Heat Treated – Phytosanitized & Densified Biomass Chips

Energy = Maine Chips Cubed

"Where Maine's Residual Forest Products Go to Sea"

To those we recognize herein - the many professionals and companies who have consulted on our work - Thank you.

E = MC³© Searsport, Maine USA Web site: www.arthurhouse.com Email: art@arthurhouse.com

Transforming Traditional Supply Processes – Toward Carbon Reduction Goals

E = MC³©

A Responsible & Sustainable Biomass Supply Chain

- **Anyone can sell wood chips!**
- **However, we provide a Renewable Energy Alternative/Supplemental Commodity.**
- **One that is Environmentally and Financially Sustainable.**
  - Enabling CHP buyers to strive for and reach Carbon Neutrality Goals
  - By, blending their Procurement needs with Pellets and $E = MC^3_{\copyright}$ Energy Chips

Let's Begins with Shared Duties and Commitments attainable through Alliances

- **We have a Shared Duty to:**
  - **Manage and lead in our companies and our industry;**
  - **Promote the success of our companies and our industry;**
  - **Act responsibly and sustainably at every level of our operations.**

This shared commitment will effectively promote and provide for Reduced Carbon Emissions

$E = MC^3_{\copyright}$

Environmental and Social Aspects

Identify - and Reduce - Risks or Exposure Related to:

1.) **Perceived Over-Cutting** or **Intrusive Harvesting** of forests;

2.) **Fiber Origination** – procure only from **Well Managed and Properly Certified** forests;

3.) **GHG – Emissions Reduction**: move from **Carbon Intensive Trucking** – to **Rail Transportation**;

4.) **Secure Bankable Fiber** - **Aggregate**, **Classify**, **Process** and **Ensure Quality Assurance**;

5.) Meet all **EU Import** requirements – **Phytosanitation** - accomplished with **no Fossil Fuel**;

6.) **Densify** and Compact commodities for effective, efficient and low cost **Material Handling**;

7.) **Costly Storage Buildings**, **Chip-Pile Management, Port Handling**, **Weather – Climate Exposure**;

8.) **Ocean Freight** cost containment to exceed **Density/Stowage Efficiency** and promote **Alliances.**

Adherence to the above will Guarantee Carbon Emission Reductions.

$E = MC^3$ ©

1 Perceived over-cutting or intrusive harvesting of forests

Perceptions – EU

Based on 1 EU Company

In 2019 a EU company consumed roughly 9 MMT of wood pellets per year (or roughly 21 M-US tons of raw wood chip fiber per year).

This requires active management and harvesting of 4,600 sq. miles of forests or 2.9 m acres Slightly smaller than Connecticut

Or, roughly 8,066 acres per day to maintain operations.

https://wattsupwiththat.com/2019/02/07/the-obvious-biomass-emissions-error/

More than 70,000 US tons of wood harvested *every day* from US forests = 2,333 Truck Load Movements per day

https://wattsupwiththat.com/2013/11/09/wood-burning-power-plants-misguided-climate-change-solution/

Perceptions US-SE

Based on 1 SE Based Company

US-SE region exported 9.6 MMT in 2019 = 22.4 M-US tons of raw wood chip fiber.

US-SE region expected to export 13.6 MMT annually by 2030

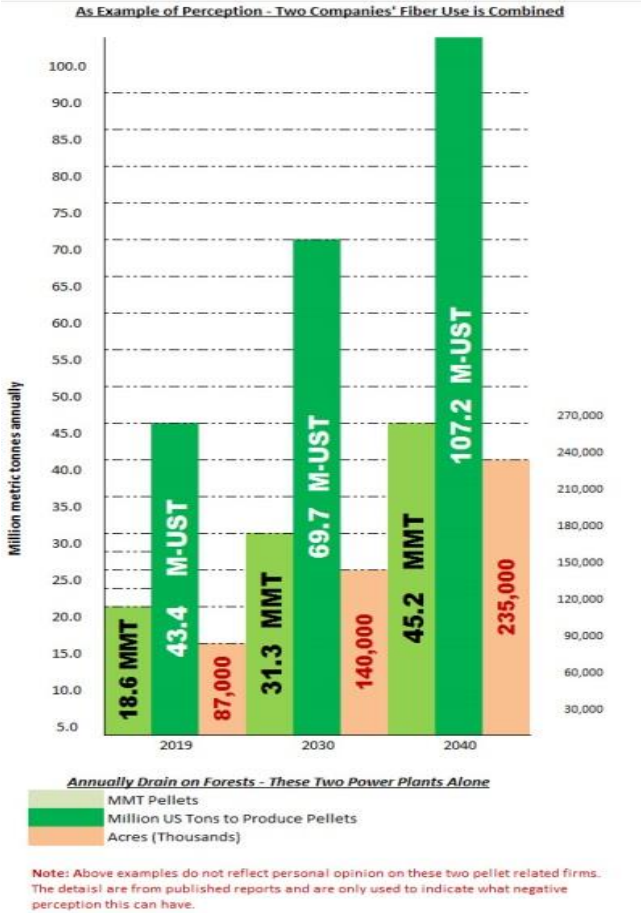
At the time of this report in 2017 80,000 acres were being harvested annually.

By 2030 this will increase to 280,000 acres annually to keep up with demand.

"The use of wood and other biomass will increase at an average annual rate of 4.4 % from 2014 through 2040".

U.S. Department of Energy, Energy Information Administration 2014
https://www.dogwoodalliance.org/wp-content/uploads/2017/08/Acres-of-Pellets-Fact-Sheet.pdf
http://bit.ly/2tFsGSe

E = MC³©



Note: Above examples do not reflect personal opinion on these two pellet related firms. The details are from published reports and are only used to indicate what negative perception this can have.

