

# FutureMetrics

RESEARCH, ANALYTICS, EXPERT ADVICE

## North American Pellet Market Quarterly

Q4 2018

*Special 5-Year Global Forecast*

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## FutureMetrics' North American Pellet Market Quarterly

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### About Us

*FutureMetrics is recognized as one of the leading global consultants in the wood pellet sector. FutureMetrics provides information, analysis, operations guidance, and strategic advice to many of the world's leading companies in the wood pellet sector.*

Our team's experience and expertise covers every part of the wood pellet supply chain. Key members of the FutureMetrics team are highlighted below. A selection of our current and recent clients is listed below.

Since 2001 FutureMetrics has specialized in the wood pellet sector. FutureMetrics believes that the foundation for all biomass based projects, from both an environmental and an economic/business model point of view, must be the sustainability of the forests from which the raw materials are harvested. Continuously renewing forests and the maintenance of the forest carbon stocks are essential for the support of the long-term security of project cash flows and the low carbon characteristics of the refined wood pellet fuel.

For more information visit [www.FutureMetrics.com](http://www.FutureMetrics.com)

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# Introduction

In this issue of FutureMetrics North American Pellet Market Quarterly, pages 5-11 provide an overview of our 5-year forecast for global pellet demand and North American pellet exports. The figures, tables, and data included in every issue of the report start on page 12.

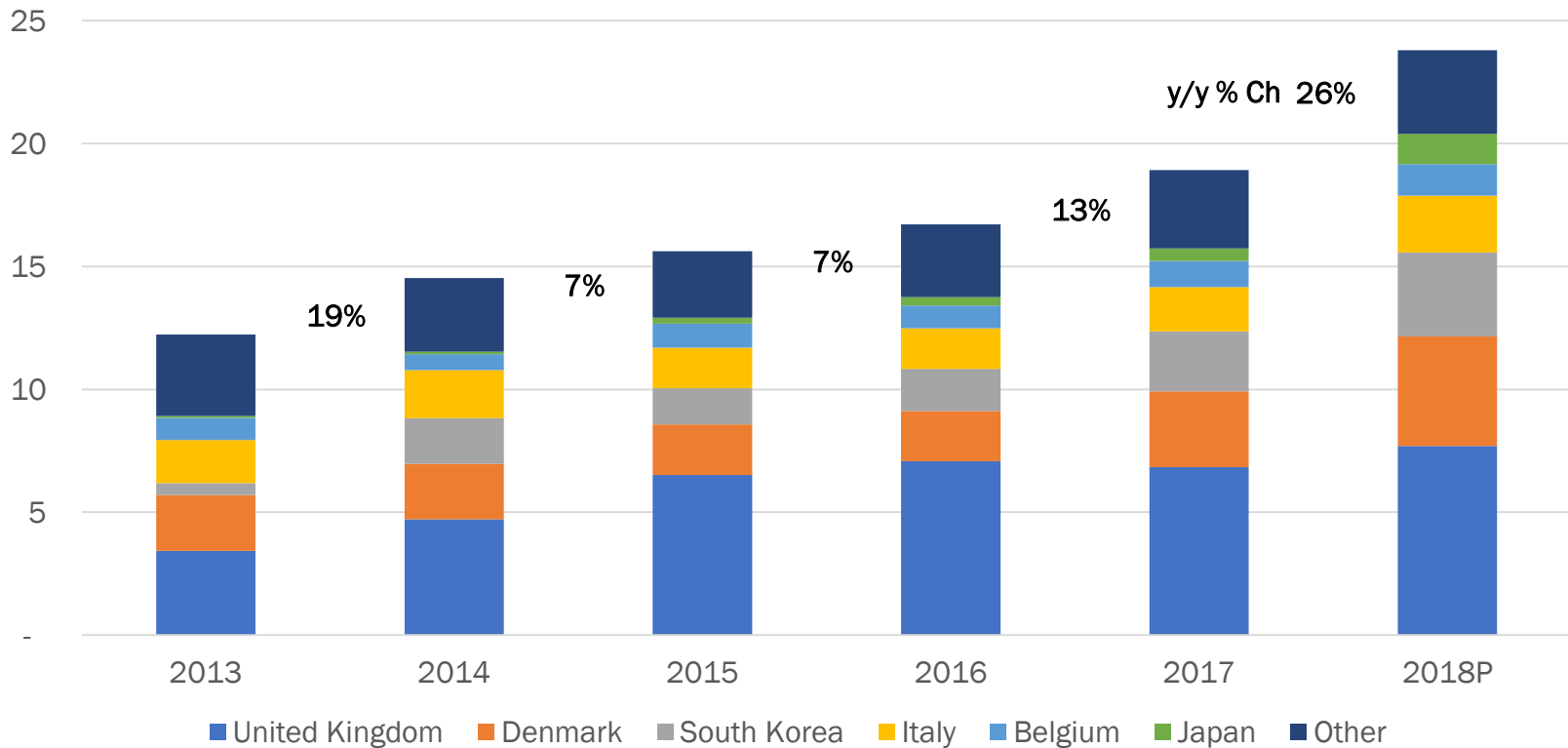
For global pellet markets, in terms of growth and pricing, 2018 was one of the strongest years in quite some time. From 2014 to 2016 the growth in global wood pellet trade slowed to 7% per year, accompanied by a low pricing environment and limited capacity expansion. In 2017 market conditions greatly improved and global trade increased 13% to 18.9 million tonnes. That market improvement continued in full force through 2018 as the growth in global pellet trade accelerated to 26%. FutureMetrics projects 2018 pellet trade will have increased to 23.8 million tonnes in 2018 up from 18.9 million tonnes in 2017 (Figure on page 5). That growth is primarily fueled by increased demand in the UK, Denmark, South Korea and Japan.

Domestically, markets also remain strong. Pellet inventories heading in to the 2018-2019 heating season were at their lowest level in several years and producers worry more about shortages than being able to sell their pellets. While the recent fall in fossil fuel prices leaves some room for worry, producers should be in for a very strong winter.

