

Trends and Prospects
**UNECE Committee on Forests and the
Forest Industry**

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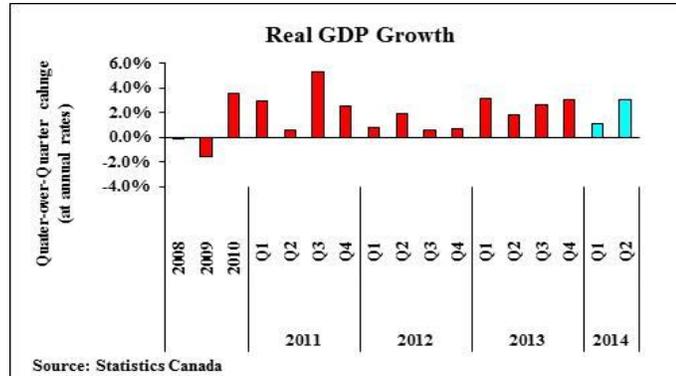
October 2014

CANADA

I. An Economic Overview

General Economic Conditions

The growth rate of the Canadian real gross domestic product (GDP) reached a sizeable 3% (at annual rates) in the second quarter of 2014, the fastest since 2011. However, this was more a function of the observed weakness in the first quarter (1.1 %) due to the particularly inclement weather. Despite global economic uncertainty, improving external demand associated with a recovering U.S. economy, solid business investments, as well as, improved competitiveness of Canadian firms benefiting from a lower Canadian dollar are expected to support the momentum of the Canadian economy through 2015. However, uncertainties remain such as imbalances in the household sector, along with external uncertainties, such as the Eurozone economy. National unemployment levels are still stable (around 7%) however, the labour force participation rate fell in August 2014 compared to the same period in 2013. The household debt to personal disposable income ratio has continued to decline from 2013, as consumers are de-leveraging to pare down both personal credit and mortgage liability levels.

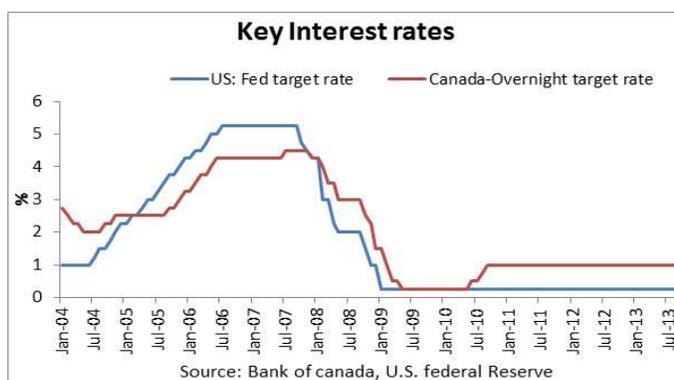


Canadian housing starts were up 4.6% in the first half of 2014, compared to the same period in 2013. And housing prices have continued to edge up. In July 2014, Canada’s housing price was up 4.9% compared to the same period last year. In line with demographic demand, and ignoring considerable regional variations, the overall Canadian housing market has started to slow down. Canada’s housing market is on course for a soft landing despite some risks of a disorderly unwinding of housing market imbalance.

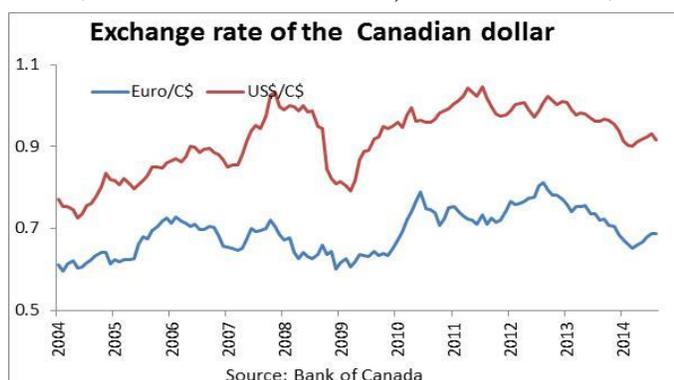


From December 2007 through to March 2009 the Bank of Canada lowered its overnight rate target (ORT) as the nation’s economy weakened with the onset of the global economic downturn. It was lowered from 4.5% in December 2007 to 0.5% in March 2009, and kept at this level until mid-2010 when it was steadily increased to 1.0% and has remained unchanged since. Given that inflation in Canada remains subdued as a result of the economy still operating below full capacity, depreciation of the Canadian dollar, and uncertain global economic conditions (in

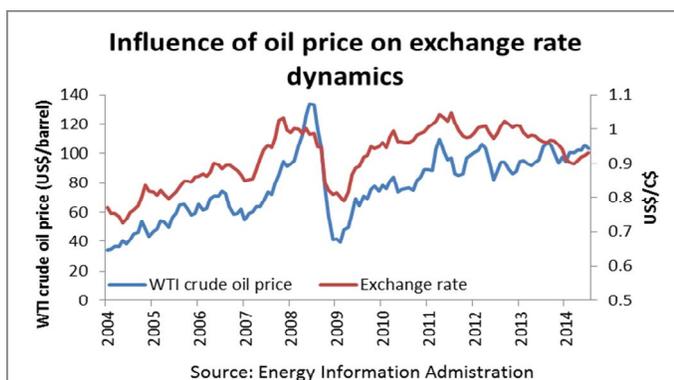
the U.S., Europe and China), the Bank of Canada has maintained its target for the overnight rate at 1%. Due to the degree of interconnectedness between the economies of Canada and the U.S., movement in the ORT is also affected by the US Federal Funds Target Rate (FFTR); both have followed similar trends since 2008. While gradually tamping down the magnitude of the quantitative easing policy, the U.S. Federal Reserve is still committed to keeping levels for the federal funds rate low for an extended period.



The Canadian dollar exhibited considerable variation during 2004 to 2009. During this period, as a result of the global financial crisis, the Canadian dollar followed the strong fluctuations of the U.S. economy, going from a monthly high of US \$1.04 in November 2007, to a low of US \$0.79 in March 2009. The Canadian dollar rebounded thereafter; peaking to a new monthly high of US \$1.05 in July 2011, followed by a period where it remained roughly on par until February 2013. More recently, the Canadian dollar has been experiencing modest depreciation since the recovery of the U.S. economy started to pick up. Between January and August 2014, the Canadian dollar averaged US\$ 0.91, considerably lower than the US\$ 0.98 cent level over the same period in 2013. The Canadian dollar has performed well against the Euro, reaching a monthly high in August 2012, at €0.81, mostly due to the elevated financial uncertainties in Europe at the time. After edging down, the Euro to Canadian dollar exchange rate may start rising again in the face of recent monetary easing and stimulus measures taken by the European Central Bank to alleviate declining inflation, weak growth and ongoing financial fragmentation in the European Union economies.