Negative Perceptions

Surprise! Greedy Green Energy Corporatists are Clear Felling Protected Forests for Biomass
https://wattsupwiththat.com/2016/11/26/surprise-greedy-green-energy-corporatists-are-clear-felling-protected-forests-for-biomass/

The Obvious Biomass Emissions Error
https://wattsupwiththat.com/2019/02/07/the-obvious-biomass-emissions-error/

A Trifecta of Green Lunacy: The law of unintended consequences kicks in
https://wattsupwiththat.com/2017/02/23/a-trifecta-of-green-lunacy-the-law-of-unintended-consequences-kicks-in/

Wood-burning power plants: Misguided climate change solution?
https://wattsupwiththat.com/2013/11/09/wood-burning-power-plants-misguided-climate-change-solution/

Green Shock: Entire Forests Being Murdered to Produce Wood Pellet Biomass
https://wattsupwiththat.com/2018/04/18/green-shock-entire-forests-being-murdered-to-produce-wood-pellet-biomass/

Hardwood forests cut down to feed [sic] Power plant, Channel 4 Dispatches claims
https://theecologist.org/2018/apr/16/hardwood-forests-cut-down-feed-drax-power-plant-channel-4-dispatches-claims

Dangerous delusions: biomass is not a renewable energy source
https://www.leonardodicaprio.org/dangerous-delusions-biomass-is-not-a-renewable-energy-source/

Negative Effects of Biomass
https://sciencing.com/negative-effects-biomass-19624.html

The biomass industry should come clean about its environmental impact
https://assets.nrdc.org/sites/default/files/01_opener_biomass_video.mp4

False [Bad] News Travels Farther, Faster Than The Truth, MIT Study Finds
https://www.wbur.org/commonhealth/2018/03/08/fake-news-twitter
Word of Mouth 7 Times Faster - Social Media 1,000 Times Faster

Responsibly: Ensure procurement strategy includes a mixture of fiber from sources not harvested. Blend residuals where ever possible.

E = MC³©

2 **Fiber Origination** – procure only from **well managed and properly certified** forests

- Maine contains an estimated **17.6 million acres of forest land** and covers **89.1%** of the land area in the State. Most of the forest land, **95.3 %, is classified as timberland**, meaning that it **exceeds a minimum level of productivity** and is not legislatively reserved from timber harvesting.
- Forest land, in Maine there is an estimated **23.9 billion live trees** ≥1 in d.b.h.
- These trees have a total **above ground biomass** of **713.8 million tons** and, looking at trees ≥5 in d.b.h., a total net volume of 27.3 billion ft3 . The ratio of net growth to **removals is 1.4:1**.
- **Certificated Fiber: 1.55 M acres FSC**; **2.83 M acres SFI** and **3.26 M acres both FSC and SFI** = **7.64 M acres total**

https://www.fs.fed.us/nrs/pubs/ru/ru_fs160.pdf

Not depicted here is certificated forests in New Brunswick, Canada - and other Canadian Regions from ~ 2.5 m acres of Sustainably Managed land.

Sustainability Statistics
Considering all Four (4) Mega Forest Regions

Certifications

Major Landowners Harvest Acreage

Certifications	Acres	Owners
FSC	1,548,319	11
SFI	2,831,237	7
FSC & SFI	3,257,579	1
	7,637,135	19

Every landowner has cutting plans, sustainability plans and works with licensed, certified Forester to define annual cuts and to oversee all required to supply fiber from the land through licensed logging companies.

Logging Contractors and Trucking Firms

Total	86	
Within 50 mi	53	62%
Beyond 50 mi	33	38%

5,000,000	US Tons Available
4,508,500	Metric Tons Available

Sustainably: Ensure all fiber comes only from Sustainably Managed Forests – Secure all Necessary Certification Documentation

E = MC³©

100% of raw **Biomass Fiber is acquired from sources including; a.) logging residuals, b.) small-diameter or low-value trees, c.) mill residues, and d.) other forms of wood waste.**

- Residuals are most prevalent – (slash, tops, limbs, other woody materials from conventional forest harvests.
- Logging residuals often comprise 25% - 45% of harvested timber in northeastern forest operations.
- Another low value source of woody biomass is short-rotation woody crops (SRWCs)
- Woody biomass removals can assist with other management goals such as timber stand improvement, reduction of insect, disease, or fire risk, and reduced use of herbicides and to increase wildlife habitat.
- Biomass production from logging residuals is environmentally and fiscally responsible.
- Hog Fuel is the lowest 'cost and value' fiber source – in late 2020 – to early 2021 ~ 600,000 MT Annually from Searsport, ME
- 2 Replicable systems planned - by 2021 will produce an additional 300,000 MT annually in St. Johns and New Haven CT

Sustainably: Ensure all fiber comes only from Sustainably Managed Forests – Secure all Necessary Certification Documentation

3 GHG – Emissions Reduction: move from Carbon Intensive Trucking – to Rail Transportation

Targeted Procurement = ~ 70% of Fiber Inbound by Rail and ~ 30% on Local Trucks

Log Truck 300,000 UST per year to Facility

Distance Miles	Weight Cargo UST	Emission Factor	Grams of CO2	MT of CO2	$ Per Loaded Mile Truck	$ Per Truck	$ Per US Ton	$ for 300 USTPY	Annual Tons	Annual Loads	Grams of CO2	MT of CO2 Per Load	
200	30	161.8	970800	0.971	$ 3.50	$ 700.00	$ 23.33	$ 7,000,000	300,000	10,000	9,708,000,000	9,708	100%
175	30	161.8	849450	0.849	$ 3.50	$ 612.50	$ 20.42	$ 6,125,000	300,000	10,000	8,494,500,000	8,495	100%
150	30	161.8	728100	0.728	$ 3.50	$ 525.00	$ 17.50	$ 5,250,000	300,000	10,000	7,281,000,000	7,281	100%
125	30	161.8	606750	0.607	$ 3.50	$ 437.50	$ 14.58	$ 4,375,000	300,000	10,000	6,067,500,000	6,068	100%
100	30	161.8	485400	0.485	$ 3.50	$ 350.00	$ 11.67	$ 3,500,000	300,000	10,000	4,854,000,000	4,854	100%
75	30	161.8	364050	0.364	$ 3.50	$ 262.50	$ 8.75	$ 2,625,000	300,000	10,000	3,640,500,000	3,641	100%
50	30	161.8	242700	0.243	$ 3.50	$ 175.00	$ 5.83	$ 1,750,000	300,000	10,000	2,427,000,000	2,427	100%
25	30	161.8	121350	0.121	$ 3.50	$ 87.50	$ 2.92	$ 875,000	300,000	10,000	1,213,500,000	1,214	100%
						Average	$ 13.13	$ 3,937,500			Average	5,461	100%

