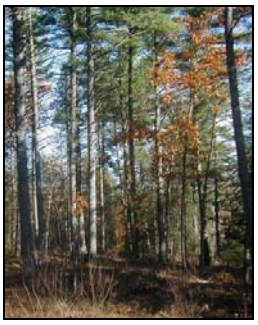
ENGINEERED WOOD PRODUCTS SECTOR

MAINE FUTURE FOREST ECONOMY PROJECT


CURRENT CONDITIONS AND FACTORS INFLUENCING THE FUTURE OF MAINE'S FOREST PRODUCTS INDUSTRY

MARCH 2005

PREPARED FOR:

DEPARTMENT OF CONSERVATION – MAINE FOREST SERVICE
AND
MAINE TECHNOLOGY INSTITUTE

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The analysis contained in this report is based upon our best professional judgment and on sources of information that we believe to be reliable. However, no representation or warranty is made by Innovative Natural Resource Solutions LLC or other authors of this report as to the accuracy or completeness of any of the information contained herein. Nothing in this report is, or should be relied upon as, a promise or representation as to the future.

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Printed Under Appropriation 013-04A-5180-512-4099 FFE3

Developed Under a Cooperative Forestry Assistance Grant CFDA 10.664

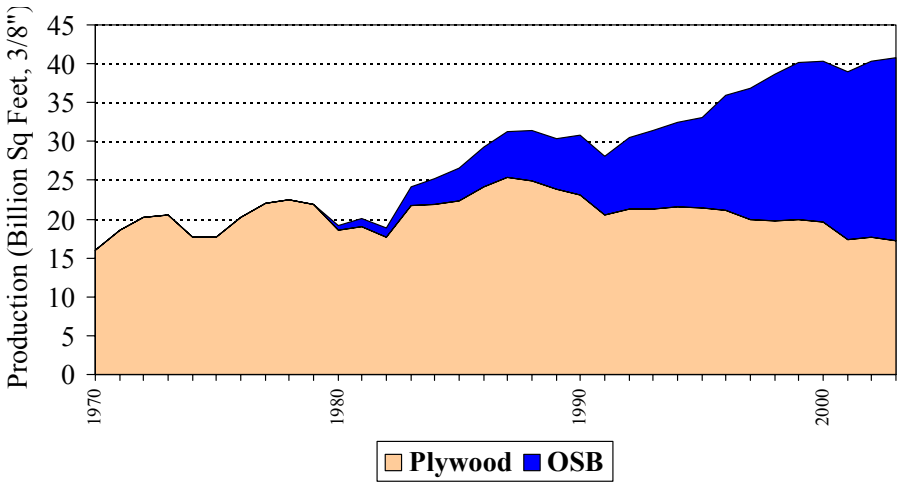
Engineered Wood Products

Engineered wood composites refer to products in which wood fiber is reconstituted with resins or other adhesives to produce a new product. Examples of engineered wood products used in Maine include structural panels (plywood and oriented strand board), composite lumber, glue-laminated lumber, and laminated veneer lumber. Engineered wood is often made with lower grades of wood or wood residues, has uniform characteristics, and is frequently cost-competitive when compared to other wood or non-wood alternatives.

Engineered lumber is the fastest growing segment of the forest industry nationally, with a market in 2002 of over $8 billion in the U.S. and Canada[75]. Engineered wood products include a number of "commodity" products – including oriented strand board, particleboard and fiberboard – as well as highly specialized products developed to meet the demands of certain niche markets.

Structural panel products – most notably plywood and OSB – have a long history in the North American market. Since entering the North American market in the late 1970's, OSB has made continuous inroads into the structural panel market, and from 1999 on has held more (and growing) market share of the structural panel market.

Figure 76. North American Structural Panel Production, 1970 - 2004

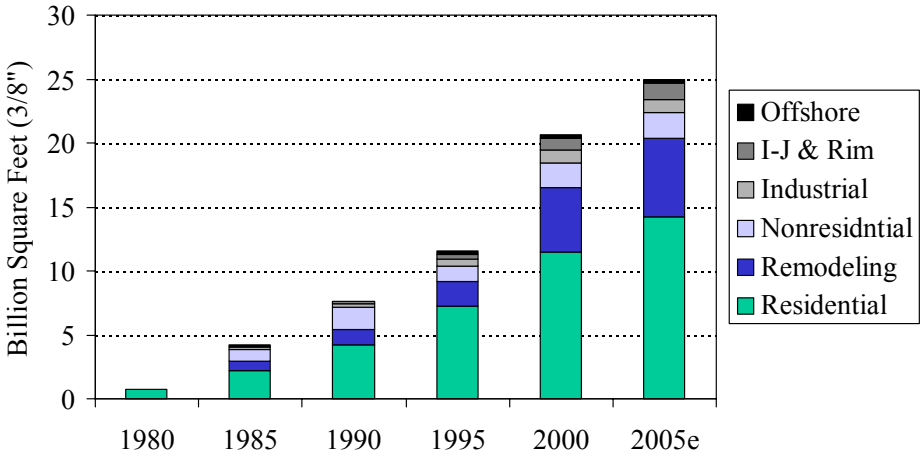


Data Source: APA - The Engineered Wood Association

[75] Personal Communication with Jack Merry, APA – The Engineered Wood Association, July 13, 2004

The great bulk of OSB is used in residential construction and remodeling applications, with both of those markets growing steadily since OSB entered the North American marketplace. This means that, as with lumber, housing starts and housing size are important indicators of where the OSB market may be headed.