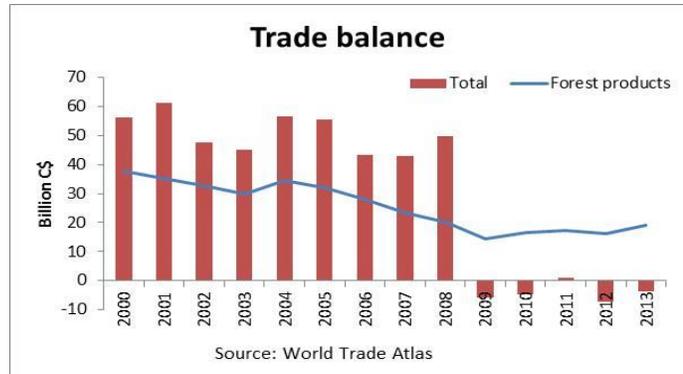


While the Canadian-US dollar exchange rate is largely driven by the relative strengths of the Canadian and U.S. economy, it is also influenced by commodity prices directly, oil prices in particular. A major benchmark for North American crude oil is the West Texas Intermediate (WTI). The WTI price increased significantly beginning in 2000, spiking at a monthly price of US \$133.88 in June 2008 before falling to US \$41.12 in December 2008. The price has recovered since, averaging



US \$95.6 a barrel over the period from 2011 to 2013. Over the first 8 months of 2014, WTI price averaged US \$100.8, due to increasing global demand and geopolitical risks.

After nearly a decade of stability (from 2000 through 2008), Canada's trade balance fell dramatically during the global financial crisis, turning negative four out of the past five years (2009, 2010, 2012 and 2013). Canada's forest products trade balance, which had been decreasing since 2004, has been recovering since 2010 thanks to sizable net exports to the US and rapidly growing exports to emerging economies, particularly to China. The forest trade balance remained positive even during the financial crisis. In 2013, it stood at \$19 billion, up 17% from level of 2012, a significant contribution towards offsetting the negative net trade in the overall economy.



II. Policy Measures in Canada Impacting Forest Management and Forest Product Trade

Commitment to Growth and Innovation and to Sustainable Forest Management

In 2013, the Canadian Forest Service of Natural Resources Canada (NRCan-CFS) released *Growth and Innovation: Rooted in Sustainable Forests*, a strategic framework that guides federal programs, science, and policy initiatives. This framework outlines three key priority areas: supporting forest sector competitiveness, optimizing forest value, and creating prosperity for Canadians.

For more information on *Growth and Innovation: Rooted in Sustainable Forests* see the Natural Resources Canada website at <http://cfs.nrcan.gc.ca/publications?id=35238>.

Competitiveness Initiatives

The Government of Canada is playing a key role in supporting the transformation of the forest sector through support for innovation and market development activities. In recent years, a number of initiatives have been implemented to help secure a more competitive forest industry by helping the sector develop new products and processes, and take action on new opportunities in the domestic and international market place.

The 2012 Federal Budget provided \$105 million for the ongoing transformation of the forest sector in the areas of fostering innovation and expanding market opportunities for fiscal years 2012/13 and 2013/14. Budget 2013 announced additional funding of \$92 million, over fiscal years 2014/15 and 2015/16, to further support market diversification and forest sector innovation.

Innovation

Investments in innovation continue to be at the forefront of the Government of Canada's efforts to enhance the long-term competitiveness and sustainability of our forest sector.

Innovation is essential in the face of intense global competition and structural declines in many paper markets. The Forest Innovation Program (FIP) is a Natural Resources Canada (NRCan) initiative supporting research for the development of new technologies and products, including new uses for Canadian wood fibre. This research is largely led by FPInnovations, Canada's national forest research institute, in collaboration with the forest industry, provinces, universities, and others. Canada's unique innovation system of strategic alignment, pooled resources and targeted research is resulting in the development of game-changing technologies from wood fibre.

Launched in 2007 under the name Transformative Technologies, this program is helping to diversify the products Canada's forest sector sells into the marketplace. The program is helping to reposition the sector for growth by developing new products, thereby enabling it to participate in new niche products areas with significant market potential. For example, the use of nanotechnology to produce new value-added products is becoming part of the forest industry's future and is expected to be a significant contributor to Canada's evolving bioeconomy. FPIInnovations is leading the global research effort in both the production and application of cellulosic nanocrystals (CNC). CelluForce, a joint venture between Domtar and FPIInnovations, is producing a form of CNC named NCCTM. NCCTM is a cutting-edge emerging product that is light, strong and bio-degradable, with a wide array of possible uses, from airplane and car parts to chemicals, composites and coatings.

FPIInnovations is also leading in the development of a unique way to isolate cellulose filaments (CF) during the pulping process. CF is a strength reinforcing agent for traditional pulp and paper products but also has vast non-traditional uses including flexible packaging, thermoplastics, coatings and construction panels. CF is currently being produced by Kruger Biomaterials in Trois-Rivières, Quebec. The construction of the Kruger Biomaterials plant was made possible with funding from NRCan's Investments in Forest Industry Transformation (see page 7) program. The federal suite of forest sector innovation initiatives is complementary –helping high-value innovative bioproducts (e.g. CNC & CF) move from the lab to pilot scale to commercial production for global markets.

The adaptation of Cross Laminated Timber (CLT) to the North American context and its adoption in codes and standards is also an important element of the Transformative Technologies Program. CLT is a key product for growing the use of wood in multi-unit mid-rise (up to 6 storeys) residential and non-residential building markets. Research and development on the manufacture, use, and performance of CLT culminated in the publication of a series of detailed CLT reference handbooks for architects, designers, and the construction industry in Canada and the US.

Much work is also being undertaken to support the commercialization of forest biorefineries. The primary focus of this work is to help identify and commercialize novel products and technologies using forest fibre. Researchers are working together to deliver innovative solutions to increase the efficiency of mill operations by capturing more waste heat and water. This is also achieved by identifying both the appropriate technologies and products that can be produced from forest residues and the best way to integrate them into the existing mill infrastructure.

In order to help facilitate the market entry of cellulosic nanomaterials, and to help preserve Canada's competitive advantage in this area, NRCan has taken the lead, through FIP, in coordinating and supporting the development of relevant domestic and international standards. As a result, in 2014 the first Canadian standard on test methods for characterizing cellulosic nanomaterials was published (*CSA Z5100-140*). At the international level, Canada received approval to lead in the development of the first phase of an International Standards Organization (ISO) standard for the measurement and characterization of cellulose nanocrystals. The development of both national and international standards are important to potentially remove

trade barriers, harmonize research and development activities, and support the development of regulations for new products.

By supporting game changing technologies that are now proceeding from the research and development stage, to commercial viability in the global marketplace, Canada is setting the stage for long-term prosperity of its forest sector while reducing its environmental footprint.

Markets

Expanding Market Opportunities Program

The goal of the Expanding Market Opportunities (EMO) program is to increase market opportunities for the Canadian forest industry in offshore markets and non-residential construction and mid-rise segments in North American markets.

Under the EMO program, federal funding is provided to forest product associations to support market diversification and expansion activities such as: branding, demonstration of Canadian wood-frame construction techniques, international representation through in-market staff in offshore offices, technical support to address market access and regulatory issues, quality assurance. EMO also undertakes activities that support the forest sector's environmental reputation through the promotion of Canada's strong record on sustainable forest management and a preferred global source of sustainable forest products. This includes the development of science and outreach products related to forest management in Canada's boreal forest.