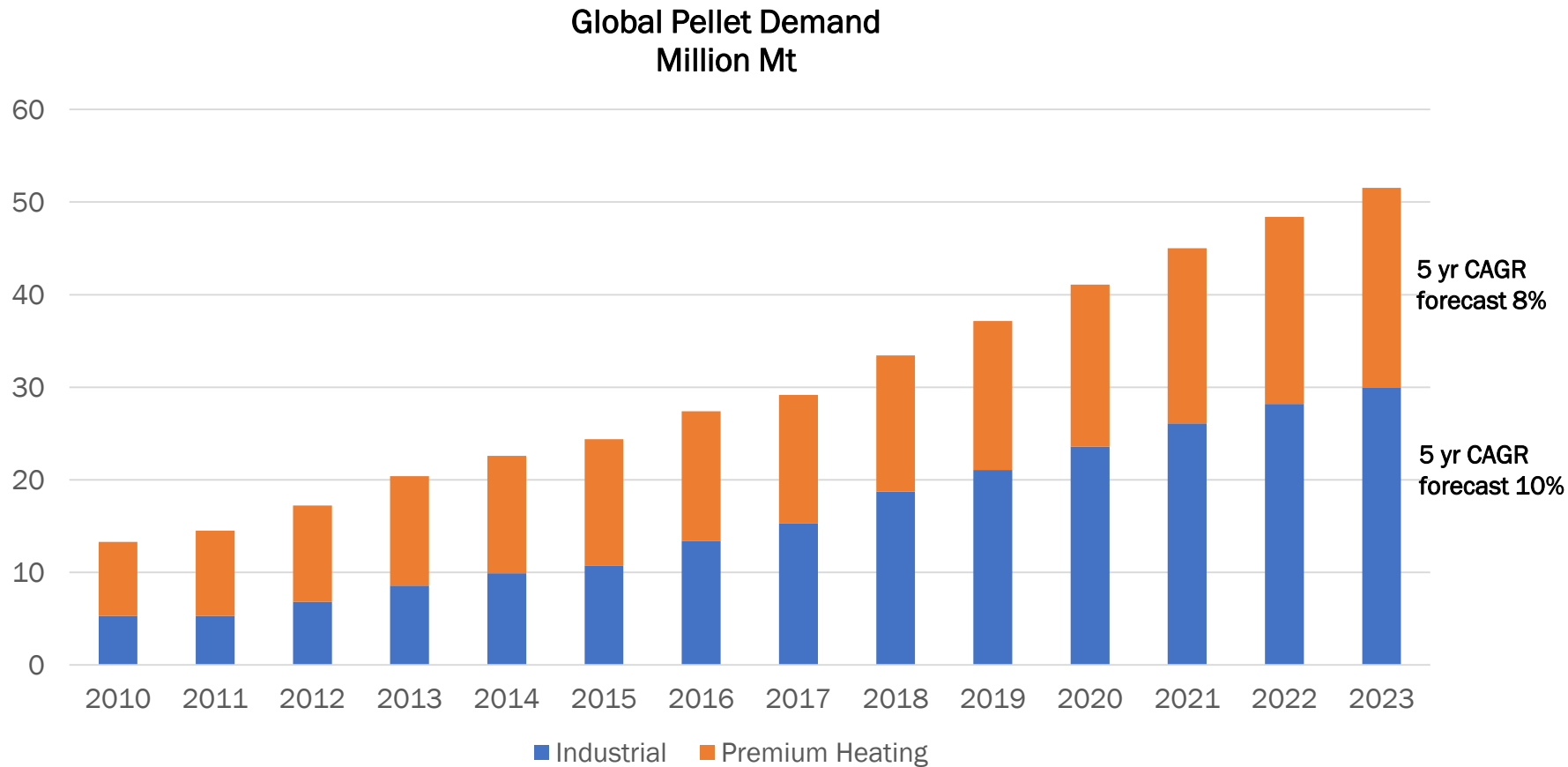
# Pellet Markets Soar in 2018

FutureMetrics projects 2018 pellet trade will have increased to 23.8 million tonnes in 2018 up from 18.9 million tonnes in 2017. That growth is primarily fueled by increased demand in the UK, Denmark, South Korea and Japan. In 2018, growth in global pellet trade accelerated to 26%.

Global Pellet Trade  
Million MT

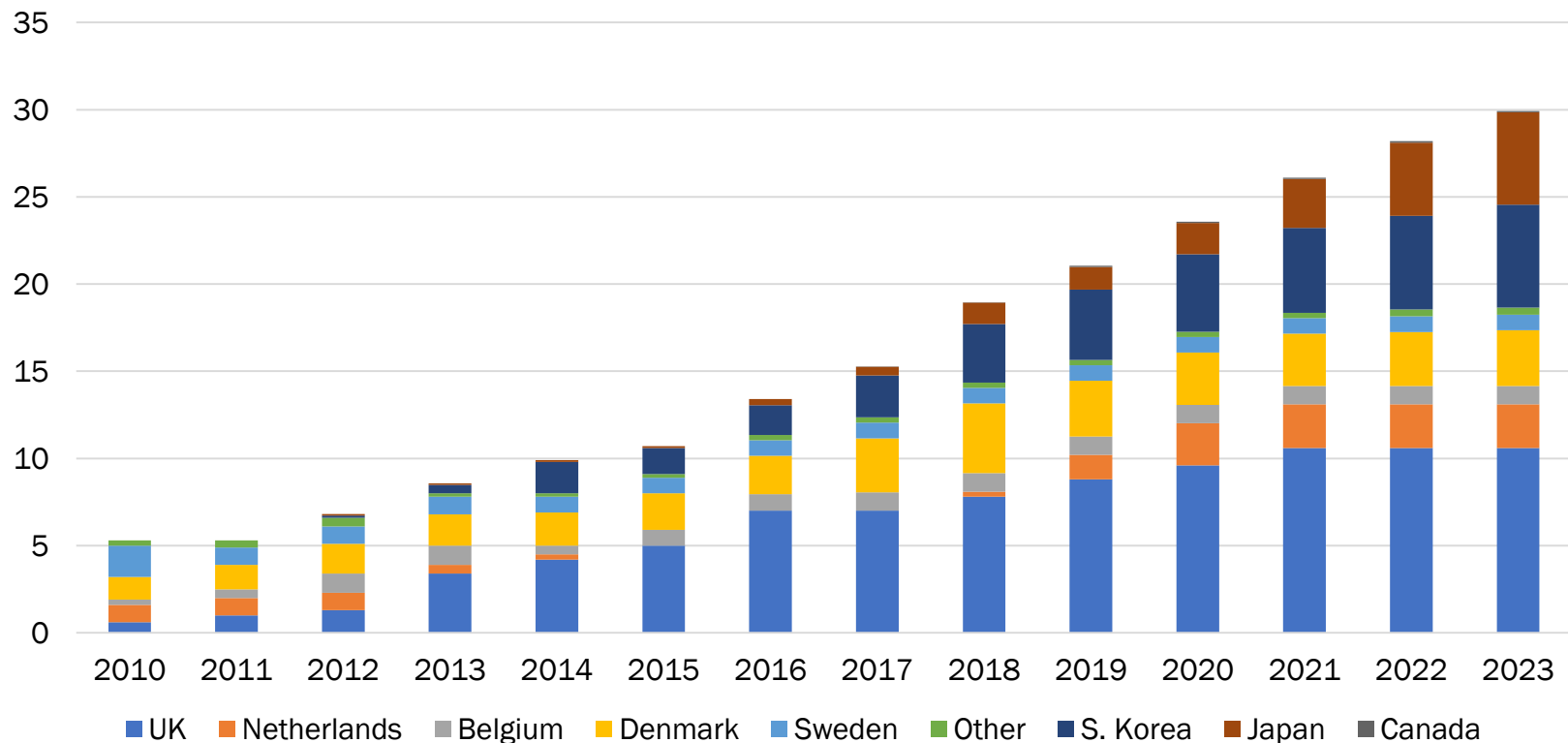


While industrial pellet markets get the bulk of the attention, heating markets are also very significant and show promise for renewed strong growth ahead.



