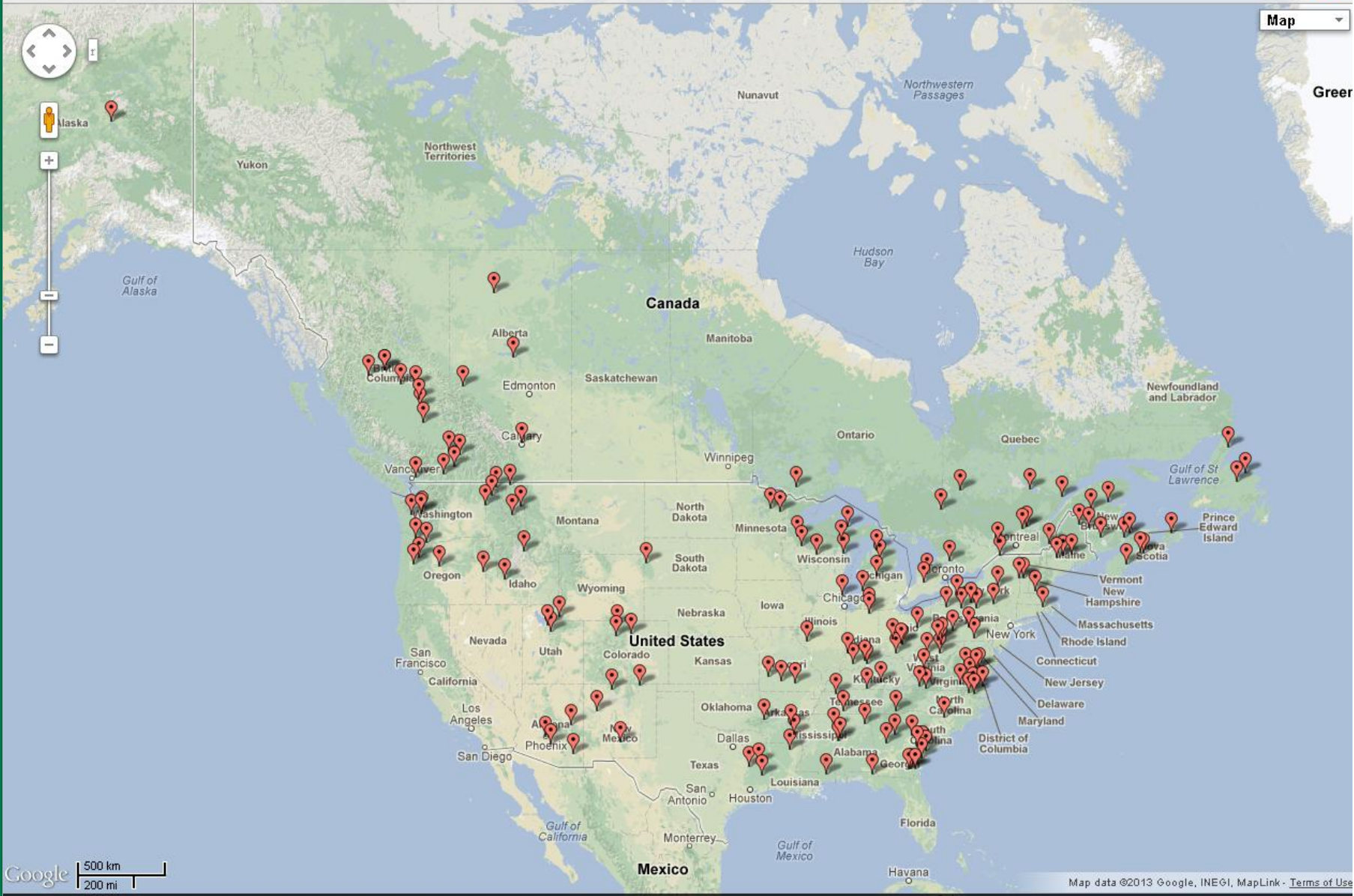
# TODAY...

