

Investment Attraction Study
in the Financial Services,
Renewable Energy and
Clean/Green Technologies Sectors

Final Report

Prepared by:



in association with



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1.0. Introduction and Scope

EDP Consulting, in association with Market Research Associates (MRA), was retained by the Antigonish Regional Development Authority (ARDA) to undertake an investment attraction strategy study for the financial services and renewable energy and clean/green technologies sectors. These sectors were identified as potential investment attraction target sectors for the Antigonish area in a 2010 Investment Attraction Research Project undertaken for the ARDA.

The primary focus of this current study is on the attraction of foreign direct investment (FDI) – new business investment and job creation in the Antigonish area by firms headquartered in foreign jurisdictions. However, it should be noted that much of the analysis and resulting recommendations in this study are also relevant for broader economic development in the Antigonish region such as asset and capacity building, investment readiness, investment attraction of domestic firms, and investment retention, expansion, and entrepreneurship.

The study was conducted in two phases over an approximate four month time frame, which started in November 2012. Phase 1 consisted of the research and analysis phase, including a background review; sector scans; review of companies in target sectors already operating in the Antigonish region; asset review and SWOT analysis; and best practices review. Phase 2 consisted of the development of value propositions for target segments; identifying and screening of companies as prospects for FDI attraction; and development of recommendations to guide investment attraction and economic development efforts in the target sectors.

The remainder of this report is structured as follows:

- Chapter 2 consists of a discussion of site selection fundamentals in investment attraction;
- Chapter 3 consists of the financial services sector scan;
- Chapter 4 consists of the renewable energy and clean/green technologies sector scan;
- Chapter 5 consists of the asset review and SWOT analysis;
- Chapter 6 comprises the best practices review;
- Chapter 7 comprises the value propositions for the target segments;
- Chapter 8 includes a discussion of target prospects;
- Chapter 9 consists of a summary of the study recommendations.

Supporting material is included in the Appendices.

2.0. Site Selection Fundamentals in Investment Attraction

The purpose of this chapter is to provide the ARDA and stakeholders with an understanding of the site selection process and factors that businesses consider in site selection decisions. It is intended that this information will provide a context for the investment attraction process.

2.1. Site Selection Process and Key Locational Factors

When selecting a location for new investment, the key factors companies consider are access to markets, access to required resources at reasonable costs (raw materials, human resources), infrastructure (transportation and communications), and innovation potential (such as the concentration of expertise and skills needed for new product development). The importance of location factors vary by sector and type of investment. For example, access to a critical mass of specialized expertise is very important for some types of manufacturing such as aerospace manufacturing, while access to raw materials, moderate operating costs, and semi-skilled labour are more important for other types such as wood product manufacturing businesses.

The relative importance of the site selection factors will also vary by business function - for example, the requirements for back office operations in the financial services sector will differ from front office operations. Additionally, for foreign firms, factors related to the living conditions/quality of life for transferees may be more important than for domestic or regional headquartered firms. In particular, given the high cost of relocation of such staff and their families, it is important that the living environment and quality of life is high enough to retain that talent.

An example of the types of factors companies consider in relocation or expansion decisions is provided in Figure 2.1.

Figure 2.1: Key Site Selection Factors

<p>Market Strategy</p> <ul style="list-style-type: none"> ♦ Proximity to target geographic markets and head office ♦ Penetration of new markets ♦ Competition ♦ Alternative Sourcing ♦ Inbound Logistics 	<p>Labour</p> <ul style="list-style-type: none"> ♦ Availability of qualified, skilled, experienced labour ♦ Long-term supply of labour through educational facilities ♦ Wages and benefits ♦ Competition ♦ Labour relations/union activity 	<p>Infrastructure</p> <ul style="list-style-type: none"> ♦ Access to 4-lane highway or expressway ♦ Airport access ♦ Rail access ♦ Port access ♦ Communications and Utilities - cost, availability and reliability
<p>Employment Lands and Buildings</p> <ul style="list-style-type: none"> ♦ Fully serviced industrial land ♦ Good market choice in vacant sites and facilities ♦ Appropriate locations ♦ Availability of large sites with expansion capability ♦ Image and quality ♦ Purchase and development costs, real estate lease costs 	<p>Business Climate and Taxes</p> <ul style="list-style-type: none"> ♦ Investment readiness of Municipality ♦ Pro-business attitude of community ♦ EDO assistance – site selection/expediting approvals ♦ Time needed for development approvals ♦ Availability of Incentives ♦ Property and business taxes 	<p>Living Conditions/ Quality of Life</p> <ul style="list-style-type: none"> ♦ Cost of living ♦ Crime/safety ♦ Housing and schools - choice and quality ♦ Recreation areas, culture, medical facilities ♦ Distance to major cultural/entertainment communities ♦ Access to other communities and airport

Source: EDP Consulting

Site selection factors that are important in most selection decisions across a wide range of sectors include highway accessibility, labour supply and cost, proximity to major markets, serviced industrial land availability, and operating cost factors. A ranking of locational factors by professional site selectors in a survey by Area Development Magazine is provided in Figure 2.2, confirming the importance of such factors along with others that are considered in site selection decisions.

Figure 2.2: Key Site Selection Factors

Site Selection Factors		2011	2010
Ranking			
1.	Highway accessibility	98.3	95.8
2.	Labour costs	96.3	96.8
3.	Proximity to major markets	93.8	90.5
4.	Availability of skilled labour	93.6	92.6
5.	Availability of land	92.7	85.3
6.	Energy availability and costs	88.4	91.5
7.	State and local incentives	88.3	96.8
8.	Occupancy or construction costs	87.1	88.3
9.	Tax exemptions	86.9	88.4
10.	Expedited or "fast track" permitting	86.4	83.0
11.	Corporate tax rate	85.0	86.4
12.	Proximity to suppliers	83.9	79.8
13.	Low union profile	82.7	78.9
14.	Availability of advanced ICT services	81.2	78.5
15.	Accessibility to major airport	80.3	83.1
16.	Available buildings	79.1	86.3
17.	Environmental regulations	79.0	86.2
18.	Inbound/Outbound shipping costs	76.5	74.2
19.	Right-to-work state	75.0	71.3
20.	Training programs	64.2	69.4
21.	Availability of long-term financing	63.0	72.0
22.	Raw materials availability	61.2	57.7
23.	Proximity to technical college/training	56.0	58.5
24.	Availability of unskilled labour	51.4	47.9
25.	Railroad service	38.2	46.8
26.	Waterway or oceanport accessibility	26.1	27.4

Source: Area Development Online, 2012

Quality of life is intangible and the importance of factors that are considered as part of quality of life can vary significantly by individual. A ranking of quality of life factors by professional site selectors in a 2011 survey by Area Development Magazine is provided in Figure 2.3. As shown, the key factors that pertain to the quality of life are schools/colleges/universities, crime level, housing costs and availability, health care, recreational, climate and cultural opportunities.

For company transferees, additional factors that may be important are access to an international airport for personal travel, cultural diversity of the population, and proximity to large communities/entertainment centres.

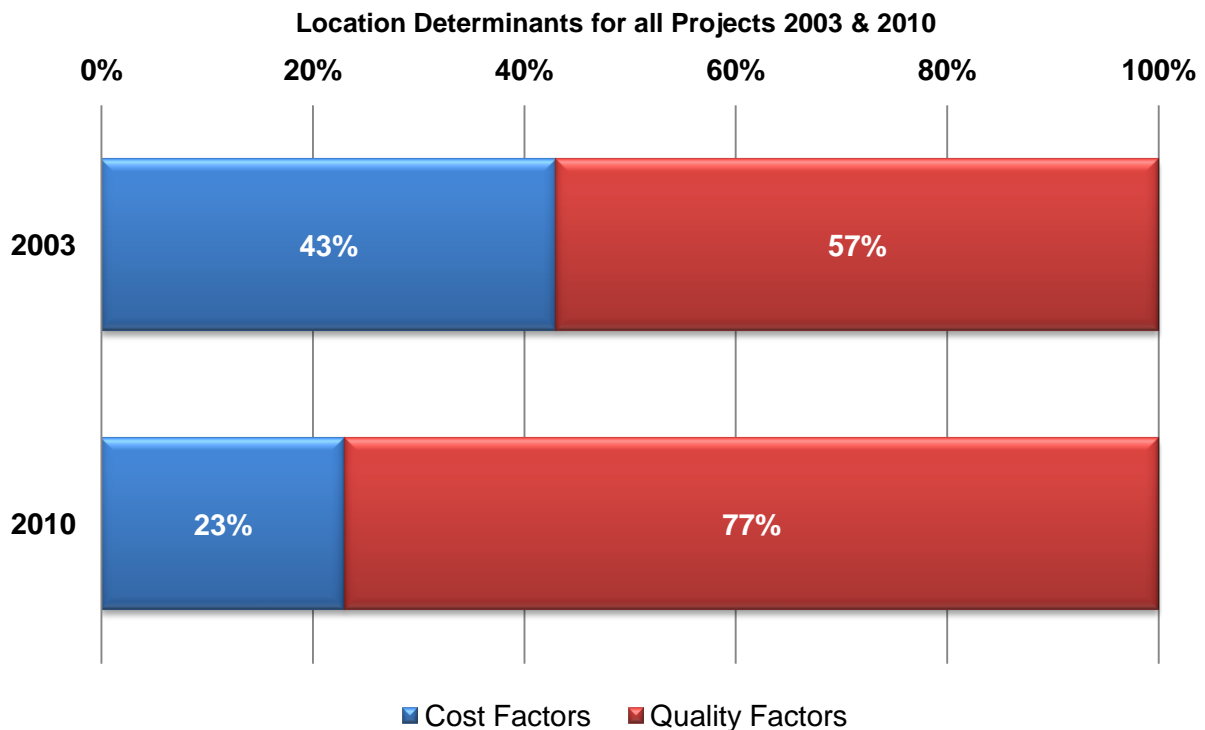
Figure 2.3: Key Quality of Life Factors

Quality-of-Life Factors		2011	2010
Ranking			
1.	Rating of public schools	76.8	65.2
2.	Low crime rate	76.6	75.0
3.	Housing costs	72.1	65.6
4.	Colleges and universities in area	69.6	66.3
5.	Healthcare facilities	69.4	63.5
6.	Housing availability	66.1	60.6
7.	Cultural opportunities	58.6	45.7
8.	Climate	52.7	49.5
9.	Recreational opportunities	52.2	43.7

Source: Area Development Online, 2012

Qualitative factors have become more important in location decisions in recent years, given the growth of knowledge industries and the importance of professional/technical skills and innovation capacity. Factors such as labour quality and long-term supply, and access to university and research centres are increasing in importance for many sectors. As shown below, qualitative factors accounted for about 57% of the location determinants for all FDI projects in 2003. This increased to about 77% in 2010.

Figure 2.4: Relative Important of Cost and Qualitative Factors in Location Decisions



Source: OCO Report, 2012

2.2. Personal Choice Factors in Site Selection

The role of personal choice in site selection decision-making cannot be totally discounted, particularly for small firms that have greater autonomy in deciding where to locate. The personal choice factor can also be the deciding factor in the site selection process for larger firms – essentially if the locational scores for specific short list locations are close, the decision can come down to the personal preference of the relocating executive and management team based on their perception of the ‘best fit’, taking into account quality of life and sometimes personal factors such as relationships in an area (particularly for ‘expats’).

Small businesses in professional and related sectors are generally more ‘footloose’ than other types of businesses. Mobile self-employed professionals, coined ‘lone eagles’, are knowledge-based professionals who typically operate their businesses out of home offices, deriving their revenues from outside the local area and may operate nationally or even internationally. Based on research by the Wadley Donovan Group in the U.S., lone eagles are typically:

- between 35 and 55 years old
- from a professional, well-educated middle class background
- migrants from large metropolitan areas
- have a desire to live in a smaller community with a high quality of life

This segment of the economy will likely increase as a result of restructuring and downsizing in large corporations through mergers and outsourcing, lifestyle interests of the Baby Boomer generation, growth in entrepreneurship and self-employment, as well as significant advances and cost reductions in technology and telecommunications that facilitate working remotely.

2.3. Site Selection Factors for Target Sectors

Many of the site selection factors discussed in the previous section are relevant to the target sectors; however, the importance of these factors will vary by sector and segment. A discussion of the relevant site selection factors for the target sectors is provided as part of the sector scans in Chapters 3 and 4.

3.0. Financial Services Sector Scan

3.1. Definition

The financial services sector is defined by Industry Canada as being comprised of “establishments primarily engaged in financial transactions (that is, transactions involving the creation, liquidation, or change in ownership of financial assets) or in facilitating financial transactions”.

The financial services sector includes businesses categorized under Statistics Canada’s North American Industry Classification System (NAICS) as sector code 52: Finance and Insurance. The sector includes banks, trust and loan companies; life, health, property and casualty insurance companies; credit unions; securities dealers, finance and leasing companies; pension fund managers, mutual fund companies, and independent insurance agents and brokers, etc.

The sector is divided into five subsectors:

NAICS 521 – Monetary Authorities - Central Bank – comprised of establishments primarily engaged in performing central banking functions, such as issuing currency; managing the nation's money supply and international reserves; acting as fiscal agent for the federal government, etc. In Canada, the Central Bank is the Bank of Canada.

NAICS 522 – Credit Intermediation and Related Activities – comprised of establishments primarily engaged in lending funds raised from depositors or by issuing debt, and establishments that facilitate the lending of funds or issuance of credit with activities such as mortgage and loan brokerage, etc. Examples of the types of enterprises included in this subsector are banks, credit unions, credit card companies, mortgage and non-mortgage loan brokers.

NAICS 523 – Securities, Commodity Contracts, and Other Financial Investment and Related Activities – comprised of establishments primarily engaged in the process of underwriting securities issues; providing securities and commodity exchange services; buying and selling of stocks, stock options, bonds or commodity contracts; asset management; and providing investment advice, etc. Examples of the types of businesses in this subsector include securities and commodity exchange, portfolio management, and investment/financial advisors.

NAICS 524 – Insurance Carriers and Related Activities – comprised of establishments primarily engaged in underwriting annuities and insurance policies, reinsurance, and the retailing of insurance and related services. Examples of the types of businesses in this subsector include medical insurance carriers, vehicle insurance carriers, insurance agencies, insurance brokers, etc.

NAICS 526 – Funds and Other Financial Vehicles – comprised of funds, trusts and other financial vehicles organized to hold portfolio assets for unit holders, beneficiaries of pension funds, and investors. These entities earn interest, dividends and other property income, but have little or no employment. Examples include pension funds, money market funds, and bond funds.

A detailed breakdown of subsectors and segments in the financial services sector is available through Statistics Canada Catalogue number 12-501-X.

3.2. Global Financial Services Sector

There was unprecedented turmoil in the financial services sector during and following the 2008 global recession and financial crisis, where many large financial services firms worldwide filed for bankruptcy and failed or required government bailout and support (e.g., Bear Sterns, AIG, Lehman Brothers, Freddie Mac).

As reported by Capgemini Consulting, the financial crisis of 2008-09 severely impacted the asset and profitability growth of the global financial services sector; however recovery started in late 2009 and 2010. The growth rate of assets for the top 1000 banks grew by 6.4% in 2010, which is above the pre-crisis level. During 2010-11, the growth moderated to 5.5% (the lower growth rate reported as being associated with a tightening regulatory landscape and debt crisis in Europe and the United States). Assets of the top 1000 banks globally grew across all regions in 2011, except in Europe. The highest growth level was in the Asia-Pacific region. It is reported that risk management and the evolving regulatory landscape remain the key focus areas for the industry, with priorities including the reduction of unproductive assets from non-profitable segments and geographies, and a focus on core business areas.¹

Substantial restructuring and consolidation has been occurring in the sector, and more stringent industry regulations have resulted in an increased need for firms in the sector to reassess their business strategies, including cost reduction approaches. Part of the response to the need for restructuring may be further outsourcing, and some consolidation and pooling of operations, and relocations to lower cost environments for functions such as back office operations. The need for cost reductions and potentially pooling of services has been noted in recent financial services industry trade publications. For example, in the November 22, 2012 on-line edition of the *Financial Times*, it is reported that London stockbrokers have been in talks about merging back office operations between companies in an effort to reduce costs and avoid being takeover targets.

Various forecasts are available on the growth in banking and the financial services sector. Based on one recent forecast, the global financial services sector is expected to exceed \$143 trillion in 2014, which represents a 58% increase in five years. Bank credit represents the leading growth market segment, with around 60% of the overall market in terms of value (source: MarketLine, 2012).

Data is not readily available on the size of the financial services sector globally. However, data is available on the sector in the United States. Based on a 2010 report by the Securities and Financial Markets Association, the financial services sector was estimated to employ around 5.77 million individuals, accounting for about 6% percent of total private non-farm employment. Employment in the securities subsector (including broker-dealers, commodities, and other financial investments and related activities) was projected to increase by 12% by 2018. A number of factors are expected to contribute to this growth, including the large number of Baby Boomers in their peak savings years, the growth of tax-favored retirement plans, and the globalization of securities markets.

Cross border investment is contributing to the recovery in the financial services sector and FDI is a large part of the growth in this sector in North America.

¹ For further information on global trends in the financial services sector, with a focus on banking, the reader should consult the report - *Trends in the Global Banking Industry 2012*; available at <http://www.capgemini.com>.

3.3. Canada’s Financial Services Sector

Based on data from Statistics Canada Labour Force Survey, the financial services sector in Canada was estimated to employ close to 685,000 people in 2011. The financial services sector has shown growth, with employment increasing by 15.2% between 2005 and 2011, compared to a growth level of 6.7% for total employment across all sectors over the same period. The relative importance of the financial services sector as a source of employment has increased slightly - it accounted for 4.4% of total employment in 2005, increasing to 4.7% in 2011.

The largest employment in the financial services sector is in the subsector NAICS 522 - Credit Intermediation and Related Activities, which includes banks, credit unions, credit card companies, mortgage and non-mortgage loan brokers.

The fastest growth subsector has been NAICS 523 - Securities, Commodity Contracts, and Other Financial Investment and Related activities, which include securities and commodity exchange, portfolio management, and investment advisors.

Data on jobs growth in the financial services sector in Canada is provided in Figure 3.1.

Figure 3.1: Employment in the Financial Services Sector in Canada

Sector (NAICS)	2005	2006	2007	2008	2009	2010	2011	Growth 2005-2011	Per Annum Average Growth
52 Finance and insurance services sector	594,436	617,141	643,594	667,816	676,184	684,753	684,662	15.2%	2.5%
522 Credit intermediation and related activities	309,990	324,168	341,086	349,446	353,658	360,341	360,706	16.4%	2.7%
523 Securities, commodity contracts, and other financial investment and related activities	93,783	96,762	100,714	111,038	110,739	113,634	114,756	22.4%	3.7%
524 Insurance carriers and related activities	186,585	190,851	195,652	198,299	201,109	199,172	200,700	7.6%	1.3%

Source: Statistics Canada, CANSIM, part of Table 281-0024

The organization, *Invest in Canada*, reports that the financial services sector is one of the largest contributors to the Canadian economy:

- The financial services sector accounted for 7% of national output in 2011 and represented a GDP of \$264 billion;
- Foreign direct investment (FDI) in Canada’s finance and insurance industries reached an accumulated \$78.5 billion in 2011;
- Over 130 foreign companies established greenfield FDI projects in the financial services sector in Canada between 2003 and 2011, creating over 13,000 jobs;

- Growth of the financial services sector is driven by technology. In Canada, over one quarter of all FDI projects in financial services from 2003 – 2011 were related to financial technology;
- Between 2003 and 2011, over 300 banking related patents were granted by the United States Patent and Trademark Office to inventors based in Canada.

Source: *Invest in Canada - Financial Services, Canada's Competitive Advantages, 2012*

The leading Canadian companies and foreign companies investing in the financial services sector in Canada, as reported by *Invest in Canada*, are noted in Figure 3.2.