Rail Car 300,000 UST per year to Facility

Distance Miles	Weight Cargo UST	Emission Factor	Grams of CO2	MT of CO2	$ Per Loaded Mile Rail	$ Per Rail Car	$ Per US Ton		Annual Tons	Annual Loads	Grams of CO2	MT of CO2 Per Load	
200	75	22.9	343500	0.344	$ 4.13	$ 825.00	$ 11.00	$ 3,300,000	300,000	4,000	1,374,000,000	1,374	14%
175	75	22.9	300563	0.301	$ 4.50	$ 787.50	$ 10.50	$ 3,150,000	300,000	4,000	1,202,250,000	1,202	14%
150	75	22.9	257625	0.258	$ 5.00	$ 750.00	$ 10.00	$ 3,000,000	300,000	4,000	1,030,500,000	1,031	14%
125	75	22.9	214688	0.215	$ 5.70	$ 712.50	$ 9.50	$ 2,850,000	300,000	4,000	858,750,000	859	14%
100	75	22.9	171750	0.172	$ 6.75	$ 675.00	$ 9.00	$ 2,700,000	300,000	4,000	687,000,000	687	14%
75	75	22.9	128813	0.129	$ 8.50	$ 637.50	$ 8.50	$ 2,550,000	300,000	4,000	515,250,000	515	14%
50	75	22.9	85875	0.086	NA	NA	NA		300,000	4,000	343,500,000	344	14%
25	75	22.9	42937.5	0.043	NA	NA	NA		300,000	4,000	171,750,000	172	14%
							$ 9.75	$ 2,925,000			Average	773	14%
Transition Point						Average Savings	26%	$ 1,012,500 26%				GHG Reduced	86%

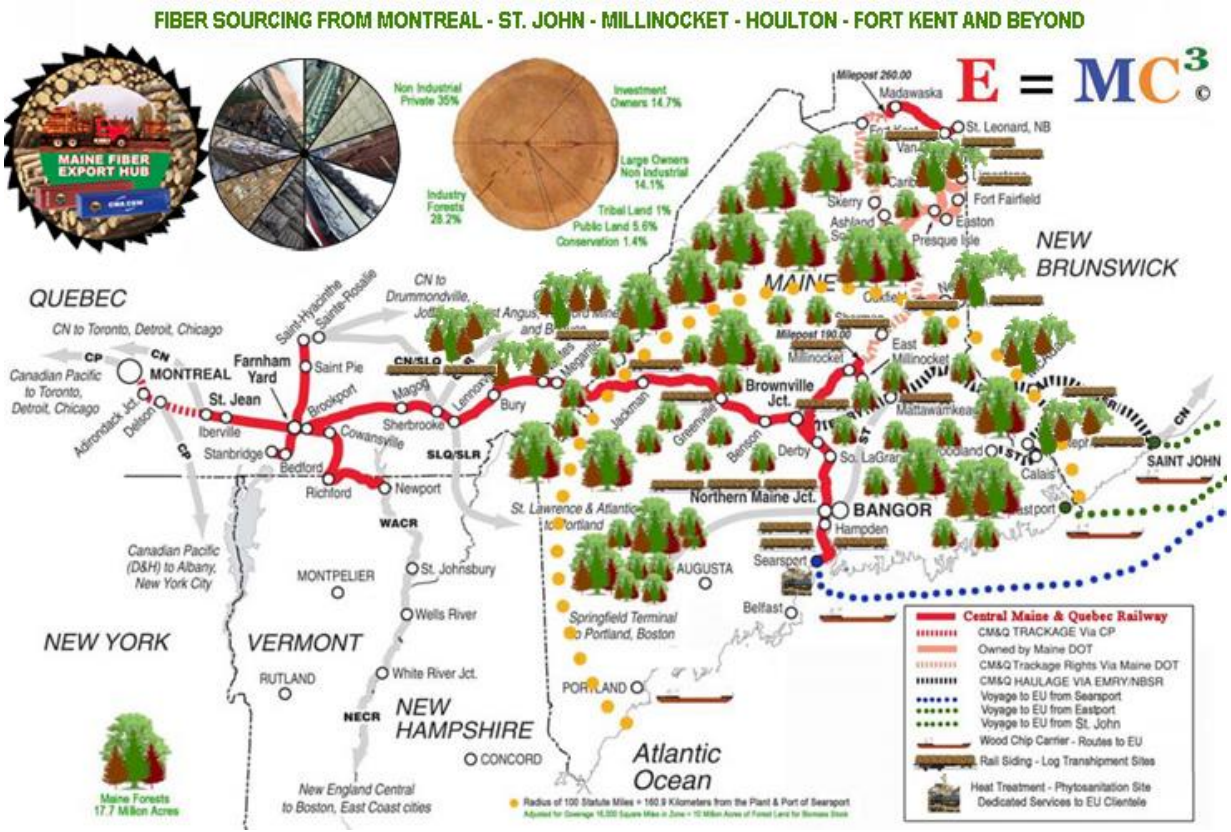
Responsibly: Transition to Rail from Trucking – Reduce GHG Dramatically

E = MC³©

From:
Montreal Region, Houlton, ME, Millinocket, ME and St. John NB, CA

To: **Searsport Fiber Hub**
Inbound Fiber 65% to 70% - By rail to reduce truck use - reduce GHG by ~ 86%

