



BC Task Force

Future Development of BC's Pulp and Paper Industry

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Executive Summary

Facing pressure from global competition, fiber availability and cost and the strengthening Canadian dollar, BC's pulp and paper sector is at a crossroads with respect to its future prospects. The BC Task Force requested Poyry Forest Industry Consulting (Poyry) to assist it with assessment of competitive position and economic prospects (the Study) for BC's pulp and paper sector as an early step in the process of creating hosting conditions necessary for industry renewal. The high level goal of the Study is "to establish a common language" stakeholders can use to address the opportunities and challenges facing transformation and renewal of the industry in BC.

BC's pulp and paper industry is well established in global markets and is based on a solid 'platform' of developed infrastructure and experienced personnel. Global markets continue to offer significant opportunity for a pulp and paper industry in British Columbia.

The product opportunities today are similar to those on which the industry was built in the period from 1960 to 1990. However, the current market environment and trends suggest the BC industry will need a clear focus to capture the most rewarding business and avoid weak and declining markets. Northern Bleached Softwood Kraft (NBSK) markets continue to look promising with a 1.6 % annual global demand growth. Furthermore, this sector is expected to have a healthy supply/demand balance for several years, enabling producers to achieve high operating rates and positive cash flow.

Markets for higher value magazine/catalog papers such as super calendared and coated grades also offer opportunity to producers with high quality products. Demand growth for these grades ranges from flat to 1.3 % per year and no new capacity is announced at this time. On the other hand, North American newsprint demand is declining precipitously and producers are faced with the difficult challenge of rationalizing and reducing capacity to balance supply and demand. While demand for newsprint in Asia continues to grow, an increasing portion of it will be supplied by local capacity thereby reducing the opportunity for BC producers to export to that region.

With some exceptions, the pulp and paper industry in BC is, as a whole, poorly equipped to compete in the global markets most important to it. In the past 20 years, the industry has fallen behind industries in other regions in such areas as research and development, the implementation of new technologies, government support and the formation of global companies. Today, BC's NBSK mills are high cost in terms of "delivered cost to natural markets" – especially those on the Coast. Newsprint producers in BC are also relatively high cost on a delivered basis. The recent rise in the value of the Canadian dollar has made the situation more urgent by reducing margins substantially since products are sold in US dollars.

In a global context, the quality of pulp and paper assets in BC is, today, below average and the reinvestment rate is below the level required to sustain their already weak competitive positions. A major increase in capital investment is needed to refocus and renew production platforms to achieve sustainable competitiveness. There are assets and production sites in BC, particularly in the NBSK sector, that could offer the opportunity for such reinvestment.

BC's large supply of high quality fiber remains its core competitive advantage. However, it is at risk. The ongoing pine beetle infestation will reduce interior harvest volumes by over 25% from 2005/06 peak levels, over the next 10 years. (about a 10% reduction from pre-beetle infestation levels in 2001). Much of this change will occur midway through the next decade, after which economic sources of residual fiber

will become less available. There is potentially a growing use for biomass, much of which is currently committed to pulp & paper production in BC. Bio-energy projects are being studied in numerous jurisdictions around the world, including BC. In developing new forest policy, ministry planners in BC are challenged with the complexity of balancing the needs of the current industrial user base, (pulp and paper mills), who generate much of their electrical power requirements from biomass, with a competing desire to develop an independent power industry. Done properly, there should be room for both sectors to coexist, without sacrificing one for the benefit of the other. Policy frameworks are required that can enable the pulp and paper sector to benefit from opportunities in demand for biomass based energy, such as those in place in other producing regions.

Renewal of the BC pulp and paper industry will demand the close cooperation of key stakeholders. The 4% return on capital employed achieved by the industry over the past 15 years has severely constrained the industry's access to capital. Cash flow from continuing operations must be substantially improved by intensive cost reduction, productivity improvement and the further removal of uneconomic capacity in some sectors. The changes needed may require the commitment and resources of larger companies than those that currently form the BC industry. Larger, global companies have clear competitive advantages in such areas as cost of capital, investment capacity, supply chain leverage and innovation.

In conclusion, there is a place in global markets for pulp and paper products made in BC. Renewal of the BC pulp and paper industry ultimately requires a high level of reinvestment. Investors, who have experienced very low returns for many years, will return to the industry only when conditions are attractive. Industry must work towards achieving a high level of operating and financial performance with the tools at hand. It will be important for labor and management to demonstrate to all stakeholders that they can run assets in BC at least to the level of the best performers who are operating comparable technology elsewhere in the world. The road to industry renewal likely goes through rationalization and consolidation both to balance capacity with available sources of economic fiber and to capture the resources available to larger entities. Restructuring will ensure that only economically viable assets are supported by stakeholders and reinvestment will provide a level playing field in terms of technology employed. A renewed NBSK sector in BC can be globally competitive and viable over the long-term as can a newsprint sector that is in balance with North American demand

Stakeholders must collaborate in putting in place hosting conditions that will create situations that encourage significant capital investments in BC's pulp and paper sector. Key examples are:

- Establish the industry and stakeholder forums and processes needed to drive necessary changes
- Develop and support energy policies that provide revenue incentives for biomass based energy produced by the pulp and paper sector.
- Establish a tax basis that is more in line with competing jurisdictions
- Support employee training and development at all levels, including apprenticeships, technical training, management training etc

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1 CURRENT SITUATION

Conditions that drove the development of a large pulp and paper industry in BC during the period 1960-1980, no longer exist. The “then & now” comparison can be summarized as follows:

Then: BC Industry in Development; 1960-1980's:

Key factors that characterized BC's pulp and paper sector during its growth phase were:

- The forest industry was the key economic engine for BC's growth
- Plenty of low cost fiber
- High demand growth for market pulp and publication papers
- Integrated company model
- World scale installations
- Low cost energy
- Northern Bleached Softwood Kraft pulp, (NBSK) held the largest market share in the global market pulp industry
- 'Room for error' in productivity and costs with high demand growth rates.

Now: BC Industry in Decline; 1990-Present:

In contrast to conditions prevalent in its growth phase, key challenges facing BC's pulp and paper sector are:

- Uncertain fiber supply and cost
- The forest sector is a less significant component of BC's economy than in the 1960's through 80's. Other industries (mining, tourism, technology) have gained significant shares of BC's total economy
- New competition for fiber from sectors such as Bio-energy
- Significant asset renewal in competing regions; Scandinavia and Western Europe over past 15 years. Generally older assets in BC and lower rates of reinvestment
- Relatively high cost of capital compared to competing regions
- Declining markets for North American newsprint and reduced ability to export to Asia due to growth in domestic supply
- NBSK supply in excess of its core demand until several years ago. Recent mill closures have brought NBSK supply and demand into closer balance.
- Emergence of a new business model in which paper/board mills were located near demand requirements and pulp mills located near sources of fiber.
- Significant growth in low-cost, plantation-supplied market pulp based on Eucalyptus and Radiata pine. Eucalyptus is now the largest volume market pulp, placing cost pressure on other grades

- Rapid growth of Asian paper and board capacity without domestic sources of fiber.
- Distribution cost disadvantage of BC producers compared to competing regions due to more distant natural markets
- Recent rapid appreciation of the Canadian dollar vs its US counterpart, putting severe stress on the sector with a direct impact on margins and profitability by reducing price levels in Canadian dollars.

Outlook: BC Industry Opportunities

The industry challenges also present opportunities for BC producers, including:

- With an established industry in BC, developed infrastructure and experienced personnel, some assets could be a good platform for reinvestment
- Positive supply/demand outlook for NBSK producers
- BC has a large and high quality fiber basket that can continue to supply a viable pulp and paper sector
- BC is well positioned to supply growing Asian markets
- Bio-energy is potentially a new source of revenue and profit for companies that control biomass and/or have assets useful in energy production
- Kraft mills generate biomass-based (green) energy. Incentives similar to those in Europe, put in place in BC, will have a positive impact on mill revenues.
- Relatively low purchased power costs that could supply a competitive magazine paper sector
- BC companies are leaders in chain of custody and sustainability certification. Industry investments in environmental remediation and effluent/emission treatment are essentially complete

During the time interval from the sector's growth phase to its current status, several patterns of development have transformed the global pulp and paper industry.

- New fiber resources – developed in South America & South East Asia
- Advanced technology – scale of production assets has quadrupled
- Formation of global companies – especially American and European
- Business model focus - e.g. market pulp, packaging, paper
- Increasing global trade in all products
- Research & development shifted from process to product, from companies to vendors. Large systems and equipment packages are now available from a single source supplier on a turnkey basis.
- Reinvestment shift from rebuilds & conversions to new mills and machines.

- Government support for industry has helped transform the pulp and paper sector in some jurisdictions. Examples are in Scandinavia, China and Germany, by encouraging development of secondary industry clusters around the pulp and paper sector, creating conditions that helped drive redevelopment.

To a large extent, the BC pulp and paper industry has neither participated in, nor benefited from, these developments. It is now at a ‘crossroads’ in terms of being able to take advantage of its opportunities or continue its decline.

Financial returns for investors in the BC pulp & paper industry have been poor for many years. The average return on capital employed for the period 1995–present has been approximately 4%*. There have also been several mill closures due to bankruptcy. One way shareholders have pressed for improvement has been to discourage capital spending. The rate of reinvestment has been severely constrained for several years and is currently at about 50-60%* of depreciation.

*Source: Pulp and Paper Industry Advisory Committee, Final Report, January 2006

The BC pulp & paper industry has significant market share in its natural markets as shown in Figures 1 and 2 below. NBSK pulp mills in BC account for 24% of global capacity – creating an opportunity for further development in this growing sector. Newsprint machines in BC account for 11% of North American newsprint capacity – creating a challenge for producers facing declining market demand.