Figure 3.2: Financial Services Companies in Canada

Leading Canadian Companies	Foreign Investors in Canada
AGF Management	Apex Fund Services
Assante Wealth Management	Bank of China
BMO Financial Group	Bank of New York Mellon
Canadian Imperial Bank of Commerce	Banque Transatlantique
Canadian Western Bank	Barclays Capital
Cunningham Lindsey	BNP Paribas
DBRS	China Investment Corp (CIC)
Desjardins Group	Citigroup
Fairfax Financial Holdings	Crédit Agricole
Great-West Lifeco	Crédit Suisse
IGM Financial	Giesecke & Devrient
Laurentian Bank of Canada	Goldman Sachs
Manulife	HSBC
National Bank of Canada	ICICI Bank
Power Financial	Industrial and Commercial Bank of China (ICBC)
Royal Bank of Canada	ING
Scotiabank	JP Morgan Chase & Co
Sun Life	Korea Exchange Bank
TMX Group	Liberty Mutual Group
Toronto-Dominion Bank (TD)	Macquarie Private Wealth
Vancity	Morgan Stanley
	Merrill Lynch
	M&T Banking
	NYSE Euronext
	Royal Bank of Scotland (RBS)
	Société Générale
	State Bank of India (SBI)
	UBS

Source: *Invest in Canada, Financial Services: Canada's Competitive Advantages, 2012*

3.4. Nova Scotia’s Financial Services Sector

Based on data from Statistics Canada Labour Force Survey, it was estimated that the financial services sector in Nova Scotia employed around 18,000 people in 2011. The financial services sector has shown growth, with employment increasing by 20.4% between 2005 and 2011 (average growth of 3.4% per annum). However, this growth level is lower than growth for total employment across all sectors over the same period (4.4% per annum).

The relative importance of the financial services sector as a source of employment in Nova Scotia has also increased – it accounted for 3.9% of total employment in 2005, increasing to 4.5% in 2011.

The financial services sector accounts for a slightly lower portion of total jobs in Nova Scotia compared to Canada overall (4.5% compared to 4.7%). Employment levels in the financial services sector in Nova Scotia between 2005 and 2011 are shown in Figure 3.3.

Figure 3.3: Employment in the Financial Services Sector in Nova Scotia

Sector (NAICS)	2005	2006	2007	2008	2009	2010	2011	Growth 2005-2011	Per Annum Average Growth
52 Finance and insurance services sector	14,968	x	x	17,524	17,508	18,105	18,015	20.4%	3.4%
522 Credit intermediation and related activities	9,787	10,297	11,054	11,326	11,397	11,883	11,700	19.5%	3.3%
523 Securities, commodity contracts, and other financial investment and related activities	x	x	x	x	x	X	x	X	x
524 Insurance carriers and related activities	3,737	4,062	4,251	4,392	4,481	4,476	4,437	18.7%	3.1%

x = data suppression due to low numbers/confidentiality

Source: Statistics Canada, CANSIM, part of Table 281-0024

Halifax is the financial services hub of the Atlantic provinces and is reported by Nova Scotia Business Inc. (NSBI) as being the fastest growing fund administration centre in Canada, and a leading global centre for middle and back office operations for the fund administration and reinsurance subsectors.

It is reported by NSBI that since 2006, Nova Scotia’s financial services and insurance sector has seen ‘phenomenal growth’ with major international firms establishing back and middle office operations in Halifax, including:

- Citco Fund Services
- Butterfield Fulcrum
- CIBC Mellon
- Castle Hall Alternatives
- Marsh Captive Solutions
- Flagstone Management Services

- Meridian Fund Services
- BF&M Insurance
- Admiral Insurance
- Manulife
- ING
- Medavie Bluecross

Like elsewhere, there has been some restructuring in Halifax's financial services sector in recent years including the following:

- Grafton Securities - closed 2013
- Jennings Capita - moved out of Halifax 2011
- Beacon Securities - (merger and new head office in Toronto) in 2012
- Citadel Securities - bought out by Calgary-based Aston Hill in 2012
- Intelligii Consulting Ltd. - relatively new start-up

3.5. Antigonish Region

Data on the size of the financial services industry in the Antigonish region is not readily available. However, data is available on the estimated number of jobs in that sector in 2006 as part of the Census. It should be noted that similar data from the 2011 Census has not yet been released by Statistics Canada.

Antigonish county had approximately 175 jobs in the financial services sector in 2006, most of which were in Antigonish town. The sector accounted for a lower portion of total jobs in Antigonish compared to the province overall – the sector accounted for 2.2% and 3.1% of jobs in Antigonish county and town respectively, compared to 3.5% for Nova Scotia overall. Additional data on the number of jobs in the financial services sector in other communities in the Antigonish region as well as Halifax (for comparison) is provided in Figure 3.4.

The jobs data can also be interpreted through the use of location-quotient analysis, which compares the relative concentration of a sector in a study area to a reference area (Nova Scotia in this case). The comparison uses a simple ratio of sector employment to total employment. The provincial average for each sector has a location quotient of 1. A location quotient higher than 1 indicates a higher employment concentration in that sector than the provincial average, while less than 1 indicates the concentration is lower than the provincial average. Greater location-quotient variances mean higher or lower employment concentrations than provincial averages. In essence, location quotients allow us to identify which sectors are over or under represented relative to the province as a whole. High location quotients can indicate where a region or community has a particular strength or competitive advantage in attracting and retaining businesses in specific sectors.

As shown in Figure 3.4, the location quotients (LQ) for the financial services sector in the Antigonish county and town in 2006 were 0.63 and 0.87 respectively. The LQ for the town was not considerably lower than the provincial level, particularly when the high concentrations in other sectors are taken into account (such as education) which tend to skew the results of the location quotient analysis. Other counties in the Antigonish region such as Guysborough and Pictou counties have very low LQs which suggest that these locations do not have particular strengths in attracting investment in the financial services sector. In comparison, the sector had a much higher LQ in Halifax in 2006, demonstrating the community's attractiveness for investment in this sector, and the LQ would likely be higher now given the investment that has occurred in that community since 2006.

Figure 3.4: Jobs in the Financial Services Sector, 2006

Location	# Jobs	% Total Jobs	LQ
Nova Scotia	13,440	3.5%	1.00
Halifax	9,200	4.9%	1.39
Antigonish - county	175	2.2%	0.63
Antigonish - town	150	3.1%	0.87
Pictou	310	1.7%	0.48
Inverness	195	2.6%	0.76
Richmond	70	3.0%	0.86
Guysborough	35	1.4%	0.39

Source: Statistics Canada, 2006 Census – Jobs at Fixed Places of Work

Comprehensive data sources such as business directories were not available for the Antigonish region. A list of businesses in the financial services sector in the region was compiled through an internet based search.

It appears that Antigonish county has about ten insurance businesses, with these being located in the town. Pictou county had the largest number of insurance businesses in the region. Branches of the major banks are distributed throughout the region, but the brokerage and financial advisory firms are concentrated in New Glasgow, including branches of national firms such as Assante Wealth Management, CIBC Wood Gundy, and TD Bank Financial Group. There is a gap in this service area in Antigonish which could be an opportunity for branches of the other large brokerage and financial planning firms based in Halifax.

A listing of identified businesses in the financial services sector in the Antigonish region is provided in Figure 3.5.

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Figure 3.5: Financial Services Businesses in the Antigonish Region

Company	Pictou County	Inverness County	Antigonish County	Guysborough County	Richmond County
MacLeod Lorway Insurance	New Glasgow				
Atlantic Insurance Brokers	New Glasgow				
A A Munro Insurance Brokers	New Glasgow, Pictou	Port Hawkesbury	Antigonish		
WCL Bauld Insurance Brokers			Antigonish		
Antigonish Insurance Agencies			Antigonish		
Maclsaac Jack	New Glasgow				
Macdonald J Ed Insurance	New Glasgow				
Pictou Co Farmers Mut Fire Ins	Pictou				
Alex M Skoke CFP-Life Insurance	New Glasgow				
Macdonald Chisholm Trask Insurance	New Glasgow				
The Co-operators	New Glasgow		Antigonish		
Cooke Insurance Group	New Glasgow				
Canada Life Assurance Co Ltd	New Glasgow				
Fraser J H & Associates Ltd	New Glasgow				
AP Reid Insurance	New Glasgow				
Brennan A J Insurance	New Glasgow				
Fraser & Hoyt			Antigonish		
Maclsaac Financial Group			Antigonish		
Antigonish Farmers' Mutual			Antigonish		
Gary Andersen (Co-operators)	New Glasgow				
Natasha Thompson (Co-operators)	New Glasgow				
Corey Thompson (Co-operators)			Antigonish		
Sun Life Financial			Antigonish		
Carmie MacInnis Insurance			Antigonish		
Lorefice Insurance			Antigonish		
Skoke & Martin Insurance	New Glasgow				
Guysborough Insurance				Guysborough	
Hayman DR Insurance	Stellarton, New Glasgow				
McKillop & Johnson Insurance		Port Hawkesbury			
Glenn Morrison (Co-operators)		Port Hawkesbury			
Bluenose Insurance					St. Peters
PwC Debt Solutions (Bankruptcy)		Port Hawkesbury			
Scotia Bank	Stellarton	Port Hawkesbury	Antigonish		
	New Glasgow (2)				
	Pictou				
	Westville				
RBC	Stellarton	Port Hawkesbury	Antigonish	Guysborough	St. Peters
	New Glasgow	Port Hood		Sherbrooke	Arichat
	Westville	Whycocomagh			
	Pictou	Inverness			

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Figure 3.5: Financial Services Businesses in the Antigonish Region (cont'd)

Company	Pictou County	Inverness County	Antigonish County	Guysborough County	Richmond County
CIBC	New Glasgow		Antigonish		
BMO	New Glasgow	Port Hawkesbury		Canso	
Bergengren Credit Union	New Glasgow		Antigonish		
East Coast Credit Union		Inverness			
Premiere Mortgage	Westville				
BMO Nesbitt Burns (full service brokerage)			Antigonish		
Beacon Securities (full service brokerage)			Antigonish		
Investment Planning Counsel (mutual funds & insurance)		Port Hawkesbury	Antigonish		
Citi Financial (mortgages & high int. loans)			Antigonish		
Donald Gunning Investments	Pictou				
Quadrus Investment Services	New Glasgow				
Sunlight Financial	New Glasgow				
Rob McDowell Financial Economics	New Glasgow				
Cornerstone Financial	New Glasgow				
Dominion Lending Centres-Ridgeway Group	New Glasgow				
Assante Wealth Mgt	New Glasgow				
Morton Robert Fin. Services	New Glasgow				
Leck A G Fin Services	New Glasgow				
Scotia McLeod	New Glasgow				
CIBC Wood Gundy	New Glasgow				
TD Bank Financial Group	New Glasgow	Port Hawkesbury			
TD Canada Trust	New Glasgow	Port Hawkesbury			
Investors Group Financial Services	New Glasgow, Pictou	Port Hawkesbury			
President's Choice Financial	New Glasgow				
Cef Insurance & Financial Services				Liscomb	
Sangster Assoc. Fin Plan			Antigonish		
Maclsaac Fin. Group			Antigonish		
Credential Financial Strategies			Antigonish		
Sun Life Financial			Antigonish		
Centum Causeway Mortgages		Port Hawkesbury			
Dominion Lending Ctr (mortgages)	New Glasgow				
Jennifer Munroe (TD Mortgage)	New Glasgow				
Peggy MacInnes AMP Premiere Mortgage	New Glasgow				

Source: MRA

3.6. FDI Trends

It is estimated that there were a total of 1,244 FDI projects globally in the financial services sector in 2010, with the United States as a top source country, accounting for about 212 of these projects, 10 of which located in Canada. British companies in this sector invested in a total of 166 FDI projects globally in 2010, of which 26 located in North America, which makes the UK a key source country for FDI in the financial services sector. Other particularly significant countries for FDI flows to North America in 2010 were Japan, Spain, Switzerland, and France.

The top source countries for FDI globally and in North America are illustrated in Figure 3.6.

Figure 3.6: Top 10 Source Countries for FDI Projects in the Financial Services Sector in 2010

Source Country	No. of FDI Projects Globally	No. of FDI Projects into North America	North America's Market Share of Global FDI (%)
United States	212	10	N/A
UK	166	26	16
Switzerland	65	7	11
India	47	2	4
France	45	6	13
Germany	44	2	5
Russia	40	3	8
Spain	39	8	21
Japan	35	11	31
China	34	1	3
Other	517	39	8
Total	1,244	115	9

Source: fDI Markets as reported in 'Review of FDI Trends into N. America with a focus on Ontario in 2010, March 2011'

The top company for FDI in the financial services sector in 2010 was HSBC, which is headquartered in the UK. This firm was the source of the most FDI projects compared with other firms in the sector both globally and in North America, being the source of 44 projects globally, and the source of 9 FDI projects in North America during that year. HSBC is one of the world's largest financial services organizations with around 6,900 locations globally, including Canada. Its business practice areas are retail banking and wealth management, commercial banking, global banking and markets, and global private banking. This was followed by Citigroup globally with 40 FDI projects. Citigroup is headquartered in the U.S and operates in 160 countries, including Canada. Citigroup was not reported as top source for FDI in North America in 2010.

A listing of the top 20 companies for FDI in the financial services sector in North America is provided in Figure 3.7.

Figure 3.7: Top Source Companies for FDI in the Financial Services Sector, North America in 2010

Investing Company	Source Country	No. of FDI Projects
HSBC	UK	9
Nomura Holdings	Japan	6
Toronto-Dominion Bank (TD)	Canada	5
Barclays Bank	UK	4
Banco Bilbao Vizcaya Argentaria (BBVA)	Spain	3
Zurich Financial Services	Switzerland	3
BNP Paribas	France	3
Rabobank Group	Netherlands	3
Royal Bank of Scotland (RBS)	UK	3
Catlin Group	Bermuda	2
ACE Group (ACE Limited)	Switzerland	2
Mitsubishi UFJ Financial Group (MUFG)	Japan	2
Hestiun	Spain	2
Doral GP	Puerto Rico	2
AMP	Australia	1
Prudential	UK	1
Crawford & Company	United States	1
Punjab National Bank (PNB)	India	1
Industrial and Commercial Bank of China (ICBC)	China	1
Bank of Montreal (BMO Financial Group)	Canada	1
<i>Other Companies</i>		60
Total		115

Source: FDI Market as reported in 'Review of FDI Trends into N. America with a focus on Ontario in 2010, March 2011'

Over 4,300 jobs were associated with the 115 large FDI projects in the financial services sector in North America in 2010 (see Figure 3.8). The project in Nova Scotia is reported as being RSA Canada, a subsidiary of RSA Insurance Company based in the UK, which is expected to add about 160 jobs to the economy over the next few years.

Figure 3.8: Top 20 Destinations for FDI in the Financial Services Sector, North America in 2010

Destination State/Province	Jobs Created
Tennessee	750
New York	634
North Carolina	455
Ontario	278
Utah	260
Florida	230
California	207
Georgia	169
Nova Scotia	160
Massachusetts	156
British Columbia	112
Arizona	90
South Carolina	50
Alberta	43
District of Columbia	35
Quebec	30
Texas	28
Maryland	15
New Jersey	15
Pennsylvania	15
<i>Other</i>	569
Total	4,301

Source: fDI Markets

3.7. Critical Location Factors

A discussion of site selection factors was provided in Chapter 2. In the following discussion, we focus on those factors most important to the key opportunity areas in this sector for Antigonish.

Small Financial Services Providers

For firms in the financial services sector, such as those in asset management and financial planning services, there needs to be a sufficient unsatisfied market demand and business opportunity to justify a business expansion decision to locate a branch in a geographic area not already covered by the company. A business case is needed that takes into consideration the size of the market, competition, the availability of qualified labour, operating costs, site specific considerations, etc. In this regard, the locational requirements do not differ substantially from other types of service businesses that need to be accessible to target markets. For example, a location in downtown Antigonish or in other commercial areas in the community would be as suitable for an asset management and financial planning services branch as it would be for professional service providers such as accountants.

Based on the review of local businesses in the financial services sector in Antigonish, it appears that there may be an opportunity for attracting Canadian branches of asset management and financial planning services firms, as well as some branch offices of foreign based firms. This would supplement the choice in available financial services providers for the population, and increase the depth of the sector; however, the number of jobs associated with such offices would be relatively small. Beacon Securities is an example of this type of operation that recently expanded to Antigonish.

Back Office Operations

Financial services companies are separated into three parts:

- The front office includes sales personnel and corporate finance – this is the revenue generating arm of the company;
- The middle office manages risk, calculates profits and losses, and manages IT resources, drawing upon the resources of both the front and back office; and
- The back office provides administrative and support services.

Back office operations are a core part of financial services businesses, and considered to be the ‘engine’ of such businesses. The ‘back office’ is essentially the division or unit of the company (or outsourcer) responsible for administrative functions such as settlements, clearances, records, regulatory compliance, and accounting. Back office operation divisions are non-revenue generating but vital to supporting the front office revenue generating operations.

FDI in back office operations in the financial services sector has been a growth area. One of the biggest trends in the North American financial services sector is outsourcing back office functions either in smaller North American cities or overseas (source: ACCA Accountants for Business, (2012) Finance Transformation: Expert Insights on Shared Services and Outsourcing).

Unlike front office operations of major financial services firms that are generally located in large centres, back office operations tend to locate in less costly areas with good access to educated labour with skills in accounting, business, and information technology.

Given that the global financial services firms need to process financial data in different markets and time zones over a 24-hour period, the back office operations adopt a 'follow-the-sun' model to ensure that their processes can work continuously around the globe, and that is a consideration in choosing a location where they can service different time zones.

When selecting a location for a back office operations facility, site selectors and companies consider a wide range of communities in a broad region, evaluate those against a number of criteria and then short-list the communities, drilling down on differentiating factors. The site selection factors include cost factors such as the cost of labour (the largest operating cost item), real estate costs, and operating costs related to taxes, utilities, telecommunications, etc. Qualitative factors are becoming increasingly important in site selection decision-making, including those noted below.

Quality of Human Resources

Factors related to human resources are the most important factor grouping in site selection decisions for back office operations, often assigned a weighting of around half of the overall qualitative factor scoring. Communities are compared against:

- Long-term availability of skilled labour (e.g., degrees in business, accounting, information management) through local universities and colleges
- Current availability of experienced skilled labour
- Unemployment rate
- Language capabilities, including Spanish
- Targeted workforce education levels
- Competition for resources
- Employee turn-over rates

Airport Access

Airport access and the availability of non-stop flights to hub cities are important for head office or regional office company executives to allow easy access to the back office. Preference is given to communities which have international airports, and a good choice in air carriers and flight times. However, this factor may be less important than in the past due to the high quality of telecommunications and video-conferencing technologies presently available.

Connectivity

High speed broadband/world-class fiber connectivity is a key factor for back office operations as they need to reliably receive and transmit large volumes of data.

Data Security/Power Grid Reliability

To ensure no business disruption, financial back office operations and data centres need to be located in areas not prone to power grid failures caused by forces of nature, such as hurricanes.

