MERCATOR INTERNATIONAL LLC
Logistics & Infrastructure Advisors

Wood Pellets – The OTHER North American Energy Revolution

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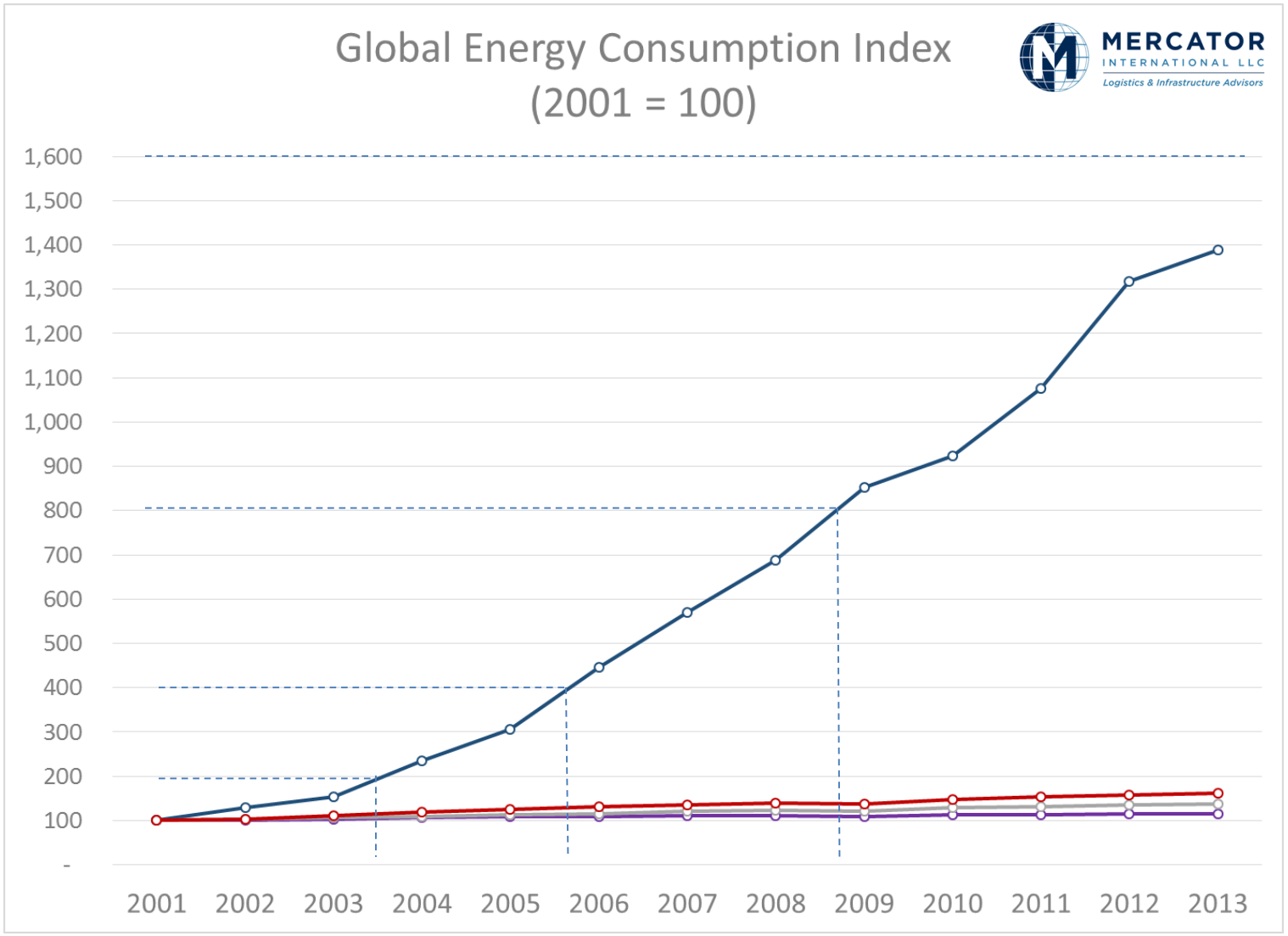
Wood Pellets Consumption Growth Rates Eclipse Fossil Fuel Growth Rates



Wood Pellets
CAGR = 24.5%

Coal (4.1%)
Natural Gas (2.6%)
Oil (1.2%)