Over the past decade, this market diversification strategy has helped Canada's wood product sector increase its exports to rapidly-growing Asian emerging economies. For example, the value of Canadian wood product exports to China increased more than 18-fold between 2004 and 2013 to \$1.9 billion. In South Korea, they grew by 150 percent to \$204.6 million during the same period.

The North American component of the EMO program has supported industry efforts to increase wood use in non-residential buildings such as schools, health care facilities and commercial outlets and in mid-rise buildings up to 6-storeys. As a result, wood has been used in more than 1,714 non-residential construction projects in Canada and the United States since 2007, representing an estimated \$742 million in new wood sales for the wood products sector.

The program has also supported the efforts of the National Research Council to undertake scientific research which is expected to lead to the inclusion of wood in mid-rise construction for up to 6-storeys in the 2015 version of the National Building Code of Canada. A final decision will be made in March 2015.

In addition, under the program, NRCan commissioned the development of a technical guide to help developers and other stakeholders design and construct tall wood buildings. The *Technical Guide for the Design and Construction of Tall Wood Buildings in Canada*, released by

FPIInnovations, provides peer-reviewed scientific knowledge and expertise on constructing multi-storey wood buildings.

Investments in Forest Industry Transformation

The Investments in Forest Industry Transformation (IFIT) program was created in 2010 to support Canada's forest sector in becoming more economically competitive and environmentally sustainable. The program is delivered by the Canadian Forest Service within Natural Resources Canada. The initial four-year \$100-million initiative supported forest industry transformation by accelerating the deployment of highly innovative, first-in-kind technologies at Canadian forest industry facilities. These projects included bio-energy, bio-materials, bio-chemicals and next generation building products.

The program's first two Calls for Proposals produced 107 unique applications, demonstrating the sector's great appetite for transformative projects. To date, IFIT has supported 14 projects across a range of forest sub-sectors and businesses, eight of which are world-first technologies. These projects aim to "de-risk" new technologies and [encourage broader adoption of the technologies](#) across the industry. They are true Canadian innovation success stories.

Examples of projects funded to date include:

- Construction of the world's first cellulose filament plant. Cellulose filaments are long, thin, ribbon-like structures found in the cell walls of trees and other plants that can be used as a reinforcing agent in various pulp and paper and composite products.
- Creation of an engineered fibre mat (EFMs) plant. EFMs which are made of wood and agricultural fibre residues can be used in the manufacturing of parts for vehicle interiors; geotextiles; home insulation; air, liquid and gas filters; and noise absorbents.
- Installation of an innovative anaerobic digestion system at a pulp mill to produce biogas which can then be used to generate electricity and heat.
- Implementation of an organic rankine cycle system at a lumber processing facility to generate electricity using biomass-derived waste heat.
- Development of a commercial-scale recovery process to produce kraft lignin that can be used in a variety of innovative applications such as to displace components in commercial glues used for plywood, medium density fibreboard and laminated veneer lumber manufacturing.
- Optimizing processes to develop advanced strand-based specialty and oriented strand board commodity products on a single production line.
- Building Canada's first manufacturing plant for prefabricating a panelized system that meets the rigorous Passive House Standard.

IFIT was renewed in February 2014, with an additional \$90.4 million provided for the program over four years under Canada's Economic Action Plan 2014. This continued commitment will help bring the next wave of innovation to market and will solidify Canada's position as a leader in forest industry transformation.

The Program is currently in its 3rd Call for Proposals with formal proposals required by October 30th, 2014.

Climate Change

Adaptation

In 2008, the Canadian Council of Forest Ministers (CCFM) stated, in *A Vision for Canada's Forests: 2008 and Beyond*, that "consideration of climate change and future climate variability is needed in all aspects of sustainable forest management." In the same year, provincial and territorial Premiers, through the Council of the Federation, requested the CCFM Climate Change Task Force (CCTF) to undertake collaborative work on adaptation in forestry. Phase 1 of this effort was completed in 2010 and provided an assessment of tree species vulnerability and management options for adaptation (www.ccfm.org/pdf/TreeSpecies_web_e.pdf).

The attention paid to the impacts of climate change and potential adaptation strategies has remained strong. Phase 2 of the CCTF initiative moved beyond trees to consider adaptation for forests and in the forest sector. A scalable, nationally-applicable vulnerability assessment framework for sustainable management under climate change and related adaptation knowledge syntheses have been developed and are now being disseminated to enable members of the forest sector to incorporate consideration of changing climatic conditions into sustainable forest management. The tools and techniques being provided to the sector are designed to be readily mainstreamed into day-to-day forest management planning and decision-making processes, and are being field tested through several case studies across Canada. They are described in a special series of nine reports by the CCFM, eight of which are now available (www.ccfm.org). The remaining report is scheduled for release in late-2014 or early-2015. The CCFM is also continuing to conduct knowledge exchange activities with forest managers in order to accelerate the uptake and application of these new approaches and knowledge.

Recognizing that business and industry lack timely access to applicable information on climate change impacts and adaptation, the 2011 federal budget provided funding for five years for work by nine federal departments on climate change adaptation. The main goal of the Natural Resources Canada (NRCan) program is to enhance competitiveness in a changing climate. Through the Forest Change initiative, NRCan is continuing working with members of the forest sector to develop and transfer targeted adaptation information, knowledge, and tools to help mainstream adaptation into sustainable forest management policies and practices to enhance competitiveness. This is meant to help members of Canada's forest sector, notably the industry, to understand climate change-related risks and address associated costs and opportunities. The Canadian Forest Service of NRCan will be disseminating to the public adaptation information and tools as they become available. In addition, trends and projections will be provided based on a logical and cohesive set of indicators of the effects of climate change on forests and forest management systems. Actionable science and decision-quality information relevant to competitiveness under a changing climate, including a range of knowledge products such as maps, synthesis reports, guidebooks, climate projections and decision-support systems, will also be distributed. Multidisciplinary information and knowledge on past and projected climate change impacts is being analysed to produce an integrated assessment of the implications of

climate change on Canada's forest and forest industry under a range of future, "what-if" climate scenarios. The integrated assessment will identify potential areas and timing of vulnerabilities to inform policies and investment by the public and private sectors.

Provincial and territorial governments are also continuing to advance adaptation of sustainable forest management activities. Within several jurisdictions, vulnerability assessments are being conducted at the forest management unit and regional level as a basis for incorporating climate change considerations into day-to-day management activities. Through the Forestry Adaptation working group of the Adaptation platform of NRCan, a Compendium of Forest Adaptation activities in Canada has been developed to document what is currently happening within Canadian organizations or jurisdictions with respect to policy and regulation on forestry adaptation, and new forest management practices that incorporate climate change considerations. Also, membership of the Forestry Adaptation Community of Practice (FACoP) is growing and has facilitated the sharing of best practices and lessons learned in adaptation among researchers, policy-makers, and forest managers across Canada (www.ccadaptation.ca).