4.0. Renewable Energy and Clean/Green Technologies Scan

4.1. Renewable Energy

Definition

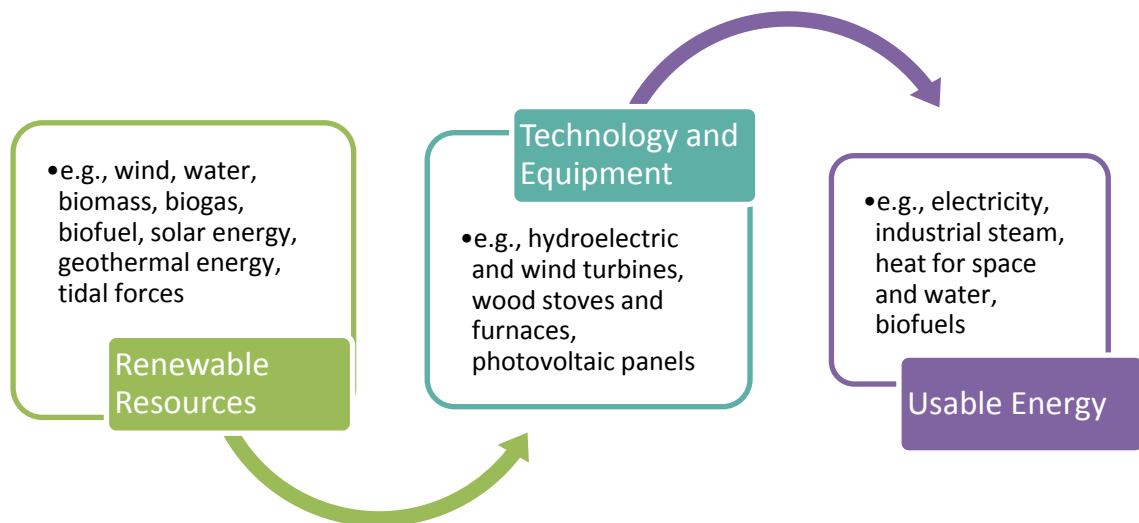
According to Natural Resources Canada, the term renewable energy refers to “energy obtained from natural resources that are sustainable sources of energy and that can be naturally replenished or renewed within a human lifespan”. Various organizations and governments have their own definition of renewable energy. For example, in the Province of Ontario’s *Green Energy Act, 2009*, renewable energy is defined as “an energy source that is renewed by natural processes and includes wind, water, biomass, biogas, biofuel, solar energy, geothermal energy, tidal forces and such other energy sources as may be prescribed by the regulations”.

Essentially, renewable energy includes energy harnessed from renewable sources, resulting in the following types of energy: hydro energy, bioenergy, wind energy, solar energy, geothermal energy, and ocean/tidal energy.

The renewable energy sector’s operations are divided between manufacturing and production initiatives. Manufacturing refers to the creation of tools and components needed to extract energy from renewable resources and production refers to extractive processes and activities required to transform renewable resources into usable energy for consumption.

In terms of inputs and outcomes, the renewable energy value chain includes renewable resources, technology and equipment as well as usable energy, as shown in Figure 4.1.

Figure 4.1: Renewable Energy Value Chain

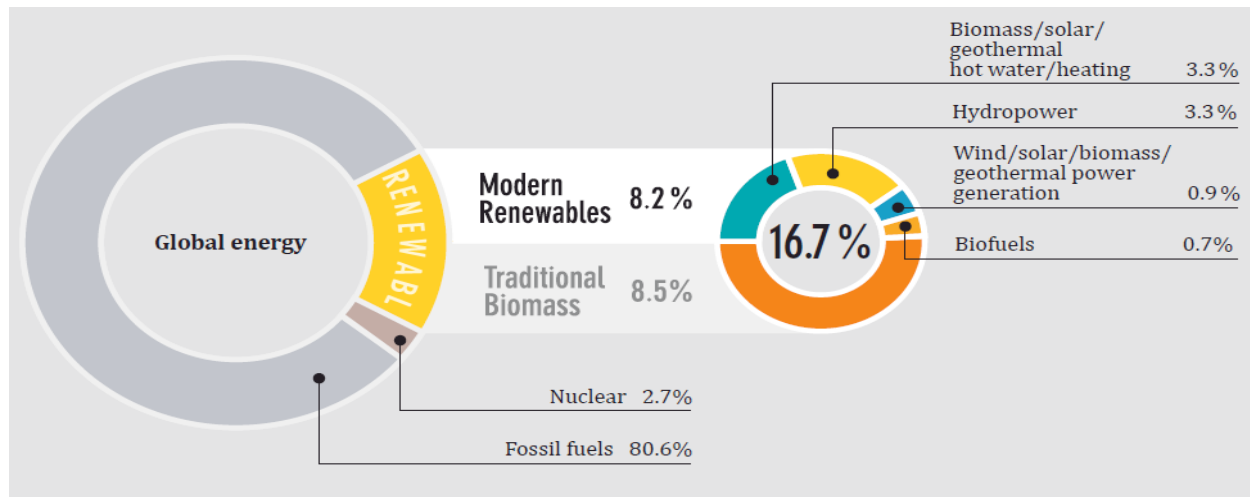


Source: Natural Resources Canada, *About Renewable Energy*

Size and Growth Trends

The renewable energy sector and supportive policy frameworks have grown considerably worldwide in recent years. Based on the report, *Global Trends in Renewable Energy Investment 2012*, global investment in the renewable energy sector reached a record high of \$257 billion in 2011 – an annual increase of 17% and a six-fold increase since 2004. Renewable energy sources supplied an estimated 16.7% of global energy consumption in 2010, as shown in Figure 4.2.

Figure 4.2: Renewable Energy Share of Global Final Energy Consumption, 2010



Source: Renewable Energy Policy Network for the 21st Century, *Renewables 2012 Global Status Report*

Global renewable power capacity has increased as follows:

- Hydro power capacity represents the vast majority of the global renewable capacity: total capacity including hydro power was estimated at 1,360 GW in 2011; excluding hydro, the capacity was 390 GW;
- Wind power represents the second largest power capacity, accounting for 238 GW. Wind power capacity has also shown significant growth from 159 GW in 2009, increasing to 238 GW in 2011;
- Although a relatively smaller segment, solar PV has shown the highest growth in capacity, growing over 200% between 2009 and 2011.

Growth in the global renewable energy sector is illustrated by selected indicators shown in Figure 4.3.

Figure 4.3: 2012 Global Indicators

Indicator	Amount	2009	2010	2011	Growth
Investment in new renewable capacity (annual)	Billion USD	161	220	257	60%
Renewable power capacity (total, not including hydro)	GW	250	315	390	56%
Renewable power capacity (total, including hydro)	GW	1,170	1,260	1,360	16%
Solar PV capacity (total)	GW	23	40	70	204%
Concentration solar thermal power (total)	GW	0.7	1.3	1.8	157%
Wind power capacity (total)	GW	159	198	238	50%
Solar hot water/heat capacity (total)	GW	153	182	232	52%
Ethanol Production (annual)	Billion litres	73.1	86.5	86.1	18%
Biodiesel production (annual)	Billion litres	17.8	18.5	21.4	20%
Countries with policy targets	#	89	109	118	33%
States/provinces/countries with feed-in policies	#	82	86	92	12%
States/provinces/countries with RPS/quota policies	#	66	69	71	8%
States/provinces/countries with biofuels mandates	#	57	71	72	26%

Source: Renewable Energy Policy Network for the 21st Century, Renewables 2012 Global Status Report

According to the Renewable Energy Policy Network for the 21st Century, over 5 million individuals were either directly or indirectly employed in the renewable energy sector in 2011. Direct jobs are those related to core activities including manufacturing, equipment distribution, site preparation and installations. Indirect jobs refer to those that supply the renewable energy industry.

Biofuels accounted for the largest employment in the sector with around 1.5 million jobs worldwide in 2011. The estimated number of jobs in renewable energy by industry are shown in Figure 4.4.

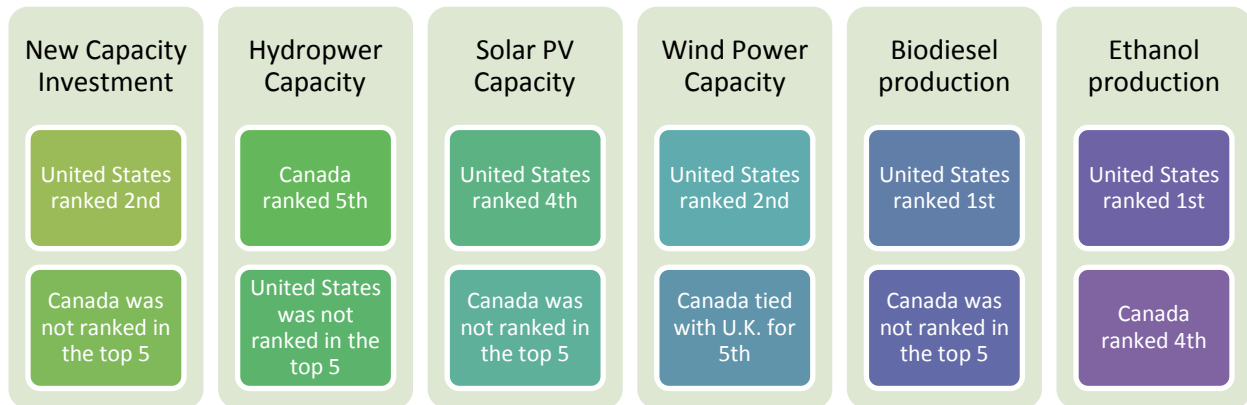
Figure 4.4: Estimated Jobs in Renewable Energy Worldwide by Industry (in thousands)

Industry	Global	China	India	Brazil	USA	EU	Germany	Spain	Others
Biomass	750	266	58		152	273	51	14	2
Biofuels	1,500			889	47-160	151	23	2	194
Biogas	230	90	85			53	51	1.4	
Geothermal	90				10	53	14	0.6	
Hydropower (small)	40		12		8	16	7	1.6	1
CSP	40				9		2	24	
Solar Heating/Cooling	900	800	41		9	50	12	10	1
Wind Power	670	150	42	14	75	253	101	55	33
Total	5,000	1,606	350	889	392-505	1,117	372	137	291

Source: Renewable Energy Policy Network for the 21st Century, Renewables 2012 Global Status Report

According to Pew Environment Group, the Americas had the fastest rate of renewable energy investment growth in 2011. This investment growth rate was primarily led by the United States. Based on Ernst & Young’s Global Renewable Energy Country Attractiveness Indices for February 2012, the United States ranked second while Canada ranked eighth globally for all renewables. The rankings for North America are outlined in Figure 4.5.

Figure 4.5: Annual Capacity Additions and Production in Renewable Energy in 2011



Source: Renewable Energy Policy Network for the 21st Century, Renewables 2012 Global Status Report

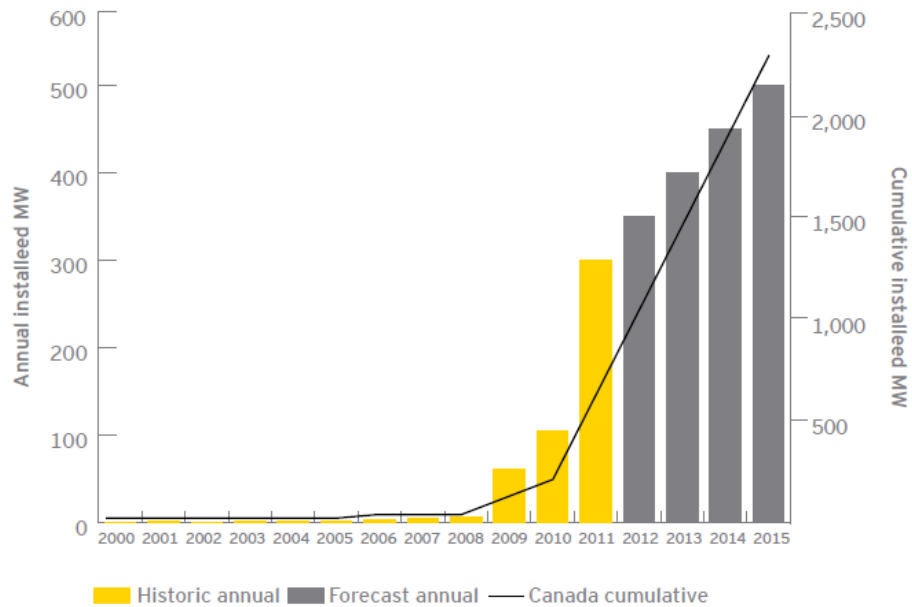
According to *Invest in Canada*, Canada has the third-largest renewable energy capacity in the world with renewable energy sources accounting for more than 60% of the total electricity capacity. Investment in solar and wind energy is projected to increase significantly by 2015 – with the most aggressive growth anticipated in the onshore wind industry. The Government of Canada’s target is to have 90% of Canada’s electricity generated from zero-emitting sources by the year 2020, as stated in the report *Planning for a Sustainable Future: A Federal Sustainable Development Strategy for Canada*.

Investment in Solar Energy

- The Canadian solar PV industry attracted \$2 billion in private sector investment in 2011;
- Total installed solar PV capacity in Canada is expected to increase from 291 megawatts in 2010 to 12,000 megawatts in 2025;
- Over 350 solar companies are operating in Canada, including 40 manufacturers of solar PV components.

Historical and projected growth in the solar energy segment in Canada is illustrated in Figure 4.6.

Figure 4.6: Canada's Historic and Projected Annual Installed MW for Solar PV



Source: EPIA

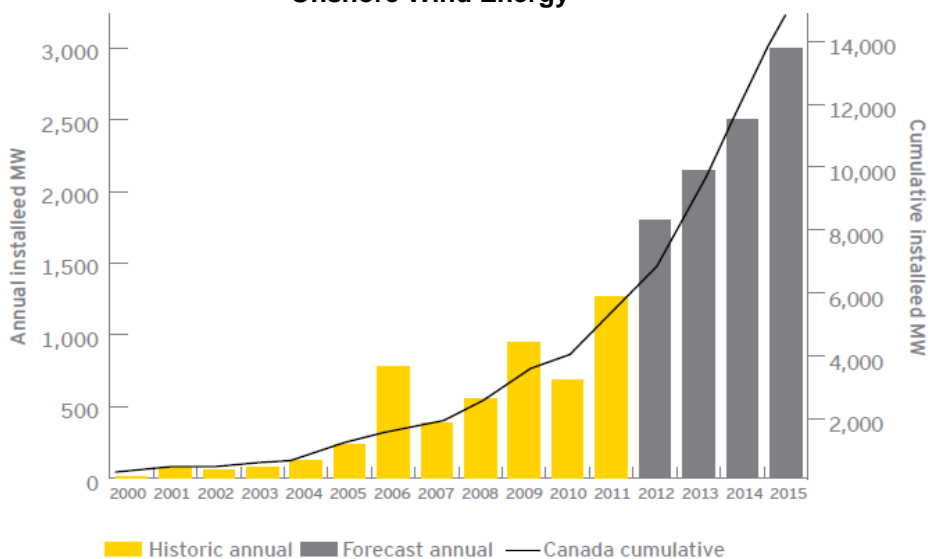
Source: Ernst & Young (2012) *Renewable Energy Investment: Canada*

Investment in Onshore Wind Energy

- As reported by Ernst and Young, for the period 2005 - 2010, Canada's wind energy industry grew much faster than those in the US and other parts of the world, growing at five-year rolling compound annual average growth rate (CAGR) of 38% (compared to the global average of 24%);
- Installed wind energy capacity is projected to increase from 5,265 megawatts in 2011 to almost 12,500 megawatts by 2015 (source: Invest Canada (2012) *Renewable Energy - Wind and Solar - Canada's Competitive Advantages*);
- Numerous wind power projects are under construction nation-wide and it is estimated by *Invest in Canada* that wind energy could supply 20% of Canada's total electricity demand by 2025.

Historical and projected growth in the wind energy segment in Canada is illustrated in Figure 4.7.

Figure 4.7: Canada's Historic and Projected Annual Installed MW for Onshore Wind Energy



Source: GWEC, Make Consult, BTM Consult

Source: Ernst & Young (2012) Renewable Energy Investment: Canada

Sector Presence in Nova Scotia

The Government of Nova Scotia via its Renewable Energy Plan (2010) has outlined targets for increasing the portion of the provincial energy supply generated from renewable sources. According to Nova Scotia Department of Energy, around 17% of the province’s electricity was generated from renewable sources - wind, biomass and hydro as of 2011 (3% more than projected in the 2009 Energy Plan, see Figure 4.8) and the Province plans to increase this to 25% by 2015 and to 40% by the year 2020.

Nova Scotia's Electricity Mix (2011)	
Coal and Petcoke	57%
Natural Gas	20%
Hydro and Tidal	10%
Wind	7%
Other (Imported Power, Oil, etc.)	6%

Source: Nova Scotia Power (2012)

The following priorities are identified in the Plan:

- Encouraging the development of mostly large-scale as well as community-based and small-scale renewable electricity projects, giving particular focus to wind and tidal energy projects. Most of the new renewable energy needed to meet the 2020 target will come from industrial-scale projects as larger projects have the capacity to produce the lowest-cost renewable electricity;
- Changes to electricity regulation; and
- The revision of requirements for biomass.

Figure 4.8: Nova Scotia - Renewable Energy Targets - % Total Energy Supply

Pre- 2001	2009	2011*	2013*	2015*	2020*
1100 GWh/yr	1300 GWh/yr	1700 GWh/yr	2300 GWh/yr	3000 GWh/yr	4800 GWh/yr
9%	11%	14%	19%	25%	40%

*2011 and future amounts forecast based on 12,000 GWh/yr of total Provincial electricity sales.

Source: Nova Scotia Renewable Energy Plan (2010)

The following are on-going projects and initiatives involving renewable energy in Nova Scotia.

Hydroelectricity

Natural Resources Canada reports that Canada had over 520 hydroelectric stations in 2010 (with more than 75,000 megawatts of installed capacity) generating about 348 million megawatt hours of power. Atlantic Canada, including Nova Scotia, had the fourth largest installed hydroelectric capacity in Canada following Quebec, British Columbia and Ontario respectively. Some 8% of Nova Scotia's electricity is produced by hydro systems generating a total of 1,000 GW hours of power per annum (source: Nova Scotia Department of Energy).

Biomass

Canada had 61 bioenergy power plants in 2010 with an installed generating capacity of 1,700 megawatts largely based on wood biomass and spent pulping liquor. Nova Scotia accounted for 4% (66 megawatts) of Canada's bioenergy supply in 2010 (source: Nova Scotia Department of Energy). Canada's bioenergy capacity is illustrated in Figure 4.9.

Figure 4.9: Canada's Bioenergy Installed Generating Capacity by Province in 2010 (MW)

Province	Total
Prince Edward Island	2
Nova Scotia	66
New Brunswick	110
Quebec	304
Ontario	280
Manitoba	22
Saskatchewan	-
Alberta	140
British Columbia	798
Canada	1,700

Source: Natural Resources Canada (2012) About Renewable Energy

The biomass boiler in Port Hawkesbury Paper (formerly called New Page) is a result of a complicated agreement that involved Nova Scotia Power (NSP) purchasing a 30-year old boiler from the New Page plant for \$80 million and investing approximately an additional \$120 million to bring the boiler's electrical generating capacity on-line (60 MW). The boiler is expected to consume up to 650,000 tonnes of biomass per year. Previously, feedstock for the boiler (for plant steam and power) relied on the trimmings from softwood used in pulp production. The use of wood biomass as fuel has been questioned by some Nova Scotia forestry industry representatives since it is only considered "sustainable" if significant amounts of tree trimmings are left in the forest to fertilize new growth. Nevertheless, as pulp production has declined, and boiler feedstock requirements have increased, it is now expected that hardwoods will be burned. Guysborough county, along with Cape Breton counties, are expected to provide considerable amounts of biomass for the boiler. Some of this demand will also be supplied by Antigonish county; however, wood biomass is not a relatively large resource in the area.

Solar Power

Solar power (PV) was deemed too expensive by Nova Scotia's Department of Energy and has not been included in renewable resource goals for Nova Scotia to the present. However, the policy is under review and a decision on possible changes is expected in Spring 2013.

Tidal Power

The Nova Scotia government has initiated a tidal demonstration project in the Bay of Fundy, subsidizing up to 4 demonstration units from various sources, including NSP and Minas Basin Pulp and Power. These various projects are currently behind schedule. Smaller community-based tidal projects have also been approved in the Bay of Fundy.