Over two million homes heating with pellets (wood, agricultural)

- pellet stoves, inserts, boilers, furnaces

Over 150 mills producing pellets for use within North America and Overseas

Growing number of schools, hospitals, governments and other large scale facilities are replacing fossil fuels with pellets



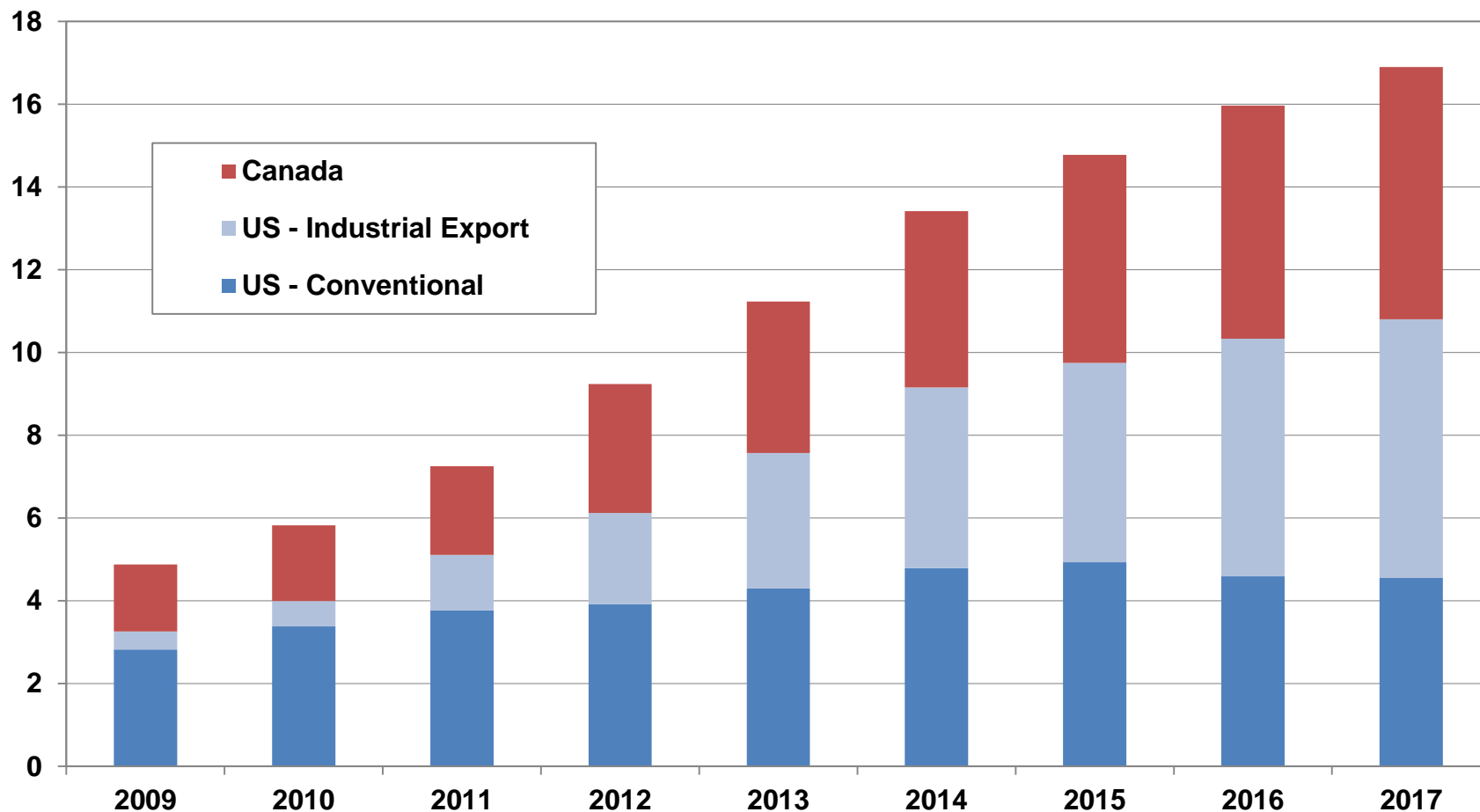
Google 500 km 200 mi

Map data ©2013 Google, INEGI, MapLink - Terms of Use

A map of North American wood pellet mills. Created on April 22, 2013.