Direct by Rail to Searsport

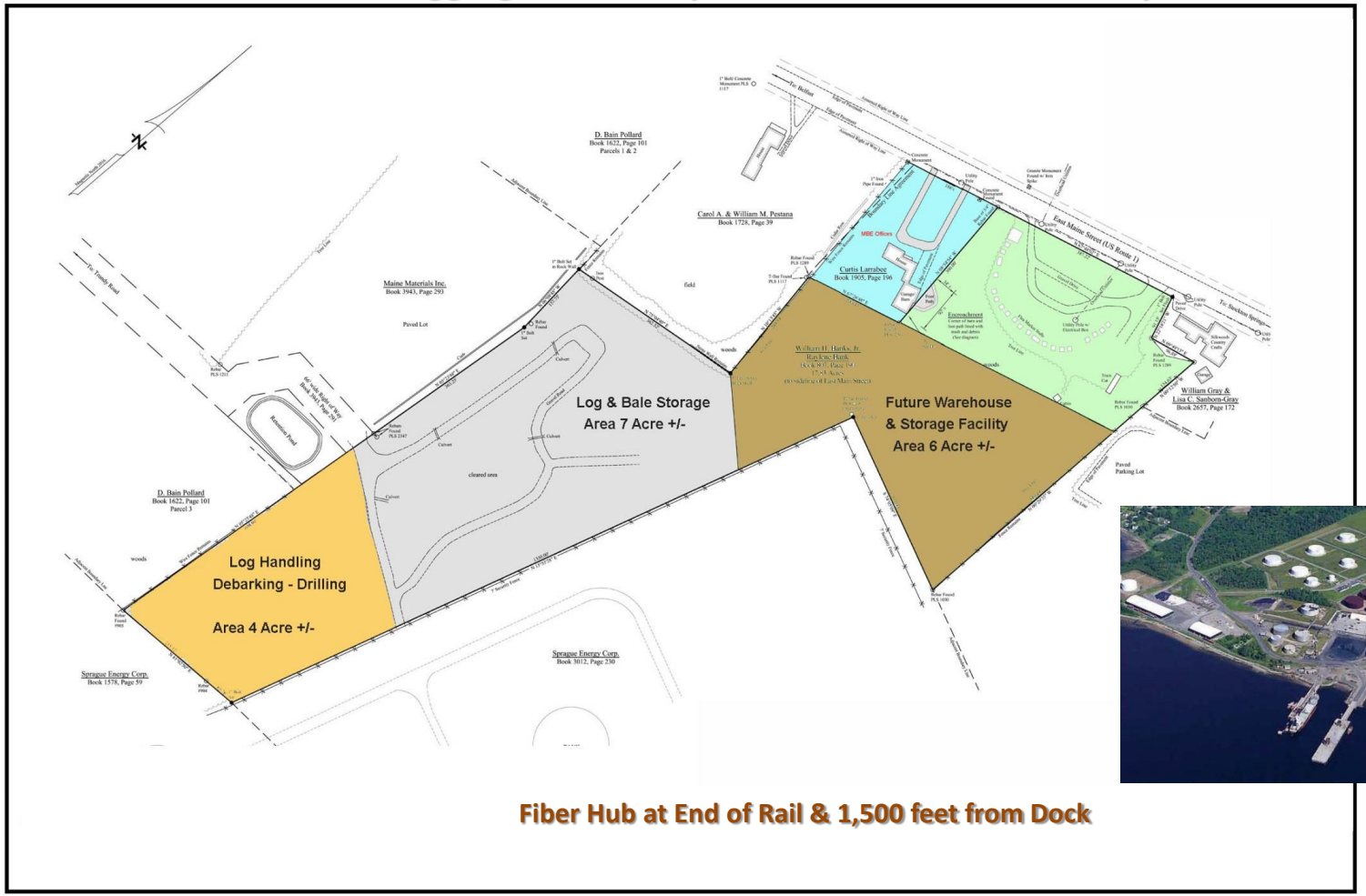


Other Benefits of Rail:

- Rail sidings located ~ 50 miles apart
- 2.5 – 3 Trucks per rail car
- Truckers increase daily fiber X3
- Opens Work to Smaller Companies
- Residuals/Slash Removed Faster
- Thinning/Clearing more Efficient
- Reduced Forest Fire Hazards
- Reduced truck traffic
- Lower accident incidents
- Increase rail service (efficiencies)
- Activates rail service
- Provides Job Opportunities
- Enhances Local Economies