Figure 1 – Global Market NBSK Capacity

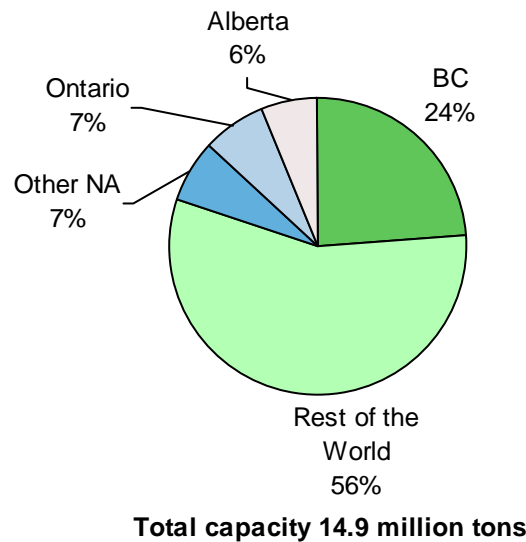
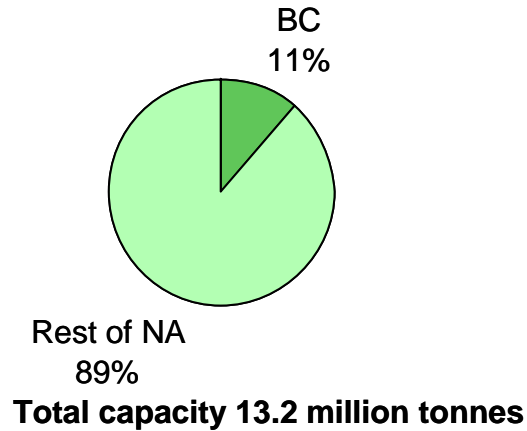


Figure 2 – Newsprint and Newsprint Specialties



The market pulp industry in BC today is largely comprised of companies that are significant players relative to NBSK market share; however they are relatively small compared to global pulp and paper companies with portfolios of products and grades.

Competitive analyses for this report are based on regional averages for asset quality and manufacturing and delivery costs, utilizing Pöyry's in-house cost models. All inputs are based on publicly available data. It should be noted that BC producers comprise a diverse group of operations with some relatively strong assets and others weak.

NBSK capacity for the BC Interior is close to the industry average, however facilities are several years older than average. Mill size in BC regions is comparable to other parts of Canada, but smaller compared to the newer Scandinavian and Western European mills.

Asset index describes the overall asset quality and technical standard of the production assets. Although some BC assets are newer and relatively strong, when averaged over a region all BC regions are positioned in the third and fourth quartiles of the cumulative NBSK capacity curve and are lower than Scandinavia, indicating older, smaller scale facilities. Significant investments have been made in pollution control over the past 15 years; however they do not contribute directly to operating and cost efficiencies.

Figure 3 – Left (Industry structure – Global NBSK), Right (NBSK Current Asset Index)

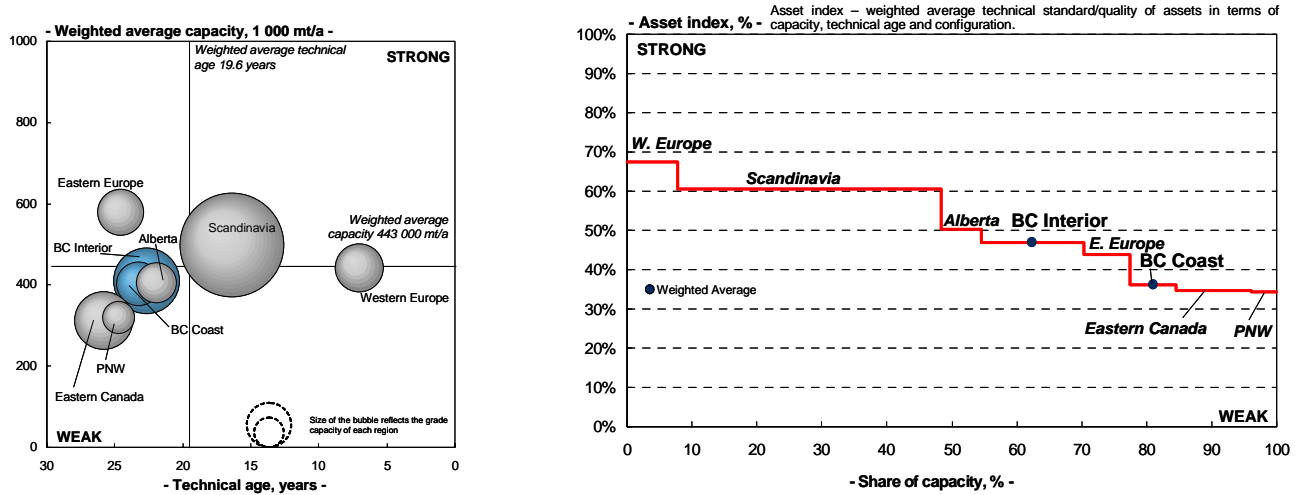
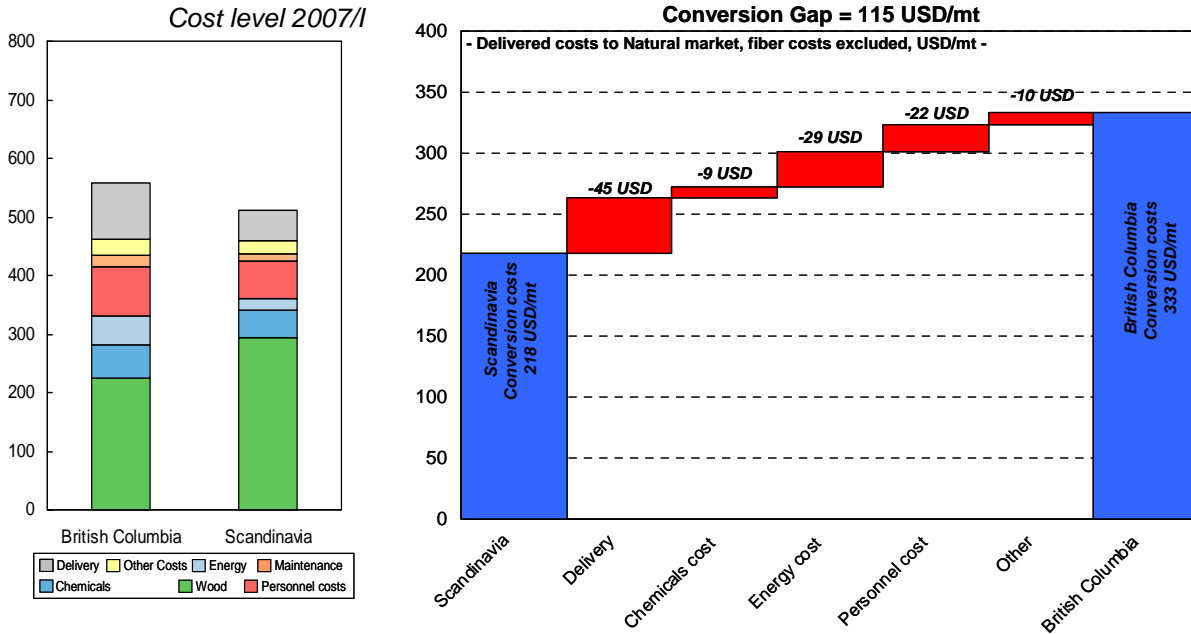


Figure 4 below shows the average component cost per ton of pulp for BC compared to Scandinavia. BC NBSK producers have a \$115/t conversion and delivery cost gap to Scandinavia-partly offset by lower fiber costs of about \$70/t

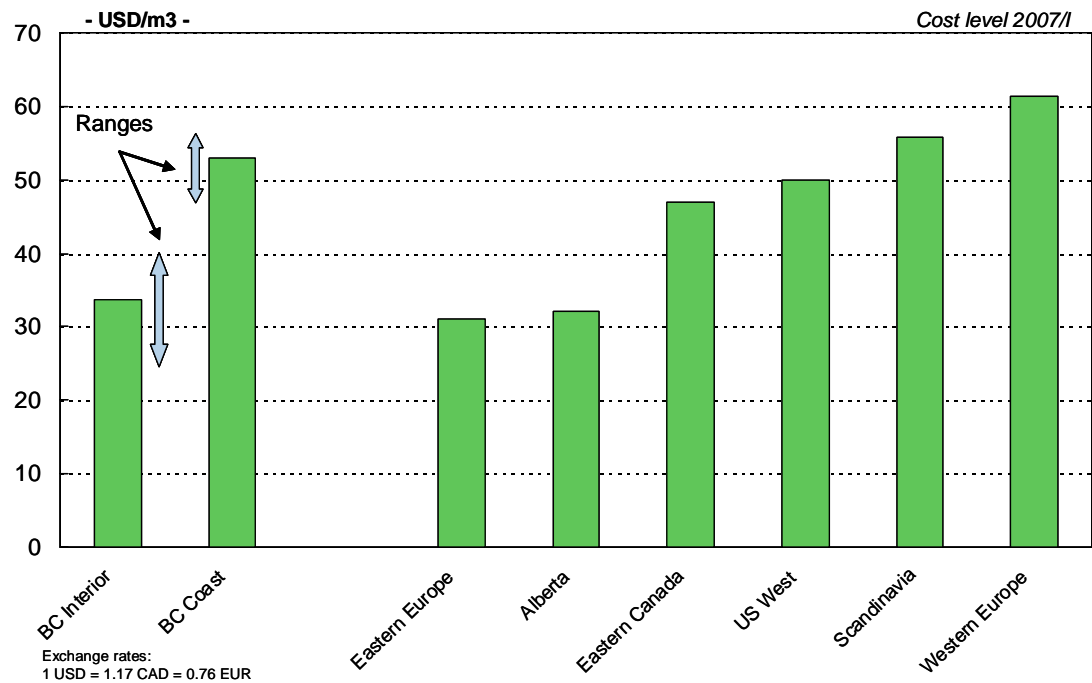
Figure 4 – Current NBSK Gap Analysis: British Columbia vs. Scandinavia



In recent years, wood cost has been an advantage for most of BC’s pulp & paper industry. Of the main regions within BC, the Interior has had low fiber costs. Even with the current downturn in the US housing market and lumber industry and the rising residual chip prices, this region still has competitive fiber costs. In the Coast region, fiber supply has been constrained by the permanent closure of several sawmills and residual chip prices (local and imported from the Interior) are high and uncompetitive.