# Wood Pellet Production – North America

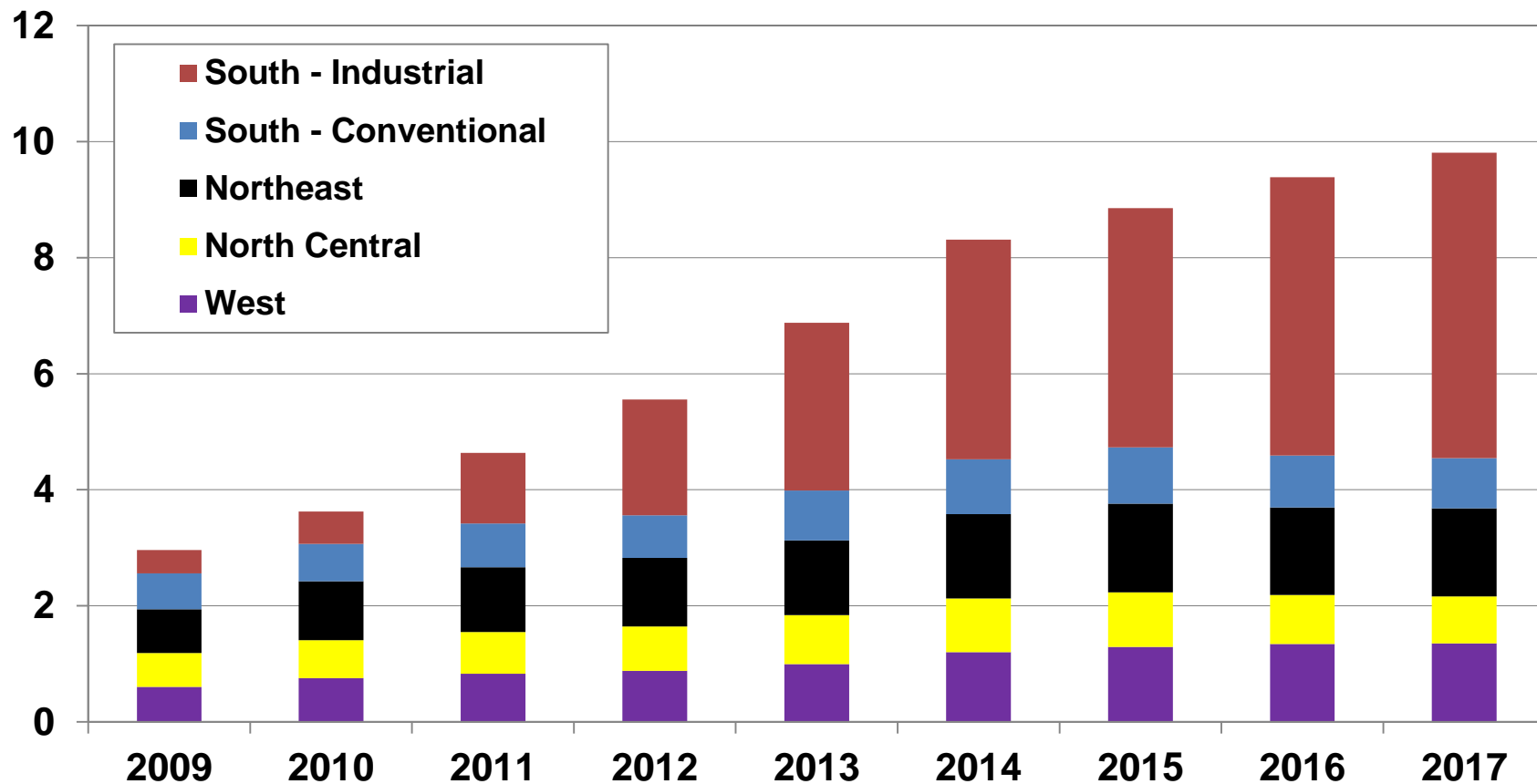
In million short tons



Source: RISI North American Bioenergy Forecast

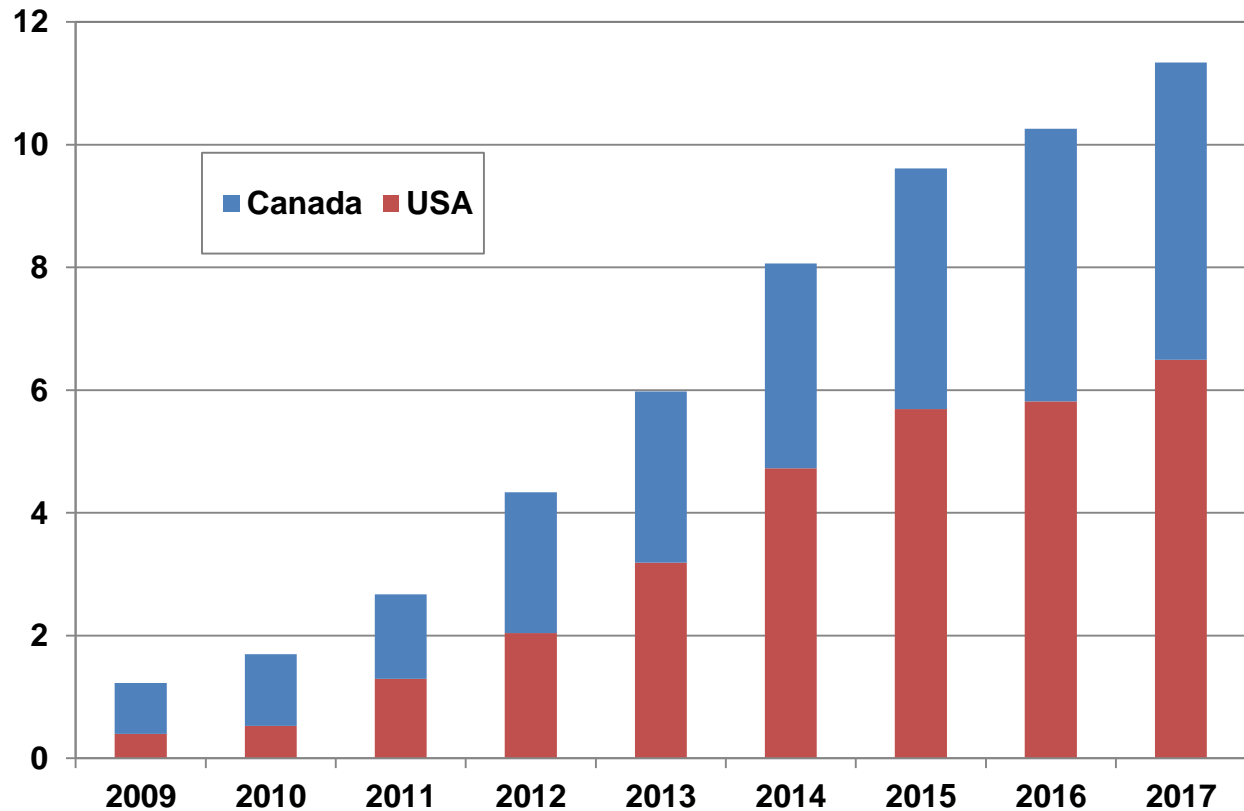