E = MC3 ©

4 Secure Bankable Fiber - Aggregate, Classify, Process and Ensure Quality Assurance



Fiber Hub at End of Rail & 1,500 feet from Dock

E = MC³©

An Example of Cost Efficiencies by Operating Fiber Hub – Aggregation Yard

Production of Low Cost – Low Value Hog Fuel

Blending Material Resources to Achieve Low Cost Materials

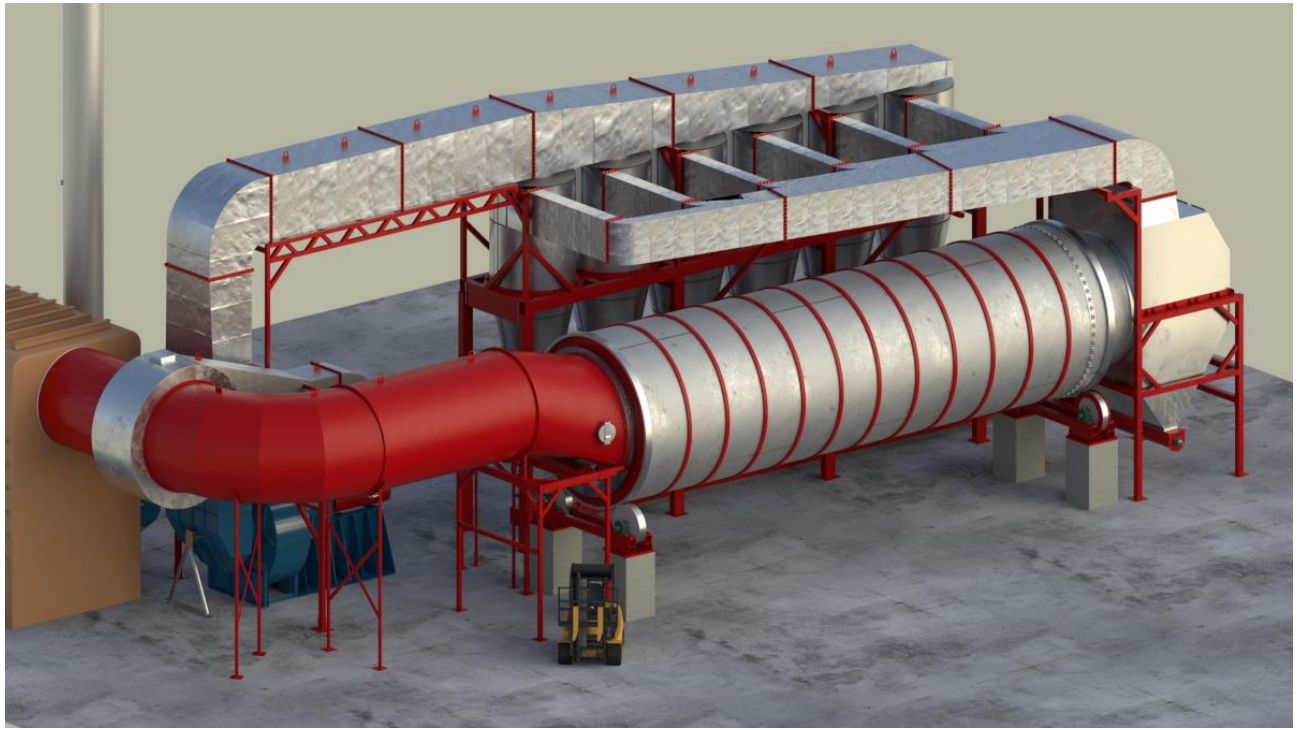
Products Arriving at Yard - Includes Delivery Costs	Annual US Tons Available	Cost to Yard Per US Ton	Extended Yard Cost of Fiber	Yard Collects	Blended
				All material is Phytosanitized	
Residual derived of merchantable harvests	150,000	$ 18.00	$ 2,700,000	$ -	$ 2,700,000
Small diameter clearing from harvest operations	375,000	$ 18.00	$ 6,750,000	$ -	$ 6,750,000
Whole tree chips from loggers during harvests	150,000	$ 20.00	$ 3,000,000	$ -	$ 3,000,000
Factory residuals, shavings and waste	6,000	$ 20.00	$ 120,000	$ -	$ 120,000
Municipal waste of dead trees, roots and stumps	15,000	$ 30.00		$ (450,000)	$ (450,000)
Tree clearing - trimming roads/power lines	10,000	$ 10.00		$ (100,000)	$ (100,000)
Clean hardwood crates and pallets	5,000	$ 8.00		$ (40,000)	$ (40,000)
Residential downed tree debris and waste wood	5,000	$ 15.00	$ -	$ (75,000)	$ (75,000)
Disaster clearing and forest fire preservation (Free)	5,000	$ -	$ -	$ -	$ -
Other					
	711,000		12,570,000	$ (665,000)	$ 11,905,000
Sampling of Materials: Research Maine 2011 - 2019	To produce Hog Fuel for Export			**Average Net Cost**	**$ 16.74**

Note: With cooperation and goal sharing by Strategic Alliance Partners one can consistently achieve these low costs targets of raw fiber before processing through the Phytosanitation System.

E = MC³©

5 **EU Import** requirements – **Phytosanitation** - accomplished with **no Fossil Fuel**

Since 1945 Thompson Dryers have been pioneering drying; patenting, perfecting and servicing dryer systems across many industries. Take a tour around one of our single-pass rotary drying systems. Thompson's believes equipment should work like it's supposed to and you deserve the very best solution for your drying needs.



300 KMTPY Output

Per Line (Potential for 2 lines).

Driven on Exhaust Steam

In-house Electric Source

Existing Infrastructure

13 Miles Proximity to Port

Focus on Heat per EU Mandates

Dehydration not Agenda

https://youtu.be/bns2qMiKgUQ

E = MC³

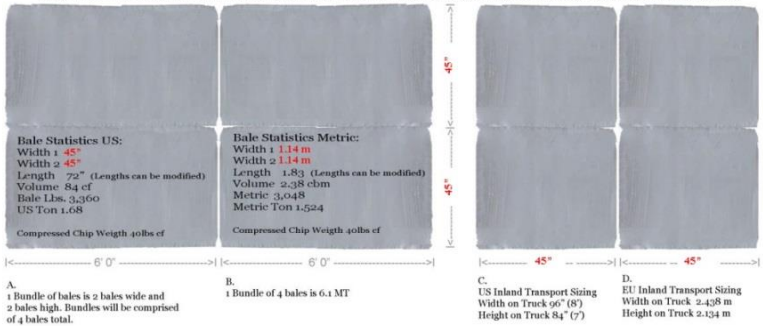
6 **Densify** and Compact commodities for effective, efficient and low cost **Material Handling**

Designer Energy Chip

Hog Fuel – Biomass Fiber

APOLLO

Final Recommended Bale Dimensions (Final dimensions meet EU transport modes, maximized container & vessel loading)



The Apollo ISC Big Bale Press (BBP65) is part of our Big Bale Packaging Concept: the most efficient and flexible compressing and packing system available on the market today. The Big Bale press in itself is a compact, fully automatic installation for compressing, packing and palletizing bulk products. The Big Bale Press can be used for a wide range of compressible and cohesive products, such as peat, biomass and compost.