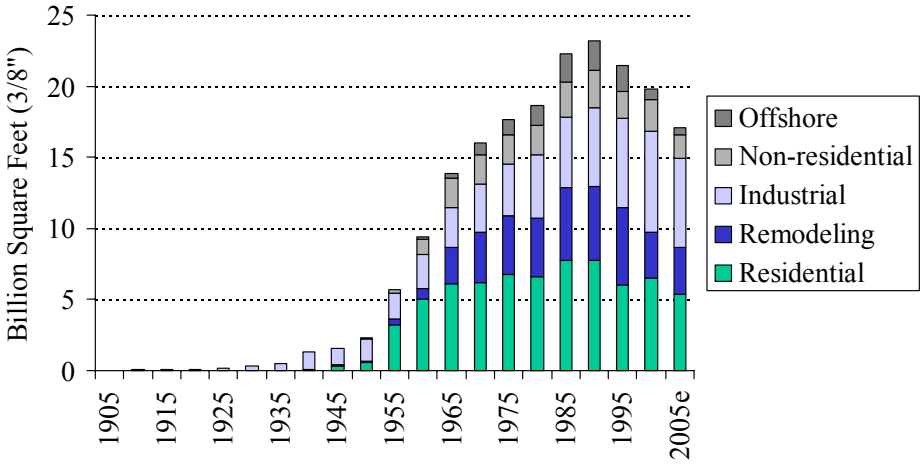
Figure 77. North American OSB Markets – 1980 to Present



Data Source: APA - The Engineered Wood Association

At the same time, the North American market for plywood has declined, with much of the market lost to OSB. Plywood does retain some significant markets for residential construction and remodeling, and is quite strong in industrial applications (for example decked pallets, shelving, construction forms, bus floors and truck interiors).

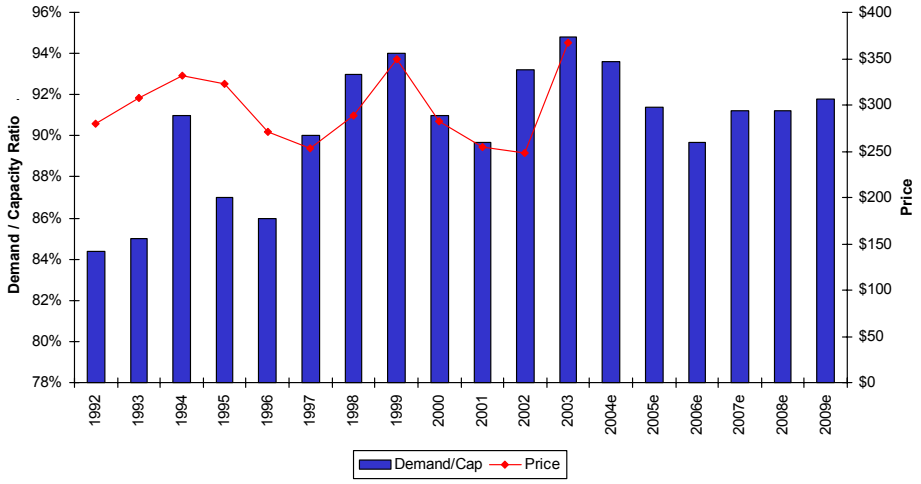
Figure 78. North American Plywood Markets – 1980 to Present



Data Source: APA - Engineered Wood Association

Structural panel prices have reached all-time highs in the past year, but are already declining as new facilities come on-line. The demand-to-capacity ratio (the amount of demand as a percentage of available production capacity) is expected to decline in coming years, and it is logical to assume that some high-cost mills will curtail production or close. While it is impossible to know what mills will be affected by the marketplace, it should be of significant concern to Maine that some mills may be idled because Maine structural panel mills as a group are older and higher cost than other North American facilities.

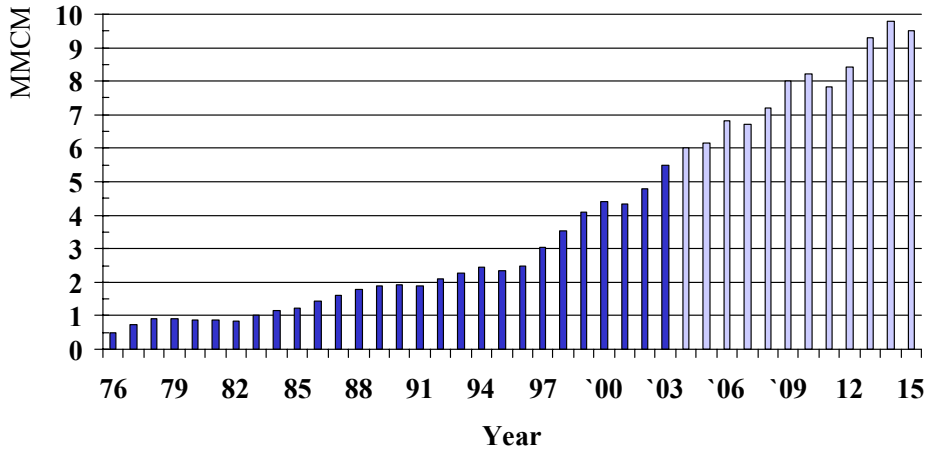
Figure 79. North American Demand to Capacity Ratio, Structural Panels -- 1992 to 2009 (estimated)



Data Source: APA - Engineered Wood Association

In addition to structural panels, the market for non-structural panels (such as medium density fiberboard, or MDF) has been growing rapidly, and is anticipated to continue doing so. MDF, used in a variety of non-structural applications such as furniture and cabinets, has grown in North American production from 0.5 million cubic meters in 1976 to 5.5 million cubic meters in 2003. Production is expected to reach nearly 10 million cubic meters by 2014.