Wood Pellet Demand is Largely Driven by Rapidly Growing European Consumption

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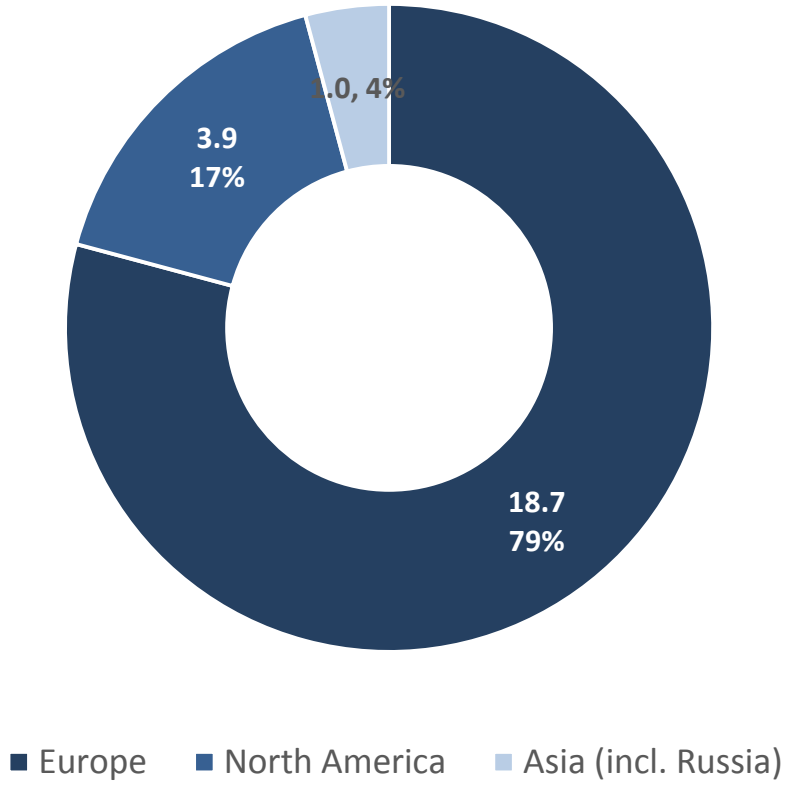