International efforts

Canada continues to play an active role in the United Nations Framework Convention on Climate Change (UNFCCC) and is committed to negotiations aimed at producing a comprehensive, legally binding agreement by 2015 that would enter into force in 2020. In these negotiations, Canada supports inclusion of forest, agricultural and other lands in a manner that contributes to reducing anthropogenic emissions and enhancing carbon removals, and that strengthens incentives for sustainable land management, while taking into account national circumstances.

Canada is participating in efforts to Reduce Emissions from Deforestation and Forest Degradation and to enhance sustainable forest management in developing countries (REDD+). In 2010, Canada endorsed the global REDD+ voluntary partnership which aligns with priorities outlined in the Copenhagen Accord. In 2011, Canada participated in a Joint Declaration of Intent on REDD+ in the Congo Basin that signals high-level commitment among donor countries to scaling-up of finance and other support for REDD+ in the Congo Basin.

The Government of Canada is demonstrating its commitment to addressing climate change by providing international climate finance in support of mitigation actions by developing countries and support for adaptation by the poorest and most vulnerable countries. Canada has fully delivered on its fast start financing commitment by providing \$1.2 billion over 2010-2013. This funding has been directed toward three priority areas: adaptation, clean energy, and forests and agriculture. Of the 2010-11 funding, \$40 million was used to support the Forest Carbon Partnership Facility's (FCPF) Readiness Fund, which, in turn, supports the building of national capacity to address deforestation and forest degradation. Canada's contributions to REDD+ activities as part of its 2011-2012 fast-start financing included \$20 million to the Congo Basin Forest Fund, \$5 million to the Forest Carbon Partnership Facility (FCPF) Carbon Fund, \$4.5 million to the World Bank BioCarbon Plus Fund, and \$2 million for the Congo Basin Forest Partnership. Details of Canada's international support, including Fast-Start financing can be found at www.climatechange.gc.ca.

Domestic Emission Reduction Efforts

The Government of Canada is implementing a sector-by-sector regulatory approach to reduce GHG emissions. The Government has already taken action on two of Canada's largest sources of GHG emissions—transportation and electricity. The sector-by-sector approach will achieve significant reductions over time. Our regulations for passenger vehicles and light trucks are already achieving GHG reductions. These regulations, along with our regulations for heavy-duty vehicles and coal-fired electricity will yield further results in the coming years.

Environment Canada's most recent *Canada's Emissions Trends* report (released in October 2013) detailed projections of progress toward Canada's 2020 GHG emissions reduction target under the Copenhagen Accord. The report shows that Canada's 2020 GHG emissions are projected to be 128 Mt lower relative to a scenario with no action. The projected reduction is a result of collective action by governments, consumers and businesses. Emissions intensity (emissions per dollar of GDP) has shown an average annual decline since 1990, a trend that is projected to continue to 2030. Emissions per capita (tonnes per person) have also been decreasing since 2005, and this is also projected to continue to 2030. However, the projections also indicate that further efforts will be required in order to meet the Copenhagen target. The 2014 version of *Canada's Emissions Trends* is expected to be released in autumn 2014 and will provide the latest projections, including from the Land Use, Land-Use-Change and Forestry sector. Governments also are assessing the mitigation potential of the forest sector for achieving climate change goals, and analysis of how mitigation actions involving Canada's managed forests could contribute over the longer term was published in 2014.

Climate change is a shared responsibility in Canada. At the provincial level, Ontario, Quebec, Manitoba and British Columbia are members in the Western Climate Initiative, a collaboration of independent jurisdictions working together to tackle climate change at a regional level. Members of the Initiative have set a regional GHG emission reduction target of 15% below 2005 levels by 2020. As well, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador are all signatories to the New England Governors / Eastern Canadian Premiers (NEG/ECP) Climate Change Action Plan (2001). This plan includes a voluntary commitment to reduce regional GHG emissions to 1990 levels by 2010, 10% below 1990 levels by 2020, and recognizes a long term 2050 target for reductions of 75 – 80 % below 2001 levels. According to the 1990-2011 regional GHG inventory, the NEG/ECP surpassed its 2010 target.

Ontario, New Brunswick, and Quebec are observers of the Regional Greenhouse Gas Initiative, a cooperative effort by ten Northeast and Mid-Atlantic States to limit greenhouse gas emissions. The Regional Greenhouse Gas Initiative is the first mandatory, market-based CO₂ emissions reduction program in the United States. All Canadian provinces and territories now participate in the Climate Registry, a continental-wide, sub-national effort to develop a common reporting system.

In August 2011, Newfoundland and Labrador released an updated Climate Change Plan called *Charting Our Course*, which built on the province's 2005 Action Plan. The 2011 Action Plan

sets out 75 commitments for action across the economy and reaffirms a commitment to reduce greenhouse gas emissions to 10% below 1990 levels by 2020, and 75–85% below 2001 levels by 2050. Most of these reductions will be achieved through expanded hydro-electric generation. In addition, the \$25 million Newfoundland and Labrador Green Fund (a three year program that is cost-shared with the federal government) will support a wide range of climate change and energy efficiency-related initiatives including biofuels.

Prince Edward Island (P.E.I.) released a *Strategy for Reducing the Impacts of Global Warming* in 2008. Goals include reducing GHG emissions, enhancing carbon sinks, improving adaptation to climate change, and increasing public awareness. P.E.I. seeks to reach a target of reducing GHG emissions to at least 10% below 1990 levels by 2020. The Strategy outlined 47 action items focused on energy efficiency and conservation, renewable energy, transportation, agriculture, adaptation, public education and awareness, and government leadership.

The *New Brunswick 2007–2012 Climate Change Action Plan* was completed in 2012 and the province is currently renewing its *Climate Change Action Plan* and remains committed to the 2020 target of 10% below 1990 levels. In its 2011–2012 Progress Report, New Brunswick projected that it was on track to meet its 2012 target of returning to 1990 GHG emissions levels. New Brunswick's new Oil and Gas Rules address air emissions and require the reporting and management of greenhouse gas emissions. The Government of New Brunswick plans to extend this requirement to other large industrial sectors such as pulp and paper and electricity generation. In 2011, New Brunswick adopted the *New Brunswick Energy Blueprint* energy policy. Key policies that encourage continued reductions in GHG emissions include support for: biomass, an electricity efficiency plan, energy efficiency building code standards, and minimum efficiency levels for appliances and equipment. New Brunswick also expanded their *Renewable Portfolio Standard* to require that 40% of in-province electricity sales come from renewable energy by 2020.

Nova Scotia has an economy-wide GHG emission target of at least 10% below 1990 levels by 2020. The province also has a mandatory declining cap on greenhouse gas emissions for Nova Scotia Power, starting from 10.2 megatonnes in 2009 and declining to 4.5 megatonnes in 2030. Under the *Environmental Goals and Sustainable Prosperity Act 2007*, *Green Economy Act 2012*, and *Renewable Electricity Regulations*, Nova Scotia committed to a target of meeting 25% of electricity needs from renewable sources by 2015 and 40% by 2020. A Community Feed-in Tariff Program has been implemented to support the local development of renewable energy projects and additional support is provided for the development of biomass/biofuels.