Figure 80. North American MDF Production, 1976 – 2014 (projected)



Case Study -- Feasibility Analysis of Medium Density Fiberboard Facility in New Hampshire

In 2001, the New Hampshire Department of Resources & Economic Development commissioned a generic[76] feasibility study for a medium density fiberboard (MDF) manufacturing facility in that state. This report was part of a larger effort to identify potential new markets for low-grade wood, and was led by Innovative Natural Resource Solutions LLC and Draper/Lennon, Inc. [77]

The analysis included a complete investigation of the MDF production process, resource availability and pricing from mill residue and roundwood, electric and thermal energy consumption, capital costs associated with production, estimates of operating costs, revenue estimates, and calculations of return on investment.

[76] The study did not identify a particular site for the facility, operator, management team or brand of equipment to be used.

[77] This complete analysis is available from the New Hampshire Division of Forest & Lands website, listed under "Low-Grade Wood Studies" at www.nhdfl.org/publications

Two individuals who helped design and build a number of MDF and other engineered wood facilities in the U.S. aided in this analysis.

An MDF facility represents a major investment, and the authors estimated that $153 million would be needed to build a facility with an annual production of 130 million square foot (3/4" basis). The feasibility analysis determined that an MDF facility in New Hampshire would be profitable, but not at a level that would attract investors. Key issues that contributed to the facility being economically under-attractive were:

- MDF is a highly energy-intensive process, and high electricity prices in New Hampshire proved a deterrent. In order to address this, the analysis specified a biomass co-generation plant as part of the facility, with electricity and thermal heat derived from this facility. While this helped mitigate the projected cost of energy (electricity and thermal heat), this added $22 million to the total cost of the project, an expense not necessary in other regions of North America.
- Wood costs in New Hampshire were projected to be marginally higher than in other regions, in part due to the need to rely on roundwood instead of sawdust, a preferred feedstock in the industry.
- The cost of trucking or otherwise transporting the finished product to its final market was anticipated to be higher than in other regions. This is because MDF is not generally used directly by consumers, but instead is used in ready-to-assemble furniture, store fixtures, laminated flooring, moldings and cabinets. In time consumers of MDF could locate close to the facility, but only current markets – largely concentrated outside of New England – were assumed as part of the study.

Following public release of this study, a number of companies contacted the authors to indicate that they had previously conducted proprietary feasibility analysis of MDF facilities in New England, and had reached similar conclusions.

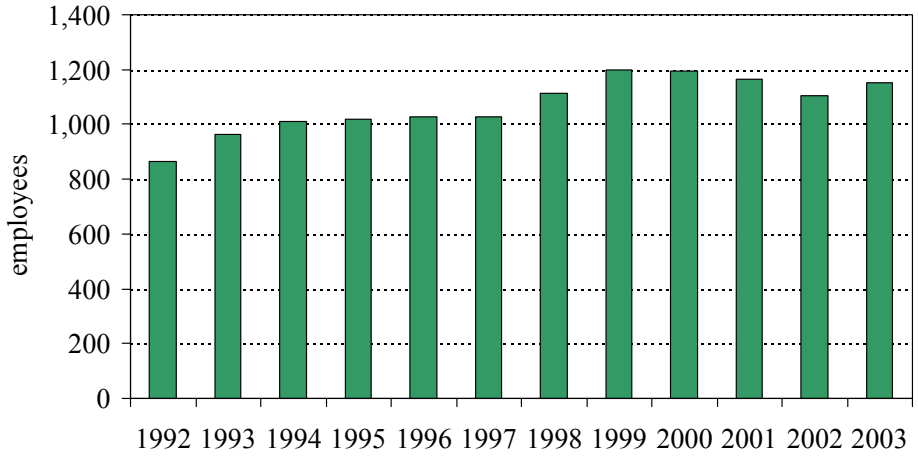
A complete re-examination of the feasibility analysis, including updating of all cost and revenue estimates, would be necessary to draw firm conclusions about the feasibility of an MDF facility in Maine. However, given the probability that electric costs would be in the same range as New Hampshire and transportation costs would be similar, it is unlikely that an MDF facility in Maine would currently prove attractive to investors. In Quebec or New Brunswick, which have significantly lower electricity costs, an MDF facility may be more economically attractive.

Engineered Wood Product Manufacturing in Maine

Engineered wood product manufacturing -- including oriented strand board, fiberboard, and more recently composite lumber – are an important part of Maine's forest industry. Theses facilities provide a market for lower grade wood or mill residue, and produce value-added products used in construction and other applications.

Maine engineered wood facilities (including, for purposes of this data, veneer plants) currently employ around 1,100 individuals.