Over the next five years industrial pellet market growth in Europe will begin to plateau and the majority of market growth will come from northeast Asia.

Industrial Pellet Demand  
Million MT



# European Industrial Markets

## United Kingdom: 2018 Demand: 7.8 mm mt, 2023 proj: 10.6 mm mt

In 2018, UK pellet demand increased with the commissioning of EPH's 396 MW Lynemouth Power Station conversion and the conversion of a 4<sup>th</sup> unit at the Drax Power Station. 2019 growth will be primarily driven by a ramp up to full operation at Lynemouth and increased availability at the Drax power station. In 2020 UK demand will increase again with the scheduled commissioning of MGT's 299MW Teeside CHP plant.

## Denmark: 2018 Demand (industrial only): 3.2 mm mt, 2023 proj: 3.3 mm mt

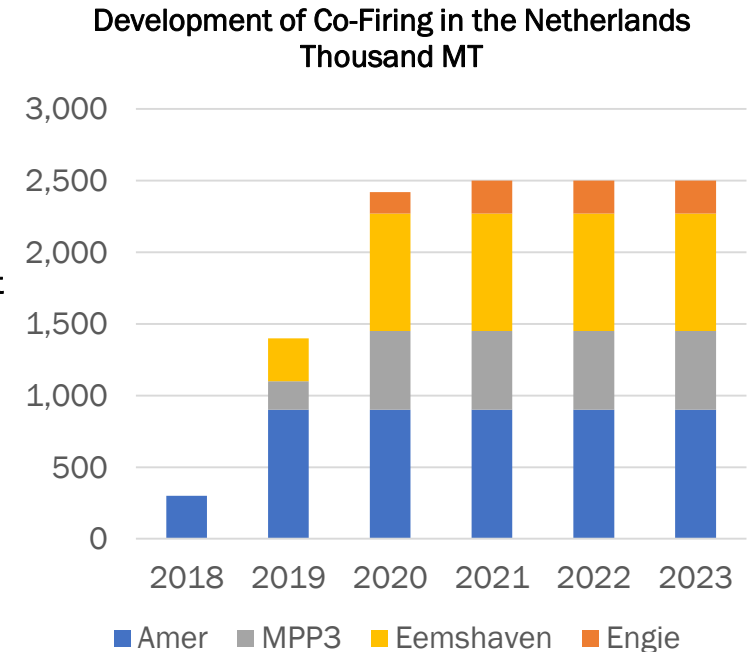
Much of the recent growth has come from the conversion of large central power stations from coal to biomass. Denmark has 9 central power stations, several of which have already been converted to biomass. Denmark has committed to phasing out coal by 2020, which will likely mean several more unit conversions. However, the additional facilities will likely be converted to wood chips or other forms of lower value waste.

## Belgium: 2018 Demand: 1 mm mt, 2023 proj: 1 mm mt

Belgium's industrial wood pellet demand is confined to two power stations both operated by Engie Electrabel, the 80 MW Les Awirs and the 205 MW Max Green power station.

## Netherlands: 2018 Demand: 300,000 mt, 2023 proj: 2.5 mm mt

The Netherlands has a history as a major market for industrial wood pellets. In 2010, the Netherlands was the biggest market for industrial wood pellets – used for co-firing to meet renewable energy goals. The market rapidly declined when a new renewable energy subsidy scheme was introduced in 2012 that required new sustainability standards before co-firing could qualify. In 2016, subsidies were awarded for co-firing at 4 power plants, RWE's Amer and Eemshaven power stations, Engie Rotterdam and Uniper Maasvlakte 3 (MPP3). Unit 9 at the Amer power station, which had previously co-fired under the old subsidy scheme, resumed co-firing of significant amounts of wood pellets in the 4<sup>th</sup> quarter of 2018. The other plants will likely begin co-firing in 2019 and 2020 (figure at right).





# Asian Industrial Markets

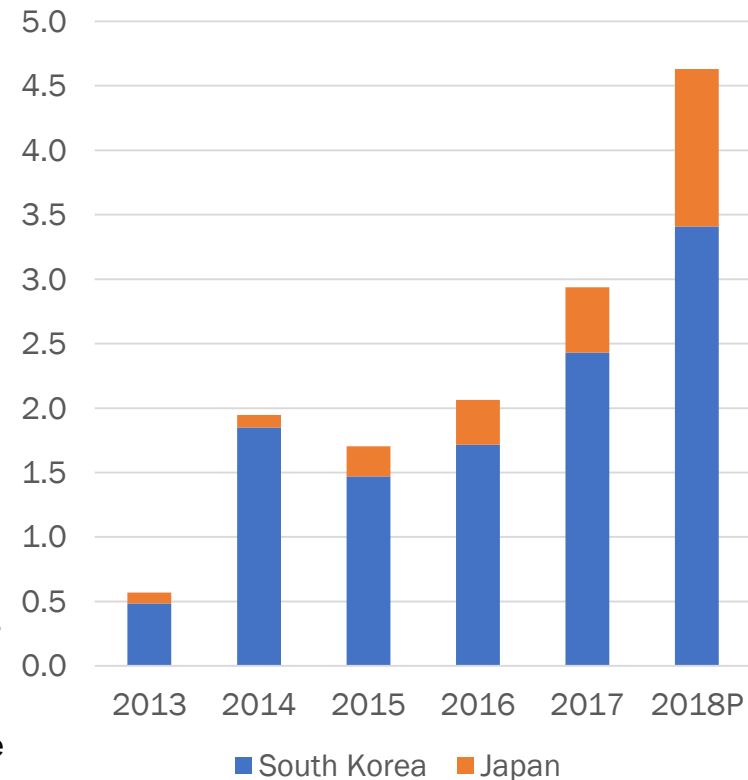
## South Korea: 2018 Demand: 3.4 mm mt, 2023 proj: 5.9 mm mt

In 2018, South Korean wood pellet imports increased to 3.4 million MT, up 40% from 2017. In South Korea, renewable energy is promoted by an RPS that requires an increasing amount of major utilities' energy to come from renewable sources. Tradable "Renewable Energy Certificates" (RECs) are used to demonstrate compliance with the RPS. Korean utilities have found that co-firing wood pellets at major coal stations is one of the most cost effective ways to meet their RPS obligations. We expect, continued increases in co-firing, combined with the commissioning of a few medium-sized dedicated biomass plants, to lead to a 12% CAGR in Korean industrial pellet demand over the next 5 years.

