

Biomass Supply Agreements From a Purchaser's Perspective



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Seneca Sustainable Energy

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Who we are **Seneca Family of Companies**

- **Seneca Sawmill Company**
 - 4 Sawmills producing lumber
- **Seneca Jones Timber Company**
 - Supplying Sawmills with timber
- **Seneca Sustainable Energy**
 - Using Sawmill residuals and woods biomass for Energy

Seneca Sustainable Energy

- 18.8 MW renewable energy facility (wood biomass)
- Cogen – generating power and thermal energy from a single fuel source (wood biomass)
 - ▣ Steam – existing dry kilns
 - ▣ Steam – power generation
 - 100% of output to the grid
- Provide annual energy needs for 13,000 homes



Seneca Sustainable Energy

□ Why:

- Logical extension of our business
- Help decrease reliance on fossil fuels
- Renewable energy is supported by both the State and Federal Governments
- Renewable Portfolio Standards (RPS)
 - Oregon – 25% by 2025
- Firm source of renewable power
 - Non-firm – solar & wind
- Discontinue use of natural gas (fossil fuel) at our existing dry kilns
 - Provide the capability to dry larger percentage of our lumber in the future
- Full tree utilization at one site.....
- Ability to supply 100% of our raw material needs internally

Biomass
- Cogen -



100% Total Tree Utilization

*Seneca Sawmill Company
Seneca Jones Timber Company
Seneca Sustainable Energy*



1" Whole
Log Chipper

3.5" Hew Saw

7" Stud Mill

12" Dimension Mill
- Mill A -

Logistics for purchasing 700,000 Bone Dry Ton's(BDT's) Annually

- Fuel Storage
- Fuel Handling
- Fuel Supply
- Fuel Purchase Price
- Fuel Specifications



Fuel Storage

Outdoor?

Maximum Storage
100K-200K BDT's



Indoor?

Limited Storage
15K-20K BDT's

How much can you hold?

3-4 Months?



For how long?

Spontaneous Combustion?

Degradation of fuel?

Fuel Handling

2,000BDT's daily=130 loads=5.4 trucks/hour = 1 Truck every 11 Minutes

- Multiple Truck Dumps?
 - Average Dump Time 20 Minutes.
- Multiple Conveyors?
- Multiple Scales for weigh in/out?
- Fuel Specifications
 - Sizing/ Resizing of material





Breakdowns?

Delays?