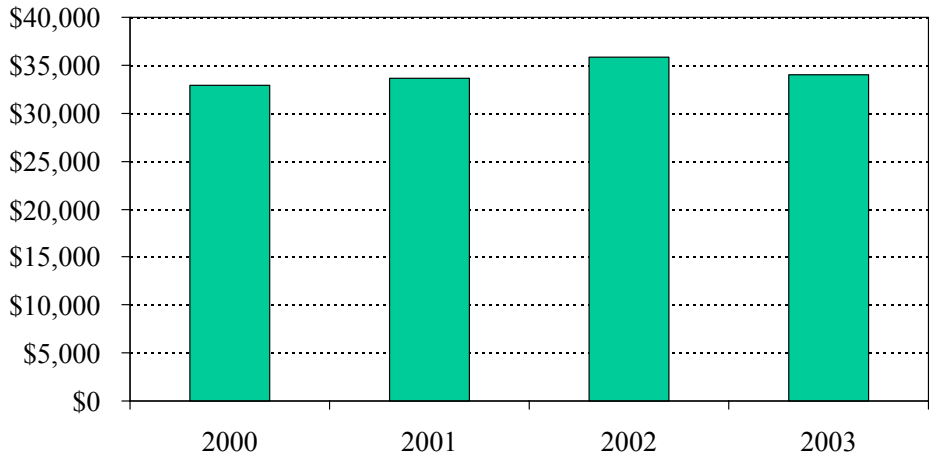
Figure 81. Engineered Wood Product Manufacturing Employment, 1992 - 2003



Data Source: Maine Department of Labor

In the time period 2000 to 2003, the average wage of employees in engineered wood product facilities has remained relatively stable, slightly below $35,000 per year.

Figure 82. Average Wage, Engineered Wood Product Manufacturing, 2000 to 2003.



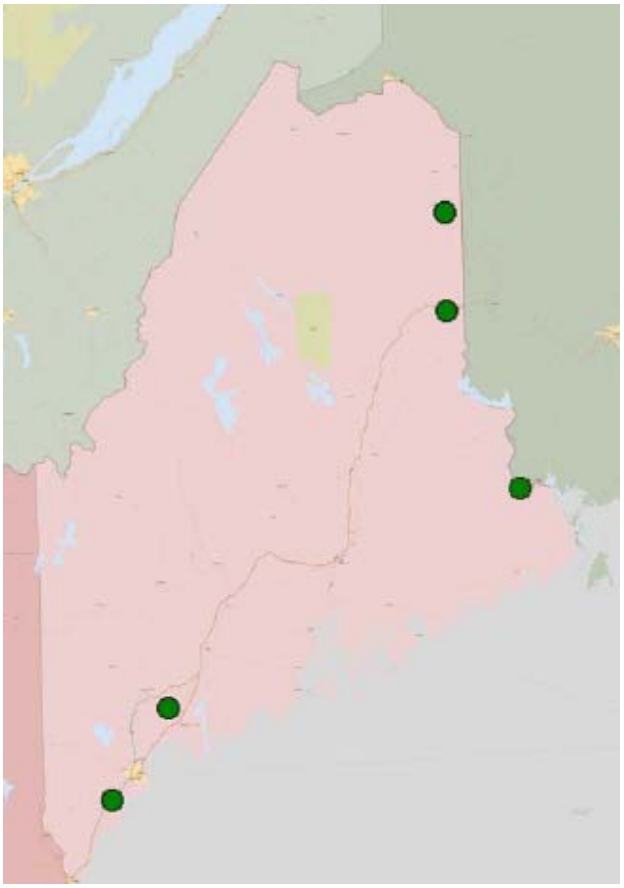
Data Source: Maine Department of Labor

Maine currently has five *major* engineered wood product facilities, as well as several small or start-up companies that are manufacturing engineered wood products. The major engineered wood facilities in Maine are:

Company	Product	Town
Correct Building Products	Composite Decking	Biddeford
Huber Engineered Woods LLC	Oriented Strand Board	Easton
Knight-Celotex LLC	Fiberboard	Lisbon Falls
Louisiana-Pacific Corp.	Oriented Strand Board	Houlton (New Limerick)
Louisiana-Pacific Corp.	Oriented Strand Board	Woodland

The location of these facilities is shown in the following map.

Figure 83. Major Maine Engineered Wood Product Facilities



Existing Engineered Wood Facilities

Maine has five major engineered wood product manufacturers, and a number of smaller firms engaged in the manufacture of engineered wood products. At the commodity level, Maine firms produce Oriented Strand Board (OSB) and fiberboard. OSB is a structural panel that uses roundwood flakes (longitudinally manufactured flakes as opposed to the chips produced for biomass energy or paper which are chipped across the grain) bonded together using water-resistant and heat-resistant resins. Fiberboard is a non-structural panel product made by breaking down wood fiber through a pressurized mechanical pulping process and then reconstituting it into a uniform consistent sheet material. One major Maine facility produces a composite decking product.

Because of the small number of Maine individual firms (one or two) engaged in each product line described below, issues at existing facilities are dealt with in relatively general terms in order to allow company information to remain confidential.

Oriented Strand Board

Maine OSB facilities are old and small by today's standards. Maine OSB mills were built in the early 1980's (the early days of OSB production in North America), and each have an annual production capacity of between 200 million and 265 million square feet[78], while new facilities being built have capacities of up to 850 million square feet[79]. As such, newer mills enjoy significant cost advantages from economies of scale, more efficient machinery, and other factors. Despite being smaller and higher cost facilities, Maine mills have continued to operate, with some taking downtime when market conditions dictate. They have done this through a combination of favorable market conditions (a continually growing market), specialization or positioning of product, or investment in plant efficiencies.

OSB facilities purchase roundwood -- in Maine there is a preference for aspen – and produce chips to be used in the production process. Due to the need for a highly consistent chip, mill residue is not used for this product.