## Japan: 2018 Demand: 1.2 mm mt, 2023 proj: 5.3 mm mt

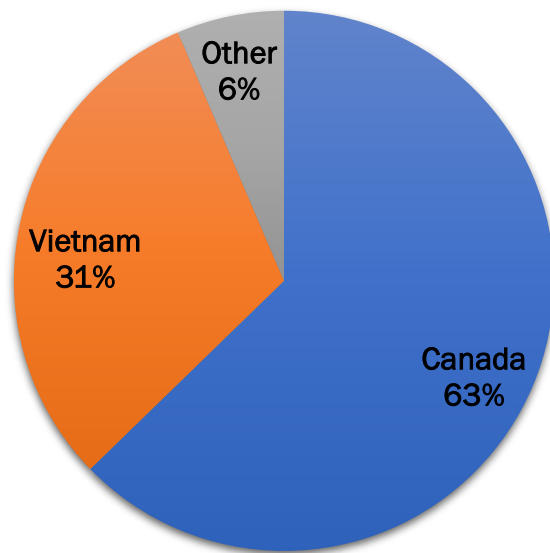
Renewable energy in Japan is promoted by the country's Feed-in-Tariff subsidy that provides renewable energy producers a guaranteed fixed price for their generation over an extended contract period. The FiT stimulated the development of dozens of new small and medium scale biomass power plants, the first of which are beginning to come online. In addition, some major utilities may begin to co-fire increasing amounts of wood pellets for a variety of reasons including meeting efficiency standards, reducing carbon intensity, and perhaps, FiT support. We expect to see continued rapid expansion in Japanese wood pellet imports in the years to come with demand projected to increase from just over 1 million tonnes in 2018 to over 5 million tonnes in 2023.

Japan and Korea Wood Pellet Imports  
Million MT

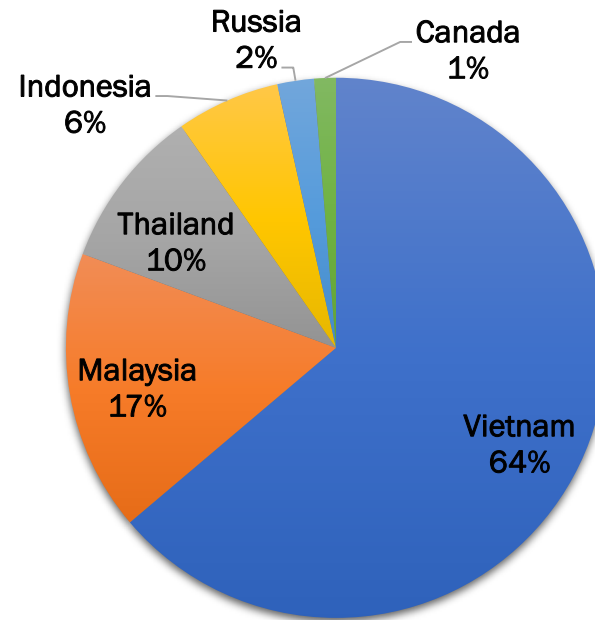


Japan and South Korea have very different sources of wood pellets, some of this is because of the types of policies that support renewable energy in each country. In Japan, where the FiT provides a fixed price over an extended period of time, long-term contracts and stability are necessary, North America is an ideal sourcing region. In Korea, because of the uncertainty regarding power prices and the value of RECs, combined with an official government tender program for fuel procurement, lower cost producing regions have dominated the market.