https://apollobv.com/products/baling-debaling/baling

Rock Solid - Perfectly Sized to Fit:

Shipping Containers – No Wasted Space

Tightly Arranged Vessel – handy sized 28 MMT

US & EU Trucks/Rail and Transport

E = MC³©

Different De-baler Systems

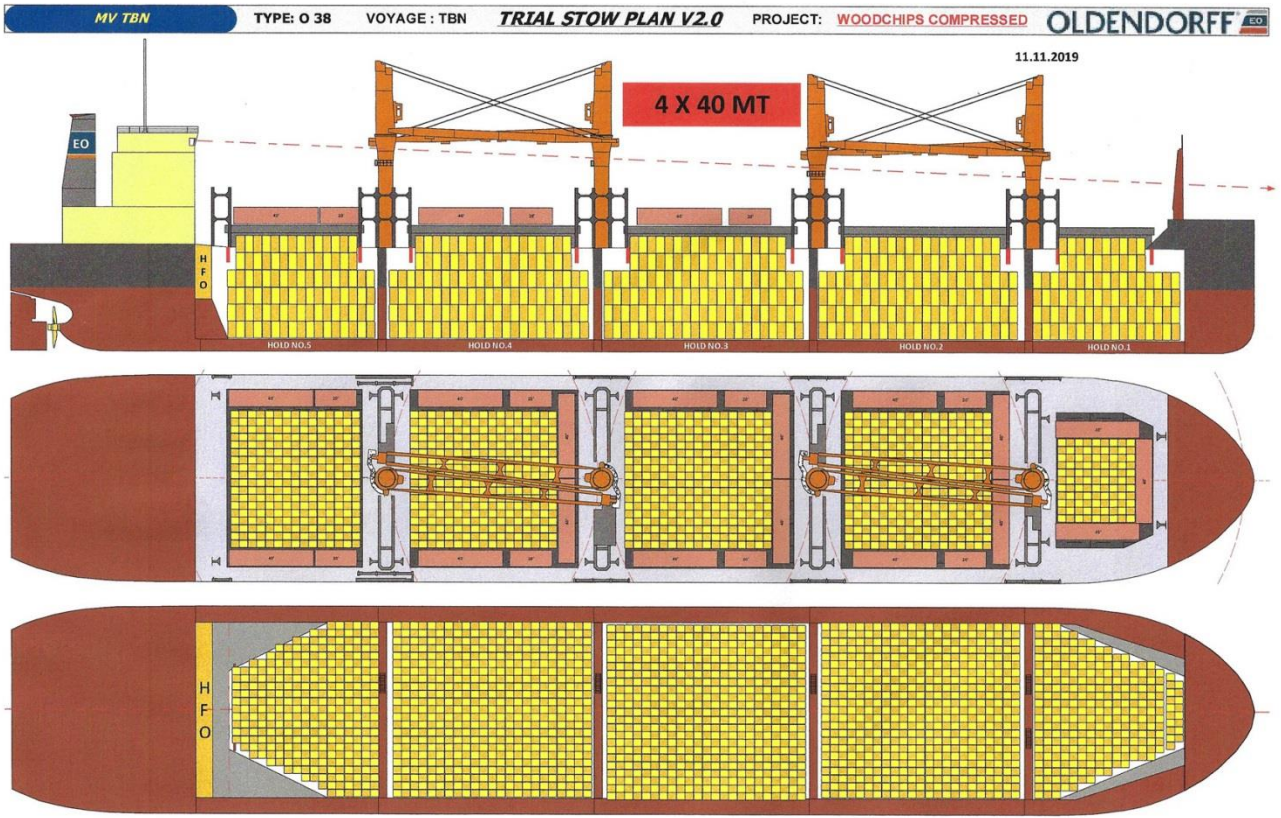
Slicing – 100 MT Per Hour

Trommel - Stripper

E = MC³©

7 Costly Storage Buildings, Chip-Pile Management, Port Handling, Weather – Climate Exposure

8 **Ocean Freight** cost containment to exceed **Density/Stowage Efficiency** and promote **Alliances**



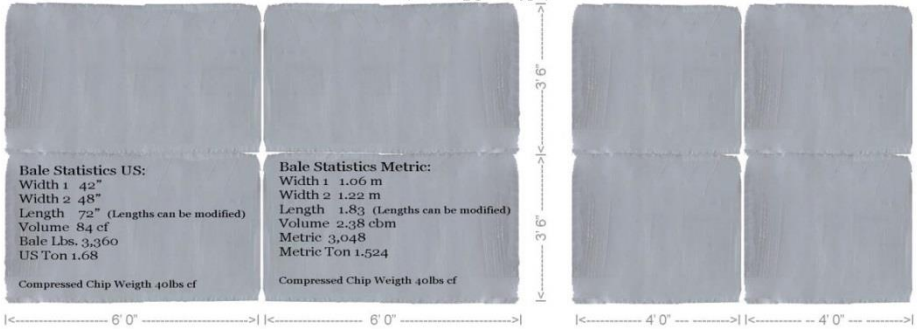
Load Perfection:

28 KMT Cargo – Handy size

- ❑ Tightly Arranged Vessel
- ❑ 3 Cranes
- ❑ 24 Mt Per Cranston Bar
- ❑ 7 Turns Per Hr (24 MT EA)
- ❑ 168 MT P/hr per/Crane
- ❑ 504 MT per Hr Total
- ❑ 55 Hrs. to Load
- ❑ 3 Days in Port
- ❑ Reciprocal Back Hauls
- ❑ Same Ports – Same Type Loads
- ❑ 20 Dedicated Loads Per Year
- ❑ 560,000 MT Potential
- ❑ Dual HT System = 600 KMTPY

E = MC³ ©

Typical - Recommended Bale Dimensions (working prototype)