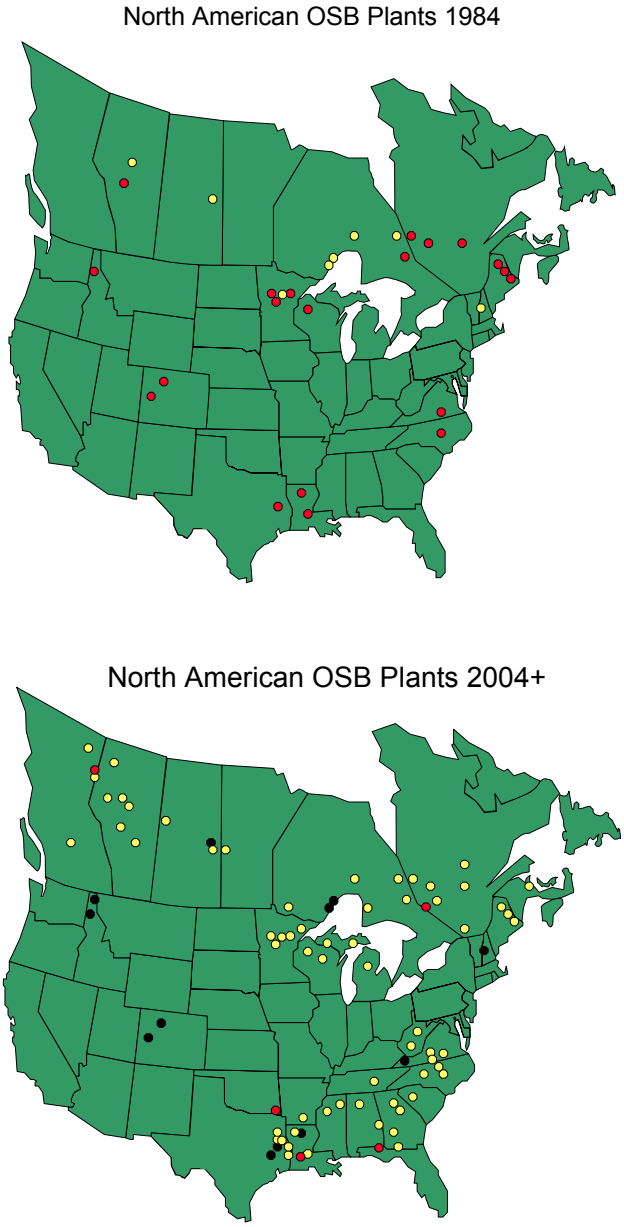
The following figure (provided by *APA – The Engineered Wood Association*) shows the geographical growth in North American OSB manufacturing since Maine's OSB facilities were built in the early 1980's. In 1984 Maine had a large concentration of facilities with three. Quebec / Ottawa had eight facilities, five were in the Lake States, and three were located in Louisiana / West Texas. Today, Maine's three facilities are still operating, but major concentrations of OSB mills have developed in the U.S. South (West Texas through Virginia and West Virginia), the Lake States, British Columbia / Alberta, and Eastern Canada (Ontario to New Brunswick). It is interesting to note that of the

[78] Personal communication, Craig Adair, Director of Market Research, APA – The Engineered Wood Association. August 20, 2004.
[79] Donnell, Rich. "Martco Chooses Site for New OSB Plant." *Panel World Magazine.* November 2004.

twenty-eight mills open in 1984, nine have closed – including one in Claremont, NH. All three Maine facilities remain open.

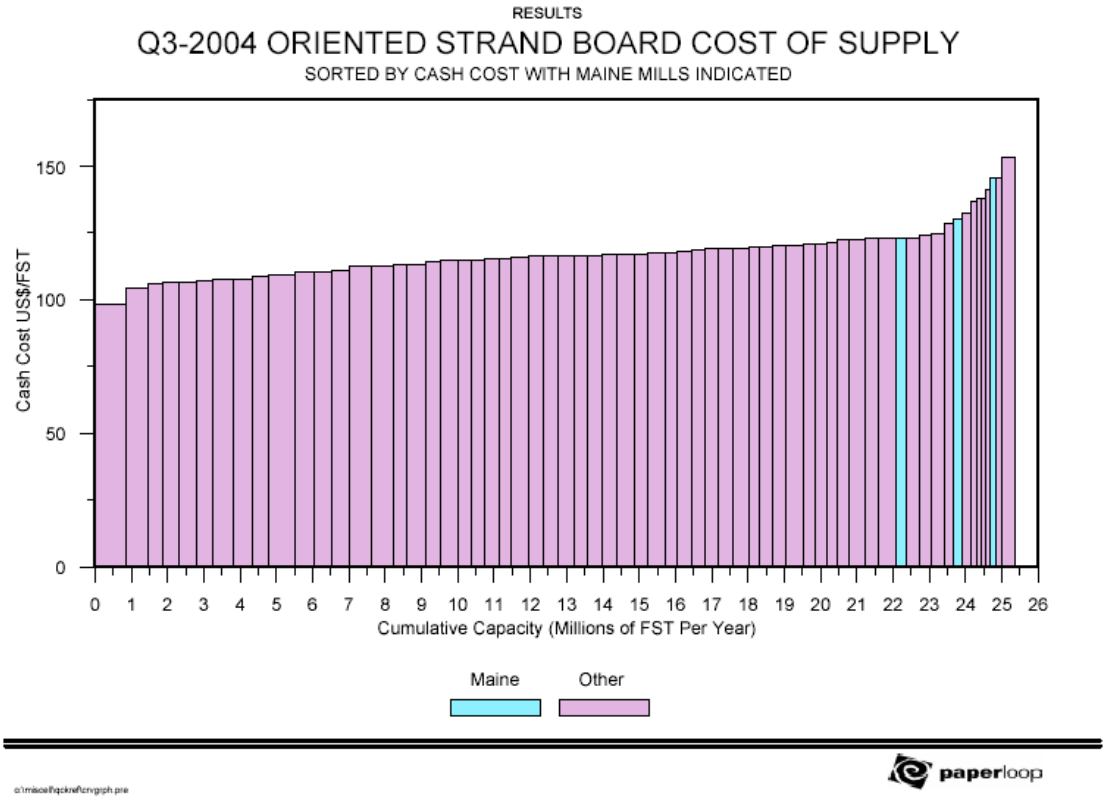
In the figure below, yellow represents older facilities (at the date of the chart), **red** represents new facilities (1980-1984 in the 1984 map, 2004 and beyond [announced] in the 2004 map), and **black** represents closed facilities.