As illustrated below, wood is the largest cost input for kraft pulp manufacturing. Although wood costs have risen due to sawmill curtailments, the Interior region remains competitive. BC Coast wood costs comparable to those in Eastern Canada and Scandinavia.

Figure 5 - Current Weighted Average Wood Price, Global NBSK Market Pulp

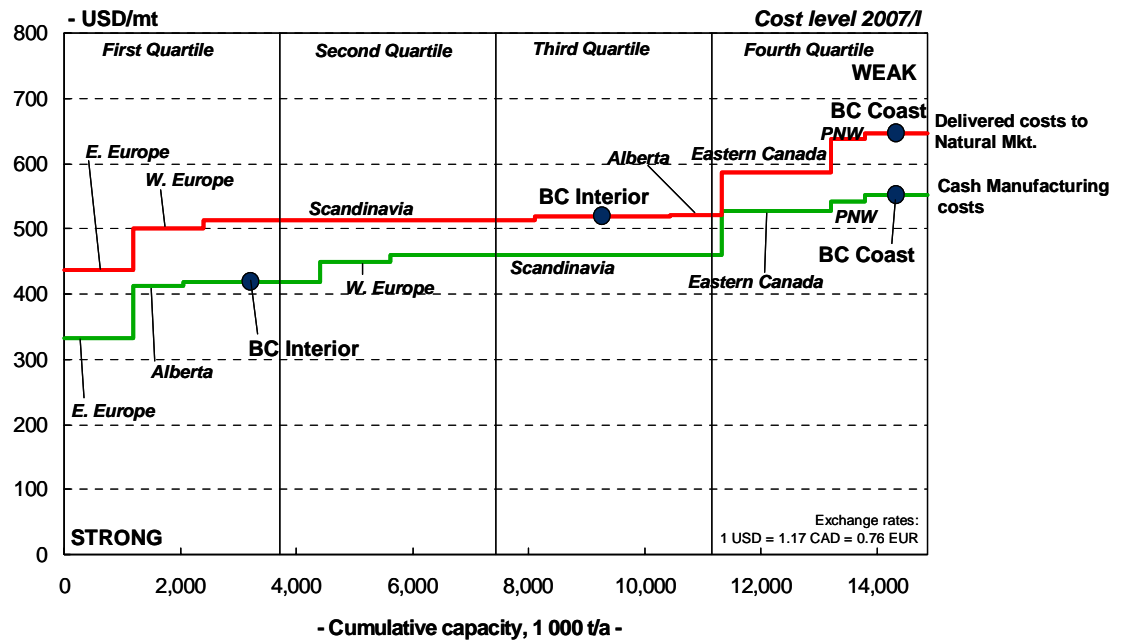


Although some BC facilities have competitive conversion costs, they have higher distribution costs than some competitors due to natural market proximity, resulting in weaker competitive positions in terms of delivered cost. Natural market destinations are based on Pöyry’s estimates of percentages of shipments from the respective regions to key markets. For NBSK this includes Northern Europe, Asia, US East coast and Midwest. Pöyry’s transportation models are used to estimate distribution costs for respective regions. Natural market distribution assumptions for the respective regions are appended.

Benchmarked to global competition, the BC industry is positioned in the third and fourth quartiles of the “delivered to natural markets” cost curves as shown in Figure 6 and Figure 7. It should be noted that through the second and third quartiles, these curves are relatively ‘flat’ indicating small changes in cost estimates can make significant differences in positioning.

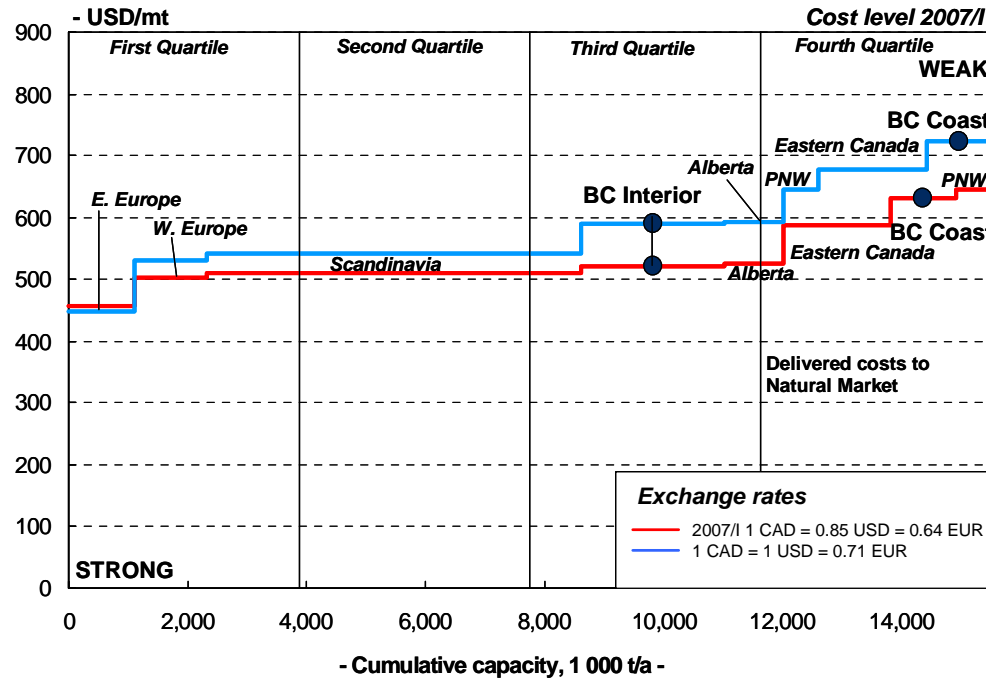
For NBSK in Figure 6, positions on cost curve are based on average mill costs in respective regions. Region positions are determined by conversion efficiency (mill asset quality), input costs (fiber by far the most important for kraft) and distance to natural markets (pulp is sold on a delivered basis). The BC Interior region has lower mill-level manufacturing costs than Scandinavia, but higher distribution costs. BC Coast remains in fourth quartile.

Figure 6 – Current NBSK Delivered to Natural Market Cost Curve



It should be noted that the Canadian/US dollar exchange rate for the above chart was based on first quarter 2007 averages when it was at 0.85 US. The chart below indicates the changes to BC's positions with the Canadian dollar at parity. Most NBSK is produced in Canadian dollars or in euros. Changes in these currencies relative to each other largely explain respective position changes on the cost curves.

Figure 7 – Exchange Rate Sensitivity - NBSK Delivered to Natural Market Cost Curve



It can be seen with the Canadian dollar at par (blue line); BC regions delivered costs increase significantly from their level in the first quarter of this year. Although pulp prices have increased over this period, the stronger Canadian dollar has offset any margin increase. Although the Canadian dollar has appreciated over 16% against the US dollar between March/2007 and the end of September, the euro has appreciated over 6% in the same time frame. Since these two regions account for most NBSK production, relative positions have not changed significantly on the cost curves; rather the curve has been shifted upwards, impacting margins for all producers. However, Canadian producers' costs have risen higher than Scandinavian competitors due to currency changes since last spring.

In contrast to NBSK, assets for BC newsprint producers are relatively strong compared to competitors in North America, as illustrated in Figure 8 below; however, key issues relate to declining North American demand.

Figure 8 – Left (Industry Structure – NA Newsprint), Right (Newsprint Current Asset Index)

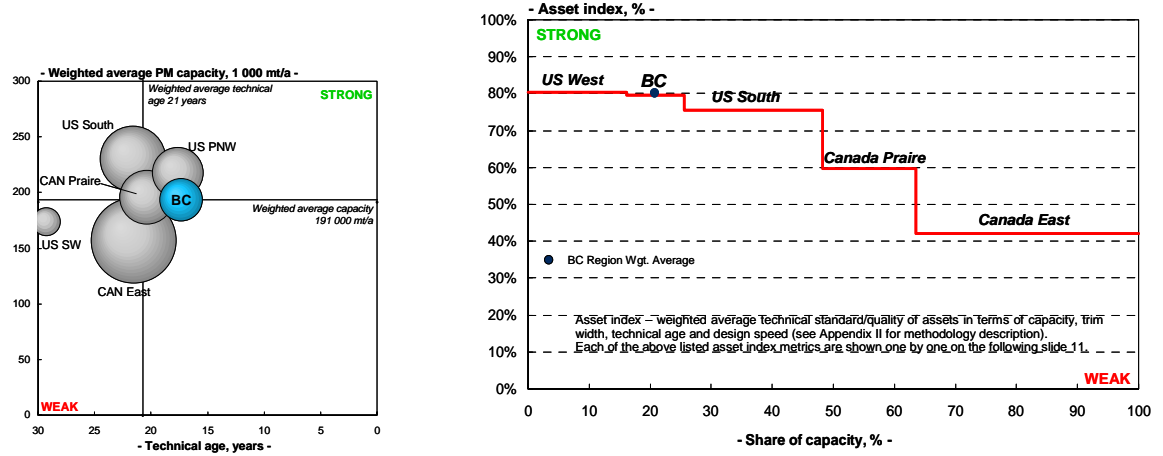
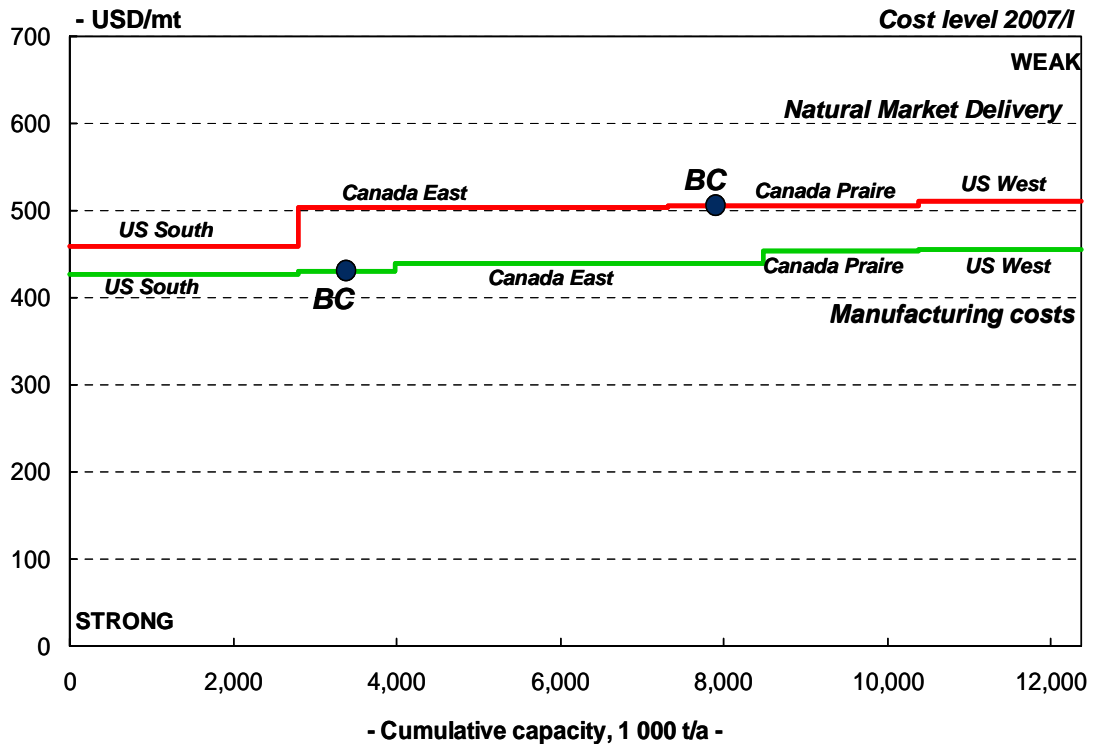