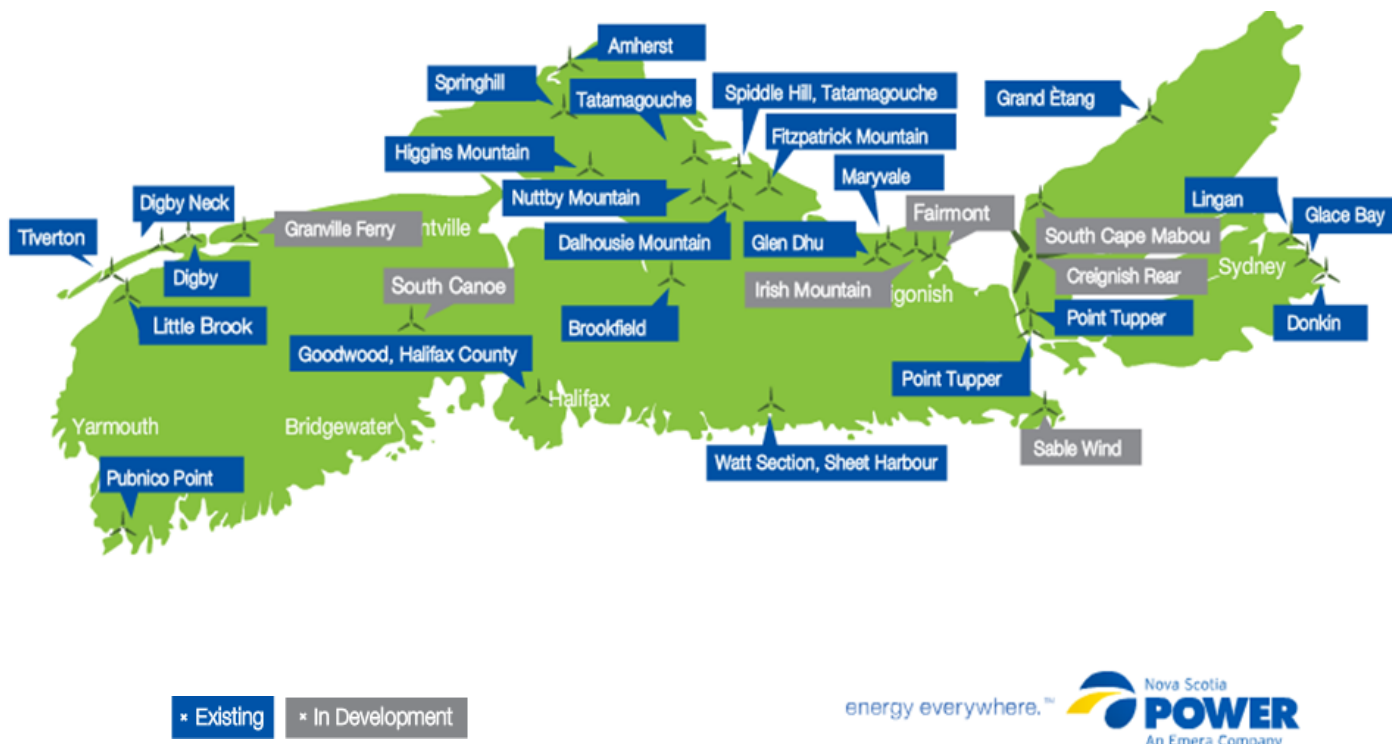
Wind Energy Generation

Wind power constitutes a major source (40%) of Nova Scotia's renewable energy supply. The province currently has about 316 megawatts of wind energy capacity, with 160 commercial turbines generating power in 2011 (source: Nova Scotia Department of Energy). Currently, around 25 wind projects are in existence in Nova Scotia, 3 of which are located in Antigonish County (Maryvale Wind, Fairmount Wind Farm and Shear Wind/Inveravante).

A number of local companies have been involved in the development of wind power in Nova Scotia over the past 10 years. However, much of the investment in larger wind turbine projects including turbine manufacturing has come from sources outside the province including Ontario and U.S based investors and venture capital groups, usually under limited partnership arrangements. In some cases, NSP or Emera has had to step in and purchase projects that were failing to raise the required capital investment. At present, NSP is restricted to a 49% ownership of new projects as the Province has sought new independent sources of electric power.

The existing wind power projects across Nova Scotia are illustrated in Figure 4.10.

Figure 4.10: Nova Scotia Wind Energy Products



The Nova Scotia government invested in a wind power manufacturing facility in Trenton, Pictou County, in 2010, investing \$19.6 million in the facility for a 49% share, while the partner Daewoo (Korean shipbuilding giant) invested \$20.4 million for a 51% share. The Province also made an additional \$40 million in equipment and working capital loans available to the operation (\$4 million is forgivable), while the federal government provided a \$5 million grant and another \$5 million loan. DSTN signed an agreement with NSP to collaborate on wind, tidal and other renewable energy projects within the province. The plant was originally expected to employ up to 500, but the only contract to date was with a wind farm in Amherst that employed about 130 and was completed in January, 2012. DSTN won a tender in November, 2012 to supply 10 towers to PEI Energy Corporation.

New wind power developments bring the NS power grid to maximum wind power capacity of approximately 500 megawatts. These include:

- 2 large developments in Lunenburg county – “South Canoe” (102 MW, \$200 million) and another wind farm in Guysborough county – “Sable Wind” (13.8 MW, \$35 million);
- Multiple COMFIT (community feed-in tariff) purchases (45 projects) totaling approximately 120 megawatts, \$250 million. COMFIT purchases are only available to municipalities, universities, First Nations, co-ops and not-for-profits.

Many of the COMFIT purchases are proposed to be funded by CEDIFs (community economic development investment funds). However, it is generally believed that CEDIFs will not be able to supply the necessary funding required.

In addition to NSP investments in wind power, Sprott Power (based in Toronto) has shown an interest in NS wind projects, recently buying out previous large wind farm owners in Amherst and Glen Dhu. Other current wind power investors in the province for both large and small projects have included:

- Acciona (Spain)
- Shear Wind
- Scotia Wind Fields
- Natural Forces
- Cape Breton Explorations
- Seaforth Energy

Nova Scotia Power (NSP)

NSP recently announced a five-year \$1.6 billion spending plan, primarily related to the Maritime Link, grid improvements and new wind energy developments. This level of spending is only exceeded by two other projects in Atlantic Canada (i.e., a nickel processing facility and enhanced offshore oil development at Hibernia, both in Newfoundland).

Investment Attraction Study – Final Report

Renewable Energy Projects in Nova Scotia and Antigonish Region

Renewable energy projects in Nova Scotia and the Antigonish region are listed in Figure 4.11.

Figure 4.11: Renewable Energy Projects in Nova Scotia

Location	Est. Cost (\$Mil)	Start Date	Units	Make	Output (MW)	Company
Little Brook		2002	1	Turbowinds	0.6	Nova Scotia Power
<i>Grand Etang (Inverness Co)</i>		2002	1	Vestas	0.7	Nova Scotia Power
Pubnico Point		2004-05	17	Vestas	30.6	FPL Energy
Brookfield		2005	1	Turbowinds	0.6	Renewable Energy Services
Glace Bay		2005	1	Enercon	0.8	Confederation Power Ltd.
Donkin		2005	1	Enercon	0.8	Confederation Power Ltd.
Goodwood (HRM)		2005	1	Turbowinds	0.6	Renewable Energy Services Ltd.
Springhill		2005/12	1	Vensys	1.2	Confederation Power Ltd.
Lingan		2006-07	7	Enercon	15.8	Confederation Power Ltd.
Tiverton		2006	1	Americas Wind Energy	0.9	Confederation Power Ltd.
Digby		2006	1	Enercon E48	0.8	Renewable Energy Services
<i>Fitzpatrick Mt., Pictou Co.</i>		2006	1	Enercon	1.6	Shearwind Inc
<i>Marshville, Pictou Co.</i>		2006	1	Enercon E48 (800 kW)	0.8	Renewable Energy Services
<i>Point Tupper Guysborough Co.</i>		2006	1	Enercon	0.8	Renewable Energy Services
Springhill		2006	1	Americas Wind Energy	0.9	Confederation Power Ltd.
Higgins Mountain Cumberland Co.		2007	3	1.2 MW Vensys	3.6	Confederation Power Ltd.
<i>Dalhousie Mt. Pictou Co</i>		2009/12	34	GE sle	51	RMSenergy (Firelight Infrastructure Capital)
<i>Maryvale, Antigonish Co</i>	12	2010/02	4	Vensys 77	6	Maryvale Wind LP (RMSenergy)
<i>Point Tupper Guysborough Co.</i>	55.6	2010/08	11	Enercon E82	22.6	Renewable Energy Services Ltd./ NS Power (49%)
Digby Neck	80	2010/11	20	GE 1.5sle	30	NSP100% (ScotiaWindFields)
Nuttby Mountain Colchester Co		2010/12	22	Enercon E82	50.6	NSP 100% (Earthfirst)
<i>Glen Dhu Pictou Co./Antigonish Co.</i>	\$148	2011	27	Enercon E82	62.1	Sprott [Shear Wind (Inveravante/ Geneva Avante Capital 49%)]
Watt Section HRM		2011	1	Vensys V77	1.5	Watts Wind Energy Inc.
Amherst		2012	15		31.5	Sprott Power Corp (Acciona)
<i>Fairmount Antigonish</i>	\$11	2012	2		4.6	Natural Forces (CEDIF funding)
New Purchases, August 2012						
South Canoe, Chester	\$50	by 2015			24	Minas Basin P&P + NSP 49%
South Canoe, Chester	\$150	by 2015			78	Oxford Frozen Food + NSP% nes
<i>Sable Wind, Guysborough</i>	\$35	by 2015			13.8	Municipal Guysborough + NSP 49%
CEDIFS - 45 projects	\$250-\$300	by 2015			120	
TOTAL - may not include all current/planned projects, including biomass-tidal					483.6	

Source: MRA

FDI Trends

As reported by fDI Markets in two recent studies (*Review of FDI Trends into N. America with a focus on Ontario in 2010, 2012 Global Greenfield Investment Trends*):

- Renewable energy was the fastest growing sector worldwide for FDI in 2011, with 19.9% growth in the number of projects. Estimated job creation associated with these projects grew by 54% and the volume of FDI projects grew six-fold between 2003–2011;
- FDI in the renewable energy sector globally was estimated at \$77 billion in 2011, increasing to \$91 billion (including 'feeder parts' such as engines, turbines and solar components). This is equivalent to about 11% of total global FDI;
- The United States is the leading source of FDI in renewable energy projects. It was the source of 18.4% of FDI in renewable energy projects globally in 2011 and 20% during 2010. Europe is also a key source market for renewable energy projects: Germany was the source of 9.5% and 16.8% in 2011 and 2010 respectively; Spain was the source for 12.5% and 13.4% in 2011 and 2010 respectively; and France was the source for 11.3% and 8.8% in 2011 and 2010 respectively;
- The source country that has been particularly important for FDI projects in the renewable energy sector in North America is Spain (accounting for 13 projects, with 37% of global FDI projects sourced from that country in 2010).

A summary of FDI projects globally and by source country is shown in Figure 4.12.

Figure 4.12: Top Source Countries for FDI Projects in the Alternative/Renewable Sector in 2010

Source Country	No. of FDI Projects Globally	No. of FDI Projects into North America	North America's Market Share of Global FDI (%)
United States	54	5	N/A
Germany	44	3	7
Spain	35	13	37
France	23	2	9
China	12	-	-
Italy	7	-	-
Japan	7	1	14
UK	7	2	29
Belgium	7	1	14
Israel	6	3	50
<i>Other</i>	60	13	22
Total	262	43	16

Source: fDI Markets

According to fDI Markets, Canada was a destination for about 5% of FDI renewable energy projects in 2011; and Ontario was the leading destination for renewable energy projects in North America in 2011, and the top destination in 2010, following California and North Carolina.

Nova Scotia was not identified as being one of the top destinations, although the province has attracted some FDI in this sector.

The top destinations for FDI in the renewable energy sector in North America in 2010 are shown in Figure 4.13.

Figure 4.13: Top 20 Destination States/Provinces for FDI in the Alternative/Renewable Sector into North America in 2010

Destination State/Province	Jobs Created	% of Total
California	827	34.1%
North Carolina	311	12.8%
Ontario	249	10.3%
Wisconsin	138	5.7%
Nevada	115	4.7%
Indiana	102	4.2%
Kansas	102	4.2%
Ohio	86	3.5%
New Mexico	75	3.1%
Oregon	70	2.9%
Arizona	57	2.4%
Colorado	57	2.4%
Quebec	48	2.0%
Georgia	39	1.6%
Texas	20	0.8%
Alberta	17	0.7%
Maine	13	0.5%
Florida	9	0.4%
District of Columbia	9	0.4%
Pennsylvania	9	0.4%
<i>Other</i>	<i>70</i>	<i>2.9%</i>
Total	2,423	100.0%

Source: fDI Markets

Some of the major FDI projects in the renewable energy sector in North America have been made by companies in Spain such as Iberdrola, Abengoa, OPDE; by Energias de Portugal from Portugal; HCL Clean Tech based in Israel; and Waste Management Inc. and First Solar headquartered in the United States. A listing of top companies for FDI in the renewable energy sector in North America is provided in Figure 4.14.

Figure 4.14: Top 20 Investing Companies for FDI in the Alternative/Renewable Sector in North America in 2010

Investing Company	Source Country	No. of FDI Projects
Iberdrola	Spain	5
Abengoa	Spain	2
Energias de Portugal	Portugal	2
OPDE	Spain	2
Waste Management, Inc	United States	2
HCL CleanTech	Israel	2
Nexterra Systems (Nexterra Energy)	Canada	2
TransCanada	Canada	1
First Solar	United States	1
SOITEC	France	1
Fronius	Austria	1
Toshiba	Japan	1
Pohang Iron & Steel (POSCO)	South Korea	1
Samsung	South Korea	1
Royal Dutch Shell Plc	Netherlands	1
Gestamp Group	Spain	1
Ormat Industries	Israel	1
Acciona	Spain	1
NTR	Ireland	1
Veolia Environnement (Veolia Environment)	France	1
<i>Other Companies</i>		13
Total		43

Source: *fDI Markets*

As reported by *Invest in Canada*, 126 foreign companies established greenfield projects in Canada’s renewable energy sector between 2003 and 2011. Foreign companies identified by *Invest in Canada* as being active in the renewable energy sector are listed in Figure 4.15.

Figure 4.15: Foreign Investors in Renewable Energy Sector in Canada

Solar	Wind	Tidal
Algatec Solar	Acciona Wind Energy	Alstom (alliance with Tidal Generation Limited)
CentroSolar	CS Wind	Siemens/Marine Current Turbines (alliance with Minas Basin P&P)
Conergy	Daewoo Shipbuilding and Marine Engineering (DSME)	Atlantis Resources Corp (alliance with Lockheed Martin and Irving Shipbuilding)
EDF Energies Nouvelles	DMI Industries	Open Hydro (alliance with NSP – now inactive)
KACO New Energy	EDF Energies Nouvelles	
Samsung	Enel	
Schletter	Enercon	
Silfab	GE Energy	
Silicor Materials	Iberdrola Renewables	
Siliken	Invenergy	
SMA Solar Technology	International Power GDF Suez	
Unirac	LM Wind Power	
	Mainstream Renewable Power	
	Mortenson	
	NCB Lohmann (alliance with Linamar)	
	Renewable Energy Systems	
	REpower Systems	
	Samsung	
	Siemens	
	Vestas	
	Wind Works Power	
	Windtechnics	

Sources: *Invest in Canada, Renewable Energy: Wind and Solar, Canada’s Competitive Advantages*

In addition to FDI in this sector, investment has also occurred in Canada by a number of domestic companies, particularly in Ontario, British Columbia and Quebec. Expansion opportunities from domestic companies could be considered as part of an investment attraction strategy for this sector. Key Canadian companies active in the renewable energy sector are listed in Figure 4.16 below.

Figure 4.16: Leading Canadian Companies in Renewable Energy Sector

Solar	Wind
5N Plus	Aeolis Wind Power Corporation
Canadian Solar	Boralex Wind
Carmanah	Brookfield Renewable Power
Centennial Global Technology	Composites VCI
Day4	Endurance Wind Power
Eclipsall Energy	Eocycle
EffiSolar Energy	Marmen
Heliene	ReDriven
Innergex	Seaforth Energy
Lumin Solar	Sequoia Energy
Morgan Solar	TransAlta Wind
OSM Solar	Western Wind Energy
Opsun	
SkyPower	
Solar Energy DC	
Solgate	
SPARQ Systems	
Sunforce	
SunRise Power	
Sustainable Energy Technologies	
Unconquered Sun Solar Technologies	

Sources: Invest in Canada, Renewable Energy: Wind and Solar, Canada's Competitive Advantages

4.2. Clean/Green Technologies

Definition

Global warming concerns, accompanied by innovation in industry, have driven the manufacturing and services sectors to reduce emissions and place greater reliance on renewable energy to ensure sustainability. Cleantech and green tech are a range of technologies, methods, products and services intended to eliminate negative environmental impacts and contribute to sustainability.

Although the terms cleantech and green tech are often used interchangeably, cleantech is an umbrella term which covers a broad range of industry segments and refers to a wide scope of ecologically sound solutions used to produce renewable energy and eliminate waste. Green tech is part of a broad range of clean technology sectors.

The various segments included under the cleantech ‘umbrella’ are illustrated in Figure 4.17.

Figure 4.17: Cleantech Industry Segments



Source: Cleantech Group, *What is Cleantech?*

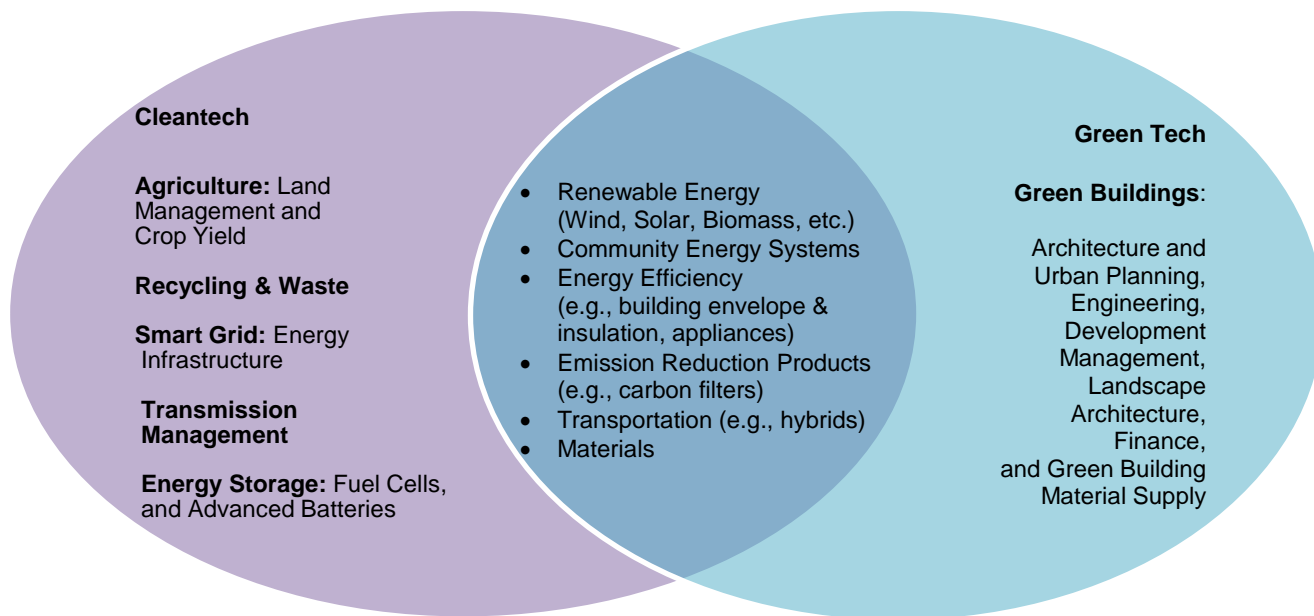
For ease of reference, the distinction between cleantech and green tech is summarized in Figure 4.18.