Figure 84. North American OSB Plants, 1984 and 2004+



As part of the Maine Future Forest Economy Project, with funding provided by the Maine Technology Institute, Innovative Natural Resource Solutions LLC engaged Paperloop Benchmarking Services (Paperloop) to provide average cash cost for Maine and other North American OSB Plants. As with the cost curves for paper machines, this information is critical to helping Maine industries and policy makers understand where the state fits in the competitive global marketplace. Paperloop does not have access to exact figures on a mill-by-mill basis, but uses known information on facilities to model costs per ton of product. Paperloop provided this information specifically for this project. Specific facilities are not identified by name, but the information provides a very revealing look at Maine's competitive position for OSB. All information is for the third quarter of 2004.

Figure 85. North American Cost Curve, Oriented Strand Board



As the market for OSB matures, Maine should be aware that facilities located here are vulnerable. As older, smaller and less efficient facilities, Maine mills are more likely than many others to take downtime or close when market conditions are not favorable[80]. In terms of making capital investments necessary to keep facilities as technically advanced as possible, Maine mills have made periodic reinvestments, in both operating efficiency and in incremental production volumes (through speeding up the production line or minimizing downtime.) Unfortunately, one Maine facility recently scaled back planned capital investments significantly (cut by roughly 80% for 2005) due to high wood costs and perceived regulatory instability.

Fiberboard

Maine has one fiberboard facility, located in Lisbon Falls. This mill has been producing fiberboard since 1934, and now is capable of producing 120 million square feet of fiberboard annually[81]. This facility, which uses pine and aspen chips as a raw material (both woods-direct fiber and sawmill residue), produces a product used in covered application for office partitions, interior doors, and laminated furniture. The product produced at this facility is *not* medium density fiberboard, which uses a relatively high volume of resins as a bonding agent. Fiberboard, by contrast, uses a process similar to papermaking in order to produce the product, and is intended for applications where the product is not visible to the ultimate consumer.

Composite Decking

Maine has one large composite decking manufacturer, located in Biddeford. This facility uses hardwood sawdust and polypropylene to manufacture a "composite decking material" used in applications traditionally dominated by lumber[82]. This company is small in comparison to others in the marketplace, such as Louisiana Pacific and CertainTeed, but has established market share through innovative products and marketing. Composite decking is one part of the "composite lumber" sector, which has experienced double digit growth for several years, and is expected to continue to do so for *at least* the next four years[83].

[80] This past year, one Maine OSB facility took downtime during some of the strongest OSB markets in recent year, indicating that they were having difficulty finding a consistent and affordable wood supply.
[81] Maine Department of Economic & Community Development. "Governor Baldacci Welcomes Knight-Celotex as Pine Tree Zone Company." *Press Release.* June 17, 2004.
[82] Correct Building Products, www.correctdeck.com (accessed August 23, 2004)
[83] Freedonia. Solicitation for "Composite & Plastic Lumber", Study #1784. April 2004.

Case Study --Correct Building Products

Correct Building Products is the manufacturer of Correct Deck®, a plastic-wood composite that is used for non-structural building applications such as decks, railings, docks, and fencing.

Correct Building Products was founded in 1999 and started operations in 2000. The company has grown rapidly. 2000 shipments were 180,000 linear feet of product; 2004 shipments will be approximately 20,000,000 linear feet. The company has 51 employees at its Biddeford headquarters and manufacturing facility, and is considering the addition of a second manufacturing facility. Correct Deck was recognized as International Innovator of the Year by the Maine International Trade Center in 2004.

Raw Materials. Correct Deck's raw materials are polypropylene and kiln-dried sawdust, in a weight:weight proportion of 40%:60%. Sawdust is procured through brokers, who source material from as far away as Pennsylvania, Quebec, and the Canadian Maritimes. The polypropylene purchased by Correct Deck is largely a recycled product; the largest supplier is the U.S. Postal Service.

In 2004, Correct Deck will consume approximately 4,000,000 pounds of kiln-dried sawdust from Maine (or approximately 1/3 of its total consumption for the year). The company states that this is nearly all of the kiln-dried product available in Maine; therefore it does not expect to increase its procurement and use of sawdust from Maine sources. Correct Deck requires a kiln-dried sawdust (which can be hardwood or softwood) to provide dimensional stability in its products. It cannot use the wet sawdust that is the product of most of Maine's sawmills.