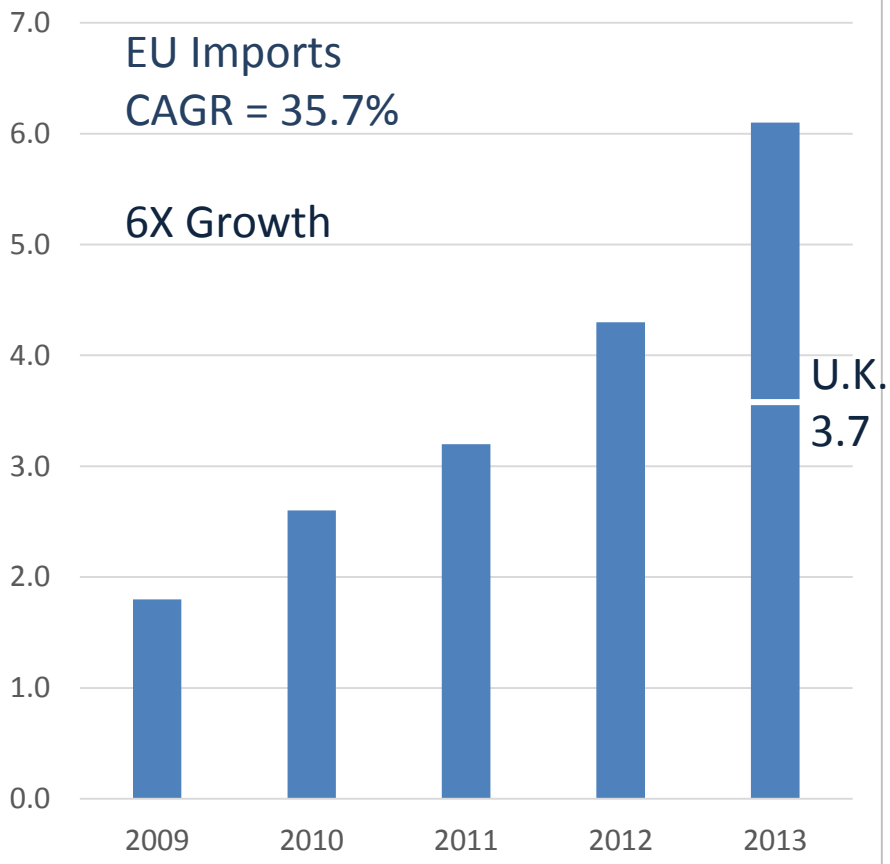
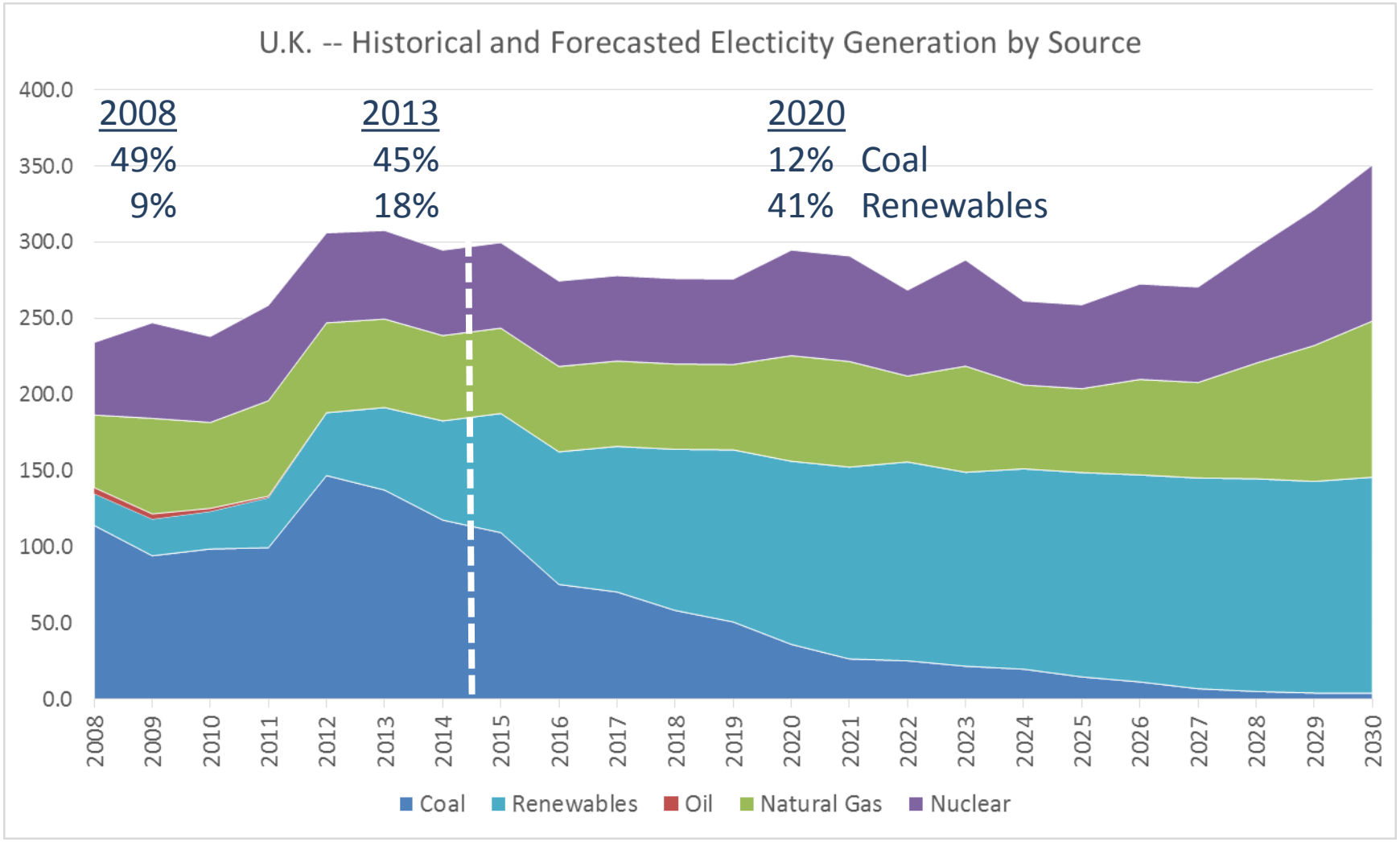
Sources of Wood Pellet Demand (2013)
Metric Tonnes (millions) and Share of Total