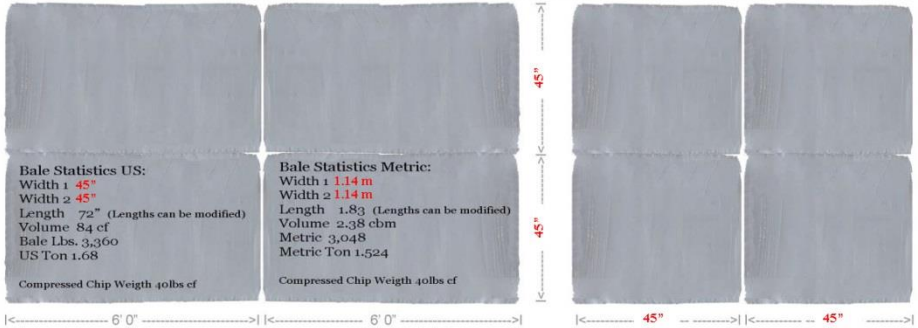
A.
1 Bundle of bales is 2 bales wide and 2 bales high. Bundles will be comprised of 4 bales total.

B.
1 Bundle of 4 bales is 6.1 MT

C.
US Inland Transport Sizing
Width on Truck 96" (8')
Height on Truck 84" (7')

D.
EU Inland Transport Sizing
Width on Truck 2.438 m
Height on Truck 2.134 m

Final Recommended Bale Dimensions (Final dimensions meet EU transport modes, maximized container & vessel loading)



A.
1 Bundle of bales is 2 bales wide and 2 bales high. Bundles will be comprised of 4 bales total.

B.
1 Bundle of 4 bales is 6.1 MT

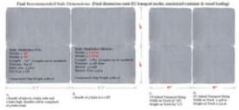
C.
US Inland Transport Sizing
Width on Truck 96" (8')
Height on Truck 84" (7')

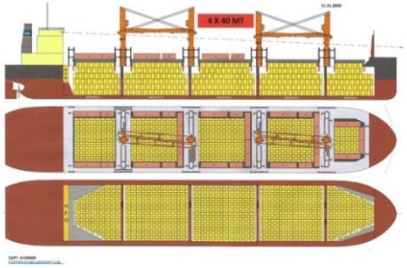
D.
EU Inland Transport Sizing
Width on Truck 2.438 m
Height on Truck 2.134 m

E = MC³©







1.) **Perceived Over-Cutting** or **Intrusive Harvesting** of forests;

2.) **Fiber Origination** – procure only from **Well Managed and Properly Certified** forests;

3.) **GHG – Emissions Reduction**: move from **Carbon Intensive Trucking** – to **Rail Transportation**;

4.) **Secure Bankable Fiber** - **Aggregate**, **Classify**, **Process** and **Ensure Quality Assurance**;

5.) Meet all **EU Import** requirements – **Phytosanitation** - accomplished with **no Fossil Fuel**;

6.) **Densify** and Compact commodities for effective, efficient and low cost **Material Handling**;

7.) **Costly Storage Buildings**, **Chip-Pile Management, Port Handling**, **Weather – Climate Exposure**;

8.) **Ocean Freight** cost containment to exceed **Density/Stowage Efficiency** and promote **Alliances.**

Fiber is derived of only residuals & waste – no harvests.

100% Fiber from Certificated Forests - ~ 10 M Acres Access

Move from Truck to Rail Reduces Carbon Emissions 86%

Yard Produces Below Market Costs & Guarantees Fiber Quality.

Phyto System Exceeds Mandates – Focus Heat vs. Dehydrations

Densification Reduces Wood Chip Ocean Freight Cost by 45%

Eliminate Major Investment in Infrastructure – Mitigates Waste

Direct Contract Relationship with Buyers – Reduces Ocean Freight Cost – Increased Cargo Volume – Reduced Freight Costs

$E = MC^3$ ©

Cumulative Sustainable and Financial Benefits from Acting Responsibly

1	2	3	4	5	6	7	8
Over Cutting - Intrusive Harvesting	**Fiber Origination Forest Certification**	**GHG Emission Reduction - Rail**	**Fiber Aggregate, Process - Quality Assurance**	**Phytosanitation No Fossil Fuels**	**Densification Material Handling - Longevity**	**Storage Buildings, Piles, Weather - Climate**	**Ocean Freight Efficiencies - Alliance**
No harvesting for residuals Slash removal - forest fire prevention Affiliated - Parent Co. Involved in 1 Trillion Tree Planting USA and Canada is Substantial Focus - Maine Can be Impacted	*Maine* 1.5 M A FSC 2.8 M A SFI 3.26 M A FSC & SFI *New Brunswick - Quebec* 2.8 M A Under Site Control	Overall Agenda is to Procure 70% by Rail Overall Agenda All Fiber > 75 Miles will come only on Rail Overall Agenda All Fiber < 75 Miles will come on truck GHG Carbon Reduction Approx. Increased Reliance on Rail v. Trucks	All fiber is Received, Sorted, Classified and separated Sorted for Species Natural Dried - Gj > Debarked if Required Chipped - Ground Exact Sizing - Guaranteed HT Infeed Specs. Delivered - Walking Bed JIT to Plant	HT Uses Exhaust Steam Electric In-house Focus - Heat Not Dehydration Dryer Can be set lower temp - need to heat not dehyrdrate Silo Storage & Phyto Cert Verification 8,400 Hours Yearly ~ 38 MT Per Hr. Per System 2 Procuction Lines Planned > 600,000 MTPY Annual Output	Compactred to > 40 Lbs. CF ~ 45 MT Per Hr. Per System Metric Size Bales - EU Transport Bales = 1.5 MT Each Bales bundled in 4 Units Each Approx 6 MT per Bundle 5 Bundles Per Trailer to Port Bales Sized to Efficiently Load - EU Trucking, Shipping Containers and Vessel Holds	No Storage Building at Origination Port 28 K MT Bales on 2 Acre Yard Lay down yard 1,500 FT from Quay Bundles Pre Strapped for Loading & Voyage No Storage Building at Destination Port No Open Wood Chip Piles No Weather or Climate Issues No Off Gas, Combustion, Oxygen Depletion or Degradation No Exposure to Contaminate from Environment	Strategic Alliance Global Presence Potential Dedicated Vessel 1 Vessel Could be Assigned Up to 300 KMTPY Export Potential to reach 600 KMTPY 2021 Direct Contracting - Vessel Owner and Buyer = Reduced Shipping Costs Vessel Rigging can Load and Unload 28 KMT in Approx 60 Potential Back haul - Same port to port - similar product - baled similarly. Back haul potential in same volume