Factors Contributing to Growth and Success.

Product. Correct Deck attributes much of its success to the fact that its products bridge a gap between functional effectiveness and good looks. Whereas most competing products look like a smooth plastic plank, Correct Deck's has a more attractive wood-grained finish. This product differentiation is the most important factor that has allowed Correct Deck to penetrate a market already well populated with products from larger, established firms.

Internet Marketing Strategy. Correct Deck has made aggressive use of the internet to grow its business. The company has a comprehensive and informative web site and uses a variety of strategies to bring customers to the site. It uses the site to stimulate buyer inquiries, which in turn stimulate dealer and distributor interest. Correct Deck makes use of this internet strategy to generate end-user demand that pulls product through the distributor chain, rather than attempting to push its product to distributors and retailers.

Inexpensive Outbound Transportation. Because Maine is no longer the source of significant outbound truck freight, the company is able to take advantage of low backhaul rates to distribute its product throughout the Northeast and beyond. (This situation has a costly reverse side, in that inbound transportation of Correct Deck's raw materials is relatively expensive.)

Barriers to Growth.

Raw Material Costs. The cost of CD's raw materials has increased dramatically since the company started business. The cost of kiln-dried sawdust has increased by a factor of 4.5 since 2000, and the cost of polypropylene resin (which tracks oil prices) has increased nearly as much. The impact of these increases is lessened by the fact that they also affect competing producers of "plastic lumber" products, but they do affect Correct Deck's competitive position compared to pressure-treated lumber and other wood decking.

Maine Business Taxes. Maine's business tax structure, particularly the business income tax, is a significant barrier to growth and profitability.

Electric Power Costs. The cost of power is rated as an "irritant", and not a major barrier. The company believes that Maine businesses are asked to shoulder an unfair proportion of statewide electricity costs in order to hold down rates paid by residential customers.

Use of Business Planning and Business Assistance Resources

Correct Deck has taken advantage of many sources of assistance available through or supported by the State and Federal Governments. In general, the company states that these resources have been easy to identify and access, and their assistance (technical and financial) has been critical to the company's success in multiple areas.

Maine Technology Institute. Correct Deck was the recipient of a grant from the Maine Technology Institute that provided important early-stage financial assistance.

Small Business Association Loan Guarantee. Working with Key Bank, the company received a U.S. Small Business Administration 7A loan guarantee, which secured the financing of equipment purchases.

Maine Patent Program. The company has used assistance from the Maine Patent Program to help determine whether several of its technical innovations are patentable.

Maine Small Business Development Center. Correct Deck made extensive use of on-site technical resources provided by the SBDC program for business planning and management assistance during its first years.

Maine Manufacturing Extension Partnership. This for-profit agency has provided expertise to help solve technical/engineering issues for the company.

Correct Deck's involvement with the ***Maine Finance Authority*** was the one state program interaction cited as frustrating. Correct Deck believes that the MFA's emphasis on immediate job creation is over-restrictive – limiting the Authority's assistance to ventures (like Correct Deck) for which job creation is a secondary or longer-term impact.

Emerging Opportunities in Engineered Wood Product Manufacturing

In addition to existing commodity products, engineered wood products are expanding into new, more demanding applications. This trend of new engineered wood applications addressing specialized, non-commodity application, holds potential promise for Maine industries.

AEWC Center

Maine is home to the Advanced Engineered Wood Composites (AEWC) Center, a "globally recognized leader in composite research and development…[for] the next generation of cost-effective, high-performance, wood-nonwood composite materials."[84] Located at the University of Maine in Orono, the AEWC Center is a leading research facility with state-of-the-art capabilities to help usher an engineered wood product from the conceptual stage through research, manufacturing of prototypes, testing and evaluation, code approval and commercialization.

The AEWC Center has among its missions to actively pursue "commercialization, entrepreneurship, and job creation in Maine and beyond."[85] As such, the AEWC Center has enormous potential as a resource for the State of Maine, the region, and the state's forest industries as a cutting-edge research center. The AEWC previously received federal funding to "support technology transfer, economic development and commercialization of wood-based composites"[86], and hired an "Innovation Specialist", whose responsibilities included helping bring AEWC-developed technologies to the marketplace. This funding, and position, has expired[87].

As part of its efforts to spur commercialization of AEWC-developed engineered wood products in Maine and the northeast region, the AEWC Center is partnering with the Eastern Maine Development Corporation and the Town of Greenville on an "incubator site", where in addition to manufacturing space, tenants can access shared support services, technical support from the AEWC Center, and business support.[88] The AEWC Center has identified at least four innovative products that could be produced at the Greenville site using locally available resources.

Research and development is a slow process, and not one where instant results can be expected. While the AEWC Center is a world-class research and development institution, it currently has limited capacity to effectively connect new ideas with all Maine businesses that can best take advantage of these opportunities[89]. The vast majority of the AEWC Center's funding comes from contract research conducted for specific

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[84] *The AWEC Center: Services, Facilities and Personnel.* 2003.
[85] *The AWEC Center: Services, Facilities and Personnel.* 2003.
[86] National Science Foundation. *Project Activities: Development and Commercialization of Advanced Wood-Based Composites in Maine*. www.nsf.gov (accessed August 25, 2004)
[87] Personal Communication, Habib Dagher and Stephen Shaler, AEWC Center, August 30, 2004.
[88] www..umaine.edu/Greenville/greenville_business_incubator.htm (Accessed August 24, 2004)
[89] Personal Communication, Habib Dagher and Stephen Shaler, AEWC Center, August 30, 2004.

clients, and this work is done to address specific needs of companies or other clients (including federal agencies). However, some of the work AEWC does leads to new products or product enhancements that could provide significant economic opportunities to existing or new Maine forest industries.