## US Wood Pellet Production – by Region Million Tonnes



Source: RISI North American Bioenergy Forecast

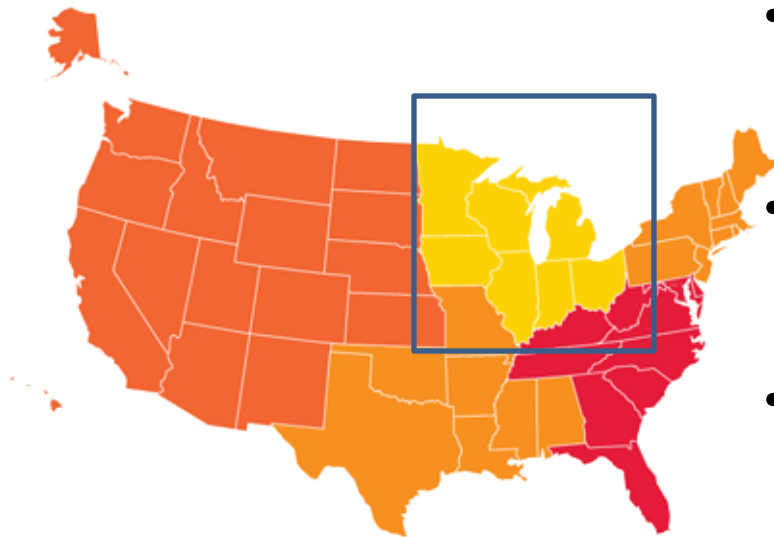
## Export Market: Significant Growth...*But...* Limited Opportunities for Midwest Region