Figure 9 illustrates the standard newsprint competitive environment, which creates a very flat cost curve where small changes in costs will create large changes in positioning. BC is currently in the second and third quartiles for cash manufacturing and delivery to natural market costs. With such a flat cost curve it becomes unclear who the marginal producers are and what mills should go down when prices decline which may lead to delays in necessary capacity reduction.

Figure 9 – Current Newsprint Delivered to Natural Market Cost Curve



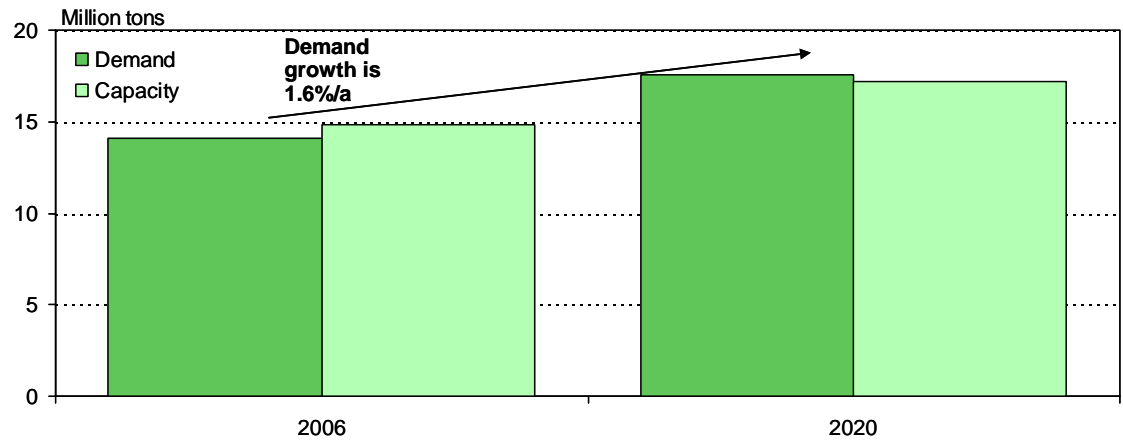
2 THE OUTLOOK AND OPPORTUNITY FOR BC MARKETS

NBSK Markets

Growing demand for market pulp, particularly for NBSK is positive.

As shown in Figure 10 the Global supply/demand outlook for NBSK is positive. Current supply and demand are now in close proximity due to closures of Canadian capacity over the past several years. Growth in key end-uses for NBSK, although maturing in North America and Western Europe, is robust in developing regions. Core demand for NBSK is forecast to grow at about 1.6% per year over the medium-term. If this rate of growth continues through the next decade, NBSK demand will exceed Pöyry’s estimates of supply growth.

Figure 10 – Outlook for NBSK Demand and Supply Growth to 2020



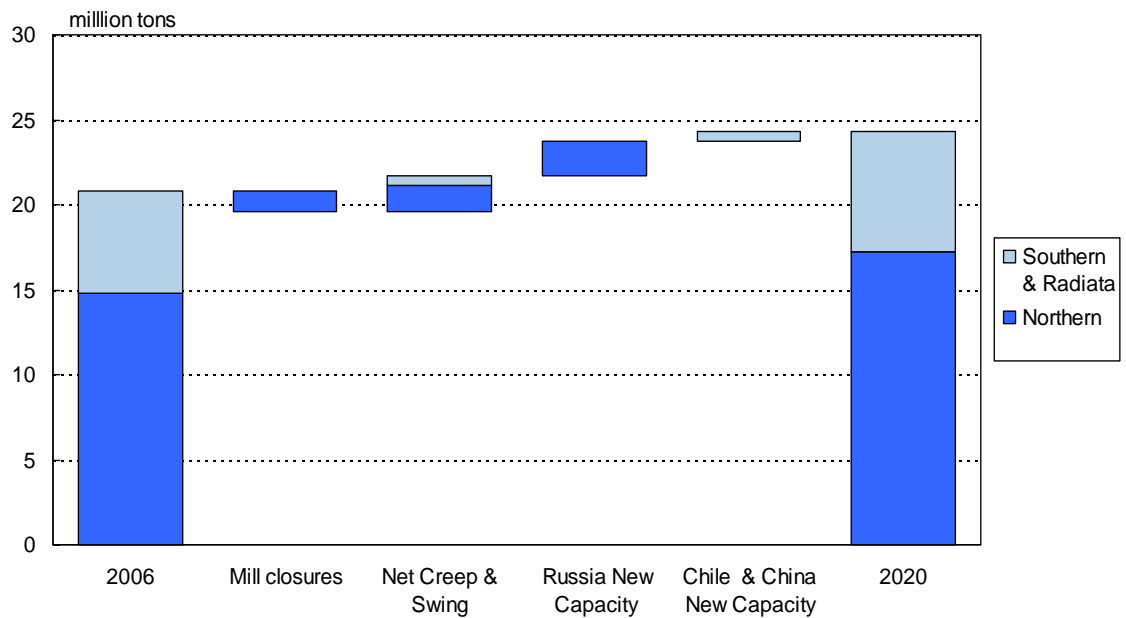
With a tighter supply/demand balance, the price gap between NBSK and hardwood kraft pulp will be higher than it has been in the past.

Capacity

Many industry sectors are so large that entirely new mills or machines are required to satisfy the incremental demand not met by continuous productivity improvement (“capacity creep”). In recent years, this new capacity has been installed in regions outside North America.

For NBSK, Stendal in Germany is the most recent NBSK capacity start up, in 2005. The market structure for Bleached Softwood Kraft Pulp (BSKP-includes southern softwood grades such as US Southern Pine and Radiata Pine pulp) as shown in Figure 11 will support new capacity additions. Pöyry expects new BSKP capacity over the next decade in Russia and Latin America. Most Russian projects being considered are for market pulp; however, some of this capacity may be integrated to paper and board products based on development of the domestic economy.

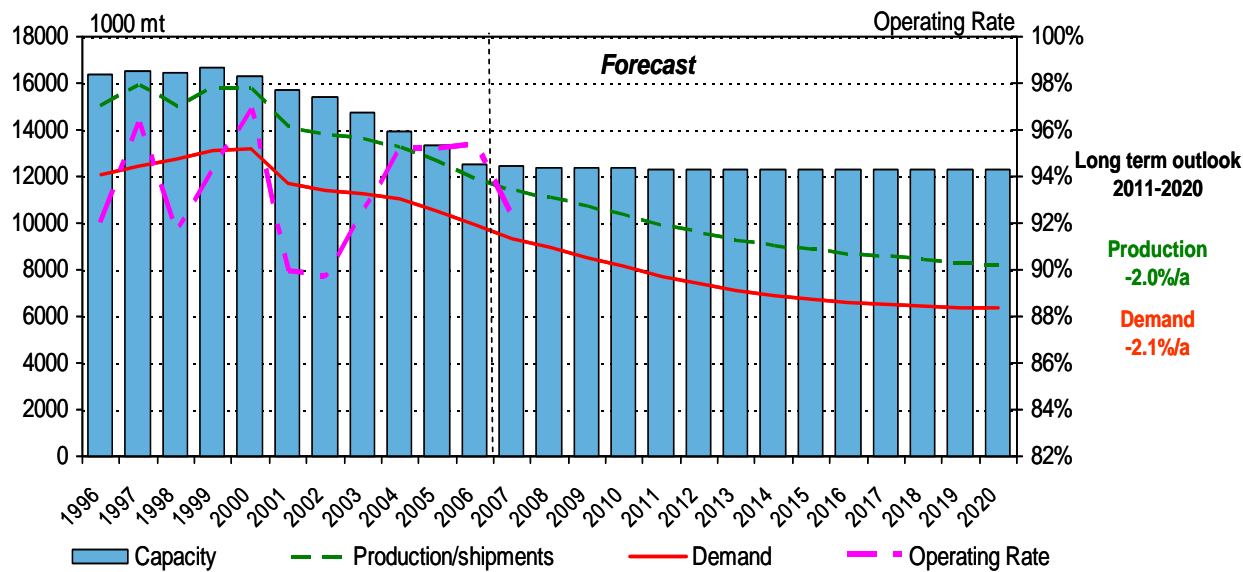
Figure 11 – BSK Supply/Demand Growth to 2020



Newsprint Markets

North American newsprint markets are in serious decline, as shown in Figure 12. From 2000 through 2006 consumption of newsprint in North America has fallen about 25% (3.2MM metric tons). Industry capacity has been reduced on average by 630,000 metric tons per year. Demand is forecast to fall by a further 3.7 million metric tons by 2020, thereby creating serious viability challenges for the higher cost facilities in BC and elsewhere in North America. Assuming each region adjusts to its demand, it is estimated that 35% of BC capacity will have to be either shut down or converted to other grades, this represents approximately 3 machines.