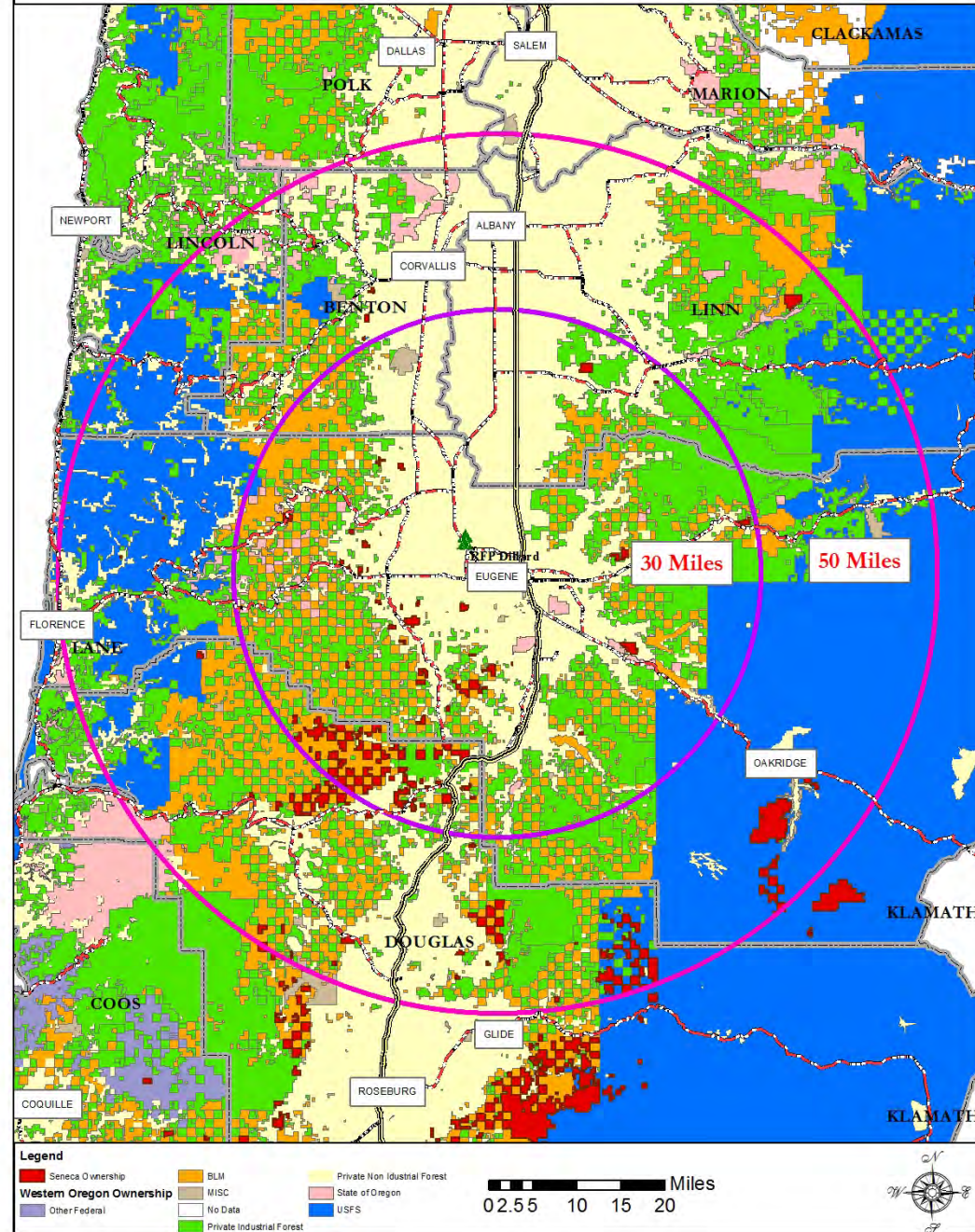


Fuel Supply

- Availability?
 - Seasonal? Rock/Dirt Roads?
- Contractors?
 - How Many do you need?
- Transportation?
 - How Far can you transport?
 - How Much can you transport?



Western Oregon Forestland Proximity Overview



Weather?



Fuel Purchase Price



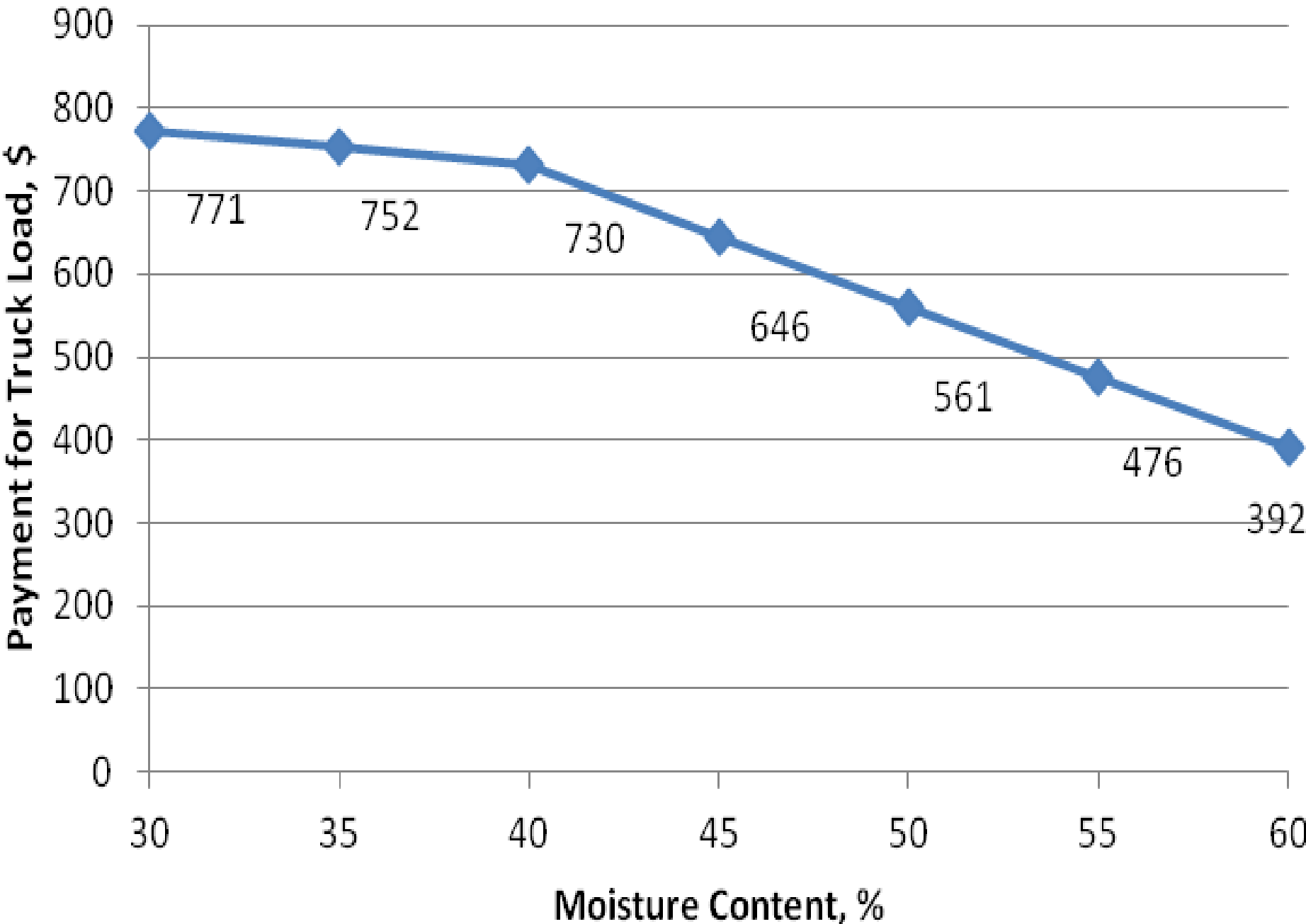
- How Much Can you pay?
 - Green Ton/BDT?
 - Load Testing?
- Tiered Pricing?
- Seasonal Pricing?
- Supply Agreements?
 - Length? 1 Year?

Fuel Specifications

- Quality
 - Dirt?Rock?
- Moisture?
 - Transporting Water?



**Biomass
Pricing as
paid \$ per
BDT**





**Sampling
Every load
for Moisture?**



Fuel Variables:

- MC%
- Quality
- Consistency
- Payment
 - Dry % = BDT

Residuals?





Thank You