As a research and development institution, the AEW Center's focus is on the research they conduct. AEWC is actively working with Maine businesses to develop new products and has worked with over 50 Maine businesses. While AEWC is working with many Maine businesses, they would like to do more. AEWC presently does not have staffing or other relationships that allow it to conduct sustained and significant outreach to Maine forest industries and others that may have an interest in taking AEWC-developed technologies and turning them into business opportunities. This includes the ability to write business plans for industries, design, specify and price out new production lines, etc. If such staffing or relationships were to be developed, this could help Maine firms make better use of new technologies, provide the AEWC with additional funding through licensing fees, and potentially spur new businesses.

Challenges Faced by New Engineered Wood Products

New engineered wood products, developed at AEWC or elsewhere, represent a real opportunity for development of new forest products or businesses. Because new products tend to be designed to meet market niches, and operate for some period of time with patent protection, the concern about some of Maine's high operating costs (e.g., electricity prices) are not as great a concern as for producers of commodity products. However, because products are seeking to penetrate markets currently served by other products, other significant challenges do exist. These include access to capital, ability to consistently secure sufficient wood fiber, security of intellectual property rights, and the time and marketing needed to introduce a new product to market.

Case Study – Engineered Materials of Maine

Engineered Materials of Maine (EMM) licensed one AEWC technology, a beam and column composite product. In October 2002 the company launched operations, and began producing product in February of 2003. The company's inauguration was accompanied with significant fanfare and high expectations.[90] Using AEWC Technology, EMM used low-grade hardwood lumber to manufacture structural beams. This provided a market for low-grade hardwood lumber, and allowed Maine products to enter a market previously dominated by softwood products manufactured elsewhere in the U.S.[91]

Unfortunately, the company closed in December of 2003, roughly a year after it was founded. Press reports have blamed the company's failure on a wood shortage.[92] At the time the company was beginning, the demand for both low-grade hardwood logs and lumber increased, causing prices to rise. Because it was a very new market entrant, EMM did not have established relationships with suppliers, and as a fledgling company was not in a position to increase the price it paid for wood.

At the same time it was facing rising wood costs, or even the inability to find appropriate wood, the company was facing challenges common to start-ups. The company was introducing a new product to the marketplace, had to create demand, and refine its marketing efforts based on experience. All of these things take time and money, and the new company did not have the cash reserves to face these challenges *and* the unanticipated rise in wood costs.[93]

While obviously disheartening, lessons can be learned from this experience[94]:

- Business plans must at minimum recognize that the wood market is dynamic, and historic prices can change – up or down – due to a wide variety of factors. Capitalization plans and cash reserves from investment must better recognize this tenuous early business period.
- Stand-alone start-ups are less able to handle inevitable challenges that a start-up associated with an established company will encounter. For this reason, firms seeking to grow their product line, or build upon existing presence in the marketplace, are often better suited to bring a new product to market.
- Firms with an existing presence in the forest products industry are better positioned to use relationships and knowledge during times of tight wood markets. For this reason, building relationships with existing Maine companies could be crucial to the success of some new products.

[90] Nagle, Margaret. "Capitalizing on Research; Development of engineered construction materials at Umaine leads to commercial enterprise." *UMaine Today Magazine.* January / February 2003.
[91] Wickenheiser, Matt. "From Academia to the Marketplace." *Maine Sunday Telegram*. July 6, 2003.
[92] Turcotte, Deborah. "Wood shortage cited in closure of composite lab." *Bangor Daily News.* January 20, 2004.
[93] Elliot, Alan. "UM wood composite center redirecting efforts." *Bangor Daily News.* May 24, 2004.
[94] Personal communication, John Fuitak, August 31, 2004 and Tyler Reed, November 8, 2004.

Outlook

Maine's engineered wood companies fall into two large categories – existing, commodity producers and emerging specialty producers. Within these larger categories there are a number of subcategories. It is this diversity that gives Maine's engineered wood sector great opportunity and promise.

For existing commodity producers, there are some significant concerns. Maine's OSB mills are older, slower and smaller than new facilities, and as such Maine facilities operate at more input cost per unit of output. Maine mills have regularly attracted some capital investment to help keep the facilities operational, but at least one facility recently had planned investment postponed, while the company continued investment at other, non-Maine facilities. For Maine's existing engineered wood product companies, the future will vary by product and company approach to how that product is positioned. Maine facilities will need to continually reinvest in their facilities to reduce operating costs. Additionally, Maine manufacturers may need to look for ways to move commodity production toward specialized production, changing production to meet the needs of smaller, less competitive markets.

For new engineered wood products, Maine has enormous opportunity but to date has not been able to fully capitalize on the world-class resource it has at the AEWC Center. Forest industry, the state and the AEWC must work together to identify the product lines that make sense for Maine's forest resource and are likely to succeed in the marketplace. All parties must recognize that there will be new engineered wood companies that fail, but that this does not mean that the product or product group is necessarily unsuited for Maine. As with many emerging technologies, it is impossible to determine what products will be made in five, ten or twenty years. However, the trend is clear – engineered wood products have an established market presence, and new products will be developed to meet emerging needs.