Figure 12 – North American Newsprint Supply/Demand Balance

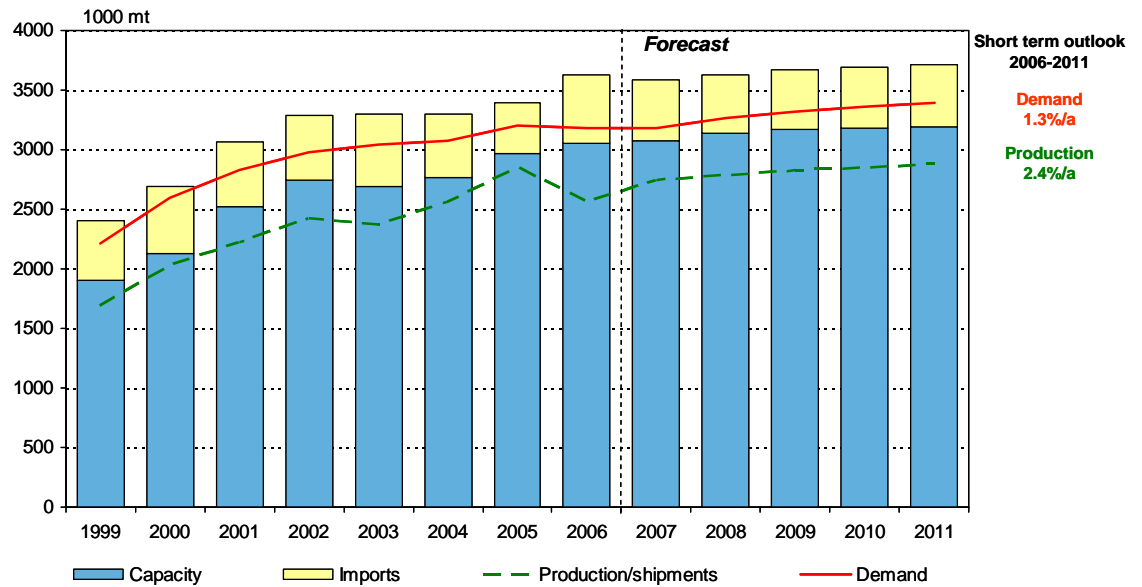


Other Publication Papers

Supercalandered papers (SC) and coated mechanical papers (LWC) are examples of publication grades used in magazines, catalogs and advertising inserts. They are relevant to this analysis as potential grades for conversion from newsprint. An example was conversion of one of Port Alberni’s paper machines, (PM5) from newsprint to LWC in the late 1990’s.

North American demand for SC papers will remain positive – in the 1-2% per year range for the next five years, as illustrated in Figure 13. With significant imports from Europe, there is limited demand-side risk for North American producers.

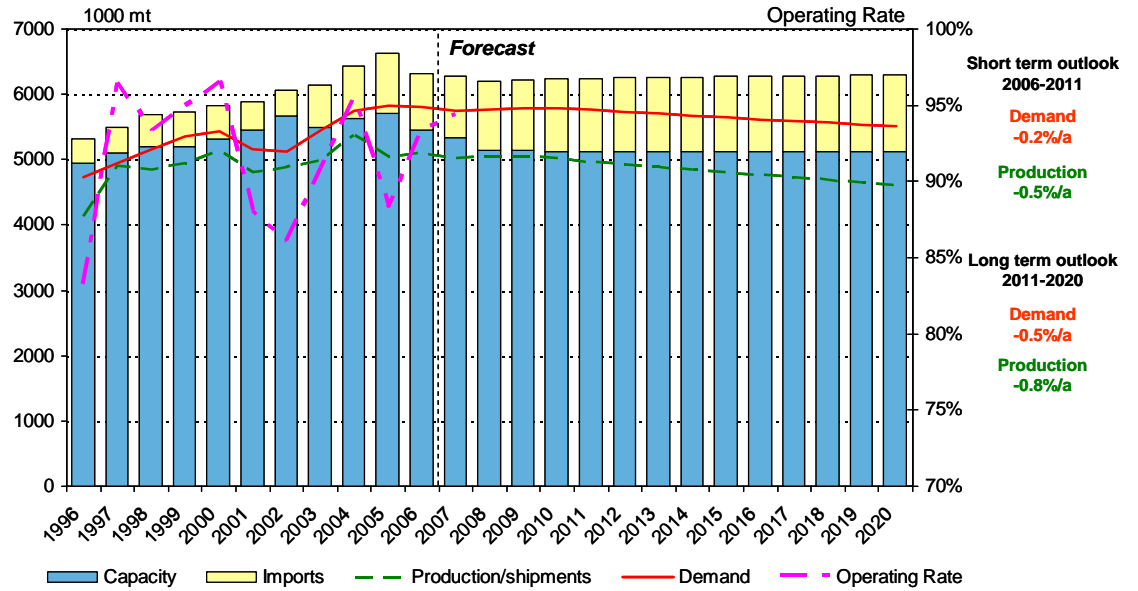
Figure 13 – North American SC Paper Supply/Demand Balance



Source: GAPTRAC

North American producers will need to continuously improve quality and service to maintain their market share as falling demand (approximately 0.5% per year for the next several years) and the prospect of rising import levels create a challenging market outlook for coated mechanical papers, as illustrated in Figure 14.

Figure 14 – North American Coated Mechanical Supply/Demand Balance



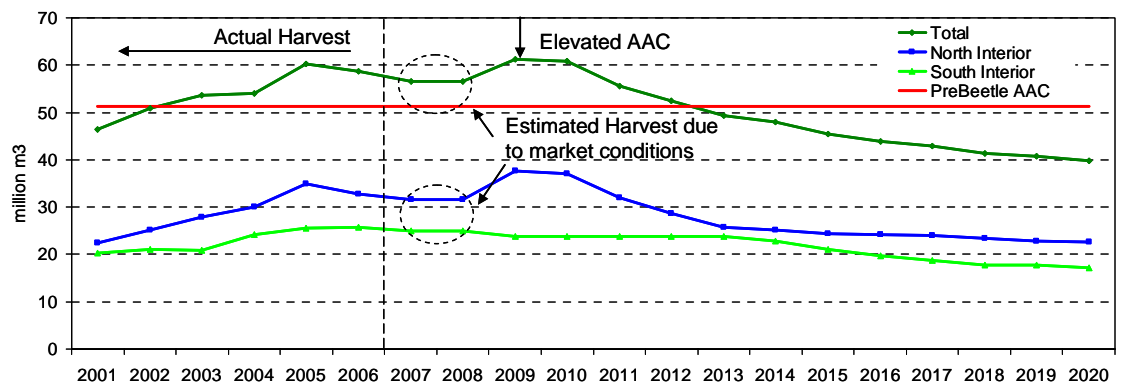
Fiber

BC has a huge fiber basket, with a strong value proposition for lumber going forward. Timber harvest volumes during the peak period of 2005/06 were about 80 million cubic meters per year for the total province. However, future fiber supply in BC is the number one issue for owners and operators in the pulp and paper industry. Uncertainty over future fiber supply – volumes and costs – has been and will continue to be a major deterrent to new investment.

Today, there are questions about volume and quality and how they will change as a result of the pine beetle infestation, the demand for lumber produced in BC, the competition for fiber from bio-energy projects and environmental priorities. The provincial government faces the major challenge of forming a point of view (along with supporting policies and regulations) on the appropriate deployment of fiber from public lands for industrial use. Issues that will drive these decisions include sustainability (environmental and commercial), the potential for economic development and the future of bio-energy markets.

Figure 15 shows historical and projected harvest volumes for the BC Interior.

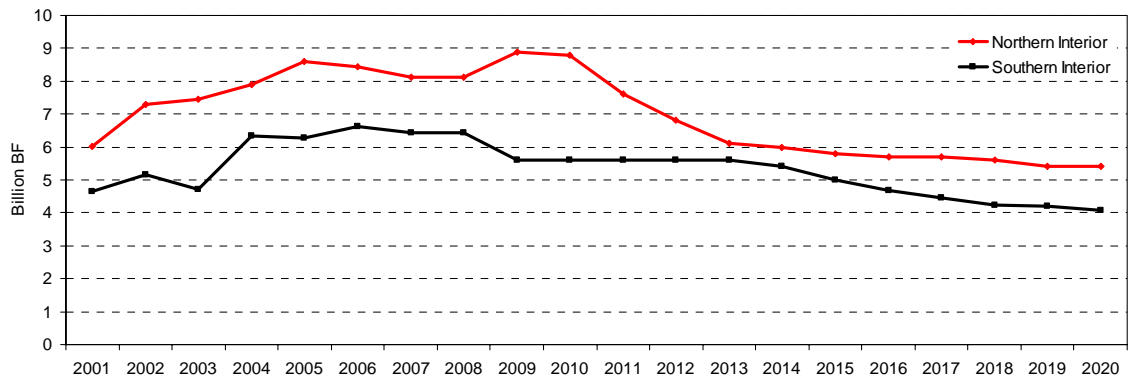
Figure 15 – Historical and Forecasted Interior Harvest Volumes