Figure 4.18: Distinction between Cleantech and Green Tech

Cleantech	Green Tech
<ul style="list-style-type: none"> • “Cleantech is a very broad, heterogeneous grouping of technologies that includes energy and water technologies which increase efficiency and performance in important markets such as oil and gas, mining, forestry, agriculture, power generation, waste management and for industrial/commercial/ domestic end uses” (source: Sustainable Development Technology Canada). • Reflects diverse range of products, services and methods intended to deliver superior performance - reducing or eliminating negative ecological impacts - at lower costs, while greatly improving the efficient and responsible use of natural resources (source: Cleantech Group). • Inclusive of recycling, renewable energy and appliances that are energy efficient. • Natural approaches applied in new technology and business models to address ecological issues. • Driven by productivity-based purchasing with extensive potential for commercialization (source: Cleantech Group). • An umbrella term that captures production, innovation and technology development of ecological solutions. 	<ul style="list-style-type: none"> • Technology designed in a sustainable manner while promoting/contributing to sustainability. • End-of-pipe technologies that have traditionally represented smaller regulatory-driven markets (source: Cleantech Group). • Continuously evolving categorization of methods and materials – to include techniques for generating energy to non-toxic cleaning products. • Green technology also encompasses the Green Building sector including architecture and urban planning, engineering, development management, landscape architecture, finance, and green building materials. • Term popularized by venture capitalists John Denniston and John Doerr of Kleiner Perkins – has become increasingly interchangeable with Cleantech since 2005.

The overlap between cleantech and green tech, as illustrated in Figure 4.19, includes renewable energy, community energy systems, energy efficiency, emission reduction products, and energy efficient transportation and materials.

Figure 4.19: Overlap between Cleantech and Green Tech



Sector Presence in Nova Scotia

Nova Scotia Business Inc. has classified a broad range of companies in the province as being within the cleantech sector. Many of these are actually green tech related businesses such as professional services firms and those that use some form of green technology or recycled/used parts in their operations. Cleantech and green tech firms identified by NSBI, along with a few additional firms that have been identified through this current study, are noted in Appendix C.

For the most part, cleantech firms in Nova Scotia are small, single location enterprises. However, some of the Nova Scotia headquartered firms have expanded their operations to other domestic and foreign locations and some global firms such as Liquide Air have operations in Nova Scotia.

In the 2010 *Cleantech Growth and Go-To-Market Report* (SDTC), a narrow definition is used for clean technology companies. Specifically, a clean technology company is defined as “a company that is predominantly engaged in the development and marketing and/or use of its proprietary technology to deliver products or services that reduce or eliminate negative environmental impacts, and address social needs, while delivering competitive performance, and/or using fewer resources than conventional technologies or services”. As noted in the SDTC report, this definition does not include companies that generate power from renewable resources as such companies do not generally own intellectual property or patents, or invest in research and development with the intent of commercializing a unique, technology-based product or service.

Using that definition, it is noted in the SDTC report that there were 436 clean technology companies in Canada in 2010, with 28 of these in the Atlantic Region. The distribution of companies by type is somewhat different in the Atlantic Region compared to Canada overall, with the highest number of companies being in power generation and energy efficiency segments. The number of companies in this sector by segment in Canada and the Atlantic Region are shown in Figure 4.20.

Figure 4.20: Clean Technology Companies in Canada and Atlantic Region

Industry Segment	Canada	%	Atlantic Region	%
Water & Wastewater	73	16.7%	4	14.3%
Process Efficient & Abatement	73	16.7%	3	10.7%
Power Generation	70	16.1%	7	25.0%
Recycling & Waste	61	14.0%	2	7.1%
Energy Efficiency	55	12.6%	6	21.4%
Transportation	38	8.7%	1	3.6%
Biofuels & Biochemicals	37	8.5%	2	7.1%
Remediation	21	4.8%	2	7.1%
Energy Infrastructure	8	1.8%	1	3.6%
Total	436	100.0%	28	100.0%

Source: 2010 SDTC CleanTech Growth and Go-To-Market Report

As noted in the *SDTC Cleantech Growth and Go-To-Market Report*, there is substantial R&D work in the cleantech sector being undertaken in the Atlantic Region, with academic expertise existing in electricity storage, fuel cells, battery technologies, as well as bioenergy and biofuels.

The major players in the cleantech sector in Nova Scotia in 2010 as identified in the *SDTC Cleantech Growth and Go-To-Market Report* are listed in Figure 4.21. One of these companies, Atlantec BioEnergy Corporation, relocated from Nova Scotia to Prince Edward Island in 2011.

Figure 4.21: Clean Technology Companies in Nova Scotia in 2010

Industry Segment	Company
Biofuels & Biochemicals	Atlantec BioEnergy Corp.
Power Generation	Green Power Labs Inc. MaManna Renewable Energy
Energy Efficiency	Advanced Glazings Ltd. LED Flex Lighting Co. LED Roadway Lighting Ltd. Nu-Air Ventilation Systems Inc.
Process Efficiency & Abatement	Atlantic Combustion Technologies Inc.
Recycling & Waste	Highland Energy Inc.
Remediation	CleanEarth Technologies Inc.
Water & Wastewater	ABL Environmental Consultants Ltd.

Source: 2010 SDTC Cleantech Growth and Go-To-Market Report

4.3. Location Factors

The renewable energy, cleantech and green tech sectors are very broad and complex, and the location factors vary between these sectors and by specific segment or type of facility being considered. For example, key considerations in site selection for wind power generation projects include the strength and consistency of the wind flow, power grid capacity, planning and zoning regulations, distance from other types of land uses, level of community acceptance/opposition, costs, incentives, etc. For cleantech businesses, the needs differ by business function – the head office, R&D, and manufacturing functions have different needs. For start-up cleantech firms, access to government funding and venture capital is critical, as is access to research facilities/universities for R&D, as well as supportive business environments with low operating costs such as those that would be available through incubator facilities.

Many of the businesses in the cleantech sector start off as an R&D project. According to a recent study pertaining to R&D in the cleantech and renewable energy sectors in the Atlantic Region, such R&D projects ‘work’ when:

- The region has a significant resource base (has local relevance);
- There is a realistic chance of use-ability and innovation;
- Priorities are established and recognized;
- They meet a market need (international relevance, export potential);
- Industry needs are front and center; industry is engaged as an active participant;
- Government needs /objectives and policies are aligned;
- Local/regional industrial and academic capacity exists to provide solutions (facilities, highly qualified people);
- Industry and government needs are matched with local research, development and demonstration (RD&D) capabilities to create regional value;

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- Adequate funding is maximized by leveraging (industry, government and academia; programs without matching or repayable conditions are often ineffective);
- Global links and international alliances are struck when relevant (recognize that other areas of the world might be more advanced in certain subsectors);
- Plans and structures allow open communication and information sharing (effective means of internal and external communication, as well as keeping data current).

Source: Research, Development and Demonstration: Challenges and Opportunities; undertaken for the ACOA by SLR Consulting and Maxis Energy Solutions, March 2012.

5.0. Asset Review and SWOT Analysis

5.1. Population and Labour Assets

5.1.1. Population Growth

Population growth is a factor that businesses and site selectors consider in investment decisions, with preference given to areas that are growing in population and increasing their supply of human resources.

The population level in Antigonish county increased by 4% between 2006 and 2011, while the population level in the town increased by 6.8%.² This population growth is contrasted with the negative growth levels between 2001 and 2006 for Antigonish county and the town: -3.8% and -10.9% respectively. The percentage growth in Antigonish between 2006 and 2011 was higher than the provincial population growth level (0.9%) and the population growth level of the counties in the broader Antigonish region, where negative growth occurred between 2006 and 2011 as shown in Figure 5.1 below.

Figure 5.1: Population Change in Antigonish Region

County	2011	2006	Percentage Growth
Antigonish	19,589	18,836	4.0%
Pictou	45,643	46,513	-1.9%
Inverness	17,947	19,036	-5.7%
Richmond	9,293	9,740	-4.6%
Guysborough	8,143	9,058	-10.1%

Source: Statistics Canada, Census Profile, 2011 Census.

The population growth in Antigonish is very positive and considered to be a strength from an investment attraction perspective. This is particularly the case for businesses in the service sectors whose growth is directly related to population growth. For sectors that export products and services beyond the region (including potentially renewable energy and technology development and commercialization), population change in-region is not itself a primary determinant of success. Notwithstanding, population growth often signals broader evolution of the economy and investment opportunities. Population decline, while not necessarily a factor for all sectors, can raise concerns among site selectors about quality and durability of the future labour supply and quality of life amenities.

² This does not include the university students that are not full time residents in Antigonish.

5.1.2. Labour Flows

Data on labour flows is useful in determining the labour market area for a community, which is a factor that site selectors consider in determining the size of the regional labour market that can be accessed. Data on the labour flows from the 2011 Census is not available at present; however, a review of data from the 2006 Census provides insight on labour flows. As shown in Figures 5.2 and 5.3, about 91% and 87% of the labour working in Antigonish (town) and elsewhere in the county respectively also lived there in 2006. This suggests that Antigonish’s primary labour market generally does not extend far beyond the county boundaries.

Figure 5.2: Place of Residence of Labour Working in Antigonish (Town), 2006

Location	Total	Percentage
Antigonish County	2,875	62.5%
Antigonish (T)	1,305	28.4%
Guysborough	105	2.3%
Halifax (RGM)	70	1.5%
Inverness	60	1.3%
Pictou	80	1.7%
St. Mary's	35	0.8%
Port Hawkesbury	25	0.5%
Mulgrave	25	0.5%
Cape Breton (RGM)	20	0.4%
Total	4,600	100.0%

Source: Statistics Canada, 2006 Census. Catalogue Number 97-561-XCB2006011.
 * excludes working at home portion and those without a fixed place of work.

Figure 5.3: Place of Residence of Labour Working Elsewhere in Antigonish County, 2006

Location	Total	Percentage
Antigonish County	1,620	74.1%
Antigonish (T)	280	12.8%
Guysborough	80	3.7%
Port Hawkesbury	60	2.7%
St. Mary's	50	2.3%
Pictou	50	2.3%
Mulgrave	45	2.1%
Total	2,185	100.0%

Source: Statistics Canada, 2006 Census. Catalogue Number 97-561-XCB2006011.
 * excludes working at home portion and those without a fixed place of work.

A review of labour outflow from a community is also instructive as it can provide insight on how far the regional labour market extends. As shown in Figure 5.4, a small portion of labour residing in Antigonish county is commuting to work in communities as far away as Halifax, with the highest labour outflows to Mulgrave, Guysborough and Inverness. Given these labour flows, it is reasonable to promote Antigonish as having a larger labour force than just the county, with the labour force market extending into parts of the surrounding counties.

It may be the case that Antigonish is not attracting a large labour inflow from other areas as there is an insufficient concentration of jobs to attract such labour inflow. However, if labour living in Antigonish is willing commute to other areas for work, it is likely that some of the labour in those areas would be willing to commute to Antigonish and be a source of labour if a concentration of jobs existed.

Figure 5.4: Place of Work of Labour Living in Antigonish County, 2006

Location	Total	Percentage
Antigonish (T)	2,875	57.2%
Antigonish (CTY)	1,620	32.2%
Mulgrave	120	2.4%
Guysborough	95	1.9%
Inverness	85	1.7%
Halifax	75	1.5%
New Glasgow	50	1.0%
Stellarton	35	0.7%
Colchester	25	0.5%
Truro	25	0.5%
Richmond	25	0.5%
Total	5,030	100.0%

Source: Statistics Canada, 2006 Census. Catalogue Number 97-561-XCB2006011.

** excludes working at home portion and those without a fixed place of work.*

5.1.3. Labour Force and Jobs by Sector

The experienced labour force in Antigonish county was reported by Statistics Canada as being 10,005 in 2006 (data from the 2011 Census is not yet available).

The labour force composition by industry in Antigonish county varied from the province overall in a number of ways:

- A much higher portion of the Antigonish county resident labour force worked in agriculture and other resource based industries – 11.7% compared to 5.8% for the province overall, reflecting the rural character of the county;
- Antigonish county had a much higher portion of its labour force employed in educational services, as would be expected due to the presence of StFX – 14.1% compared to 7.4% for the province overall;

- Antigonish county had a much lower portion of its work force employed in business services (10.4% compared to 17.3% for the province overall) and a lower portion in finance and real estate (2.6% compared to 4.6% for the province).

This suggests that Antigonish county does not have labour force strengths in some of the skill areas for the target sectors, such as financial services; however this could potentially be counterbalanced by the ongoing supply of new business graduates from StFX.

Data on labour force by sector in Antigonish county is provided in Figure 5.5.

Figure 5.5: Antigonish County Labour Force by Sector, 2006

Industry	Number	Percentage
Total experienced labour force 15 years and over	10,005	
Agriculture and other resource-based industries	1,170	11.7%
Construction	810	8.1%
Manufacturing	665	6.6%
Wholesale trade	250	2.5%
Retail trade	1,315	13.1%
Finance and real estate	260	2.6%
Health care and social services	1,245	12.4%
Educational services	1,415	14.1%
Business services	1,045	10.4%
Other services	1,835	18.3%

Source: Statistics Canada, Census Profile, 2006 Census.

An estimate of the number of jobs by sector in Antigonish county in 2006 is available through the 2006 Census for jobs at fixed places of work, which excludes jobs without a fixed place of work location such as those associated with landscaping, construction, truck driving, etc. It is estimated that there were 7,930 jobs at fixed places of work in Antigonish county in 2006. Based on the Census for that year, 975 persons in the labour force in Antigonish county worked in jobs at non-fixed places of work. It appears therefore that Antigonish county did not have a sufficient number of jobs for its labour force during that year – the experienced labour force was 10,005, while the estimated number of jobs at fixed places of employment and those at non-fixed places of employment was 8,905 – this suggests that Antigonish county needed about 1,100 more jobs to satisfy the size of its labour force.

There also appears to be a disconnect between the jobs by sector in the county and the sectors' labour force employment – in particular, 665 persons in the Antigonish labour force were employed in the manufacturing sector in 2006; however, it is estimated there were only 380 jobs in this sector in Antigonish county in 2006, which suggests there is a significant outflow of labour with manufacturing skills to other areas for work. A significantly higher portion of labour was also employed in the construction sector compared to jobs at fixed places of employment in this sector in the county, but this can likely be attributed to many jobs in this sector being at non-fixed places of employment – i.e., at various construction project sites rather than one fixed location.

Compared to the distribution of jobs in Nova Scotia overall, Antigonish county has a significantly higher portion of jobs in primary industries such as agriculture, and in education due to the presence of StFX. Data on jobs by sector in Antigonish county in 2006 is provided in Figure 5.6.

Figure 5.6: Employment and LQ by Sector - Antigonish County

Sector	Antigonish	Antigonish	Nova Scotia	Antigonish
Total Jobs	7,930	%	%	L.Q.
Agriculture, forestry, fishing and hunting	700	8.8%	3.1%	2.82
Mining and oil and gas extraction	45	0.6%	0.4%	1.34
Utilities	15	0.2%	0.5%	0.34
Construction	270	3.4%	3.1%	1.09
Manufacturing	380	4.8%	9.4%	0.51
Wholesale trade	185	2.3%	3.6%	0.65
Retail trade	1,265	16.0%	14.0%	1.14
Transportation and warehousing	185	2.3%	3.6%	0.65
Information and cultural industries	110	1.4%	2.4%	0.58
Finance and insurance	175	2.2%	3.5%	0.63
Real estate and rental and leasing	85	1.1%	1.6%	0.68
Professional, scientific and technical services	185	2.3%	5.3%	0.44
Management of companies and enterprises	0	0.0%	0.1%	0.00
Administrative and support, waste management and remediation services	180	2.3%	5.0%	0.45
Educational services	1,325	16.7%	8.1%	2.06
Health care and social assistance	1,185	14.9%	13.1%	1.14
Arts, entertainment and recreation	100	1.3%	1.8%	0.69
Accommodation and food services	790	10.0%	7.2%	1.38
Other services (except public administration)	405	5.1%	4.9%	1.03
Public administration	345	4.4%	9.1%	0.48

Source: Statistics Canada - 2006 Census. Catalogue Number 97-561-XCB2006007

5.1.4. Ongoing Supply of New Labour from StFX and NS College Campuses

An ongoing supply of new labour is an important consideration in site selection decisions, particularly for operations requiring highly skilled and educated labour. Antigonish has a steady supply of educated new labour from StFX university and NS community college campuses in the broader region.

The supply of new business graduates from StFX has ranged from 157 to 210 in the past five years, averaging at around 181 per year. The ongoing ‘pipeline’ of new labour serves to partly counteract the labour force weakness of a relatively low number of experienced labour in the financial services sector in Antigonish.

The number of science program graduates at StFX have ranged from 100 to 123 over the last five years, averaging at around 114. There are a small number of graduates per year in Chemistry and Geology (35 degrees granted in 2012). The ongoing and potentially increasing supply of such graduates is considered an asset for the renewable energy and clean/green technology sectors.

The number of graduates by program at StFX is shown in Figure 5.7.

Figure 5.7: St. Francis Xavier University Graduates by Program (2008-2012)

Program & Major Field of Study	2012			2011			2010		
	Bachelors	Masters	Other	Bachelors	Masters	Other	Bachelors	Masters	Other
Science	93	7	0	121	2	0	115	4	0
Aquaculture & Fisheries	6	0	0	6	0	0	4	0	0
Chemistry-Other	25	0	0	30	1	0	19	0	0
Geology-Other	10	5	0	9	0	0	9	2	0
Other Biology	42	2	0	61	1	0	66	2	0
Other Mathematics	7	0	0	7	0	0	8	0	0
Other Physics	3	0	0	7	0	0	9	0	0
Science-General or Undeclared Major	0	0	0	1	0	0	0	0	0
Business	186	0	0	186	0	0	167	0	0
Accounting	41	0	0	37	0	0	33	0	0
Commerce, Management, Business Admin, Administrative Studies/Science-Other	125	0	0	123	0	0	110	0	0
Information Management	20	0	0	26	0	0	14	0	0
Management							10	0	0
Arts	96	0	0	94	1	0	101	0	0
Coady Institute	0	0	37	0	0	49	0	0	53
Computer Science	12	5	0	9	5	0	6	3	0
Education	0	155	122	0	153	138	0	128	111
Engineering - Associated Insts	31	0	0	32	0	0	20	0	0
Home Economics	43	0	0	34	0	0	42	0	0
Nursing	147	0	0	121	0	0	117	0	0
Physical Education	109	0	0	99	0	0	107	0	0
Psychology	70	0	0	69	0	0	73	0	0
Social Sciences	57	0	0	84	0	0	84	0	0
Theology	5	0	7	3	0	14	10	0	14
Visual and Performing Arts	24	0	0	16	0	0	22	0	0
Total	873	167	166	868	161	201	864	135	178

Figure 5.7: St. Francis Xavier University Graduates by Program (2008-2012) (cont'd)

Program & Major Field of Study	2009			2008		
	Bachelors	Masters	Other	Bachelors	Masters	Other
Science	111	4	0	108	3	0
Aquaculture & Fisheries	2	0	0	7	0	0
Chemistry-Other	34	0	0	34	1	0
Geology-Other	7	1	0	7	0	0
Other Biology	54	3	0	46	2	0
Other Mathematics	9	0	0	9	0	0
Other Physics	5	0	0	5	0	0
Science-General or Undeclared Major	0	0	0			
Business	210	0	0	157	0	0
Accounting	49	0	0	47	0	0
Commerce, Management, Business Admin, Administrative Studies/Science-Other	139	0	0	94	0	0
Information Management	16	0	0	10	0	0
Management	6	0	0	6	0	0
Arts	116	0	0	122	1	0
Coady Institute	0	0	46	0	0	57
Computer Science	9	2	123	4	2	0
Education	0	85	0	0	88	101
Engineering - Associated Insts	34	0	0	14	0	0
Home Economics	39	0	0	32	0	0
Nursing	152	0	0	129	0	0
Physical Education	104	0	0	90	0	0
Psychology	73	0	0	69	0	0
Social Sciences	84	0	0	95	0	0
Theology	5	0	19	5	0	30
Visual and Performing Arts	10	0	0	15	0	0
Total	947	91	188	840	94	188

Source: StFX University Registrar

An ongoing supply of skilled labour is also available through the Nova Scotia Community College campuses in the broader region, including those in Pictou and the Strait Area, as shown below.