EU Imports of Wood Pellets
Million Metric Tonnes



U.K. Electricity Generation by Fuel Type

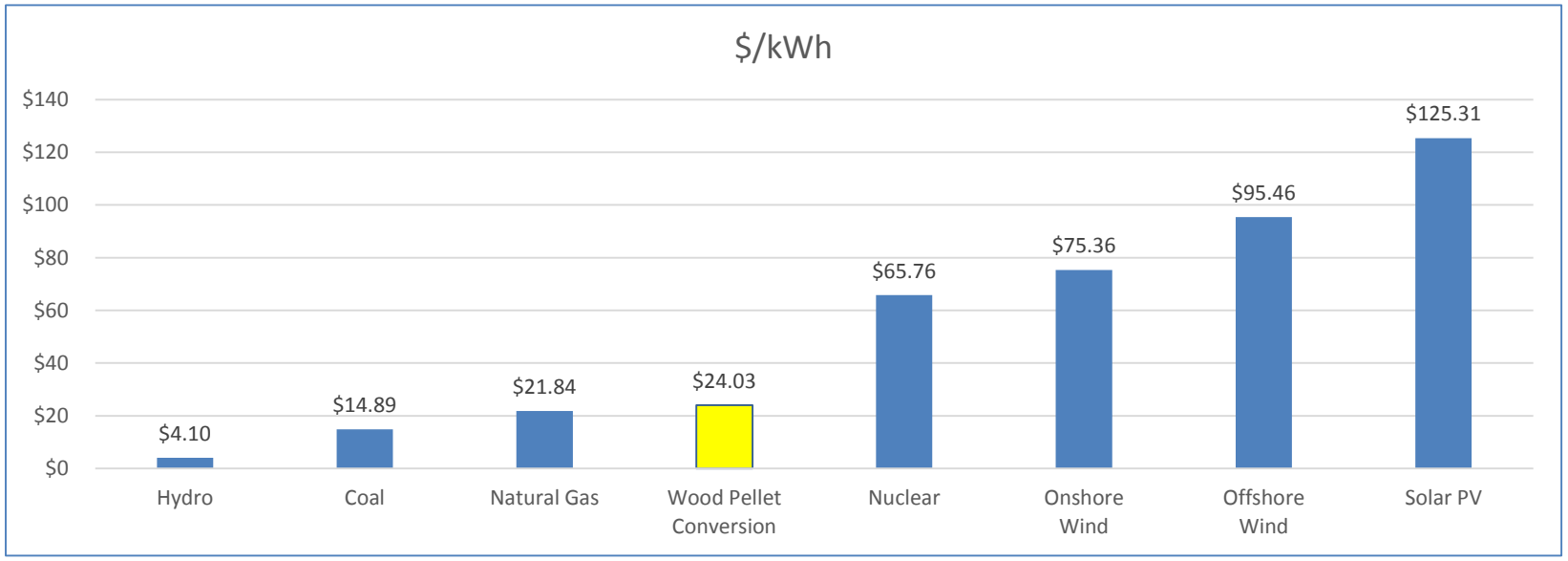


Competitive Advantage of Wood Pellets for Power Generation

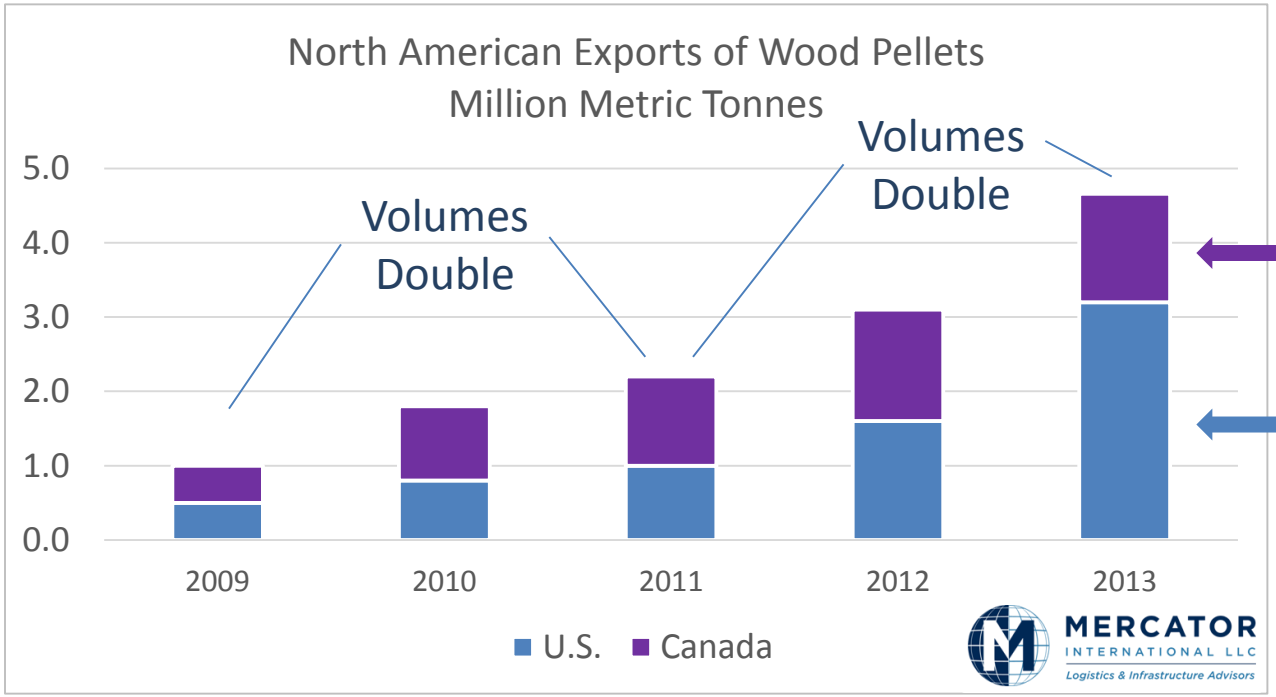
Comparison of Alternative Sources of Power Generation				
	Baseload Power	Renewable	Low Carbon	Price/kWh
Hydro	✓	✓	✓	$4.10
Coal	✓			$14.89
Natural Gas (Combined Cycle)	✓			$21.84
Wood Pellet Conversion	✓	✓	✓	$24.03
Nuclear	✓			$65.76
Onshore Wind		✓	✓	$75.36
Offshore Wind		✓	✓	$95.46
Solar PV		✓	✓	$125.31