Million m³

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	46.5	50.9	53.7	54.1	60.4	58.6	56.6	56.6	61.3	60.8	55.6	52.4	49.4	48.1	45.5	43.9	42.8	41.2	40.7	39.8
North Interior	26.2	29.8	32.9	30.1	34.9	32.8	31.6	31.6	37.6	37.1	32.1	28.7	25.7	25.2	24.4	24.2	24.0	23.4	22.9	22.7
South Interior	20.3	21.1	20.8	24.1	25.5	25.8	25.0	25.0	23.7	23.7	23.7	23.7	23.7	22.9	21.1	19.7	18.8	17.8	17.8	17.1

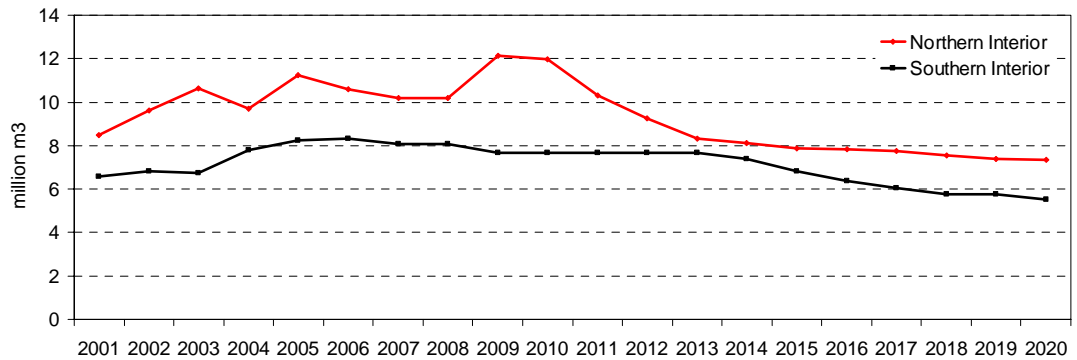
Figure 16 – Historical and Forecasted Interior Lumber Production Volumes



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	10.7	12.5	12.2	14.2	14.9	15.1	14.5	14.5	14.5	14.4	13.2	12.4	11.7	11.4	10.8	10.4	10.2	9.8	9.6	9.5
North Interior	6.0	7.3	7.5	7.9	8.6	8.4	8.1	8.1	8.9	8.8	7.6	6.8	6.1	6.0	5.8	5.7	5.7	5.6	5.4	5.4
South Interior	4.7	5.2	4.7	6.3	6.3	6.6	6.4	6.4	5.6	5.6	5.6	5.6	5.6	5.4	5.0	4.7	4.5	4.2	4.2	4.1

Figure 16 shows that although declines in Interior lumber production appear gradual in the later part of the next decade, they are significant when compared to peak levels in 2005/06. However declines in lumber and residual chip production from the pre-beetle period in 2001 are about 10%. Much of the forecast decline will occur by the middle part of the next decade.

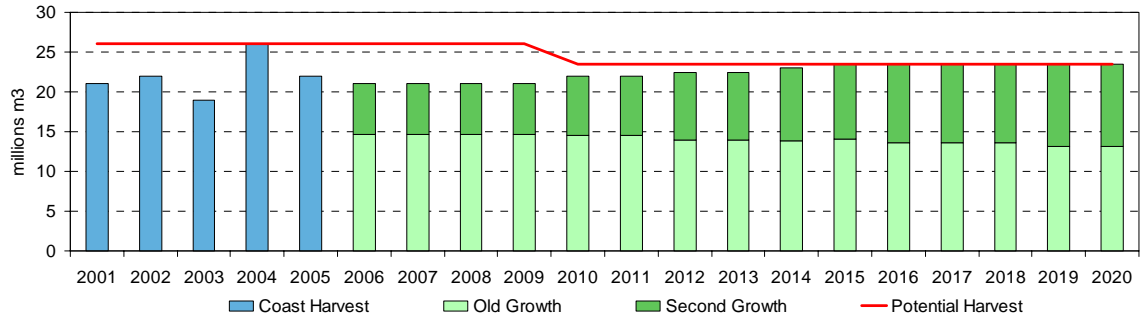
Figure 17 – Historical and Forecasted Interior Residual Chip Production



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	15.0	16.4	17.3	17.5	19.5	18.9	18.3	18.3	19.8	19.6	18.0	16.9	16.0	15.5	14.7	14.2	13.8	13.3	13.1	12.9
North Interior	8.5	9.6	10.6	9.7	11.3	10.6	10.2	10.2	12.1	12.0	10.3	9.3	8.3	8.1	7.9	7.8	7.8	7.6	7.4	7.3
South Interior	6.6	6.8	6.7	7.8	8.2	8.3	8.1	8.1	7.7	7.7	7.7	7.7	7.7	7.4	6.8	6.4	6.1	5.8	5.7	5.5

For the Coast, crown AAC is likely to decline from 19.6 million m³ today to 17 million m³ in next decade; however, harvest is currently limited by market/industry conditions and not harvest restrictions.

Figure 18 – Coast fiber supply-base case, assuming new sawmill capacity



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Harvest volume	21.0	21.0	21.0	21.0	22.0	22.0	22.5	22.5	23.0	23.5	23.5	23.5	23.5	23.5	23.5
Sawlog volume	11.6	11.6	11.6	11.6	12.5	12.5	13.1	13.1	13.6	13.9	14.1	14.1	14.1	14.3	14.3
Pulplog volume	2.7	2.7	2.7	2.7	2.8	2.8	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.7	2.7
Residual chips	3.7	3.7	3.7	3.7	4.0	4.0	4.2	4.2	4.4	4.5	4.5	4.5	4.5	4.6	4.6
Total chips	6.4	6.4	6.4	6.4	6.8	6.8	7.0	7.0	7.1	7.3	7.3	7.3	7.3	7.3	7.3
% second growth	30%	30%	30%	30%	34%	34%	38%	38%	40%	40%	42%	42%	42%	44%	44%

Key assumptions regarding future coastal volumes are as follows (*subject to hosting conditions being in place such that new sawmill capacity can be incented*):

- Second growth will increase from 30% of harvest today to reach 44% of harvest by 2020.;
- Harvest levels from Crown land will increase from 15.5 million m³ today to 17 million m³ by 2015;
- private harvest will be maintained at 6.5 million m³ through 2020 for a maximum harvest of 23.5 million m³;
- AAC on Crown land will be reduced from 19.6 million m³ to 17 million m³ meeting harvest levels;
- Second growth harvest will increase the volume of sawlogs and decrease the volume of pulplogs harvested, there will need to be sufficient sawmill capacity to use the second growth sawlogs produced in this scenario (an increase of 2.7 million m³ or 600 million board feet of lumber production, two world class sawmills);
- Increases in sawmill production are not expected to be fully reached until at least 2015, but production increases begin in 2010 with increased second growth harvesting;

Considerable effort has been expended by government and industry to assess the future fiber volumes and costs for the regional industries –Interior, and the Coast. The current consensus view is that the pine beetle problem will have a major impact on fiber supply. Interior sawmill residual chip volumes will decrease significantly from their peak levels of 2005-2006, and costs across all regions of the province will respond accordingly, based on the ability of remaining pulp and paper capacity to pay for the fiber.

In addition to this clear and present risk to fiber supply caused by the pine beetle infestation, there are other trends that will drive the allocation (total volume and end-use applications) of fiber for industrial use. The increasing demand for sustainability in the use of public lands, the global climate change agenda and the evolution of bio-energy will also shape the priorities of public policy makers.

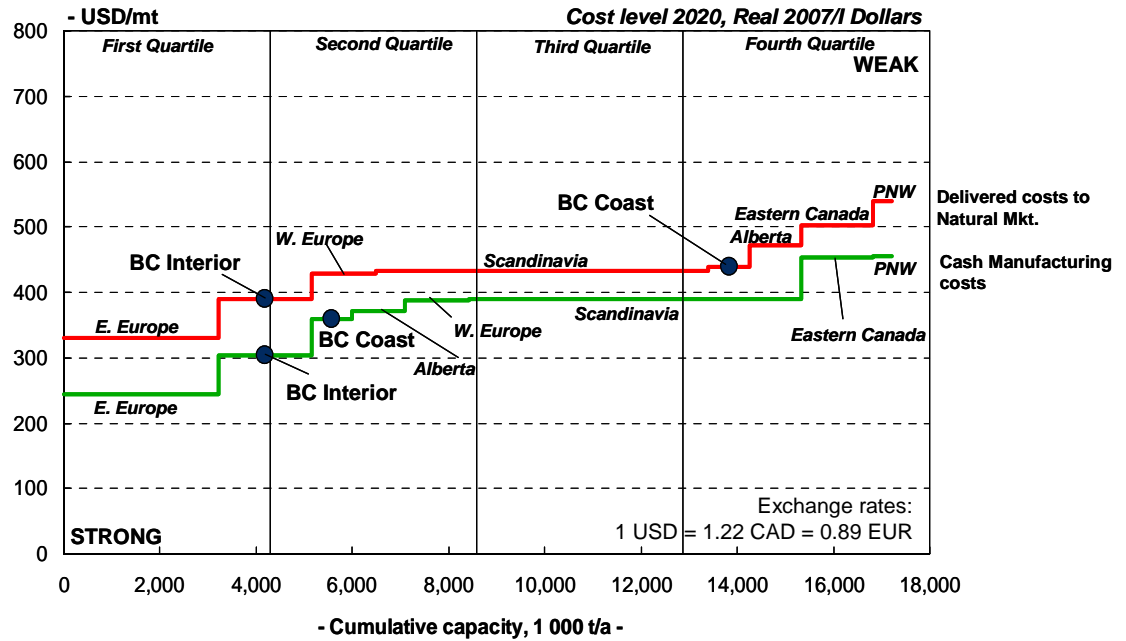
The BC forest products industry must maintain and strengthen its role in ensuring that fiber flows to its highest value uses. The prospects for reinvestment in the pulp and paper industry depend heavily on a clear understanding of fiber supply.