Figure 5.8: Community College Graduates in Target Sectors

Campus	Program Description/ Program Concentration	2012	2011	2010	2009	2008
		Graduates				
Pictou	Business Administration					
	Business Administration	1	4	4	3	2
	Business Admin-Accounting	19	19	27	13	17
	Business Admin-Marketing	4	7	8	3	5
	Business Admin-Management	0	1	0	0	0
Pictou Total		24	31	39	19	24
Strait Area	Business Administration					
	Business Administration	2	4	3	0	0
	Business Admin-Accounting	6	6	4	14	14
	Business Admin-Software & Info Mgmt		1	0	0	0
	Nat Res Environmental Tech Dip					
	Nat Res Environmental Tech Dip	22	19	15	13	17
Strait Total		30	30	22	27	31
Total		54	61	61	46	55

Source: Nova Scotia Community College

5.1.5. Population Age Characteristics

The portion of the work force in the prime working age group (generally considered to be 25 to 45 years of age) is a factor that companies and site selectors consider when comparing communities as a place to invest. In this regard, while Antigonish county compares quite well to other counties in the region as shown in Figure 5.9, it has a lower portion of population in the prime working age group compared to the province overall (22.6% compared to 26.5%)³.

Figure 5.9: Population Age Characteristics - Counties in Antigonish Region

Prime Working Age Cohort	Antigonish	Pictou	Inverness	Richmond	Guysborough
25 to 29 years	1,045	1,995	640	315	265
30 to 34 years	1,025	2,415	775	400	270
35 to 39 years	1,115	2,705	935	510	385
40 to 44 years	1,235	2,905	1,120	580	450
Total 25 to 44 years	4,420	10,020	3,470	1,805	1,370
% Total Population	22.6%	20.0%	19.3%	19.4%	16.8%
Median Age of Total Population	42.0	46.0	47.3	49.6	52.3

Source: Statistics Canada, Census Profile, 2011 Census.

5.1.6. Highest Educational Attainment

The prime working age group within Antigonish (town) is particularly well-educated, with 38.4% having a university degree in 2006 compared to 33.5% in Halifax and 23.8% in Nova Scotia overall. The educational attainment of the prime working age in Antigonish county is also higher than the provincial level, with 28.5% having a degree. However, it should be noted that while the educational attainment level in Antigonish as a portion of overall population educational attainment is high, the actual number of persons with degrees is not large – 315 in Antigonish, and 1,255 in the county overall, including Antigonish town. Educational attainment levels are shown in Figure 5.10.

From an investment attraction perspective, the relatively high educational attainment of the prime working age group in Antigonish is a strength, although the relatively low number of well-educated labour could be considered a weakness in comparison with larger communities.

³ Note: this doesn't take into account the university population that are not full-time residents in Antigonish.

Figure 5.10: Highest Certificate, Diploma or Degree of Prime Working Age Group (25-44 yrs)

	Antigonish (CTY)		Antigonish (T)		Halifax RGM		Nova Scotia	
	#	%	#	%	#	%	#	%
Total - Highest certificate, diploma or degree	4,405		820		111,485		240,795	
No certificate, diploma or degree	430	9.8%	75	9.1%	10,085	9.0%	33,065	13.7%
Certificate, diploma or degree	3,975	90.2%	745	90.9%	101,400	91.0%	207,720	86.3%
High school certificate or equivalent	690	15.7%	190	23.2%	21,975	19.7%	50,890	21.1%
Apprenticeship or trades certificate or diploma	695	15.8%	60	7.3%	11,195	10.0%	30,365	12.6%
College, CEGEP or other non-university certificate or diploma	1,190	27.0%	150	18.3%	25,860	23.2%	59,325	24.6%
University certificate, diploma or degree	1,400	31.8%	335	40.9%	42,365	38.0%	67,145	27.9%
University certificate or diploma below bachelor level	155	3.5%	20	2.4%	5,065	4.5%	9,910	4.1%
University certificate or degree	1,255	28.5%	315	38.4%	37,300	33.5%	57,230	23.8%
Bachelor's degree	780	17.7%	200	24.4%	25,930	23.3%	40,465	16.8%
University certificate or diploma above bachelor level	170	3.9%	55	6.7%	2,905	2.6%	5,080	2.1%
Degree in medicine, dentistry, veterinary medicine or optometry	50	1.1%	30	3.7%	1,070	1.0%	1,505	0.6%
Master's degree	185	4.2%	30	3.7%	6,275	5.6%	8,740	3.6%
Earned doctorate	60	1.4%	10	1.2%	1,115	1.0%	1,435	0.6%

Source: Statistics Canada, 2006 Census, Catalogue Number 97-560-XCB2006008.

5.1.7. Investment Attraction ‘Ambassadors’

A very important asset in Antigonish is the commitment and passion of a group of highly educated and accomplished individuals who are well qualified to act as ambassadors for investment attraction. Some of these individuals are already represented on the Steering Committee. It will be important to involve these individuals in the implementation of the study recommendations for the target sectors, particularly in meetings with target prospects.

5.2. Infrastructure and Market Access

5.2.1. Connectivity/Telecommunications

Availability of advanced information and communications technology (ICT) services was rated as being important by over 80% of site selectors in a 2011 survey undertaken by Area Development Magazine. A reliable and fast internet service/connectivity is important for various sectors including professional and financial services. It is a key consideration for back office operations as they need to reliably receive and transmit large volumes of data. It is also essential for other businesses that require high quality video conferencing capacity for meetings.

High speed broadband internet service is offered through Bell Aliant, Eastlink, and Seaside Communications in Antigonish and most of the county.

StFX is wired in high-speed fibre optics connections for ACENET, CANARIE and ACORN research consortia.

5.2.2. Access to a Four-Lane Highway

Highway accessibility was rated as the most important site selection factor in a 2011 survey undertaken by Area Development Magazine. It is important for most sectors, although particularly important for businesses in the manufacturing sector with high levels of inbound and outbound shipments. Highway accessibility is not as important for other sectors including the target sectors for this study. However, it is a consideration in terms of easy access for employees and visiting company representatives, business travel, and personal travel by employees (particularly transferees and out-of-town recruits).

Antigonish and communities in the county are well served by easy access to the Trans-Canada Highway, which is mostly a four-lane divided highway between Halifax and Antigonish. However, it is noted that around 37 km along the Trans-Canada Highway west of Antigonish is not a controlled access divided highway, which adds somewhat to travel time between Halifax and Antigonish.

5.2.3. Airport Access

From an investment attraction perspective, access to an airport is important for a number of reasons:

- Ease of access by company representatives visiting from head office or branch offices located outside the region and province;
- For transportation of high valued and fragile goods and materials – both inbound and outbound;
- As a quality of life factor for transferees and recruits for personal travel.

Access to a major airport was rated as important by over 80% of site selectors in a 2011 survey undertaken by Area Development Magazine. The importance of access to a major airport varies by sector, being less important for the manufacturing sector, and more important for sectors with fragile, high value goods and those that require specialized, well-educated labour and business travel to and from centres located long distances away. Access to an international airport is particularly important for foreign based companies, including those in the back office operations segment of the financial services sector. Ideally, an airport should be easily accessible within a 1 hour drive.

The Halifax International Airport is located 185 km (roughly 2 hours drive) away from Antigonish, which is less than ideal. Smaller airports are located in Port Hawkesbury (54 km away from Antigonish) and Trenton in Pictou county (roughly 63 km from Antigonish).

The distance to an international airport may result in Antigonish being considered less attractive as a location for back office operations of foreign based companies than communities with better access; however, this could be traded off against some key strengths such as the presence of the university and the resulting ongoing supply of educated labour. As well, this disadvantage could somewhat be counterbalanced by the availability of high quality video conferencing and telecommunications capacity. Additionally, easy access to an international airport could be less important for back office

operations that are a secondary supporting operation, such as a support operation to a main back office operation in Halifax.

5.2.4. Rail Access

Rail access is important for sectors and businesses with heavy inputs and outputs that require reliable but relatively inexpensive inbound and outbound transportation. Railroad service was identified as an important site selection factor by less than 40% of site selectors in a 2011 survey undertaken by Area Development Magazine, which confirms that rail access is only important for specific industries.

Rail access is not considered to be important for the financial services industry but could be important for companies manufacturing component parts in the renewable energy sector. Additionally, access to passenger railway services could be considered an amenity for personal travel for employees.

Cape Breton and Central Nova Scotia Railway (CBNS) corridors run directly through Antigonish county, although needs to be accessed in Truro or Sydney. It carries about 30,000 carloads a year including woodpulp, chemicals, newsprint, paper, steel, etc. The CBNS interchanges with CN at Truro and with the Sydney Coal Railway (SCR) at Sydney.

Passenger train service is provided by Via Rail, with the closest station being located at Truro, which is roughly 123 km or 1 hour and twenty minutes away from Antigonish. Via Rail has recently reduced its service to a few days a week.

Rail access is not considered to be of prime importance to the target sectors in this study.

5.2.5. Port Access

Waterway or oceanport accessibility was only rated as important by about 26% of site selectors in a 2011 survey undertaken by Area Development Magazine, confirming that port access is only of importance for a small number of sectors such as manufacturing, particularly for operations with heavy inbound and outbound shipments that need this type of transportation for long distances. The closest port is the Port of Halifax, which is roughly 220 km from Antigonish. Mulgrave is a smaller port in terms of warehouse and container traffic, located about 50 km from Antigonish town. The presence of a port within a short distance (less than 1 hour) is a strategic asset even if the likelihood remains that the economics of transportation dictate that Halifax will remain the principal port of entry for significant shipments destined for/ shipped from Antigonish.

Port access is not considered to be a significant factor for the target sectors, although it is for other growing sectors in the broader region (for example, ocean industries are expected to grow rapidly, including those in the Strait area).

5.2.6. Market Access

Proximity to major markets was rated as important by around 94% of site selectors in a 2011 survey undertaken by Area Development Magazine. Access to major markets is more important for some types of sectors such as manufacturing segments that rely on 'just-in-time' delivery. For businesses in the manufacturing sector, preference is given to locations within one day's driving distance. The distance to major markets from Antigonish is significantly further (for example, about 1,807 km driving distance to large markets in Ontario such as Toronto; about 1,260 km driving distance to Montreal; 1,430 km to New York; and 2,648 km to Chicago). This makes the location less attractive than areas closer to major markets for large scale manufacturing; however, Antigonish could be a viable location

for small manufacturers targeting closer market areas such as the Eastern or Atlantic Region, which could be the case for some manufacturers of renewable energy equipment.

Access to major markets is not considered to be a key factor for financial services sector businesses as they serve local markets or support front office operations through back office operations that can be located a significant distance from the front office.

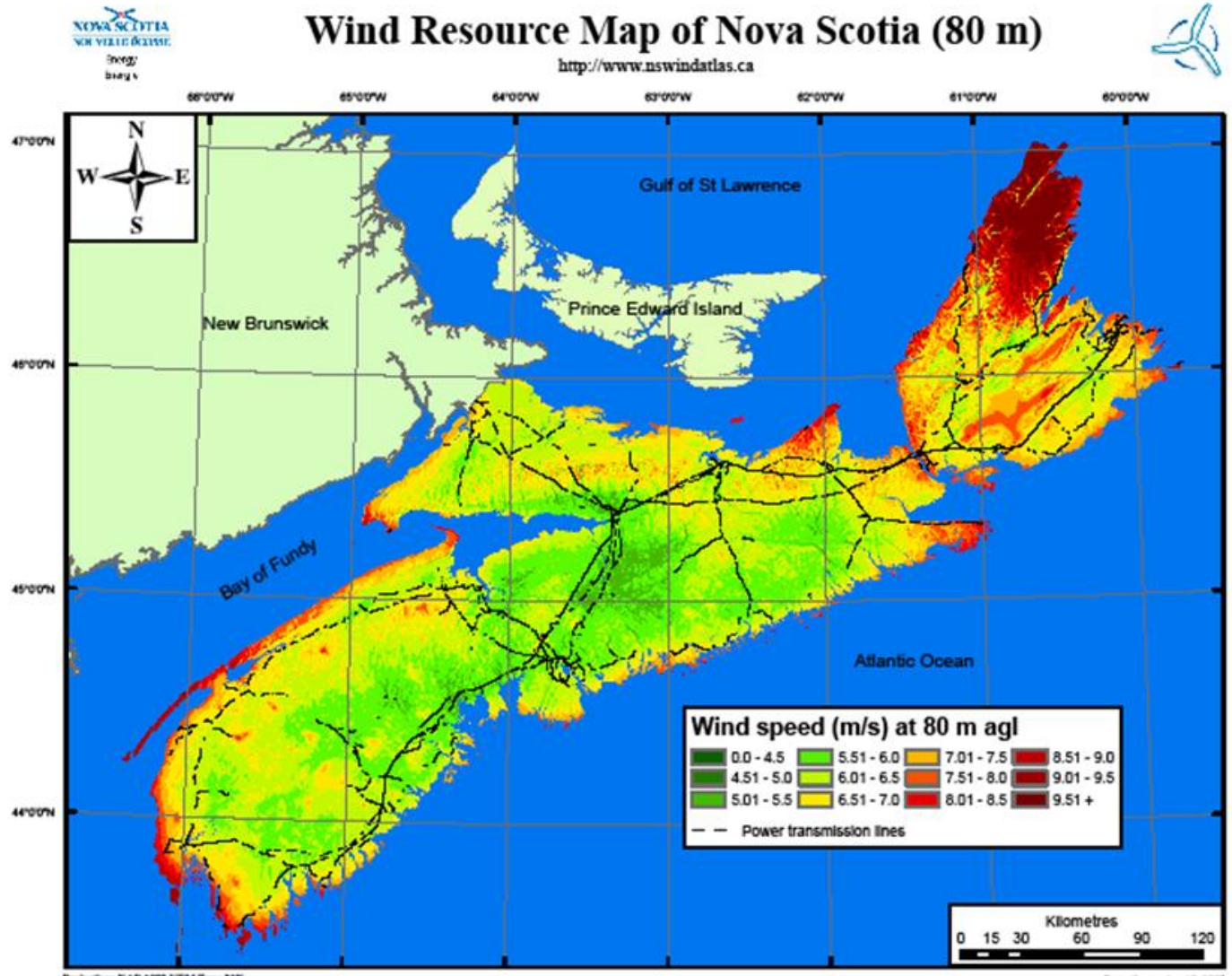
5.3. Renewable Resources

An ongoing supply of renewable resources that can be accessed in a cost effective manner is important for companies in selecting a location for renewable energy power generation, whether this is biomass from forestry waste or power from wind, tidal flow or the sun.

Antigonish county is within one of the highest wind speed areas in Nova Scotia as shown on the following page. These wind resource contours reflect consistent wind resource potential. This high wind speed makes Antigonish county an attractive location for wind energy development. It is noted, however, that Cape Breton may be more attractive as a location for wind energy development as a large portion of the island is in a high wind speed area.

The experience of wind power generation versus solar field development in Canada is particularly relevant. While the capital costs for original equipment and installation are greater, and some of the regulatory implications of large wind turbines present an important risk to the successful and timely development of the projects, wind energy projects do not create the same level of land sterilization as solar projects. For example, a 10 MW of solar development might require between 50 to 100 acres of land, and represents a long-term and primary use of the land. In comparison, wind projects can and do enable agricultural activities to continue and often occur with less ground-level impact.

The N.S. Provincial Energy Minister announced a freeze on new wind projects over 50 kW in 2012, but the Province is still accepting applications under the COMFIT program for projects under 50 kW. However, the majority of existing COMFIT wind project proposals are reported as being over the 50 kW limit and there is also a backlog of COMFIT applications that have not yet been reviewed. Grid capacity issues are central to the reality of this sector being a viable opportunity.



Projection: NAD 1983 UTM Zone 20N

Date: September 18, 2007

nsc
Applied Research

This map describes the wind resource of the Province of Nova Scotia at the elevation indicated above the ground level (agl) at a resolution of 200 m based on the Canadian Wind Energy Atlas (2004) data at 5 km resolution (www.windatlas.ca) and Anemoscope 1.5.5 model. Although it is believed to represent an accurate overall picture of the wind resource, estimates at any location should be confirmed by measurements. The authors are not responsible for the use of the present map.

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5.4. University/Technical Schools

Access to a technical college/training was identified as being an important site selection factor by 56% of site selectors in a 2011 survey undertaken by Area Development Magazine. It is more important for sectors requiring an ongoing supply of specialized labour, and those that need research and development (R&D) expertise for product innovation. The presence of a university and technical colleges is also an important quality of life factor for transferees and recruits. Information on the number of graduates from StFX and the Nova Scotia Community College was provided in Section 5.1.4.

St. Francis Xavier University (StFX)

St. Francis Xavier University has consistently been rated as one of the top undergraduate universities in Canada. The university includes four Faculties (Arts, Science, Business and Education). It has 36 undergraduate programs, 8 graduate programs (mainly focused on sciences) and over 257 full-time and 64 part-time faculty members. StFX has seven Canada Research Chairs (CRCs) and there are approximately 50 active research programs on campus. With regard to the target sectors, the presence of StFX is a strong asset in terms of its business school and supply of graduates and its research programs in Earth Sciences, Chemistry, and Environmental Sciences. StFX is home to the Environmental Sciences Research Centre (ESRC) with expertise in hydrogeology and water resources, aquatic and soil biogeochemistry, and a natural source for commercializing ideas for cleantech and green tech. StFX is also home to the Centre for Applied Petroleum Sciences (CAPS) and a natural source for commercializing ideas for energy and renewable resource development.

StFX has made the commitment to supporting research in renewable energy and environmental/clean technologies, and this commitment is a strength in increasing the attractiveness of Antigonish for research and commercialization opportunities in renewable energy and environmental/clean technologies. The 'Energy, Natural Resources, and Environmental' cluster is identified as one of six major research areas in the StFX's Strategic Research Plan (2012). Specifically, in the published Strategic Research Plan Summary (2012) document, it is stated that "the primary themes of this cluster draw together a vast range of investigation, from basic, curiosity driven research to applied, product driven outcomes. Research in this cluster encompasses some of the most relevant areas of current human endeavour in today's rapidly changing world, and includes subjects such as alternative energies and environmental sustainability. Researchers in this area seek knowledge that will not only contribute to further, fundamental understanding of these themes and closely related areas, but will also be key to improving humanity's ability to cope and co-exist with the environment in the future."

The StFX Industry Liaison and Knowledge Transfer Office (ILKTO) has been very instrumental in promoting and furthering the research and early commercialization projects at StFX, and in obtaining critical funding for research efforts, including those in the Energy, Natural Resources, and Environmental cluster research.

Some of the key initiatives by the ILKTO in this cluster have included:

- Working with the Biofouling Research Team, ILTKO secured \$150,000 from Encana to launch research projects within the Centre for Applied Petroleum Science at StFX;
- Gemini Surfactant Technologies Research Laboratory: One spin-off company; five license agreements; leveraging assistance of \$93,500; facilitating technology license with GreenCentre Canada;

- Biogeochemical-Physical Climatic Processes Centre: two spin-off companies; one license agreement; leveraging assistance of \$660,000;
- Supporting faculty research and working with Dr. David Risk, helping to secure StFX's reputation for expertise in the field of monitoring soil gases in the rapidly growing industry of Carbon Dioxide Capture and Sequestration (CCS). This research focuses on the development of new technologies, procedures, protocols and business practices that will ensure the safe removal and enhanced disposal of greenhouse gas emissions from industrial processes into the atmosphere. Spin-off companies have included Forerunner Research Inc. and Enterre. Over \$656,000 from 18 separate awards has been raised from applications prepared by the ILTKO for R&D work in this area;
- Asia Pacific Partnership - \$289,000; collaboration with Chinese Academy of Sciences, British Geological Survey, HTC Pureenergy.