High Capacity Factors

Low Capacity Factors



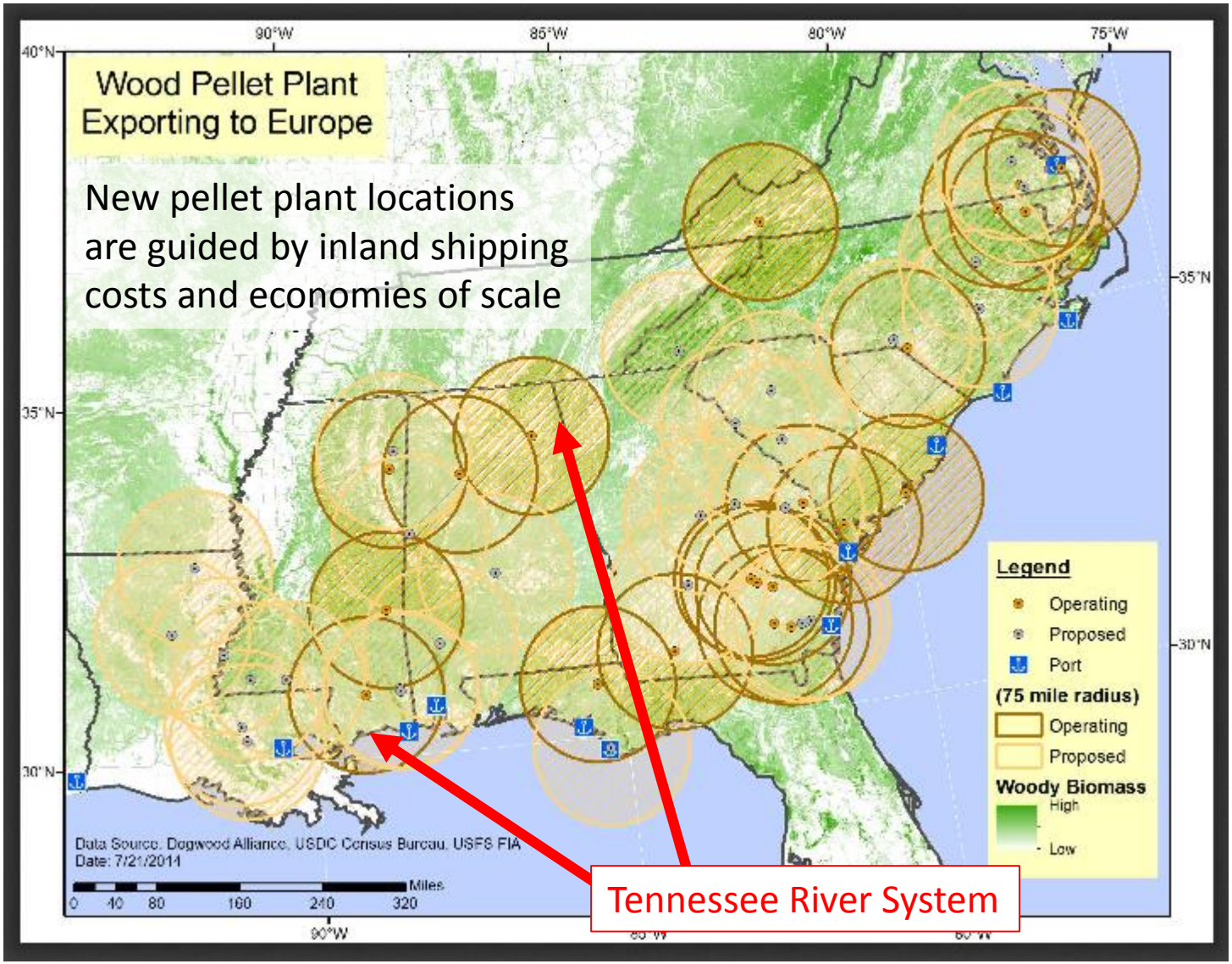
North American Exports of Wood Pellets



80% from British Columbia

98% from Southeast

Map of Existing and Proposed Wood Pellet Plants



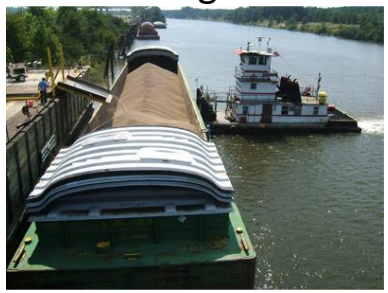
Wood Pellet Export Supply Chain

Sawmill/Logging Residues

Low Grade/Burnt Feedstock

Pellet Plant

Barge



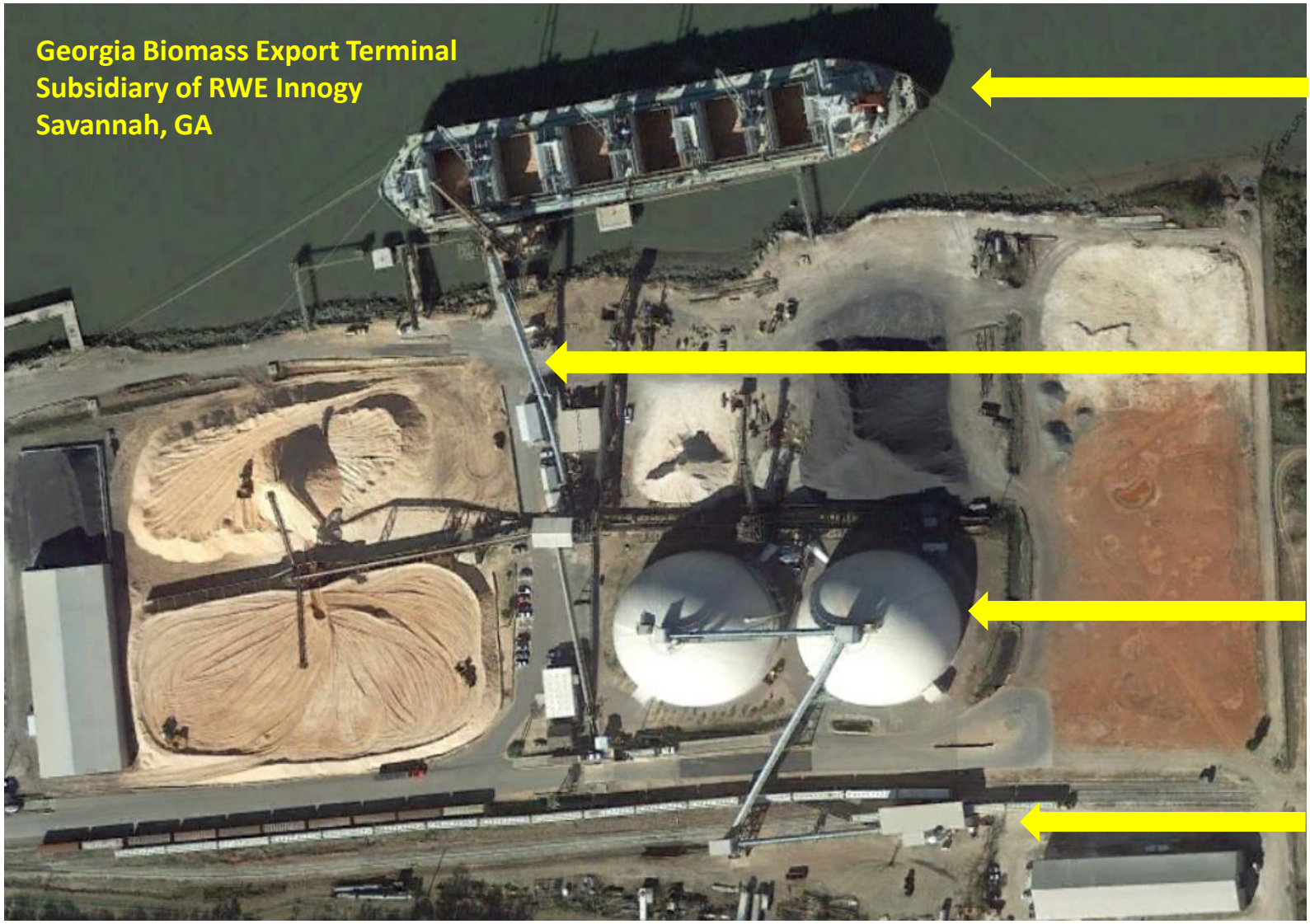
Rail

Export Terminal

Rules of Thumb

- Each 500 MW power unit produces approximately 4 TWH per year when operating at a capacity factor of 90%
- 0.5 million MTPY (metric tonnes per year) are required to generate 1 TWH
- 2.0 million MTPY are required for each 500 MW power unit
- Supplying 2.0 million MTPY is efficiently handled via a weekly call of a 50,000 DWT vessel (large handymax/small supramax)
- This requires a conveyor system capable of handling 1,000 MT per hour, and
- Approximately 10 unit trains per week
- Supplying one 500 MW power unit generates approximately domestic 3,500 jobs