In Million Tonnes

Source: RISI North American Bioenergy Forecast

# Densified Biomass in the Midwest



- ~ 25 pellet production facilities
- Production mainly for residential market; mainly woody biomass
- Access to ample supply of feedstock (wood and ag)
- Tough to compete with cheap LPG and Natural Gas (now used to heat 80% of businesses/residences in the Midwest
  - But opportunities exist to displace fossil fuels, create rural jobs and offer sustainable, affordable (e.g. stable) heating options
- Opportunities to facilitate growth in the Industrial/Commercial markets



# Commercial/Industrial Market: Examples

## Mineral Community Hospital, Superior, MT

- **Pellet burning system (180 tons/year)**
- **885,000 BTUs per hour**
- **Replaces 36 year-old fuel-oil system**
- **Lower costs by \$48,000 p/a**
- **Grants fund ½ of project's costs**





# Commercial/Industrial Market: Examples

## Barron School District, Barron, WI

- Multiple systems include pellet burning system
- Pelco Boiler = Middle School
- 2.5 MM BTU/hr
- Fuel supplied by Indeck Energy





# Commercial/Industrial Market: Examples

- Eagar (AZ) Town Hall --boiler using pellets, .5 million BTU/hr
- Fairplay (CO) High School--boiler using chips from Beetle infested trees, 3 million BTU/hr
- Granby (CO)--warehouse and equipment shop for Mountain Parks Electric, 1 million BTU/hr, pellets from Beetle kill trees
- All are projects of Forest Energy Corporation (Show Low, AZ)





# New Market Development

Opportunities Exist:

- Green Houses
- Confined Animal Feeding Operations
- U.S. Department of Defense  
(largest consumer of energy in the U.S.)





# Market Development through Enhanced Structure

## Growing Bulk Delivery Market

- Promotion
- Development of Delivery and Storage Recommendations



## Standardization of Fuel

- Promotion
- PFI Standards Program  
(*densified biomass*)





# Promotion and Education



- Educate, Educate, Educate
  - Consumers
  - Colleagues in Energy Arena
  - Elected Officials
  - Local/Regional Government Officials
- Promotion
  - Strength in Numbers: Build Coalitions and Find Advocates Across the Spectrum (industry, govt., NGOs)
  - Utilize national groups for assistance in finding marketing best practices and opportunities (PFI, BTEC, etc.)

**Important that people understand how and why using biomass benefits them**



# Public Policy

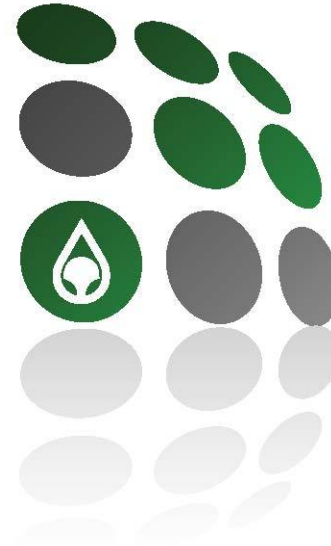
- Review successes of other states (e.g. efforts in NE, Maryland, Washington State), and current Midwest initiatives (e.g. RPS) Many effective initiatives can be used as templates.
- Model efforts of national groups, like PFI, to develop legislation from appliance tax credits to incentives for commercial/industrial scale production
- Any public policy effort should be mindful of the entire supply chain (sustainability of feedstock → emissions)
- Seek champions in state and local governments who will push for parity and most efficient use of biomass (thermal)



# Join Us...

## PFI ANNUAL CONFERENCE

July 28-30, 2013  
The Grove Park Inn  
Asheville, NC



- More information at [www.pelletheat.org/events](http://www.pelletheat.org/events)
- Sign up today for more information at the PFI booth



# THANK YOU!

Contact Us!



Facebook.com/pfipellets



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