**Japan**  
Sources of Wood Pellets - 2018

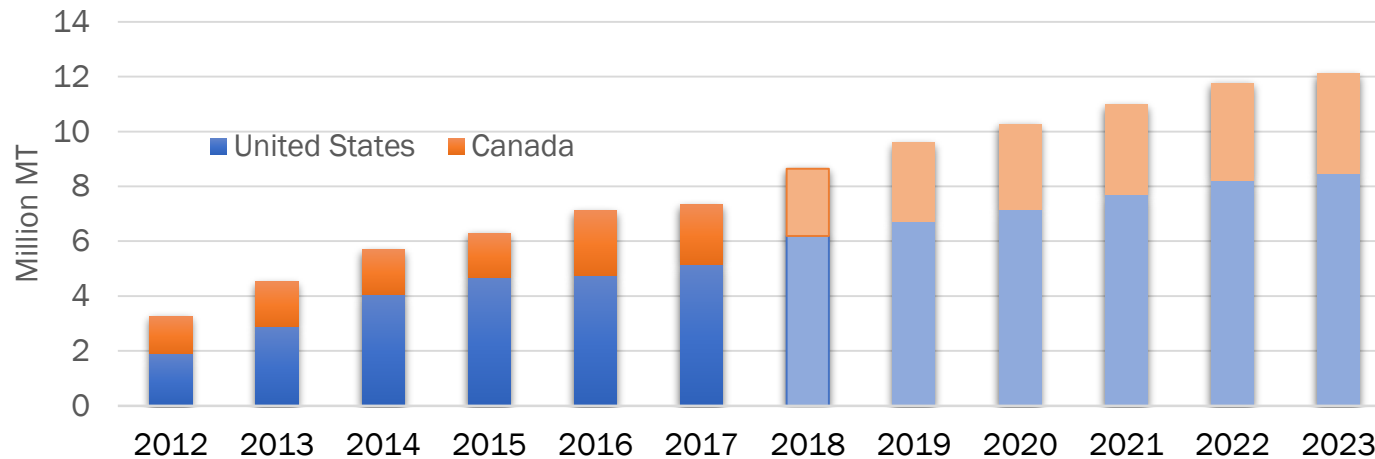


**South Korea**  
Sources of Wood Pellets - 2018



# Outlook For North American Exports

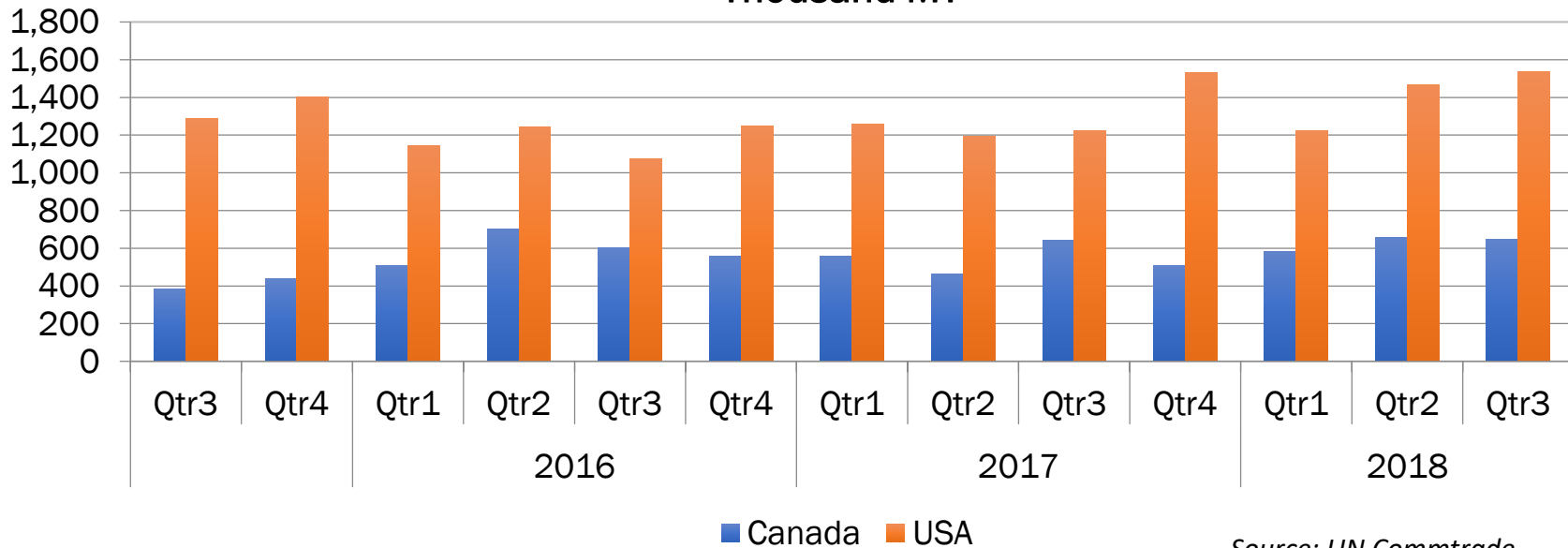
North American Pellet Export Forecast



- North American pellet exports will increase to an all time high in 2018. US pellet exports are projected to increase to 6.2 million tonnes, up 20% from 2017; Canadian pellet exports are projected to increase 2.4 million tonnes, up 12.6% from a year prior.
- FutureMetrics projects that US exports will increase to 8.5 million tonnes in 2023. Canadian exports will increase to 3.7 million metric tonnes.
- With pricing and demand growth both strong in industrial wood pellet markets, we expect to see new major industrial pellet mills to be developed in the US South after several years of slow growth. In addition, the US Pacific Northwest is well positioned to supply some volume to rapidly growing Asian pellet markets.
- In western Canada new growth will likely be more marginal with feedstock constraints from the mountain pine beetle remaining an issue. Eastern Canada will likely see the development of several small to medium sized industrial pellet mills as sawmillers in those regions look for markets for their residuals.

# North American Pellet Exports

Quarterly North American Pellet Exports  
Thousand MT

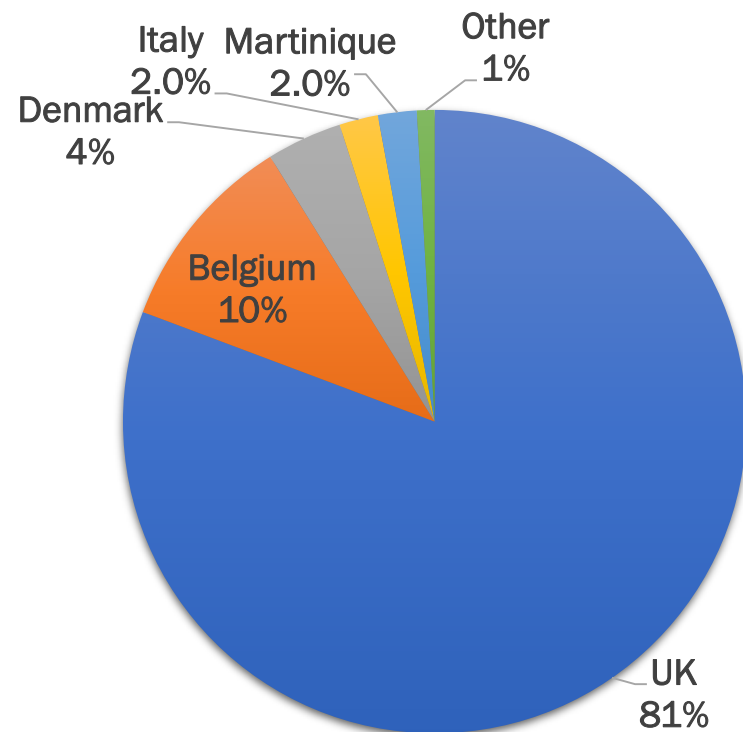


Both the US and Canada exported record volumes of wood pellets in the 3<sup>rd</sup> quarter of 2018. Canadian exports slightly surpassed previous highs set in the 3<sup>rd</sup> quarter of 2017 and US exports were greater than previous highs in the 4<sup>th</sup> quarter of 2017.

# US Pellet Exports

- In Q3 2018 the UK remained the dominant market for US pellet exports accounting for 81% of the total.
- Belgium, Denmark and Italy also received bulk shipments, however, one of the most interesting developments was a shipment to the French overseas department of Martinique.
- In late September a 40 MW biomass CHP plant was commissioned at the Gailon sugar refinery in Martinique. The plant will use a combination of sugarcane bagasse and “wood residues from sustainably managed forests.” Which, apparently means wood pellets from the United States.

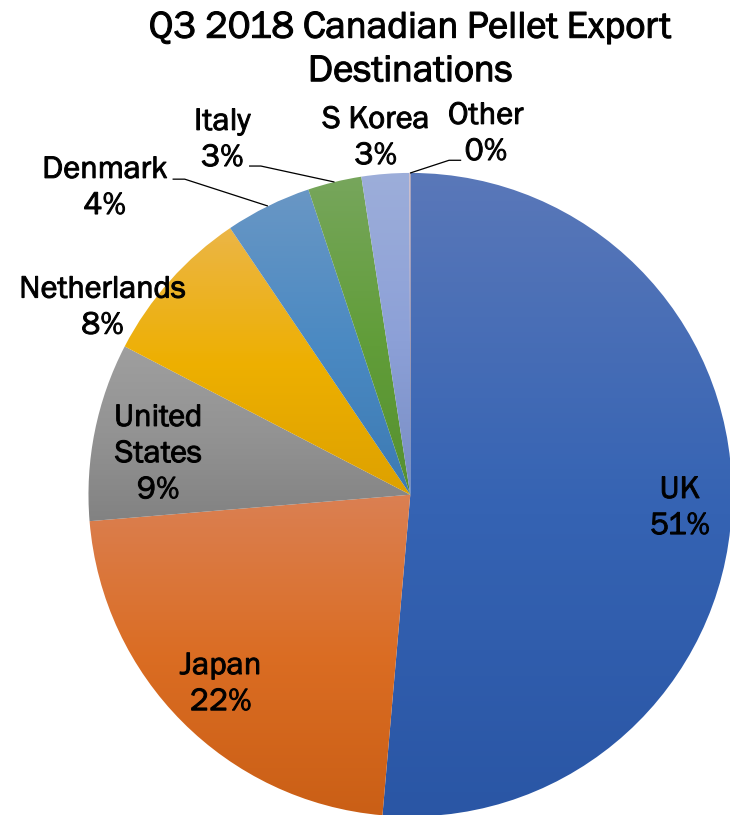
Q3 2018 US Pellet Export Destinations



Source: UN  
Commtrade

# Canadian Pellet Exports

- Canadian exports were significantly more diverse than US exports in Q3.
- The UK, Japan and US remain the three largest markets for Canadian exports.
- More than 50,000 tonnes were exported to the Netherlands, the first significant volumes since 2012 – likely to fuel co-firing at the Amer power station.
- The large shipment to Denmark was the first of its kind from Canada.
- Volumes to Italy and South Korea were at recent highs.