Overview of Wood Pellet Export Terminal Characteristics



Handymax/ Supramax Vessel ~50,000 DWT

Covered Conveyor System (1,000 MT/h)

Two 25,000 MT Storage Domes

Three 1,400 foot tracks & Covered Offload Facility

European Power Producer Wood Pellet Demand Outlook

CASE STUDY

Estimation of Potential Incremental European Wood Pellet Demand

Power Plant	Nameplate Capacity	Capacity at 80% Utilization	Total Energy Generation	Total Wood Pellet Demand
	MW	MW	TWH/Y	MTPY
DRAX 1*	650	585	5.12	2.6
DRAX 2*	650	520	4.56	2.3
DRAX 3	650	520	4.56	2.3
DRAX 4**	650	520	4.56	2.3
Lynemouth	350	280	2.45	1.2
Tees	295	236	2.07	1.0
Tilbury*	750	600	5.26	2.6
EON Langerlo	500	400	3.50	1.8
Netherlands	875	700	6.13	3.1
Total Incremental Demand				9.4

* DRAX 1 and DRAX 2 are already online at end of 2014

** DRAX 4 may or may not be converted

*** Tilbury may or may not be brought back online

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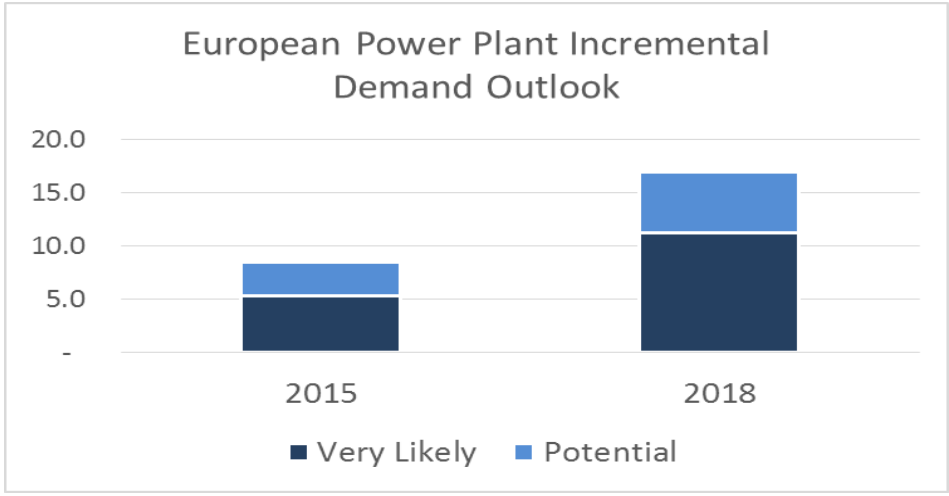
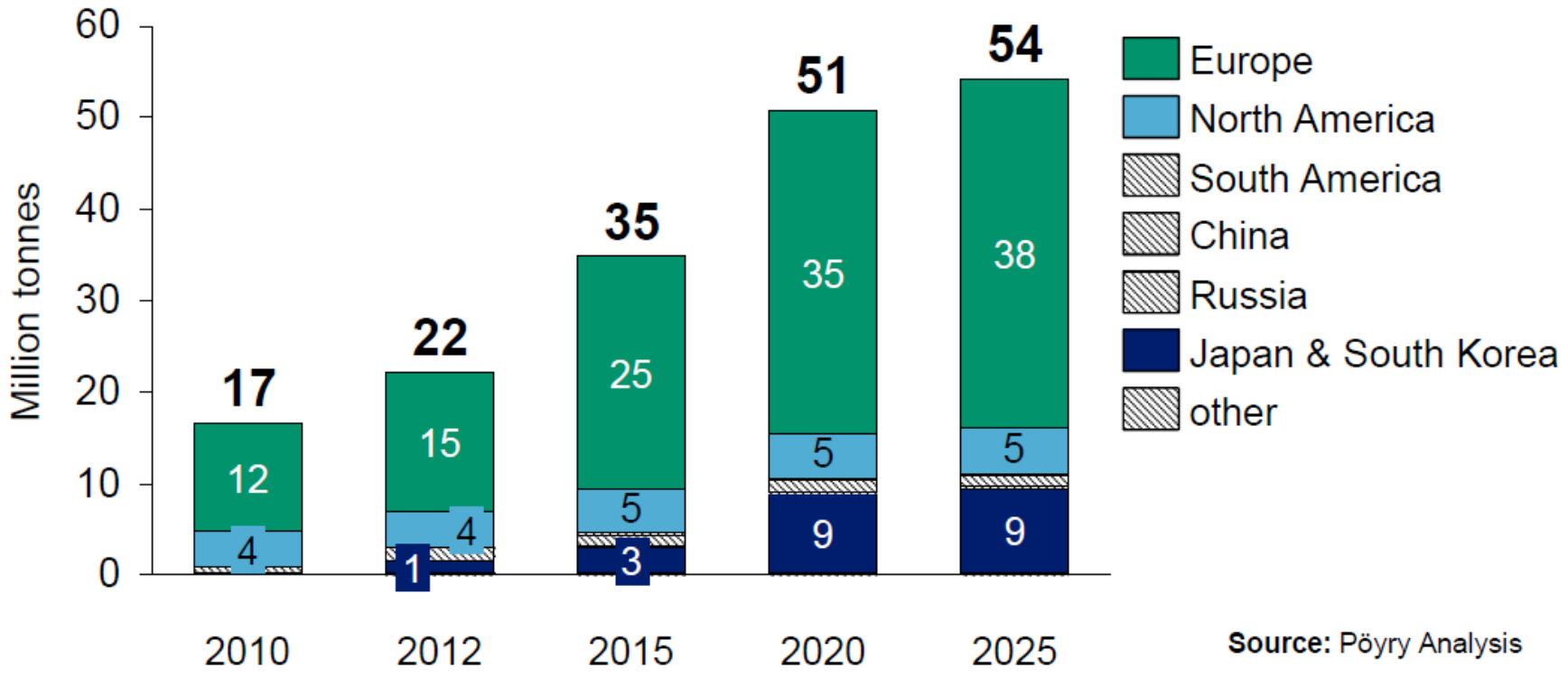