Faculty and students at StFX are actively involved in green technologies as noted below.

Green Chemistry

- StFX has had a key role in research and commercialization of technologies using green chemistry, which is “smart” chemistry that encourages the design of products and processes that reduce waste, provide safer products, and reduce the use of energy and resources;
- Research into greener surfactants has earned StFX the distinction of being the first Canadian institution to complete a technology licence for a new surfactant compound developed at the university with GreenCentre Canada (which is located at Queen's University, formed in 2009 and funded by the governments of Ontario and Canada, and industry). Surfactants are a class of compounds used in a vast range of consumer products, including cleaners, personal care products and paints, and in industrial processes such as oil and gas drilling;
- In addition to the surfactant technology, GreenCentre has also licensed compounds developed at StFX for use in drilling fluids used in the oil and gas drilling industry. These “shale hydration inhibitors” address problems caused by drilling through shale layers, where water seepage can cause the rock to swell, putting pressure on the drill and making bore holes unstable.

Greenhouse Gas Emissions/CO₂ Monitoring

- Research on new sensor probe: the technology, which measures gas emissions from soils, was patented by StFX. The instrument measures CO₂ and other gas releases from soils;
- Development of computing methods that help build robust surface CO₂ monitoring networks;
- Projects where researchers are trying to combine these first two technologies for real world application: Capture and Storage, where CO₂ is disposed of underground in depleted or non-producing oilfields rather than released to the atmosphere;

- StFX University researchers are part of the Network of Centres of Excellence (Industry Canada) called Carbon Management Canada (CMC). This network combines the expertise of a multidisciplinary research team which develop technologies necessary to rapidly “decarbonise” fossil fuel production and utilization. In partnership with industry and government, CMC's vision is to develop the technologies necessary to reduce Canada's annual greenhouse gas (GHG) emissions;
- Project to develop single-molecule level multi-species nanowire-based sensors for carbon emissions;
- Forerunner Research Inc. is a StFX spin-off company based on groundbreaking technology. Forerunner's instruments are used for long-term monitoring of CO₂ and other gases.

Wind/Geothermal Energy Project

This is an Atlantic Innovation Fund Project of ACOA at StFX. It is formally titled "Creating Knowledge Based Advantages in Renewable Energy Sources for Atlantic Canada". The project encompasses a number of sub-projects, such as the examination of geothermal energy and the examination of climate change and associated impacts to wind energy:

- Project addresses the need to clearly establish the capacity for alternative sources of energy in the Atlantic Canadian region;
- Aims to make a significant contribution to regional efforts by encouraging the private industry to invest in sources of renewable energy through geothermal and wind power sources;
- Examines the potential for sustainable geothermal energy development in Atlantic Canada and focuses on industrial applications for direct-use of Earth energy and will examine which environments are most suitable for geothermal development;
- The project also studies the suitability of operating conditions for small and large wind farms to ensure quality in the electricity generation supply and guidance in the long-term management of large and small-scale wind farms.

Nova Scotia Community College

Campuses of the Nova Scotia Community College are located in Pictou, Truro and the Strait Area, as well as elsewhere in the province. Alternative Energy is one of the areas of applied research at the college.

5.5. Living Conditions/Quality of Life

5.5.1. Distance to Major Communities/Culture/Entertainment

Access to major communities and culture/entertainment is an important quality of life factor, particularly for transferees and recruits and young workers. This factor is more important for small communities that don't have a wide range of amenities and entertainment, dining and shopping options.

Antigonish is within roughly a 2.5-hour drive of Halifax and 3-hour drive from Moncton, which are options for culture, entertainment, and shopping, particularly for overnight visits.

5.5.2. Hospital

Access to good quality medical services is a quality of life criterion that companies and talent consider in locational decisions. In this regard, Antigonish is well served by St. Martha's Regional Hospital, which is a full service hospital. It is reported on the hospital's web site that 20 family physicians and 32 specialists practice in Antigonish.

The availability of a regional hospital is an investment attraction asset as a quality of life factor for transferees and recruits.

5.5.3. Housing Costs

Based on information from Mary Pat Realty in Antigonish, the average cost of housing in Antigonish is as follows:

- average selling price for a bungalow is \$198,432
- average selling price for a detached 2-storey home is \$208,824

The cost of housing in Antigonish is significantly lower than housing costs in larger urban communities.

5.5.4. Crime Level/Safety

Crime levels are also a quality of life consideration for business operations and for transferees and recruits.

Antigonish has the reputation as a low crime area, and it will be important to back this up with crime statistics in promoting the region as a safe area.

5.5.5. Small Town Charm

The small town charm and attractiveness of Antigonish is an asset that has been a factor in attracting new population and talent to the region, and may help contribute to the attractiveness of the area for new investment in the target sectors. Although Antigonish has an enviable downtown, the 'big box' development in the town is detracting from this small town charm.

It is expected that the planned Gateway development will increase the attractiveness of Antigonish for businesses and residents.

5.6. Employment Lands and Buildings

5.6.1. Industrial Park

A light industrial park is located in Antigonish county, approximately 8 km east of Antigonish on the Trans-Canada Highway at Lower South River. The park presently egresses directly onto Highway 104, which has recently been by-passed by a new twinned-highway around the town.

The park is comprised of 100 acres of serviced industrial land, and presently is home to a small number of wholesale and light industrial uses, some which are space extensive. It appears that, depending on size requirements, roughly 6 to 8 more operations could be accommodated. The vacant land in the park is owned by the County. This area could be a suitable location for small manufacturers of component parts in the renewable energy sector.

It is reported in the recent Gateway Study that the County is preparing to plan infrastructure for a possible business park near the Beech Hill Road Exit (behind the County Building) to accommodate any future light industrial or service commercial uses closer to the town.

5.6.2. Commercial Buildings/Incubator Centre

Other types of businesses in the target sectors such as those in the financial services sector and the renewable energy research/green technologies would likely be most interested in locations in the downtown or other commercial areas in Antigonish, and those close to the university. The Antigonish Gateway lands have been identified as an area that would be suitable for small scale office space for the services sector. This area could be appropriate for small scale financial services businesses serving the regional area.

An incubator facility would also be an asset for businesses related to clean technologies. A major recommendation of the MRA 2010 Investment Attraction Research Study was the development of an incubator mall to field and potentially commercialize ideas generated from university, and to a lesser degree, hospital sources.

5.7. Business Operating Costs

5.7.1. Labour Costs

Labour costs are the most significant operating costs for large operations such as back office operations. Labour costs in the Antigonish region are lower than those in the Halifax region, and lower for some positions compared to Nova Scotia overall as shown in Figure 5.11. Antigonish is included in the North Shore region for reporting of wage data by Human Resources and Skills Development Canada. Labour costs in Antigonish are also considerably lower than costs for labour in larger communities elsewhere such as those in Ontario.

Antigonish's low labour costs are a competitive advantage.

Figure 5.11: Financial Services Sector Wage Comparisons

NOC	Job Position	Nova Scotia	Halifax Region	North Shore Region
		Median Wage (\$/hr)		
1431	Accounting and Related Clerks	18.00	18.00	15.00
1434	Banking, Insurance and other Financial Clerks	18.22	18.22	18.22
1212	Supervisors, Finance and Insurance Clerks	21.98	21.54	15.96
0121	Insurance, Real Estate and Financial Brokerage Managers	28.85	30.77	28.85
0122	Banking, Credit and Other Investment Managers	29.36	31.25	29.36
1112	Financial and Investment Analysts	25.64	26.44	n/a
1433	Customer Service Representatives – Financial Services	14.97	16.00	14.97

Source: Labour Market Information – HRSDC

5.7.2. Property Taxes

Antigonish has the lowest commercial property tax rates in Nova Scotia, considerably lower than tax rates in the Greater Halifax Area, as shown in Figure 5.12.

Figure 5.12: Municipal Commercial Property Tax Rates

Area	2007/08	2008/09	2009/10	2010/11	2011/12
Antigonish Town	2.19	2.27	2.36	2.47	2.50
Antigonish County	1.32	1.40	1.48	1.48	1.48
Halifax Region					
Halifax	-	3.71	3.69	3.83	3.78
Halifax Urban Core	3.68	3.73	3.71	3.84	3.80
Darhmouth	-	3.73	3.71	3.84	3.80
Bedford	-	3.70	3.71	3.84	3.80
County Urban	-	3.70	3.69	3.84	3.80
County Rural	3.20	3.19	3.22	3.39	3.37
County Suburban	3.65	3.68	3.67	3.83	3.78

Source: Government of Nova Scotia

5.7.3. Energy Costs, Availability & Reliability

Energy availability and costs were rated as being important by over 88% of site selectors in a 2011 survey by Area Development Magazine. Inexpensive energy could potentially be available in Antigonish and Guysborough from the existing Maritime and Northeastern Gas Pipeline (in the short-term, this may depend on existing contracts). This inexpensive energy could be an asset for target sectors as well as other sectors in Antigonish. Additionally, the power supply is reliable and Antigonish not prone to forces of nature such as hurricanes. This is important for both financial back office operations and data centres.

5.8. SWOT Analysis

The Antigonish region has many competitive advantages for attracting and retaining investment in all sectors of the economy. These advantages include:

- Growing population – the population level in Antigonish county increased by 4% between 2006 and 2011; the population level in the town increased by 6.8% – this represents an increased market for services and possibly an increase in the labour supply.
- Prime working age population (25-44 years) is well-educated: 38.4% of the population in this age cohort in Antigonish town had a university degree compared to 23.8% for Nova Scotia overall in 2006; 28.5% in Antigonish county had a university degree in 2006.
- A larger labour force than just labour residing into the county: the labour force extends into parts of the surrounding counties.
- Low business operating cost advantages compared to Halifax (labour cost advantages, land and commercial lease rates, power costs, property taxes).
- Low turn-over of employees (note: this will need to be substantiated through discussions with businesses in the target sectors).
- Stable power grid and reliable high speed internet/connectivity.
- High quality of life assets for transferees and recruits – highly rated undergraduate university; small arts and culture centre; low crime rate; regional hospital; low housing costs and low property tax rates relative to large centres such as Halifax; Antigonish can offer an attractive lifestyle for families and recreational/outdoor enthusiasts.
- 2-3 hour drive to larger centres such as Moncton and Halifax and recreational areas such as PEI for weekend getaways.
- Potential to attract expatriates (including graduates of StFX).

Other strengths, as well as weaknesses, opportunities and threats specific to the target sectors for this study are identified in the following sections.

5.8.1. Financial Services Sector

Strengths

- Long-term ongoing supply of new labour from StFX – averaging 181 business (BBA) graduates per year over the past five years.
- Presence of the Gerald Schwartz School of Business at StFX.
- Time zone that overlaps both Europe and North America.
- Reliable power grid/supply and power linesmen who are employed by the Town of Antigonish and available to service private sector operations in the event of a power disruption – this is particularly important for financial services back office operations and data centres.
- Antigonish county is not prone to extreme weather conditions or forces of nature such as hurricanes (which could result in power outages and disrupt telecommunications in some other locations). For example, Antigonish fared much better than Halifax in both Hurricane Juan and White Juan, with minimal damage in Antigonish and only short-term power outages.
- Well-qualified individuals on the Steering Committee (and possibly others) with a strong understanding of the financial services sector, who could act as local ‘ambassadors’ and take a key role in investment attraction activities.

Weaknesses

- Financial services sector is not a current strength – no critical mass of financial services businesses or back office operations in Antigonish.
- Small experienced labour force in the financial services sector in Antigonish.
- Lacks nearby international airport – approximately 2-hour drive to an international airport, which is less than optimal, particularly for foreign based financial services companies establishing back office operations – doesn’t allow ease of access for visiting company representatives.
- Antigonish is a much smaller community and is not within the size range of communities where back office operations typically locate.

Opportunities

- May be an opportunity to attract Canadian branches of asset management, investment banking and financial planning services firms, as well as some branch offices of foreign based firms that already have a presence in Nova Scotia or Atlantic Canada. This would supplement the choice in available financial services providers for the population, and increase the depth of the sector.
- Opportunity to market Antigonish as a cost effective secondary back office operation location, supporting existing main back office operations in Halifax, particularly once the sector is at capacity in Halifax. Antigonish is an easily accessible location for these main back operations through highway travel (2.5-hour drive) for in-person meetings and via teleconferencing.

- Potential for back office operations of outsourcing firms, and secondary back office operations of segments that NSBI has been targeting, which have located in Halifax (e.g., hedge fund administration, reinsurance, due diligence) and data centres.
- Solicit the assistance of NSBI to market Antigonish as a viable location for financial services back office operations and data centres, and to help attract such operations to Antigonish.

Threats

- Competition from larger communities that have been successfully attracting back office operations or from other communities which may be viewed as viable alternatives to those centres, being cost effective locations and in proximity to large centres and an international airport.
- Substantial restructuring and consolidation in the sector, could potentially result in companies not relocating or expanding operations to new regions in the short term.
- Weak U.S. dollar relative to the Canadian dollar – not a large cost advantage for US firms in locating back office operations in Canada presently.

5.8.2. Renewable Energy and Clean/Green Technologies Sectors

Strengths

- StFX has research and commercialization expertise in various areas of renewable energy and clean/green technology. University faculty has demonstrated they can develop products for commercialization in the clean technologies sector. Researchers at StFX are keen on working with industry.
- The StFX Industry Liaison and Knowledge Transfer Office (ILKTO) has been instrumental in furthering the research and early commercialization projects at StFX in the Energy, Natural Resources, and Environmental Cluster research, and facilitating collaboration with Industry. It has been highly effective in accessing government and private sector funding and partnerships and in commercialization of research.
- An Incubation Centre on campus is in the feasibility assessment phase, and if developed, could serve as a focal point for new companies in the clean/green technologies sector, and support synergies and collaboration between the university researchers and industry.
- Ongoing supply of new labour - graduates in the Earth Sciences, Chemistry and Environmental Sciences programs at StFX.
- The potential for wind power in Antigonish county is highly rated on the Province's Energy Map, and Antigonish and the broader region have attracted wind power projects.
- Provincial funding is available for renewable energy projects and cleantech start-ups.
- Well qualified individuals on the Steering Committee (and possibly others) with a strong understanding of clean/green technologies, who could act as local 'ambassadors' and take a key role in investment attraction activities/discussions with target prospects.

Weaknesses

- A component of the renewable energy sector is equipment manufacturing – however, the Antigonish region does not have a strength in manufacturing, as demonstrated by the low number of manufacturing jobs in the county.
- Long distance to major markets in Canada and the U.S – for businesses in the manufacturing sector, preference is given to locations within one day’s driving distance. The distance to major markets from Antigonish is significantly further (for example, about 1,807 km driving distance to large markets in Ontario such as Toronto; about 1,260 km driving distance to Montreal; 1,430 km to New York; and 2,648 km to Chicago). This limits the attractiveness of Antigonish for large renewable energy component parts manufacturing.
- The provincial energy grid is presently tapped out for large wind power projects; regional biomass dedicated to Pulp Mill boiler; and Antigonish is not near tidal developments.
- Cleantech is not a developed sector in Antigonish region at present.

Opportunities

- May be opportunities for small-scale renewable energy component parts manufacturing targeting regional markets; however this investment would likely be sourced locally or regionally rather than through FDI.
- May be opportunities to attract servicing/replacement parts for wind turbines and renewable energy projects, however this investment would likely be sourced locally or regionally rather than through FDI.
- Opportunities for small wind power projects through COMFIT.
- Opportunity for building on the research and commercialization projects at StFX in the clean/green technologies sectors, and attracting further investment in that sector.
- Opportunities to build upon StFX’s role in clean/green technologies and synergies with other universities focusing on those areas.
- Opportunities to market Antigonish as a supportive business environment for clean technology businesses, with an incubator centre (when established) and available university research facilities and opportunities for R&D collaboration.
- Opportunities for attracting clean technology businesses in segments where researchers at the StFX have already been active (e.g., carbon dioxide capture and sequestration, green chemistry: surfactant technologies, biogeochemical physical climate processes, shale hydration inhibitors, gas emissions/CO₂ monitoring, etc.).

Threats

- Significant competition from other communities across North America, with strong government programs/incentives in place. Nova Scotia is not well placed to either fund a provincial program of comparable incentives or to compete on the basis of access to market.
- Provincial power grid capacity issues – new and planned wind power developments bring the NS power grid to maximum capacity of approximately 500 megawatts, meaning there is no additional capacity for large new wind projects at this time and to accommodate new projects at a later point (2020) would require the Maritime link, which will force new grid upgrades.
- Heavy reliance on government funding for renewable energy projects and cleantech start-ups.

6.0. Best Practices in Investment Attraction

Investment attraction activities, undertaken in a targeted manner as part of a broader economic development program, can help grow local and regional economies. However, investment attraction is the most expensive area of economic development and often the returns on these activities are less than returns on other types of economic development such as retention and expansion programs. Therefore, in considering and planning investment attraction activities, it is important that economic development agencies take into account the best practices and approaches for investment attraction, and carefully assess the costs and likely returns from investment attraction efforts.

Key considerations and best practice approaches in investment attraction are discussed below and on the following pages. Many of these are applicable to broader economic development planning, not just investment attraction.

The discussion is organized into three parts:

- An overview of non sector-specific best practices in investment attraction;
- A discussion of some of the best practices/examples of investment attraction marketing by economic development organizations in the financial services sector;
- A discussion of how economic development organizations and universities are partnering to attract and support development of businesses in the clean technologies sector.

6.1. Investment Attraction Best Practices

6.1.1. Take a Regional Approach to Investment Attraction

Businesses and site selectors initially consider broad regions in the site selection process, rather than communities. Regions may be very broad such as eastern, central or western regions within Canada or the United States. After a high level assessment is undertaken at a broad regional level, potential investors and site selectors then drill down to smaller regions. The regions that will be considered depend on the strength of the assets of those regions for the type of investment being considered. Core regional assets include the regional labour supply, educational and research facilities, infrastructure, market access, quality of life attributes, and other regional factors. Communities within those regions are then assessed on the extent to which they meet the specific locational needs of the business.

Ensuring competitiveness of core regional assets is an important part of positioning communities in a region as attractive locations for investment. Competing effectively for new investment requires a regional approach and pooling of resources. This is strategically important as well as a financial necessity - communities, particularly small communities, do not have the resources to effectively market and compete for investment on their own.

A consistent approach and vision for economic development in a region and marketing of its assets in a unified consistent manner is essential to present the region as a desirable location for new investment. This requires that economic development agencies and key stakeholders in the broad region work together to address any inadequacies and promote regional value propositions. Collaboration of communities in the region is needed to develop a regional approach to economic

development and investment attraction, taking into account the interconnectedness and distinct assets and roles, and leveraging strengths.

6.1.2. Ensure Target Sectors are Appropriate

A key step in an investment attraction program is first to ensure that the chosen sectors/segments are appropriate as investment attraction targets for the area. There needs to be a good fit between what the region has to offer and the locational needs of businesses in the target sector/segment, as well as moderate to high growth potential. This requires an objective assessment of the strengths and weaknesses of the region taking into account the critical location requirements of the target sectors, and also an assessment of the growth potential of the target sectors.

Ideally, target sectors should be high growth sectors or segments, where similar businesses have already located or expressed an interest in the region, and there is a good fit with locational needs of such target sectors/segments or a compelling argument to be made on why the region is a good fit, even if there has been little investment to date. Consideration needs to be given to how regional assets can be strengthened, and weaknesses mitigated.