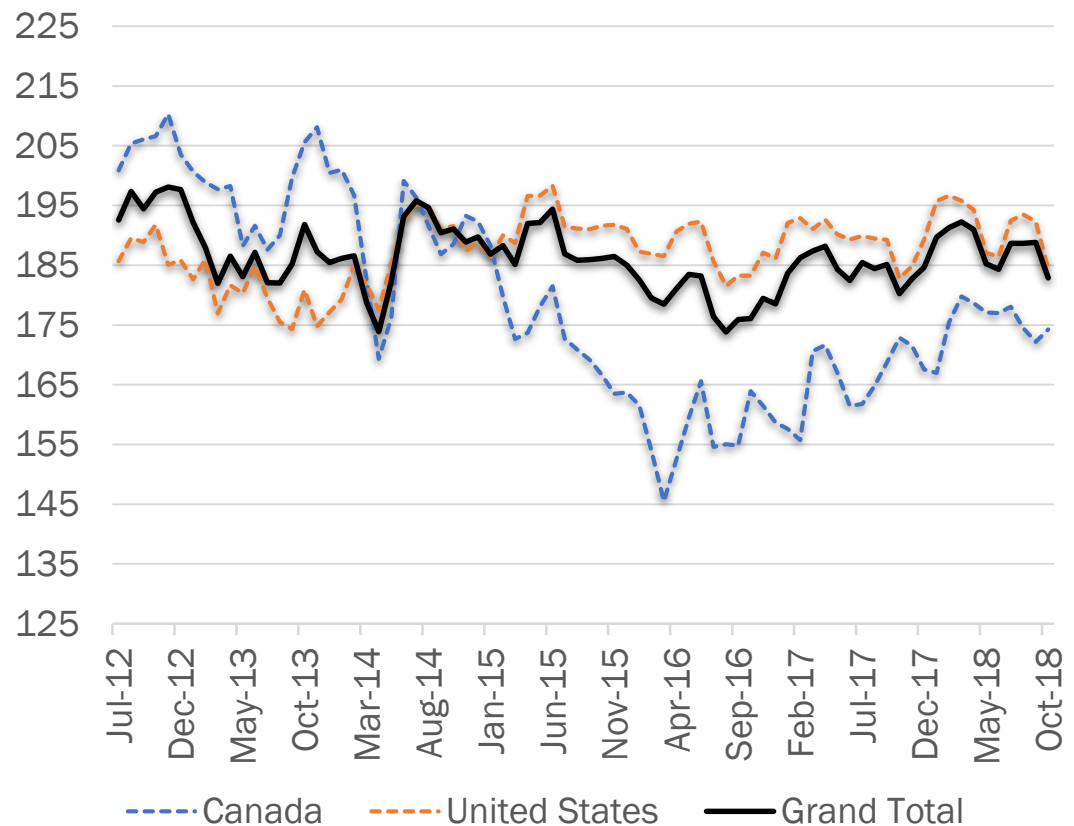
Source: UN  
Commtrade

# Pellet Export Prices

There are spot markets for wood pellets, however the vast majority of industrial wood pellets sold from North America are under long-term bilateral contracts. These contracts are typically, though not always, in local currency, which helps explain why the average contract price from Canada is now significantly lower than from the United States – since the Canadian dollar is comparatively weak (though it has recovered some recently).

In Q3 2018, FutureMetrics North American pellet export price index was **\$188.84/MT** (CIF, Western Europe and UK). The average price of wood pellets from the United States was **\$192.28/MT**, while the average price from Canada was **\$172.18/MT**.

North American Pellet Export Contracted Prices  
USD/MT CIF Western Europe



Source: UN Comtrade,  
FutureMetrics

# North American Industrial Export Economics

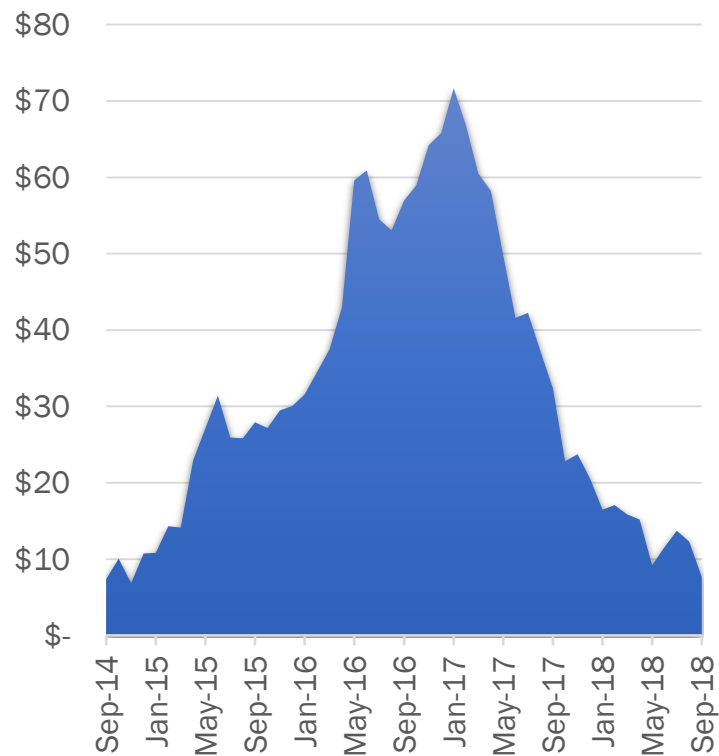
The spread between spot and contract prices is a good indicator of market conditions and the relative competitiveness of North American pellet suppliers.

The spread between spot prices, indicated by *Argus Biomass Markets* CIF ARA index, and average contract prices from North America narrowed to just \$7/MT in Q3 2018. Spot prices in the index were around \$178/MT and average contract prices around \$188/MT. This is the lowest price spread since early 2015, indicating a fairly healthy market with supply and demand in better balance.