E = MC³ ©

Financial Benefits from Acting Responsibly

Example of Total Consumption from Each Product

Comparison of Wood Pellet Use to Energy Wood Chip Use - MT Required and Net Gj Cost Per Unit

Industrial Wood Pellets	Gj/MT	Forward	$ Gj MT CIF	Gj $	Annual MT Consumption	Annual Gj Consumption			Dashboard Stats	
	17	1 Q20	$ 164.60	$ 9.68			$	98,760,000	10,200,000	Total Gj Use
		2 Q20	$ 163.60	$ 9.62			$	98,160,000	600,000	MT Volume Use
		3 Q20	$ 162.10	$ 9.54	600,000	10,200,000	$	97,260,000	$97,185,000	Total Procurement
		4 Q20	$ 157.60	$ 9.27			$	94,560,000	$ 9.53	Pr Gj Cost
		2020	$ 161.98	$ 9.53			$	97,185,000		
									% Δ	Av. % Δ
	17	2021	$ 169.10	$ 9.95	600,000	10,200,000	$	101,460,000	4.4%	2.8%
	17	2022	$ 171.10	$ 10.06	600,000	10,200,000	$	102,660,000	1.2%	

Energy Wood Chips	Gj/MT	Forward	Converted from € $ Gj MT CIF	Gj $	Annual MT Consumption	Annual Gj Consumption			Dashboard Stats	
	12.6	1 Q20	$ -	$ -			$	-	10,200,000	Total Gj Use
		2 Q20	$ -	$ -			$	-	809,524	MT Volume Use
		3 Q20	$ 110.00	$ 6.47	809,524	10,200,000	$	66,000,000	$65,670,000	Total Procurement
		4 Q20	$ 108.90	$ 6.41			$	65,340,000	$ 6.44	Pr Gj Cost
		2020	$ 109.45	$ 6.44			$	65,670,000		
									% Δ	Av. % Δ
	12.6	2021	$ 110.76	$ 6.52	809,524	10,200,000	$	68,558,710	4.4%	2.8%
	12.6	2022	$ 112.09	$ 6.59	809,524	10,200,000	$	69,369,576	1.2%	

Source: Areus Aug 2019 A change from Wood Pellets to Energy Chips would remain at 10,200,000 Gj use but, provide $ 31,515,000 32.43% savings

E = MC³©

Financial Benefits from Acting Responsibly

Savings with Blended Consumption from Each Product

Suggested Supplementation of Biomass Energy Chips in the Wood Pellet Consumption Mix - UK Region - 50%/50% Blend

	Gj/MT	Forward	$ Gj MT CIF	Gj $	Annual MT Consumption	Annual Gj Consumption		Dashboard Stats	
Energy Wood Chips	12.6	2020	$ 109.45	$ 6.44	300,000	5,100,000	$ 32,835,000	5,100,000	Total Gj Use
								300,000	MT Volume Use
								$32,835,000	Total Procurement
								$ 6.44	Pr Gj Cost

	Gj/MT	Forward	$ Gj MT CIF	Gj $	Annual MT Consumption	Annual Gj Consumption		Dashboard Stats	
Industrial Wood Pellets	17	2020	$ 161.98	$ 9.53	300,000	5,100,000	$ 48,592,500	5,100,000	Total Gj Use
								300,000	MT Volume Use
								$48,592,500	Total Procurement
								$ 9.53	Pr Gj Cost

Combined Fiber Sourcng	Dashboard Stats	
	10,200,000	Total Gj Use
	600,000	MT Volume Use
	$81,427,500	Total Procurement
	$ 7.98	Pr Gj Cost

Total Gj Use	Unchanged
Total MT increased by	-
Annual Expenditure reduced by	$15,757,500
Net Gj Cost P/MT	$ 7.98
Savings P/MT P/Gj	$ 1.54

E = MC³ ©

FORWARD-LOOKING AND PREDICTIVE STATEMENTS

The representations depicted herein are based on exhaustive, multi-year cross industry disciplined research and development, primarily related to woody biomass as a sustainable source of renewable energy fiber for use in co-generation CHP facilities and in stand-alone power plants intended to rely only on biomass wood chips.

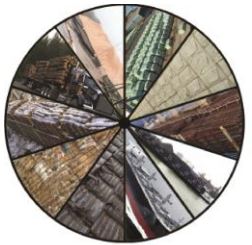
All predictions and statements, other than cited commentary derived of published or historical facts, included in this presentation that address activities, events or developments that we expect, believe or anticipate will or may occur in the future are forward-looking statements. The words “may,” “estimated,” “believe,” “expect,” “will,” “anticipate,” “plan,” “intend,” “foresee,” “should,” “would,” “could,” or other similar expressions are intended to identify forward-looking statements, which are generally predictive but, not historical in nature.

The intent here is to combine those statements with reasoned prediction – helpful in a broad, macro sense, that can point to potential alternatives to traditional thinking and allow one to fulfill market demand, address climate change issues, reinvigorate forest industry revenue, enhance local and international economies and build enduring strategic alliances globally.

THANK YOU FOR YOUR TIME AND INTEREST

We may be reached at:
T. S. Laurent Forest Preservation, LLC
56 Stephenson Lane
Belfast, Maine 04915

Presenter: Arthur T. House
Tel: 1-207-930-5168
Email: Art@ArthurHouse.com
Web: http://www.arthurhouse.com/



E = MC³ ©