In June 2012, Quebec launched its *Climate Change Action Plan 2013-2020*. The Plan included the allocation of \$2.7 billion for climate change mitigation and adaptation programs to work toward a GHG reduction target of 20% below 1990 levels by 2020. One key element of the Plan is a GHG cap and trade system that began operating in 2013 and linked with California's trading system in 2014. Other measures under the Plan include the establishment of green building standards and promotion of renewable energy.

Ontario's *Climate Change Action Plan* was released in 2007 and included a set of short-term (6% below 1990 levels by 2014), medium-term (15% below 1990 levels by 2020), and long-term

(80% below 1990 levels by 2050) targets for reducing the province's GHG emissions. Most of Ontario's progress in emissions reductions has been achieved through the phase-out of coal-fired electricity generation. Ontario is replacing coal-fired generation with increased conservation and cleaner energy sources like natural gas, nuclear, solar and wind. Ontario's *Provincial Policy Statement*, the provincial framework for land use planning and development policies, addresses the need to reduce GHG emissions through policies that promote efficient use and management of land and infrastructure, protection of the environment, and wise use of resources. The *2007 Climate Change Action Plan* also included a 50 Million Tree Program, in which the government invested \$79M in the planting of 50 million trees on the settled landscape of southern Ontario. This is expected to sequester approximately 6.6 megatonnes of carbon dioxide by 2050 and help restore forest cover on a highly fragmented landscape.

The *Manitoba Climate Change and Emissions Reductions Act* received Royal Assent in July 2008, and had an initial 2012 target to reduce emissions by at least 6% less than Manitoba's total 1990 emissions levels. Between 2000 and 2011, Manitoba's emissions decreased by seven percent amidst a 9.6% increase in its population and 78% growth in its economy during the same period. In June 2012, Manitoba released *Tomorrow Now*, a new eight-year strategic plan, for public comment. The plan foresees the modernization of the *Sustainable Development Act* and the release of an updated climate change action plan, as well as a comprehensive energy strategy, including a 43% increase in hydro power output from 2012 levels in the next 15 years.

Manitoba has fully implemented its 2008–2012 climate change plan, with actions carried out across multiple sectors including energy conservation and expansion of renewable power production through hydroelectric, geothermal, solar, and biomass power production. Manitoba introduced a coal-reduction strategy, including a tax on coal emissions, which came into effect in January 2012. The strategy provides capital support for coal-reliant industries to convert to cleaner energy and provides support for developing biomass. In November 2012, Manitoba released the *Clean Energy Strategy* which outlines actions to harness water, wind, solar, and biomass resources within the province.

In Alberta, the government announced its climate change action plan in 2008 with an objective to reduce GHG emissions by 50 megatonnes from a business-as-usual scenario by 2020 and by 200 megatonnes by 2050. Alberta is currently working on renewing its strategy to ensure policies and programs are in place to meet the targets. In 2011, Alberta extended and expanded its Bioenergy Producer Credit Program until 2016. The program has been in place since 2006 and provides incentives to develop bioenergy products to support the development of new technologies and facilities that use non-food crops, waste biomass and wood fibre for fuel, power and heat. In addition to investing in carbon capture and storage, the Government of Alberta implemented in April 2011 a *Renewable Fuels Standard* to accelerate the use of fuels derived from renewable sources.

Saskatchewan's *Management and Reduction of Greenhouse Gases Act* was enacted in 2010 and amended in April 2013. Among other things, the Act provides for the regulation of major GHG emitters and the setting of a provincial carbon price for regulated emitters. The Government of Saskatchewan has supported, through its \$70 million Go Green Fund, a range of small scale

renewable energy initiatives in the province, including solar, wind, and biomass. Saskatchewan is also engaged in a number of Carbon Capture and Storage Initiatives.

British Columbia enacted its *Greenhouse Gas Reduction Act* in 2008. The Act authorized hard caps on GHG emissions by designated large emitters (33% below 2007 levels by 2020 and 80% by 2050) and provided the statutory basis for setting up a market-based cap and trade framework. A key element of the province's Climate Action Plan is a revenue-neutral carbon tax that puts a price on GHG emissions. In addition, the province has developed the initial institutional framework for carbon offsets as part of working toward a carbon neutral public sector. In 2011, the province introduced a forest carbon offset protocol to guide the design, development, quantification and verification of forest carbon offsets generated on private and public lands in the province. Forest carbon mitigation activities that are eligible include afforestation, improved forest management and forest conservation. Making the transition to a clean energy economy is a cornerstone of British Columbia's climate action plan. British Columbia's *Energy Plan: A Vision for Clean Energy Leadership* (2007), British Columbia's *Clean Energy Act* (2010) and other initiatives have been adopted to reduce emissions from the energy sector and foster innovation including through carbon capture and sequestration for coal-fired electricity and a commitment to generate at least 93% of energy from clean or renewable sources.

Major Forest Pest Disturbances in Canada

The Spruce Budworm Infestation in Eastern Canada

Spruce Budworm (SBW) is one of the most damaging pests in North America, with most regions of Canada reporting damage by defoliation each year. During periods of major outbreaks, SBW causes disruptions to the forest industry and affects jobs, recreation and tourism, especially for those communities and regions that are heavily forest-sector dependant. Currently, SBW populations are escalating in eastern Canada and observers are predicting that we are on the threshold of another major outbreak in the region.

The last extensive outbreak of Spruce Budworm in Canada reached its peak in the 1970s, and covered more than 50 million hectares across Quebec, Ontario, and Atlantic Canada, resulting in unprecedented timber supply losses. The new cycle of SBW outbreak has been expected in eastern Canada for several years, has appeared further north than previously recorded, and is now spreading east and south toward the Atlantic Provinces. The last major SBW outbreak resulted in fibre losses of approximately 500 million m³ of spruce and fir, with a commercial value of approximately \$12.5 billion in Quebec alone.

Due to the potential negative effects of an outbreak in eastern Canada, the federal government is working with provincial partners, industry, and academia to test and evaluate early intervention strategies aimed at minimizing the extent of the epidemic by targeting high-population Spruce Budworm epicentres.

The Mountain Pine Beetle Infestation in Western Canada

The Mountain Pine Beetle is a native insect that attacks pines in Western North American forests and the infestation has caused widespread timber losses in the province of British Columbia. Since the current beetle epidemic started in the early 1990s, it has killed more than 50% of British Columbia's commercial pine volume, largely dense stands of lodgepole pine in the central interior of the province.

The beetle has since spread far beyond its historic range into northern British Columbia and eastward into the boreal forest of north-central Alberta. Scientists are assessing the risk that the beetle may continue to spread eastward across Canada's boreal forest, potentially impacting Canada's forest industries and the well-being of forest-dependent communities located throughout Canada's boreal zone.

Because of the vital role the forest industry plays in Canada's economy as a whole, and the growing threat the beetle poses to forests throughout Western Canada, the Government of Canada is concerned about the beetle infestation's impact on forest communities and is working in collaboration with the provinces, territories, stakeholders and communities across Canada to respond to the challenges it poses.