We expect to see even further narrowing of the spread in our next issue as the Argus index is now above \$200/MT for the first time ever.

In January 2017, that spread was at its highest level, over \$70/MT, with spot prices around \$112/MT and average prices from North America, landed in the UK, Belgium and Denmark at \$184/MT.

Difference Between Argus Spot Price and  
North American Contract Price  
\$/MT



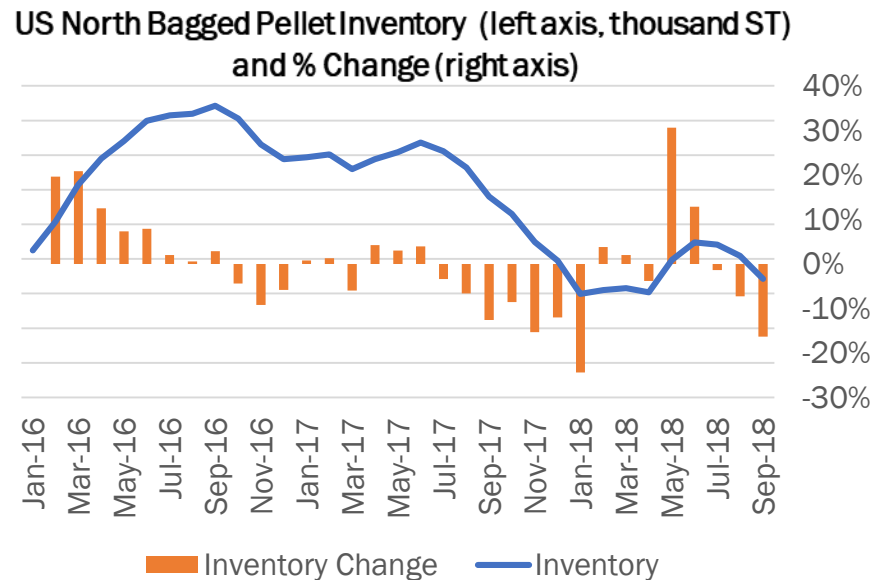
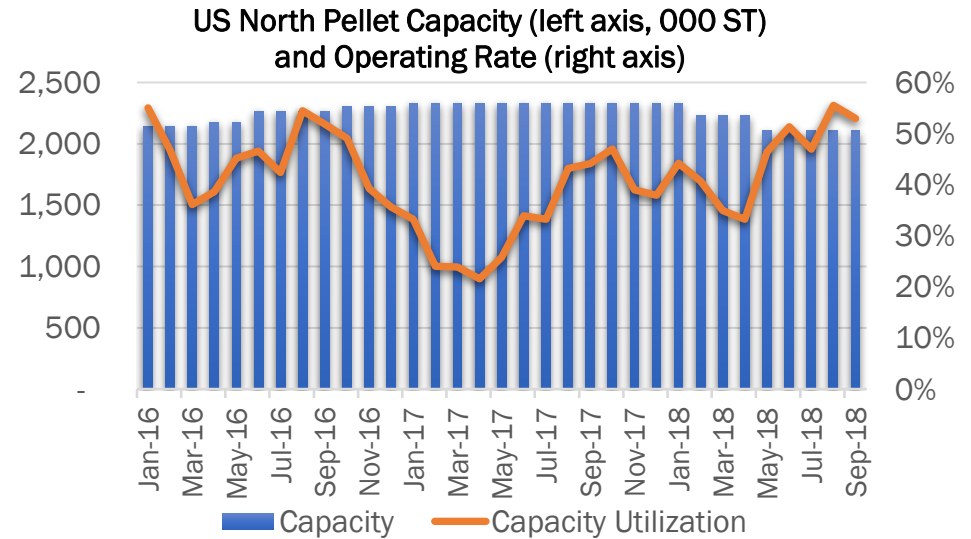
Source: Argus, FutureMetrics



# Northeast / North Central Production

Producers in the Northeast and North Central have not been able to increase production as much as they would have liked primarily due to fiber shortages. Producers reported that it was difficult to procure fiber due to historic wet weather in the East. That, combined with robust demand and low inventory levels, has led to a situation where producers are actually more concerned about shortages than being able to sell their product.

Despite some mill closures due to fire and fiber shortages, production in Q3 was 17% higher than last year.



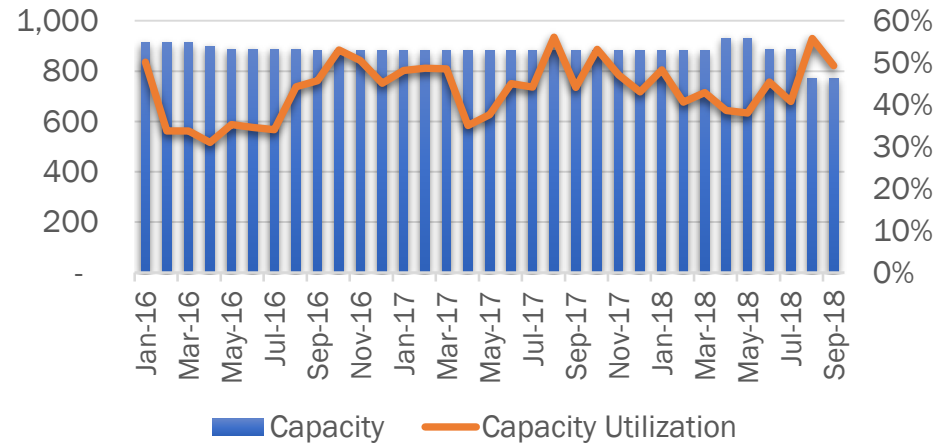
Source: EIA, FutureMetrics

# West Production

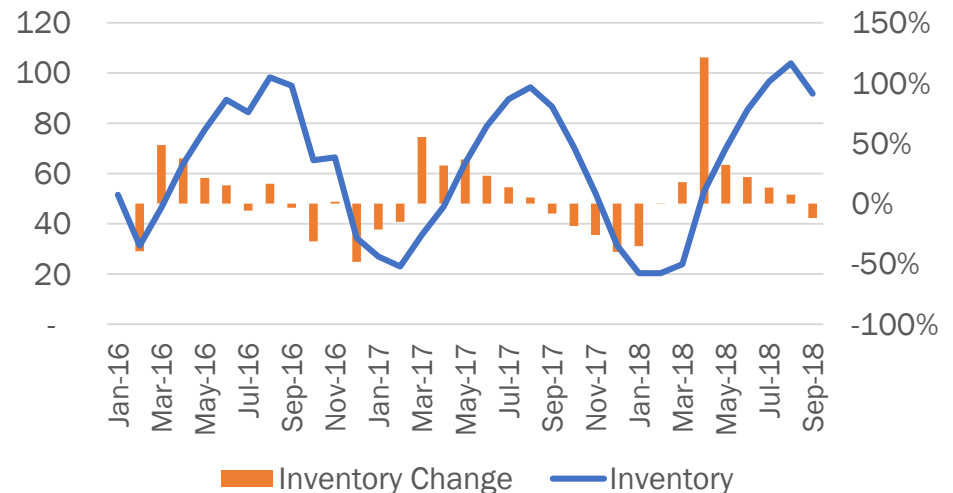
Based on EIA projections, the west will see a significantly cooler winter this year than last. This comes as a welcome development considering that despite a warmer than average winter, producers in the West were able to maintain production levels, though pricing was a bit weaker than last season.