Asia Demand

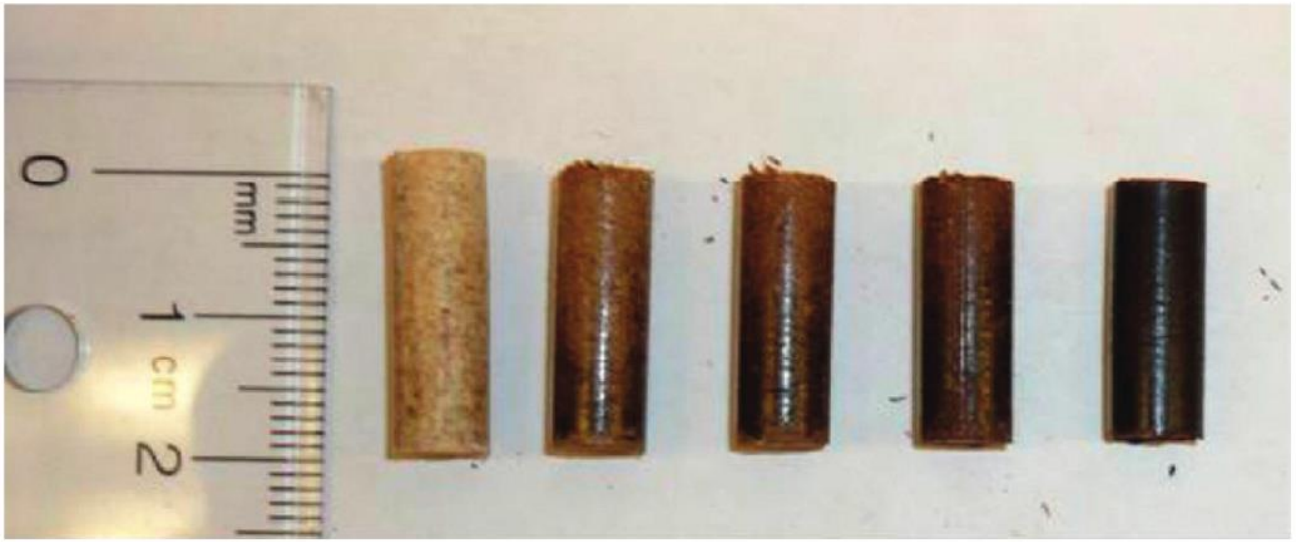
Global Pellet Demand (Pöyry central scenario)



Source: Silvio Mergner, Poyry

Note on Potential Technological Developments

Stages of Value Added Processing
Steam Explosion and Torrefaction



White Pellets:
Fragile
Hydrophilic
Lower Energy Density

Black Pellets:
Sturdy
Hydrophobic
Higher Energy Density

Thank You

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