The global outlook for wood pellet markets

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The Outlook for Wood Pellets
Demand, supply, costs and prices

A multi-client service comprising regularly updated forecasts of the wood pellet market’s development

- Two ‘main’ reports (Q3 & Q1)
- Two ‘update’ reports (Q3 & Q2)
- Workshop or presentation meeting
- Charts and background data on request
- On-call response to ad hoc queries

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Wood pellets as a share of global primary energy

It’s more in Europe, but the market share of wood pellets still amounts to just 0.6% of the EU’s total primary energy consumption.
Global wood pellet production

Sources: REN21, FAO, AEBIOM, Hawkins Wright estimates
Wood pellet consumption by region in 2015
Heating, industrial and total

**Industrial pellets - 13Mt**
- North America: 1%
- Asia: 13%
- EU28: 86%

**Heating pellets - 15Mt**
- Russia & CIS: 4%
- Asia: 2%
- North America: 21%
- Other Europe: 3%
- EU28: 70%

**Total wood pellets - 28Mt**
- North America: 12%
- EU28: 77%
- Other Europe: 1%
- Asia: 8%
- Russia & CIS: 2%
Wood pellet demand in Europe, 2015

**Industrial pellets - 11Mt**
- Belgium, 1,100
- Sweden, 1,200
- Denmark, 1,400
- United Kingdom, 6,800

**Heating pellets - 10Mt**
- Austria, 850
- France, 950
- Germany, 1,850
- Other EU, 1,880
- Italy, 3,100

Figures are in thousands of metric tonnes
Source: Hawkins Wright, *The Outlook for Wood Pellets Q2 2016*
Factors driving the recent trends

- Delays in new demand-side capacity growth
- Exchange rates, disadvantaging US suppliers
- Weather – the absence of winter
- Oil prices – collapse followed by stagnation
- Bankruptcy of German Pellets
- Ironbridge closure & Drax maintenance shuts
- Policies and regulations – some unhelpful

But the news is not all bad – some long awaited sunlight...

- The go-ahead for important demand-side projects Europe
- Momentum building in Japan
- Pellet capacity growth is being curtailed

[Graph showing industrial pellet spot prices, in US dollars]
The weather – where’s winter gone?
Heating degree days, a measure of heating demand

In many north European countries, the heating required in 2015 was around 20% below average.

Northeast North America had an average start to the 2015/16 winter, but temperatures in Q1 2016 in Boston, for example, were 12% warmer than the historical norm.
Historically, heating pellets have had a significant cost advantage over heating oil. Since the collapse in oil prices in 2014, this is no longer the case.

Analysis based on delivered (retail) prices of heating oil and wood pellets, including taxes.
Sources: DEPV (pellets); EU Energy Portal (heating oil)
European wood fibre prices
Sawdust prices in Germany, converted into US dollars

A combination of lower euro-denominated sawdust prices, and a weaker euro against the US dollar, have caused US dollar-denominated feedstock costs in Germany to fall sharply.

Source: EUWID (original price data in €/m³, converted to US$/metric tonne by Hawkins Wright)
Wood pellet spot prices
Indices of industrial grade pellet prices in different currencies CIF ARA

Excess supply in the heating market, and European producers’ greater competitive advantage, have spilt over into the industrial pellet spot market. Exchange rate effects have been damaging for US producers particularly.

Source: Hawkins Wright (Forest Energy Monitor).
New industrial wood pellet demand by 2020 (compared to 2015)

<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>Capacity</th>
<th>Pellets (Mt/y)</th>
<th>Start-up</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lynemouth Power (conversion)</td>
<td>Northumberland</td>
<td>450 MW</td>
<td>+1.60</td>
<td>early-2018</td>
<td>Under construction</td>
</tr>
<tr>
<td>MGT Power (biomass CHP)</td>
<td>North Yorkshire</td>
<td>299 MW</td>
<td>+1.00</td>
<td>2020</td>
<td>Fully financed (Macquarie)</td>
</tr>
<tr>
<td>Drax Power (full conversion of unit #1)</td>
<td>South Yorkshire</td>
<td>630 MW</td>
<td>+2.00</td>
<td>2017</td>
<td>Full conversion once CfD given state aid approval</td>
</tr>
<tr>
<td>Less closure...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E.ON Ironbridge</td>
<td>Staffordshire</td>
<td>350 MW</td>
<td>-1.10</td>
<td>end-2015</td>
<td>Closed</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>+3.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The outlook...

New demand
- Drax’s fourth unit?
- Industrial heat, subject to availability of support. (Renewable Heat Incentive – RHI)

Policy priorities
- Supply security (keeping the lights on)
- Budgetary discipline. Constraints on the Levy Control Framework are unchanged
- GHG emissions / carbon budgets (more relevant in a UK context than EU targets)
- BREXIT
New industrial wood pellet demand by 2020 (compared to 2015)

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<tr>
<td>Langerlo NV (Graanul Invest)</td>
<td>Genk, Flanders</td>
<td>440 MW</td>
<td>+1.60</td>
<td>2018</td>
<td>Financing</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>+1.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The outlook...

**New demand**

- New biomass CHP capacity in Wallonia. Tender for 200MW of new capacity

**Policy priorities**

- Supply security. (Ageing nuclear plant and low interconnector capacity with neighbours)
- Sustainability of biomass. Ultimately led to demise of BEE project in Ghent
- EU renewable/carbon targets
**New industrial wood pellet demand by 2020 (compared to 2015)**

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</tr>
</thead>
<tbody>
<tr>
<td>RWE/Essent (cofiring)</td>
<td>Amer</td>
<td>600MW</td>
<td>+1.26</td>
<td>2018</td>
<td>Awarded SDE+ support</td>
</tr>
<tr>
<td>Engie (Maaslakte) (cofiring)</td>
<td>Rotterdam</td>
<td>800MW</td>
<td>+0.24</td>
<td>2018</td>
<td>Awarded SDE+ support</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>+1.50</strong></td>
<td></td>
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</table>

**The outlook...**

**SDE+ tenders**
- In theory, ~3.5Mt/y of pellet demand for cofiring in the Netherlands will be supported by SDE+, but utilities will only make final investment decisions when the government clarifies its policy of phasing out coal and on the sustainability criteria for biomass.

**Policy priorities**
- GHG emission reductions and their compatibility with undertakings given in Paris last year.
- The sustainability criteria that will apply to wood pellets

**New markets**
- Industrial heat and biochemicals
### Denmark

#### New industrial wood pellet demand by 2020 (compared to 2015)

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<th>Start-up</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dong Energy (conversion)</td>
<td>Avedøre</td>
<td>345MW</td>
<td>+0.50</td>
<td>2017</td>
<td>Completion of conversion</td>
</tr>
<tr>
<td>Dong Energy (conversion)</td>
<td>Studstrup</td>
<td>800MW</td>
<td>+0.60</td>
<td>2018</td>
<td>Completion of conversion</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>+1.10</strong></td>
<td></td>
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</tr>
</tbody>
</table>

#### The outlook...

#### Policy priorities

- Policy framework in Denmark remains highly supportive of bioenergy
- GHG emission targets – 37% reduction
- Electricity’s contribution mainly supplied by wind
- Biomass’s role is mainly to displace coal as a source of heat
- Opportunities for further deployment of biomass CHP
The outlook for demand and supply
Is the supply surplus in the industrial pellet market structural or cyclical?

Growth in industrial pellet demand is likely to tighten the market over the next five years. To what extent will this new demand require an increase in new supply? The answer will depend on what happens in the heating market… is the spill-over of heating pellets into the industrial market structural or temporary? Has the spot market matured into a credible source of supply?