Trade Policy

In addition to the *Softwood Lumber Agreement* with the United States and the *North American Free Trade Agreement* with the United States and Mexico (1994), Canada has free trade agreements in force with Honduras (2014), Panama (2013), Jordan (2012), Colombia (2011), Peru (2009), the European Free Trade Association (2009), Costa Rica (2002), Chile (1997) and Israel (1997). Canada also signed a free trade agreement with South Korea (2014) which is in the process of being implemented. Negotiations with the European Union were concluded in 2014.

Negotiations for free trade agreements are underway with Japan, the Trans-Pacific Partnership as well as with Morocco, the Caribbean Community, Dominican Republic, India, Singapore, Ukraine, Guatemala, Nicaragua and El Salvador. Negotiations are also underway to modernize existing free trade agreements with Costa Rica and Israel.

Finally, Canada is engaged in exploratory trade discussions with Turkey, Thailand and Mercosur.

Phytosanitary Measures

Canada is a strong supporter of the International Plant Protection Convention (IPPC) and is active in the development of regional and international phytosanitary standards (e.g. wood packaging standard, ISPM No. 15, draft wood commodities standard). Canada has demonstrated leadership in implementation of wood-related standards through the development of certification

systems for wood exports and for wood packaging. The Canadian Heat Treated Wood Products Certification Program (CHTWPCP) is the official certification system for the export of wood products to countries requiring heat treatment prior to entry. The Canadian Wood Packaging Certification Program (CWPCP) certifies that the wood packaging materials for export satisfies the international requirement of ISPM-15.

Canadian experts continue to take an active role in international fora related to phytosanitary measures, including North American Plant Protection Organization (NAPPO), International Plant Protection Convention (IPPC) and International Forest Quarantine Research Organization (IFQRG). Phytosanitary scientific research is conducted nationally and coordinated internationally to ensure that import regulations for internationally traded wood commodities are based on the best available science.

III. Market Drivers

The Canadian forest sector has begun emerging from the global economic downturn of 2008/09. Recovery in the sector has been driven primarily by growing demand from Asia (particularly by China and South Korea) for wood products. In addition, recovery has also been aided by the strengthening of the U.S. housing market. More recently, over the course of 2013, the weakening of the Canadian dollar also facilitated exports from Canada and supported growing profit margins for Canadian producers. Both factors were key to the financial performance of the forest sector in 2013, given that the U.S. is Canada's largest market for forest products.

The ongoing strength of emerging markets has maintained a significant trend of market diversification over the past decade. While in 2004, 79.5% of forest product exports were destined to the U.S., this percentage has dropped to 63.7% in 2013. Demand for wood products in Asia, and China in particular, has grown exponentially over the course of the past decade as a result of rapidly developing economies. China averaged 10.2% GDP growth between 2004 and 2013 along with a rising urbanisation which is expected to see 200 million Chinese people move into urban areas over the next decade. As a result, the value of Canadian wood product exports to China have increased more than 18-fold between 2004 and 2013. Likewise, the demand for Canadian pulp has been strong in China which has seen exports increase by 161% between 2004 and 2013. Overall, the share of forest products exports destined to China increased from 2.6% in 2004 to 16.4% in 2013. In India, demand for paper and paperboard has also been robust with exports increasing by 38.4% between 2004 and 2013.

Canada's forest sector still faces numerous challenges; among them are rising energy costs, fibre supply availability in some regions and increasingly aggressive foreign competition.

Emerging Opportunities

While many traditional markets for Canadian forest products are mature, there are still opportunities for growth by pursuing developing or emerging markets. This also includes increased use of wood in non-residential and mid-rise construction and expanding offshore export opportunities for Canadian wood products in emerging markets. Climate change

considerations and a growing recognition of the environmental benefits of wood use are helping to open up opportunities for wood products, including bio-energy and next generation bio-fuels.

Energy Prices

Given the significant increases in oil production over the past decade in North America – namely from the Canadian oil sands and the shale rock formations in the U.S., oil prices are expected to soften in the future as supply begins to exceed demand. Geopolitical risks in Russia along with the Middle East could impact the oil market – at present, the impact has been muted with modest impact on supplies or oil prices.

The price of oil (West Texas Intermediate) has risen since 2009, increasing more than 58 percent to US\$97.98 per barrel. Oil prices have increased slightly, averaging US\$100.80 per barrel in the first eight months of 2014.

Projected lower energy costs in the future would help boost the competitiveness of the forest industry.

Exchange Rates

Exchange rates continue to play a role in the prosperity of the forest industry since most Canadian forest products are sold in U.S. dollar terms while the sector pays most of its costs in Canadian dollars. The Canadian dollar has appreciated against the U.S. dollar in the 2009 – 2012 period to average U.S.\$1.00 in 2012. It decreased significantly over the course of 2013 to US \$0.97 and in the first 8 months of 2014, moderated, further to US \$0.91. The valuation of the dollar will be key to determining the profitability of Canadian forest products firms.

US Housing Market

The U.S. housing market is the primary driver behind softwood lumber and wood panel demand in North America. The U.S. housing market is still experiencing an ongoing economic recovery. For comparison, housing starts in 2005 were a record 2.1 million units. In 2012, starts were just under 38 percent of the 2005 figure at 780,600 units. In 2013, housing starts grew to 924,900 units; showing an increase of 18.5 percent compared to 2012.¹ This level of housing starts is still well below the long-term (20 year) average of 1.4 million annual starts although the market has seen steady improvement from 2009 when housing starts had dropped to a low of 554,000 units.

Thanks to the recent traction from the recovery of the U.S. economy, the U.S. housing market has shown significant improvements. Sales of existing homes rose to 5.15 million units on an annualized basis in July and the median sales price rose 4.9 percent from a year ago to US

¹ U.S. Federal Reserve Bank of St. Louis – Economic Research
<<http://research.stlouisfed.org/fred2/series/HOUST/downloaddata?cid=32302> >

\$222,900. Housing affordability and ongoing improvements in the job market should maintain that momentum of recovery.

Exports of softwood lumber to the U.S. have increased markedly, rising 86.4 percent above 2009 levels. In the first 7 months of 2014, the value of softwood lumber exports to the U.S. have risen by 17.1 percent compared to the same period last year and the anticipation of the U.S. market recovery should sustain softwood lumber demand.

Shifting Global Demand for Paper

The paper products industry is anticipated to realize revenue this year of \$24.6 billion and should see its first profit in four years according to an article that highlights a recent report by the Conference Board of Canada². The shift to digital advertising from print media has been the greatest challenge of the industry over the past decade, however, some new opportunities have developed such as manufacturing high-value products including specialty paper products (thermal and photographic paper), and building alternative revenue streams (electricity generation and bio-products). While demand for paper products in North America continues to fall, demand from emerging markets such as China and India are alleviating factors.

Built With Wood Policies

There are a number of policies and initiatives taking place in Canada to promote the use of wood in mid-rise and tall building applications.

The Quebec Government has announced the intended publication of a new *Quebec Building Code* incorporating by reference the provisions of the *2010 National Building Code of Canada* (NBCC). It will include amendments to the 2010 NBCC to reflect the specific needs of Quebec. The new *Quebec Building Code* will come into effect in the spring of 2015. Among the proposed amendments, are formal provisions for the early adoption of 5- and 6-storey mid-rise wood frame buildings largely based on the proposed 2015 NBCC provisions.