Cost Competitiveness

The charts below show projections of regional cost curves for the 2020 timeframe in current (2007) dollars. These are based on estimates of capacity additions and closures as well as cost input price changes in ‘real’ terms. (It should be noted that the Eastern Europe region includes Russia.)

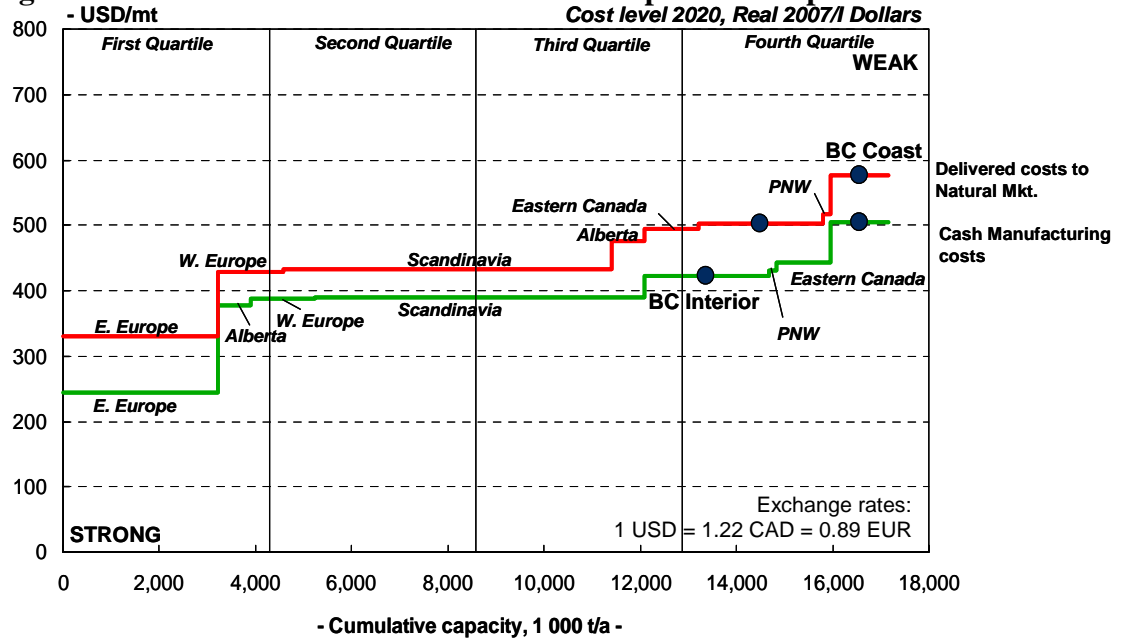
Proactive change management by key stakeholder groups can create a positive outlook for BC’s NBSK producers. For example, the combination of further asset restructuring (including mill closures) and reinvestment in world-scale assets could lead to a very competitive industry focused on the more attractive market sectors. NBSK pulp production in BC could be very competitive in global markets – even allowing for substantial new low cost capacity in Russia. The scenario shown in the chart below assumes capacity reduction of about one million tonnes across the province plus reduced conversion costs with asset renewal. Similar opportunities exist in the higher value added publication papers where BC producers benefit from comparatively low power costs and high quality virgin fiber.

Figure 19 – NBSK Market Pulp Reduced Conversion Cost and Reduced Capacity Scenario 2015-2020



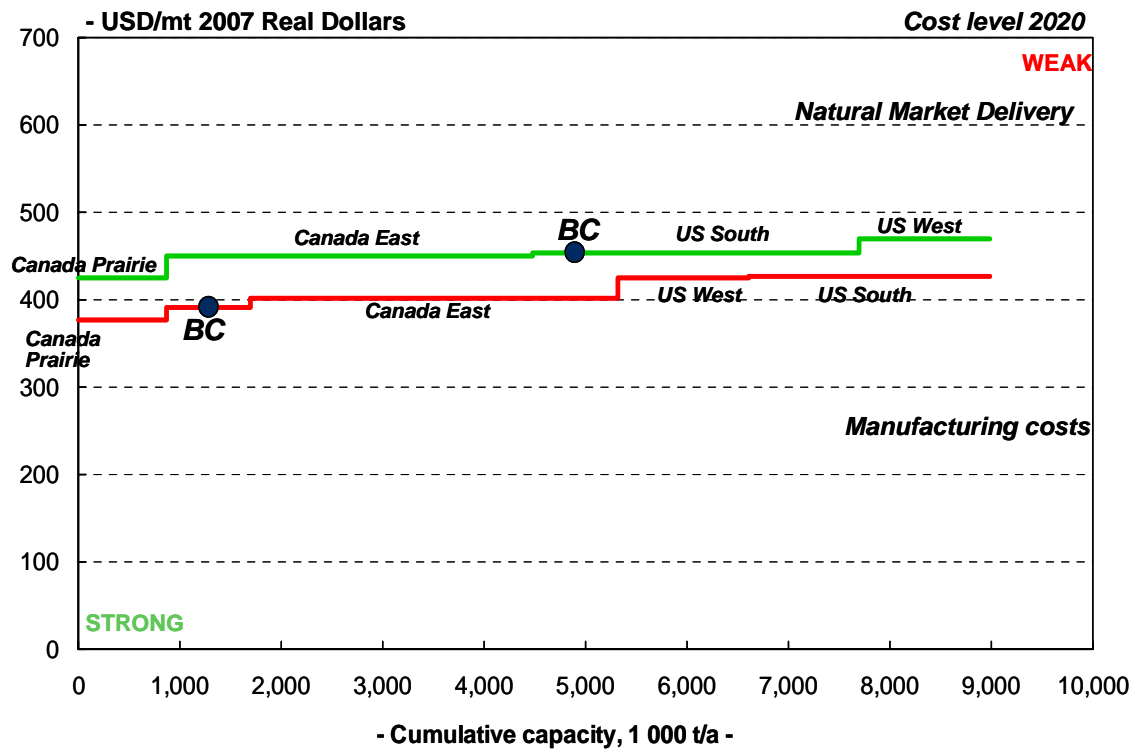
However, without significant “intervention” by industry stakeholders, the outlook for the BC pulp and paper industry is poor. In the chart below all BC mills are assumed to continue operating through 2020, (which is unlikely) but high cost mills are closed in other regions. In this scenario, all (or virtually all) of BC’s NBSK pulp assets will be in the highest cost quartile (fourth quartile) by the 2015-2020 timeframe. Many assets will be in the marginal cost zone. This “last man standing” development path eliminates opportunity for all stakeholders. Industry players will experience further capital constraints, loss of markets and substantial downtime in cyclical downturns.

Figure 20 –2015-2020 Global NBSK Market Pulp Cost Competitiveness



Despite the good asset quality, the newsprint capacity demand reduction will lead to capacity reductions of about 35% to remain competitive, these machines will have to find new grades to produce or be permanently closed

Figure 21 –2015-2020 North American Newsprint Cost Competitiveness



High recycled fiber pricing shifts the US West and US South up the curve since they are the two most dependent regions on recycled fiber. Three BC paper machines are shut/converted in this scenario for a total of 410,000 mt/a. The cost curve remains relatively flat, with demand reduction being the overwhelming issue.

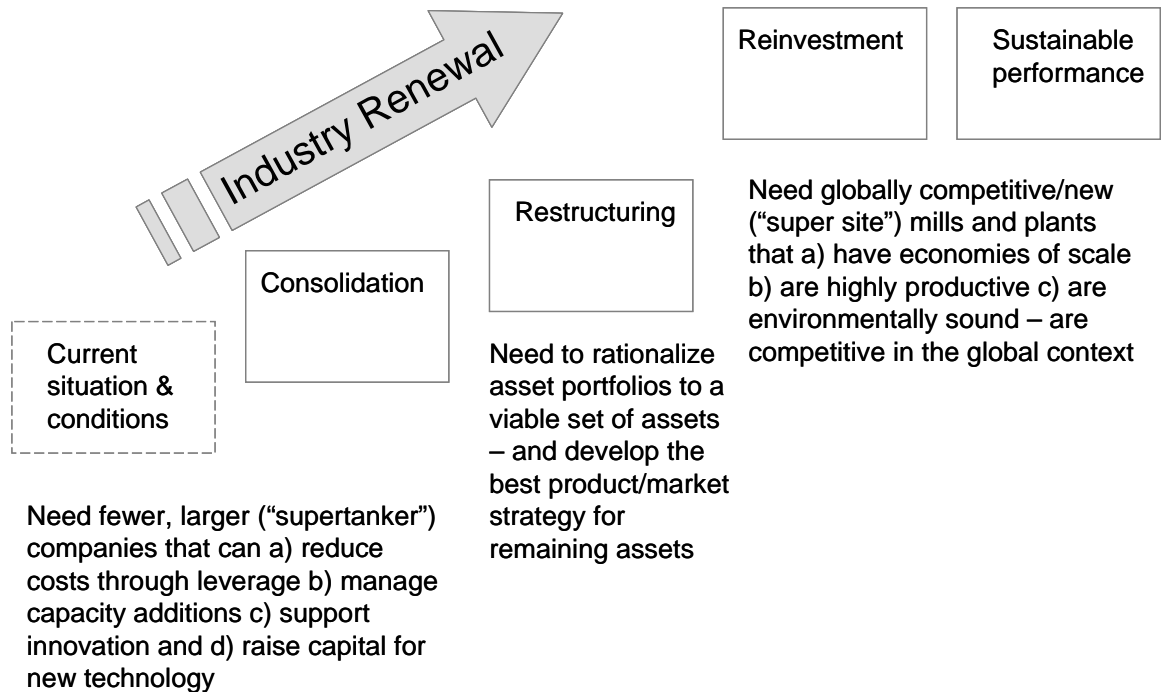
Due to the flatness of the curve, capacity reductions in all regions will be driven by factors other than pure cost competitiveness. BC and the US West also face limited export opportunities to Asia due to growth of newsprint capacity in that region. With BC’s high quality virgin fiber and low power costs, there may be potential to convert some newsprint assets to the production of other products.