Inventory in the West is even slimmer than the last two years, setting the region up for a good winter.

US West Pellet Capacity (left axis, 000 ST) and Operating Rate (right axis)



US West Bagged Pellet Inventory (left axis, thousand ST) and % Change (right axis)



Source: EIA, FutureMetrics

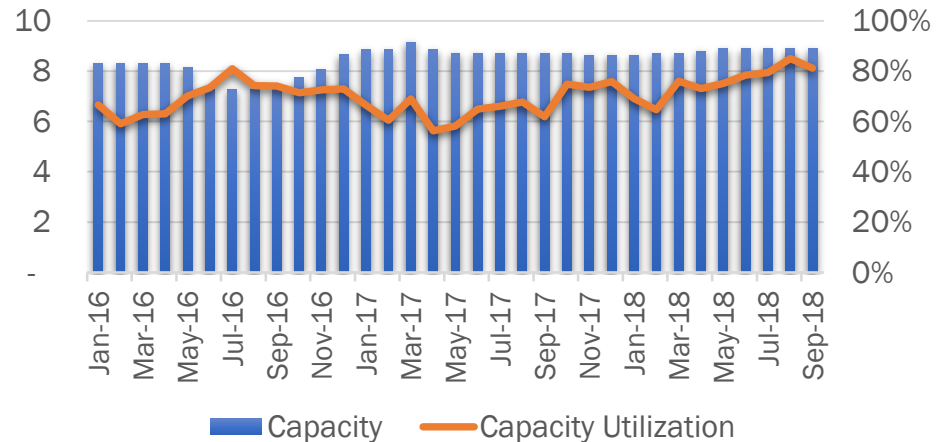
# South Production

US South pellet capacity utilization has increased from a low of 56% in April of last year to 85% in August –a trend reflective of broader improvement in global industrial pellet markets.

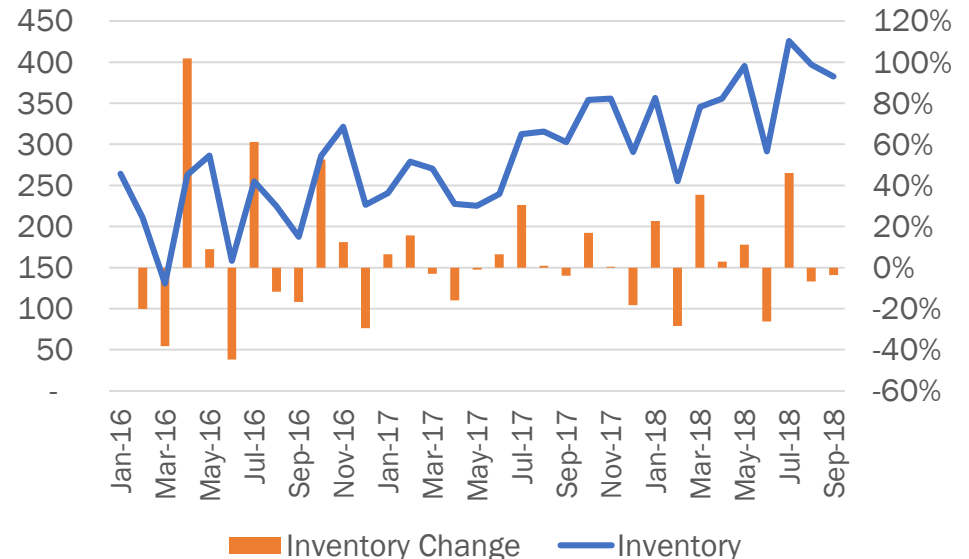
Virtually all current wood pellet production in the US South is for the industrial export market (96% in Q2 2018 according to EIA survey results). US South industrial pellet production was 1.81 million MT in Q3 2018 a 28% increase from Q3 2017.

US South industrial producers are looking to Japan and Korea to develop new contracts in order to build additional pellet mills in the region.

US South Pellet Capacity (left axis, million ST) and Capacity Utilization (right axis)



US South Industrial Pellet Inventory (left axis, thousand ST) and % Change (right axis)



Source: EIA, FutureMetrics

# New England Pellet Pricing

FutureMetrics' New England Pellet Price Index started in 1995 and tracks bagged pellet prices in Northern New England.

FutureMetrics' New England Pellet Price Index was \$267 in November 2018, up \$13 from a year ago. Our surveyor reported that several retailers were already sold out of product and were waiting for more orders to arrive.

*Pellet prices are currently at their highest levels since FutureMetrics began collecting monthly data.*

Feel free to contact FutureMetrics if you are interested in more granular information or custom analysis based on our survey.



Source: FutureMetrics

# Competing Fuel Prices

Pellets currently have a significant advantage over most fossil fuels on a \$/MMBTU basis. The main exception is natural gas. It is important to note that crude oil prices have fallen from the mid \$70s per barrel to mid \$40s per barrel over the last quarter. Heating oil prices, which lag behind crude prices, will follow.

**Comparative Heating Fuel Prices 12/10 /18**

	Units	\$/unit	\$/MMBTU
Cord Wood	cord	275	12.50
Pellets	ton	268	16.24
Natural Gas	therm	1.73	17.30
Heating Oil	gallon	2.96	21.34
Kerosene	gallon	3.55	26.52
Propane	gallon	2.89	31.64
Electricity	kWh	0.175	51.29

Source: Maine Governor's Office

**New England Heating Oil Prices**  
\$/gal (left) and \$/ton pellets equivalent (right)



Source: Maine Governor's Office, FutureMetrics

# Upcoming Events and Announcements

William Strauss will be speaker at the  
CMT 4th Biomass Trade and Power Europe Conference  
in Copenhagen, Denmark, February 12-13, 2019.

William Strauss will be speaker at the  
International Biomass Conference  
in Savannah, Georgia, March 18-20, 2019.

FutureMetrics team members William Strauss, John Swaan, Seth Walker, and Laurenz Schmidt will be at the  
Argus Biomass Conference  
in London, April 8 - 10, 2019.

FutureMetrics team members William Strauss, John Swaan, Seth Walker, and Laurenz Schmidt will be at the  
CMT 10th Biomass Trade and Power Conference in Tokyo, May 13 - 16, 2019.

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