On September 23, 2014, the province of Ontario announced the amendment of its building code to allow wood mid-rise buildings effective January 1, 2015. Quebec and Ontario's building code amendments follow the province of British Columbia which amended its building code in 2009 to allow for mid-rise wood building construction up to six storeys.

² *Canada's Paper Industry Cuts New Path for Revenue Growth*, The Wall Street Journal, September 2, 2014
<<http://blogs.wsj.com/canadarealtime/2014/09/02/canadas-paper-industry-cuts-new-path-for-revenue-growth/>>

Wood Related Code Changes to the 2015 Edition of the National Building Code of Canada

The Government of Canada, through Natural Resources Canada, supported the efforts of the National Research Council to undertake the scientific research which is expected to lead to the amendment of specific provisions in the National Building Code of Canada (NBCC) that currently restrict the height and size of wood frame construction. This has limited the use of wood in the construction of bigger and taller buildings in Canada. The proposed changes have been under review by a Joint Task Group representing the five technical Standing Committees implicated by the changes. The proposed changes completed the public review process in late 2013 and a final technical review by the Standing Committees in May 2014. The final step is a vote by the Canadian Commission on Building and Fire Codes at their next meeting in March 2015. Any changes will then be included in the 2015 edition of the NBCC.

Tall Wood Buildings

In May 2013, the Canadian Wood Council (CWC), in collaboration with NRCan, formally issued an Expression of Interest (EOI) for a Tall Wood Building initiative in Canada. The EOI helped to identify Canadian real estate developers, designers and other institutions who can conceptualize, design and build cost-effective, structurally sound and visually-pleasing tall wood buildings. The buildings would demonstrate the commercial viability of using innovative wood building solutions in high-rise construction, including new composite or hybrid construction methods. Funds made available from this initiative are expected to provide the impetus to design and build taller buildings (greater than 10 storeys) made from wood.

A total of 8 proposals were received and were ranked by a review panel comprised of practicing architects and engineers, forestry executives and research professionals from across Canada. Three of the proposals were short listed and ongoing negotiations are proceeding with the proponents.

To further foster the use of wood in non-residential construction, NRCan supported the development of a first-of-its kind technical publication that will help advance the construction of tall wood building structures in Canada. The *Technical Guide for the Design and Construction of Tall Wood Buildings in Canada* has been developed by FPInnovations utilizing a group of more than 80 experts, including design and construction and top researchers from Canada, the US and Europe. This manual will help architects, engineers, code consultants, developers, building owners and authorities having jurisdiction to better understand the key technical issues and challenges associated with the design and construction of tall wood buildings that are beyond the height and area limits currently found in the National Building Code of Canada. It was officially launched by Natural Resources Canada Minister, Greg Rickford, on August 11, 2014 at the World Timber Engineering Conference in Quebec City.

IV. Developments in Forest Products Markets Sectors

Wood Energy Policy

The Canadian forest sector makes widespread use of forest biomass in the cogeneration of heat and electricity for use in industrial processes and sale to 3rd parties. In 2012, the biomass installed generating capacity was 2,050 MW, 78% of which was installed at pulp and paper facilities. In addition, several private utilities generate electricity using wood wastes and other biomass materials as fuel. In 2012, forest biomass accounted for approximately 3% of Canada's domestic energy production.

In 1990, fossil fuel use accounted for 38% of the forest sector's energy needs. A focus on changing the fuel supply mix and improving energy efficiency in the industry caused fossil fuel use to fall to 25% by 2011. Over the same period, the sector's use of renewable energy has risen from 61% to 75%.

Wood pellets are a small but important market for the Canadian forest industry. Canada's wood pellet production capacity has grown from 500,000 tonnes in 2002 to 3.29 million tonnes in 2013, with 2.47 million tonnes of pellets being produced, largely for export. The conversion of two coal-fired generating stations in Ontario will increase future domestic wood pellet demand and create the largest power plant in North America fuelled by 100% biomass.

Developing liquid fuels from biomass continues to be an important focus for Canada. The federal Renewable Fuel Regulations, which took effect in much of the country in December 2010, requires an average of 5% renewable fuel content in gasoline across Canada. Biodiesel production and use in Canada is still in the early stages of adoption. The federal Renewable Fuel Regulations include provisions requiring an average 2% renewable fuel content in diesel fuel and heating distillate oil. This requirement went into effect on July 1, 2011.

Certified Wood Products

The different levels of government, and the various forestry and wood products associations, have various programs and policies in place that promote the sustainable use of wood both domestically and internationally, whether at the harvesting, manufacturing or consumption level. For example, many provincial governments have policies and guidelines requiring that the pulp and paper sector use existing wood fiber (i.e., residues), available through primary manufacturing plants such as sawmills and other wood processing mills, before being granted a tenure license. Such a procedure ensures that existing fiber is used efficiently before new harvesting areas are opened up.

Environmental issues are, more than ever, a growing concern in the marketplace, and demand for certified forest products continues to increase. Recognizing the growing global interest in certified forest products, the Canadian forest products industry has implemented forest certification as a way of demonstrating its commitment to sustainable forest management. Canada now has 40% of the world's certified forest areas. As of end of 2013, nearly 153 million hectares have been certified under one of the three forest-specific certification systems available

in Canada. The distribution under the three systems is as follows: Canadian Standards Association (CSA) over 40 million ha, Sustainable Forestry Initiative (SFI) over 79 million ha, and Forest Stewardship Council (FSC) nearly 61 million ha³.

Value-Added Wood Products⁴

Market acceptance of Engineered Wood Products (EWPs) —the shift from larger dimension lumber to EWPs and the shift from stick-built homes to factory-built homes— contributed to the significant growth of this segment that began in the mid-1990s.

In 2013, approximately \$1.78B in value-added products were exported, the majority of it supplying the US market (81.1%) followed by the U.K (9.1%) and Japan (2.4%). In 2013, the value of total exports of value-added wood products increased 14.1 percent compared to the year prior.

Sawn Softwood

Between 2009 and 2013 Canadian sawn softwood production increased by 30% to 57.5 million cubic metres. During this period, North American sawn softwood prices increased by 73% while the volume of Canadian sawn softwood exports to the U.S. increased by 31.5%. The strengthening U.S. housing market, along with continued strong demand from China for softwood lumber, was behind the price increase in 2013.

U.S. demand for Canadian softwood lumber has improved considerably as a result of the turnaround in the housing market. Between 2012 and 2013, Canadian exports of softwood lumber to the U.S. increased 33.3% to \$4.5 billion and in the first 7 months of 2014 exports have increased 17.1% compared to the same period last year.