3 THE CHALLENGE

Pulp & paper remains one of the world’s most capital intensive industries. In general, reinvestment in BC’s pulp & paper industry has been far below the level that would ensure sustainable global competitiveness. An industry “turnaround” that will drive a healthy level of reinvestment will require the collaborative support of key stakeholders – employees, government, management and investors.

The federal government Task Force on Industry Competitiveness has recently concluded that the renewal of the Canadian industry will follow a path similar to that followed by the Nordic and US industries.

Figure 22 – High level “road map” to industry renewal



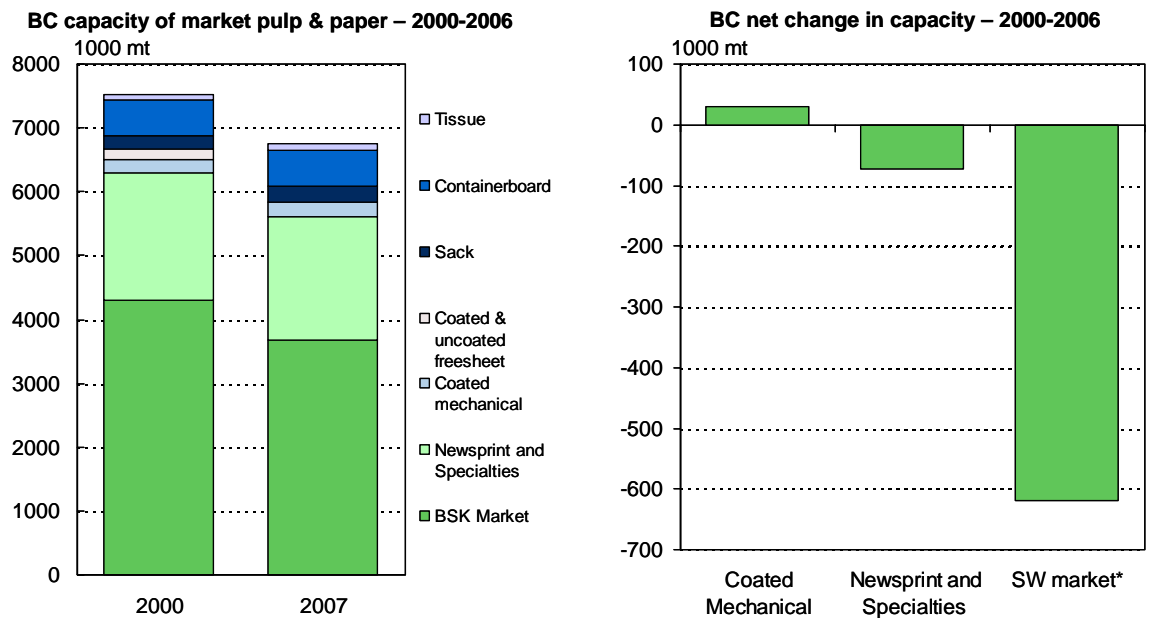
There has been little progress with industry consolidation in BC. Although there have been combinations of assets and companies, BC pulp & paper companies are still small in the global industry.

Company size is important for several reasons. Large “supertanker” companies can a) reduce costs through supply chain leverage b) manage capacity additions c) support innovation and d) raise the large amounts of capital needed for new technology. Furthermore, the cost of capital needed for reinvestment is lower for large companies because the risk profile is lower.

Federal and provincial government policy should support consolidation in the pulp & paper industry. Industry can assist the policy makers by educating them on global competition and the risks of falling behind. Canadian companies are challenged to compete in global commodity markets with sub-scale assets and companies, particularly with a strong domestic currency.

The challenge in BC will be to balance pulp and paper capacity with economically available fiber such that margins improve and asset renewal can occur. Some progress has already been made in asset restructuring. Several uncompetitive pulp mills and paper machines have been permanently closed. The government in BC (and in other provinces in Canada) has assisted this process by discontinuing “bail out” assistance programs for obsolete assets or properties. Removal of this capacity has benefited the remaining industry in two important ways. Firstly, the reduction in fiber demand causes a reduction in the marginal cost of fiber – making all remaining pulp & paper mills more competitive. Secondly, the reduction in supply of finished product increases operating rates and helps the overall supply/demand balance.

Figure 23 – BC capacity development 2000-2006



* Integrated and market pulp closures

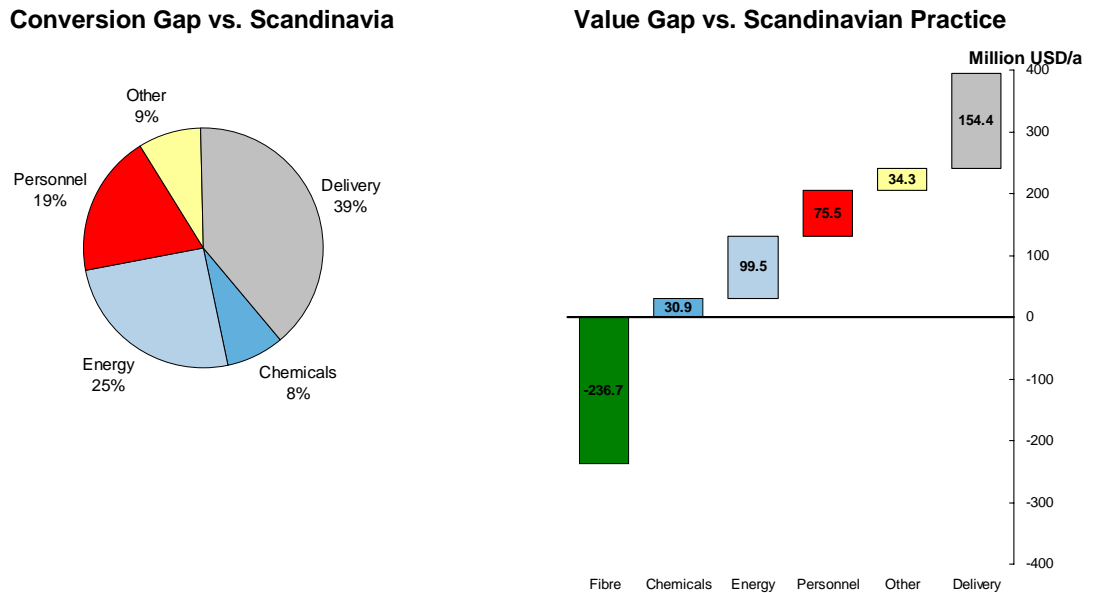
Renewal of the BC pulp & paper industry ultimately requires a high level of reinvestment. Investors, who have experienced very low returns (4-5% return on capital employed) for many years, will return to the industry only when conditions are attractive.

Industry must first prove it can achieve a high level of operating and financial performance with the tools at hand. Labor and management must clearly demonstrate to all stakeholders that they can run assets in BC at least to the level of the best performers who are operating comparable technology elsewhere in the world. There is considerable room for operational improvement that must be achieved to reach best-in-class performance (for comparable technology). The most important “gaps” to close, as illustrated in Figure 24, are:

- Productivity – labor cost per unit of output
- Logistics costs – cost of delivering finished product to market
- Energy cost – currently favorable in BC for publication paper producers (as well as bleached chemi thermomechanical pulp, BCTMP mills). It is important to keep this advantage. However, pulp and paper producers are disadvantaged as load displacement (reduction in purchased power by load reduction or increased self generation) has a lower value than for European competitors who get credits for ‘green’, biomass-generated energy.

Closing these gaps will create substantial positive cash flow in the industry and create an environment for further change. There is a ‘window of opportunity’ for these changes to occur as the mountain pine beetle infestation runs its course by the early to mid part of the next decade, after which economic supplies of fiber become less available.

Figure 24 – British Columbia vs. Scandinavia Value Gap Summary for NBSK



To be competitive longer term (2020) BC’s pulp and paper capacity has to be in balance with economic supplies of residual fiber

INITIAL RECOMMENDATIONS

There is much to be done on the road to renewal of the BC pulp and paper industry. The path is clear – consolidation, restructuring and subsequent reinvestment. Renewal will take place when substantial new investment takes place in the pulp & paper industry.

It is beyond the scope of this initial work phase to develop and support an implementation agenda. However, there are certain changes that are clearly needed based on this assessment (and prior work) of the current situation and future opportunity for the industry.

Hosting conditions need to be put in place that will create situations that encourage significant capital investments in BC's pulp and paper sector. These include:

- Allow mills to exit the sector (mill closures) without inappropriate government intervention. This will enable a transition to a pulp and paper demand scenario that is more in balance with supplies of economically available fiber.
- Develop and support energy policies that provide revenue incentives for biomass based energy produced by the pulp and paper sector. The Nordic region provides a good example where electricity certificates and carbon dioxide credits provide up to EUR 25/t revenues for some mills
- Stakeholders to encourage a more collaborative management/labor environment that provides the type of flexibility needed for modern facilities. Both management and labor must drive hard on this issue
- Support employee training and development at all levels, including apprenticeships, technical training, management training etc.
- Fund research that supports the sawmill sector making a successful transition to post-pine beetle forest conditions. Support the renewal of the coastal sawmill industry as second growth forests mature in the next decade.
- Based on work done by Forest Products Association of Canada (FPAC) and the BC Pulp and Paper Industry Advisory Committee, bring municipal property taxes for pulp and paper facilities in-line with those in competitive regions in other parts of North America and Europe. Major industry property taxes in BC are over twice those in Alberta and significantly higher than urban and rural rates in the US.
- Actively promote the strengths of BC's pulp and paper sector:
 - Improving transportation infrastructure
 - Experienced work force, particularly construction resources, post-Olympics
 - Good brownfield sites with significant cost reduction potential
- Develop more formal industry cooperation in areas that impact all participants; i.e. supply chain issues such as ports, railways and related infrastructure.

The immediate challenge for the industry and its key stakeholders is to establish the forums and change management processes to:

- a) agree on priorities

- b) develop clear action plans and
- c) measure and manage progress