The Outlook For Wood Pellets In International Markets

43rd Annual Spring Symposium
May 13 – 14, 2015
On the Agenda….

- An excellent timing for looking at the wood pellet space with some very interesting recent developments taking place in the industry:
  - Enviva’s recent IPO, representing the first wood pellet project going public in the U.S.
  - New incentive system in The Netherlands’ for co-firing biomass with coal, creating interesting new demand prospects.

BUT:

- New biomass sustainability requirements are coming…… creating significant challenges for the U.S. Forestry Industry.
Global Wood Pellet Production

Compound annual growth of 24%.

More than half of the production is traded between countries.

EU-28 countries presently consume about 85% of the global production.

Source: Hawkins Wrigth, REN-21
U.S. Wood Pellet Production

- U.S. has taken over the role as the leader in the production of wood pellets and has seen tremendous growth over the past few years. (From 2010, the growth has been 285%).
- Present plant expansions and new capacity can grow the U.S. nameplate capacity with another 2 million mt within a couple of years.

5.7 million mt in 2013
U.S. Wood Pellet Exports

- U.S. is now also the world’s largest exporter of wood pellets.
- 2014 exports were up 41% from 2013.
- Close to 75% of the export volumes go to the U.K.
- Dramatic shifts in the volumes imported by various European countries over the past few years.

3.89 mill. MT in 2014

Source: Eurostat
Who Did We Sell To?

82% of the U.K. volume was bought by the Drax Group.
## Critical Success Factors for U.S. Producers

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<thead>
<tr>
<th>Factor</th>
<th>PAST</th>
<th>FUTURE</th>
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<td>Exchange Rates</td>
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<td>Sustainability Requirements</td>
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<td>OPEX, CAPEX, tax regimes, etc. also important factors</td>
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## Critical Success Factors - Highlights

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Market Development

- Europe will continue to dominate the world consumption of wood pellets.
- A healthy foundation for future growth in the heating market -
  - BUT warm winters the last 2 years and low oil prices have temporarily slowed the growth.
- The industrial market will continue to depend on significant incentive support, with several countries now having defined what these look like (… or have they?).
- The focus in this market segment will be on the U.K., Denmark, Belgium and The Netherlands. Other countries are not likely to develop significant incentive systems for biomass in electricity production, at least for the foreseeable future.
- New incentive system in The Netherlands has finally been agreed (SDE+)
- SDE+ creates a potential for up to 3.5 million metric tons per year of wood pellets for electricity.
- SDE+ might also drive additional demand from other industrial sectors in the country for steam and energy. Market potential is uncertain, but could be < 1 million metric tons per year.
  - BUT: New and increased sustainability requirements will be challenging for most U.S. supply.
Euro – US$ Exchange Rate Impact


- On May 7, 2014, Argus Biomass Market reported the CIF Spot ARA wood pellet price at $180.25, or equivalent to €130.03.

- Applying today’s FX to last year’s Euro price would reduce the US$ price by $36.75/mt.

- Actual price is down about $11.50, indicating a shared burden between U.S. sellers and European buyers.
The fundamental business model of the larger U.S. wood pellet manufacturers has to a large extent been based on forest thinning material.

There is an abundance of this material still available in many wood baskets in the U.S. South East forests.

BUT: We are starting to see some areas where there are indications of tightening supply. Some caused by the increase in demand from these new wood pellet mills, but also related to unfavorable weather patterns.

The effect is an increase in wood costs for many wood pellet manufacturers. However, wood costs are still competitive with many other areas in the world.
Sustainability Requirements

- In the past, existing certification schemes (FSC, PEFC, SFI, ATFS) have been the foundation for European sustainability requirements of the wood pellet plant, procurement and operation, overlaid with some industry specific certification schemes at the wood pellet plant level.

- USIPA has played a very significant role in getting to a practical and workable certification scheme to-date.

- With the new SDE+ incentive system in The Netherlands comes a set of new sustainability requirements that will be challenging to meet for U.S. wood pellet producers.

- These requirements came out a few weeks ago, and are still being evaluated by the industry and other interested parties.
# SDE+ Biomass Categories and Related Sustainability Criteria

<table>
<thead>
<tr>
<th>Biomass categories</th>
<th>SFM criteria</th>
<th>GHG balance</th>
<th>Carbon debt</th>
<th>ILUC</th>
<th>Soil quality</th>
<th>Complianc e with legislation</th>
<th>Chain of Custody</th>
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<tbody>
<tr>
<td>1. Woody biomass from large forest management units</td>
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<td>X</td>
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<td>2. Woody biomass from small forest management units</td>
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<td>3. Residual products from multi-functional forests</td>
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<td>4. Agricultural residual products</td>
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<td>6. Biogenic waste materials</td>
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<td>N/A</td>
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<td>7. Residual products from natural site and landscape management</td>
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U.S. Wood Pellet and Forestry Implications

- Forest thinning material used by the wood pellet industry will likely fit into one of the first two categories:
  - Woody biomass from large forest management units >= 500 ha, or 1,235.5 acres.
  - Woody biomass from small forest management units < 500 ha, or 1,235.5 acres.
- Biomass from these categories require Sustainable Forest Management certification (SFM) on the forest level.
- Certification must be FSC, “or equivalent”.
- In the case of biomass from small forest management units, sustainability can be temporarily demonstrated and certified at the pellet mill level.
SFM Share of Biomass for Cat 2 Material From Small Forest Manag. Units
Implications For the Industry

- Lack of common sustainability requirements across the major industrial wood pellet markets in Europe.
- Uncertainty regarding how to interpret the rules will linger for quite some time.
- Will the stricter Dutch requirements spread to other EU countries/EU level?
- Will other wood processing industries also be affected by the Dutch sustainability requirements?
THANK YOU FOR YOUR ATTENTION