China has become a significant offshore market for Canadian sawn softwood products as exports have increased tremendously over the span of a decade. During 2004 to 2013, sawn softwood exports to China increased by more than 30-fold on a volume basis, from 262,378 m³ to 7,960,888 m³. Demand in China is increasingly driven by government housing projects, as well as by private multi-storey residential construction. More recently, the value of softwood lumber exports to China increased 6.8% in the first 7 months of 2014 compared to the same period in 2013 while the volume of softwood lumber exports to China increased by 2.8% during that time. Year-to-date, China holds a 18.8% share of total Canadian sawn softwood exports (by volume). This suggests that China will remain a key market for Canadian sawn softwood in the near term.

³ If a forest area has been certified to more than one standard (ISO, CSA, FSC, SFI), the area is only counted once, hence the grand total of certifications may be less than the sum of the individual totals.

⁴ In the Canadian context, the value-added wood products group includes wood windows and doors, factory-built homes, millwork and joinery products, shingles and shakes, containers and pallets, engineered wood products (EWPs) such as I-beams and roof trusses, and other structural products.

Oriented Strand Board

OSB represents a large portion of Canada's total structural panel exports (between 82% in 2006 and 78% in 2013). It is expected that as the U.S. housing market continues to improve OSB's production will rebound accordingly, gaining shares of Canada's total structural panel production. Given that 90.4% of OSB is destined for the U.S. market, and in particular goes towards housing construction end-uses, OSB exports greatly suffered from the downturn in the U.S. housing market. With the recovery gaining traction, OSB exports have started growing again. Between 2009 and 2013, total exports of Canadian OSB grew by 131.7% to \$1.3 billion. In the first 7 months of 2014, exports of OSB decreased 17.4% compared to the same period last year. Demand for OSB is expected to increase as the U.S. housing market continues to improve.

Paper and Paperboard

The value of Canadian paper and paperboard exports declined by 33.8 percent between 2008 and 2013 to \$8.7 billion. The industry faces weak producer margins and is highly sensitive to any cost increases. Despite the growing displacement of paper by digital media, (online and reading devices), the recent decline of the US\$/CAD\$ exchange rate has provided the sector with much needed relief. It remains that, in general, there are limited growth opportunities for paper and paperboard.

Wood Pulp

Pulp markets continue to be generally robust. Despite the current loss of end-use from a declining printing and writing paper segment, demand from other segments is growing (sanitary, packaging and viscose staple fibres in the textile industry). Consequently, while the current pulp markets are susceptible to fluctuations, they are expected to grow in the longer term. In the meantime, an increasingly important determinant of pulp markets has become Asian demand. In particular, global pulp prices are largely influenced by inventory management cycles in China. The value of Canadian pulp exports to China has grown at an annual average rate of 12.4% from 2003 through 2013. In 2012, China became the main destination of Canadian pulp exports (39%), surpassing the U.S. (35%).

The Chinese pulp market is expected to keep growing, fuelled by two main factors. First, China has greatly expanded its paper capacity and this is contributing to increased demand for pulp. Second, China has significantly reduced its domestic non-wood pulp capacity (e.g. reed, bamboo and bagasse), causing Chinese paper producers to source pulp supplies from foreign markets. The drive to reduce inefficient, highly polluting non-wood Chinese pulp capacity will likely continue.

In 2013, the value of Canadian wood pulp exports increased by 4.1% while the volume of overall Canadian wood pulp production also increased, but by a smaller value (0.6%) compared to 2012. The improved performance in 2013 was largely due to the upswing of this cycle from a subdued 2012.

In the long-term, Canadian pulp producers will likely continue to benefit from growing Chinese pulp demand, with Canada continuing to ship its primary pulp product, Northern Bleached Softwood Kraft (NBSK), to China. However, low-cost foreign competition will play a role in determining Canada's market share. Since 2008, Canada's share of Chinese wood pulp imports has remained steady from 23.6% to 23.9% in 2013. Over the same period, Brazil's share has risen from 13.3% to 15.6% while the U.S. share has improved from 12.3% to 13.9%.

Demand for dissolving pulp grades continues to grow, primarily driven by an expanding Asian textile industry, but with other uses as well. However, a rapid global expansion in capacity, especially in Brazil, China, the U.S. and Canada, has increased supply faster than the increase in demand, significantly lowering prices. While its long-term prospects remain solid, in the medium term dissolving pulp markets are expected to be weak performers.

Appendix

Statistics and Prospects

* Figures for 2014 and 2015 are estimated/forecasted

Sawn Softwood (000 Cubic Metres)

	2012	2013	2014*	2015*
Production	39,288	41,553	42,565	45,265
Apparent consumption	15,664	15,091	15,252	16,129
Imports	1,261	1,105	1,446	1,260
Exports	24,886	27,567	28,759	30,396

Coniferous Veneer and Sawlogs (000 Cubic Metres)

	2012	2013
Imports	2,216	2,734
Apparent consumption	108,155	111,501
Exports (Total)	5,499	6,623

Sawn Hardwood (000 Cubic Metres)

	2012	2013	2014*	2015*
Production	1,276	1,306	1,382	1,435
Apparent consumption	2,134	1,972	2,015	2,142
Imports	1,340	1,116	1,154	1,188
Exports (Total)	482	450	521	481

Oriented Strandboard (OSB) (000 Cubic Metres)

	2012	2013	2014*	2015*
Production	5,742	6,268	6,678	7,525
Apparent consumption	2,445	2,478	2,444	2,470
Imports	83	102	109	103
Exports (Total)	3,380	3,892	4,343	5,159

Plywood (000 Cubic Metres)

	2012	2013	2014*	2015*
Production	1,824	1,792	1,842	1,931
Apparent consumption	3,202	2,774	2,828	2,926
Imports	1,665	1,409	1,504	1,545
Exports (Total)	287	427	517	550

Particleboard (000 Cubic Metres)

	2012	2013	2014*	2015*
Production	7,446	7,962	8,391	9,308
Apparent consumption	3,706	3,795	3,827	3,872
Imports	452	604	628	627
Exports (Total)	4,192	4,771	5,192	6,064

MDF (000 Cubic Metres)

	2012	2013	2014*	2015*
Production	780	810	890	1,022
Apparent consumption	615	562	566	631
Imports	264	261	235	226
Exports (Total)	429	509	558	617

Fibreboard (000 Cubic Metres)

	2012	2013	2014*	2015*
Production	n/a	n/a	n/a	n/a
Apparent consumption	n/a	n/a	n/a	n/a
Imports	665	645	607	588
Exports (Total)	569	623	698	771

Wood Pulp (000 tonnes)

	2012	2013	2014*	2015*
Production	17,149	17,253	17,630	17,765
Apparent consumption	7,515	7,696	7,808	7,714
Imports	279	265	280	291
Exports (Total)	9,913	9,822	10,102	10,342

Paper and Paperboard (000 tonnes)

	2012	2013	2014*	2015*
Production	10,756	11,133	11,725	11,834
Apparent consumption	5,838	5,977	6,138	6,214
Imports	3,356	3,479	3,412	3,567
Exports (Total)	8,274	8,635	9,000	9,186

n/a – Data are unavailable

Figures in grey shading and blue font indicate revised 2012 data

Note 1: Figures above have been adjusted to reflect actual volumes as opposed to nominal. Figures are consistent with those provided for the *2013 UNECE Timber Committee Forecasts (Forest Products)*.