6.1.3. Tap Insights of Companies in Target Sector/Segments

An important source of intelligence for investment attraction efforts consists of companies in target sectors/segments that are already present within the region, particularly those that have located in the region in recent years. Dialogue with such companies is important from an investment retention perspective but also for understanding the key reasons that the company chose to locate in the area, and their perspective on the strengths and weaknesses of the region, and view on value propositions.

In tapping the insights of local companies, economic development officials need to be cognizant that some companies in the target sector/segment that have located in the region will not be keen for additional companies to locate there as this may result in increased competition for customers and human resources, and for that reason they may not be very cooperative.

Companies in the target sector/segment that are located outside the region could also be tapped for their objective insights on the locational needs of businesses in the sector. This could be undertaken most effectively by economic development staff with a strong understanding of the target sector and local ‘ambassadors’ with target sector experience.

6.1.4. Leverage Efforts/Support of Senior Governments

Various levels of government including federal and provincial government departments as well as regional, municipal, and public-private sector entities engage in investment attraction efforts. Often the same sectors and even the same companies are being targeted by economic development/investment attraction agencies in a broad region, and these companies are also likely being targeted by countless organizations elsewhere.

It is therefore critical that a coordinated approach be taken to investment attraction and that the senior government departments responsible for investment attraction at the provincial level are aware of the value propositions and strengths of the region for investment in target sectors/segments and are promoting the region as part of their overall investment attraction efforts. With regard to investment attraction in target sectors for the Antigonish region, the NSBI may need to be convinced that there is a business case. In this regard, it will be important to have ongoing dialogue with NSBI and provide them with the value proposition/business case information for the target sectors/segments and solicit

their input on what assets need to be strengthened to help make the area more attractive for investment. The NSBI's experience and knowledge in FDI should be tapped by the ARDA or the new economic development organization, once established, as a resource for their investment attraction efforts.

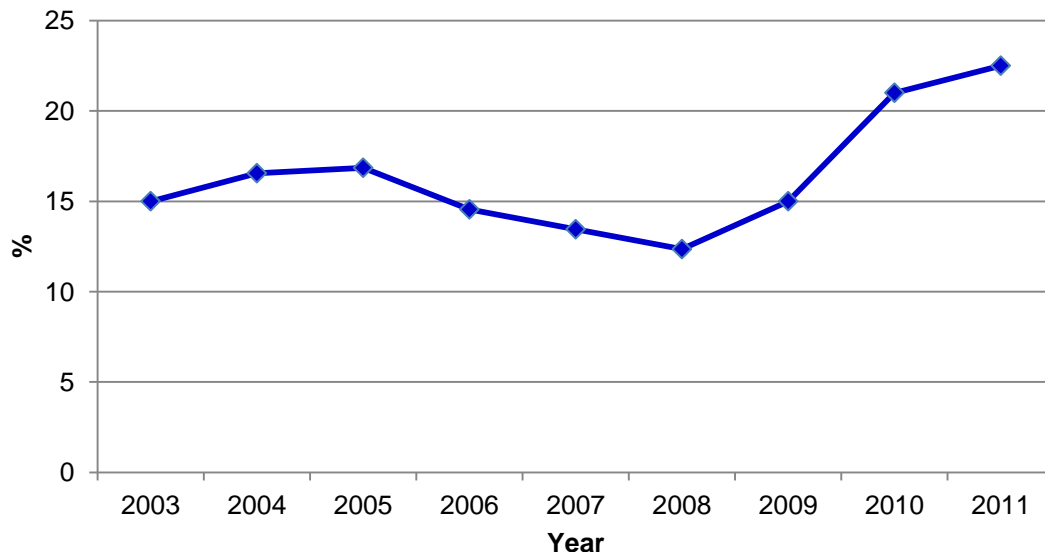
6.1.5. First Target Expansion from Foreign Companies Already Present in the Broader Region

Much of FDI attraction efforts focus on foreign companies not already operating in a particular region. However, a key source of new investment occurs from expansion of businesses already present in an area. This has been a growing part of FDI, increasing since 2008, which coincided with the recession that year, and the fragile economic recovery since that time. Specifically, in a time of economic uncertainty, businesses have shown a preference for the lower-risk strategy of expanding in regions where they currently operate rather than establishing a presence in a new country or region.

In 2008, expansions accounted for about 13% of global capital investment from FDI, increasing to 23% in 2011 – see Figure 6.1. There is a relatively high level of expansion for back office functions, accounting for 28% of the total FDI projects in this segment in 2011.

A best practice in investment attraction therefore pertains to targeting opportunities associated with expansion by international companies that already have a presence in the broader region (in this case, Nova Scotia or Atlantic Canada).

Figure 6.1: Relative Importance of Expansions in FDI
Expansions as a Percentage of
Total Capital Investment in FDI



Source: *fDI Markets*

6.1.6. Target Domestic Investment the Same as FDI

While a key focus of investment attraction efforts has been foreign direct investment (FDI), the importance of investment attraction from domestic firms located in the broader region should not be discounted. In some economic development circles, this has been thought of as ‘poaching’, that is, taking investment away from one region in favour of another region. However, it is also the case that expanding to another less costly community in a broad region helps to retain the original investment in the region, enabling the company to decrease its overall operating costs, thereby becoming more profitable. In this regard, opportunities for investment attraction related to expansion from domestic firms located elsewhere in the broader region (such as Nova Scotia or Atlantic Canada) should be considered as part of the investment attraction strategy for the Antigonish region.

6.1.7. Develop Collaborative Relationships and Information Network

Another key best practice in investment attraction is developing strong collaborative relationships and partnerships with regional stakeholders such as universities, businesses in key sectors, labour market agencies, realtors, property developers, etc. These collaborative partnerships are important for investment attraction in a number of ways:

- Key stakeholders can be strong allies in convincing businesses in target sectors/segments of the business case for investing in a region;
- Stakeholders with significant experience in the target sector/segment can serve as local ambassadors and also may have a network of sector contacts in various companies elsewhere, some of which may be prospects for investment attraction;
- An established network of information contacts, such as realtors, labour market information contacts, business park managers, etc. is a key part of investment readiness for when a data request comes in from a site selector or business. Networks and easy access to information need to be set up well in advance of incoming data requests.

6.1.8. Have High Quality Value Proposition/Business Case in Place Before Contact

An important element in investment attraction is to ensure that there is a sound business case and that the region and communities within the region have the assets needed by the target sectors. Having a compelling business case on why the region or a community is an optimal fit for the target sector/segment is critical to have in place prior to any contact with investment attraction prospects. Such value propositions/business case also need to be clearly articulated and documented in a concise and attractive format, with appropriate visuals such as charts and graphics with accurate data. To be credible, value propositions need to be based on facts, with supporting data from credible sources. Generalities such as ‘high quality of life’ are not compelling value propositions. Examples of value propositions for the target sectors/segments are discussed in Sections 6.2 and 6.3 of this report, and included in the appendices.

6.1.9. Target Strategically and Monitor

Given the cost and effort associated with investment attraction, it is critical to target strategically - identify and drill down on good quality investment prospects based on intelligence gathering and analysis rather than taking a mass marketing approach. While this is a time consuming exercise, it will end up being less expensive and will result in better investment prospects in the longer term. Given the long timeline between identifying a prospect and attaining investment (or that investment occurring

elsewhere), it is important to have a prospect tracking system well established, with data and record of contact information updated over time.

6.1.10. Talent Attraction and Retention

An important locational consideration for businesses is access to a long-term labour supply. Indeed, the 'war for talent' is a business reality, partly the result of a significant portion of the labour force retiring over the next 10-20 years ('Baby Boom' generation, consisting of individuals born between 1946 and 1966) and an insufficient labour supply to replace them as a result of the declining birth rates after that generation. Additionally, there is disconnect between available labour force skills and those needed, particularly for high technology and specialized skills. Therefore, a key best practice approach in investment attraction is to develop a strategy to attract and retain highly educated and skilled labour. This is a critical part of investment readiness – ensuring the region has a long-term labour supply to attract investment. Talent attraction and retention requires a multi-pronged strategy and collaboration of various levels of government, university and labour planning groups, as well as the private sector to create environments that are attractive and respond to the needs of new talent, particularly highly qualified young talent. Part of this strategy will involve the attraction of well-educated immigrants, foreign students that could be enticed to remain in the region, and 'expats' and graduates that have left the region.

6.1.11. Be Ready When Site Selectors/Potential Investors Come Calling

Most of the information that site selectors need in their initial comparison of communities is readily available from secondary sources or through on-line subscription data bases. The information required by site selectors that may not be readily available from secondary sources includes information on employment lands/business parks and commercial space for lease, local operating costs, technical training programs, number of graduates, the level of support for new businesses, union activity, local wage rate data, etc. To be investment-ready for dealings with site selectors and potential investors, it is important that the economic development agencies have some of this information readily available (such as information on employment lands, operating costs, etc.) and have a network of contacts that can be accessed to provide up-to-date data at short notice.

The site selection visit/tour of the community by site selectors/potential investors is a critical part of the business location decision-making process. Part of the visit will likely include meeting with businesses in the area to solicit views on the strengths and weaknesses of the business environment. In this regard, the efforts in business retention and addressing the needs of local businesses is very important to help ensure that those businesses convey positive views on the region and community as a viable low risk business location.

6.1.12. Eliminate Impediments to Investment

Two of the biggest impediments to investment taking place, once a community is on a site selector's short-list, are lack of shovel-ready zoned and serviced land or appropriate facilities; and the time required for development approvals or rezoning. A best practice is therefore for economic development agencies to work closely with regional and municipal planning departments and developers to ensure that an adequate supply of appropriately situated, zoned and serviced land, and facilities is available. Good descriptive information and mapping of employment lands should be available at the economic development agency for dealings with site selectors. Additionally, economic development staff need to have a sound understanding of the land development process and the various applications and permits that are required and potential timelines. In some large communities, economic development departments provide a 'one stop shop' approach, where development

applications and information are provided on the economic development agency's web site and economic development staff are available to help businesses work through the development application process.

6.1.13. Use the Marketing Budget Strategically and Effectively

Some communities hold familiarization (FAM) tours as part of their investment attraction efforts, inviting site selectors to visit. This can often be somewhat expensive as the economic development agency is responsible for covering expenses such as accommodations, meals, entertainment, and transportation. However, more importantly, for a FAM tour to be effective, a well-planned program and schedule is needed that showcases the community and high quality assets, particularly for the target sectors/segments. If not properly planned or executed, or if the program lacks depth or assets disappoint, this could effectively result in the region or community being screened out as a potential investment location in the future by the invited site selectors. Therefore caution needs to be taken when planning FAM tours, ensuring that assets are high quality, value propositions are compelling, and that individuals involved in the FAM tour implementation are properly trained, knowledgeable, and can act as 'ambassadors'. It is also essential to have the support of the business community, including a group of knowledgeable individuals who are available for discussions with the site selectors such as individuals in real estate, property development, local businesses owners/managers in the target sectors, university representatives in areas related to the target sectors, etc. High quality accommodations and dining are also essential to creating a good impression of the community and region.

Similarly, business development representatives of investment attraction agencies often attend trade shows and may host a community information booth at such events. This is a costly exercise that may not generate significant results. It is also very competitive as representatives of numerous communities will also be in attendance and marketing to business attendees. A targeted approach needs to be taken in determining which trade shows to attend, taking into account costs and likely return as well as opportunities to interact with representatives of target companies. If a decision is made to attend and host a community information booth at a trade show, it is essential that a high quality display and value proposition materials are provided, and that staff members in attendance are knowledgeable and have the marketing skills needed to showcase the community. A best practice is to lay out the ground work prior to attending the trade show: identify the businesses that will be in attendance (obtain a list of attendees from the trade show organizers), review relevant data on those businesses, assess which businesses are the best investment attraction prospects, and set up meetings with attendees from those businesses. The meetings should occur while the representatives are at the trade show (some economic development agencies retain on-site meeting facilities for this purpose), however, the scheduling of meetings need to occur well in advance of the trade show.

6.1.14. Have Realistic Expectations re Timelines and Level of New Investment

Investment attraction is a long process and it can easily take years before investment occurs, particularly if there is work to be done to improve a community's investment readiness and competitiveness to attract investment. It is therefore essential to set reasonable timelines and targets, taking into account the level of inward investment that has occurred in the region or community in the target sectors in the past. It is also important to take into account that capacity-building takes time and strong community assets need to be in place before investment is likely to occur.

6.1.15. Provide Proactive Aftercare/Business Retention Program

Aftercare is a critical part of the overall investment attraction process for retention of the investment, and to address any concerns and facilitate any expansion opportunities.

A business retention program will go a long way to ensure that local businesses convey positive views on the region and community as a viable and low risk business location. In addition to business retention, this is important because site selectors and companies considering expanding to a region or community often consult with local businesses to solicit views on the strengths and weaknesses of the business environment.

6.1.16. Conduct Performance Measurement/Strategy Adjustment

Measuring the performance of an investment attraction strategy is important because it provides a measurement of the effectiveness of investment attraction spending - quantifying results, which can be reviewed relative to costs and efforts needed to attain those results. It also provides early warning signs of problems or where the strategy needs to be adjusted, thereby increasing the effectiveness of investment attraction efforts. Similarly, performance measurement is a critical part of other areas of economic development.

A best practice in investment attraction is ensuring that a sound performance measurement plan is in place which includes identification of desired outcomes, baseline measures, targets, indicators, and data sources. Indicators need to be 'SMART': *specific, measurable, achievable, relevant, and time-based*.

6.2. Communities and Marketing Approaches - Financial Services Sector

To gain insight on whether back offices in the financial services sector have developed in small university communities similar to Antigonish, a high level review was undertaken of where back office operations in the financial services sector have located in Ontario and Nova Scotia. This included discussions with industry and economic development contacts, and an internet-based search. We then reviewed how those communities have been marketing themselves as locations for back offices.

6.2.1. Back Office Operations in Ontario Communities

The main clusters of back office operations in the financial services sector in Ontario are in the Greater Toronto Area (GTA), the Kitchener-Waterloo area, Ottawa area, and London. Back office operations in the GTA have generally located in cities to the north and west of Toronto, such as the cities of Markham and Mississauga. These are relatively large communities, with population levels of roughly 300,000 and 700,000 respectively. Waterloo has a regional population of over 500,000; London has a population of around 366,000; and Ottawa has a population of around 883,000.

Smaller communities in Ontario that have universities such as Peterborough, where Trent University is located, were reviewed for the presence of back office operations. This community has a population of roughly 79,000, and is situated about 150 km east of Toronto. Economic development staff at the Greater Peterborough Area Economic Development Commission were contacted to determine whether back office operations in the financial services sector have located in the area. No such operations were identified as being situated in the community. It is possible that there are some isolated examples of back office operations located in small communities in Ontario; however, none

have been identified through consultation with economic development and industry contacts for this research.

Based on the review of communities in Ontario where back office operations have located, it appears that these communities:

- are significantly larger than Antigonish, with populations ranging from roughly 300,000 to 900,000;
- have established financial services clusters which account for a higher portion of jobs compared to the provincial level. For example, the financial services cluster in Waterloo accounted for 12.9% of overall jobs in that community in 2006 (most recent year for which data is available from Statistics Canada), which is significantly higher than the provincial average of 5.4% for this sector;
- are relatively close to very large urban centres such as Toronto, but have a lower operating cost structure, particularly for real estate, and slightly lower labour costs (although not significantly lower as the labour market area extends into Toronto);
- are accessible to an international airport – between 0.5 and 1 hour away.

Rather than focusing only on back office operations in the financial services sector, these communities are marketed as viable locations for financial services sector businesses, as well as other sectors.

The Ministry of Economic Development and Innovation of the Province of Ontario promotes communities in Ontario as locations for back office operations as part of its marketing of the province to financial services sector businesses. Much of its promotional material pertains to the Greater Toronto Area.

Examples of promotional materials being used in Ontario for the financial services sector, including back office operations, are provided in the 'Appendix A – Examples of Place Marketing for the Financial Services Sector'.

6.2.2. Nova Scotia

Nova Scotia Business Inc. (NSBI) has been actively promoting Nova Scotia (the Halifax area in particular) as a global financial centre for middle and back office operations.

The assets being promoted on NSBI's web site for the financial services sector are:

- *“Halifax has the most employees with a degree, diploma or certificate in the country;*
- *Experience low turnover - our workforce is among Canada's most satisfied;*
- *Enjoy an environment that encourages collaboration between industry & academia;*
- *Work in a time zone that allows you to do business with Europe and the west coast of the US in the same work day;*
- *Benefit from our affinity to attract expatriates back to Nova Scotia for work in the financial services sector;*
- *Experience competitive business costs - some of the most competitive in Canada;*

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- *Offer an unbeatable quality of life to your employees;*
- *Spend less time in traffic - the average commute time in Nova Scotia is 7.5 minutes”.*

The NSBI web site also includes testimonials and links to news articles on Nova Scotia’s financial services industry.

It is reported by NSBI that since 2006, Nova Scotia’s financial services and insurance sector has seen ‘phenomenal growth’ with major international firms establishing back and middle office operations in Halifax, including:

- Citco Fund Services
- Butterfield Fulcrum
- CIBC Mellon
- Castle Hall Alternatives
- Marsh Captive Solutions
- Flagstone Management Services
- Meridian Fund Services
- BF&M Insurance
- Admiral Insurance
- Manulife
- ING
- Medavie Bluecross

Based on discussions with the Director of Financial Services & Nearshore Solutions at NSBI, the back office operations in the financial services sector in Nova Scotia have located solely in the Greater Halifax Area, with most of them in the downtown core.

The segments that have been targeted in the middle/back office operations in the financial services sector are hedge funds administration, due diligence, and reinsurance.

Target markets have included the United States, Cayman Islands, Bermuda, the United Kingdom and other parts of Europe.

Key findings from a discussion with the financial services sector representative at NSBI include:

- Companies that NSBI have been targeting in this sector have shown a preference for Halifax compared to more rural areas of the province because it is an urban centre, has a large labour supply, and is close to an international airport. It was noted that companies want to be within one hour’s drive of an international airport;
- Access to a large pool of skilled labour is important – some of the larger businesses in this sector will start off with 100 employees and then increase to 300 employees in a couple of years. Some of the larger players in the sector in Halifax have up to 800 employees;
- Small hedge fund administration firms have lower labour needs – 20 to 50 employees;
- Halifax is considered to be a small community compared to the other communities that companies and their site selectors consider for back office operations (e.g., the Greater Toronto Area and Waterloo in Ontario, and Charlotte, North Carolina);

- Some of the companies in the sector that have been attracted to Halifax have had a Canadian on their management team that wants to live in Halifax, and has been instrumental in convincing company management of the merits of expanding to Halifax;
- Risk is a key factor in the location decision – need a low risk location that is politically and economically stable and has the right labour force depth and size;
- Back offices of the big Canadian banks have a more centralized model and are not likely to be strong prospects as they prefer to be in Ontario, closer to head office;
- As the financial services sector is further developed in Halifax, and the area reaches capacity, opportunities may open up for regions outside of Halifax as locations for back office operations;
- Investment attraction takes a long time for a ‘win’ – it has taken 6 years to attract around 11 firms in this sector to Nova Scotia (all in the greater Halifax area) and took 4 years from the initial contact to securing investment from the last firm that was attracted in the sector; from 2008 to 2011, there were no investment attraction ‘wins’ in this sector by NSBI as companies were not expanding due to the recession, financial crisis and restructuring in the industry;
- Strong value propositions and a business case are needed for an area to be considered by prospects;
- NSBI is the lead agency in investment attraction in the province and is already targeting and tracking a significant number of companies in this sector in various geographic markets. It is important that a coordinated approach is taken to contacting prospects, led by NSBI;
- NSBI is committed to attracting investment to Nova Scotia overall, including its rural areas, and have confirmed that they will work with the ARDA to further develop this sector.

The Greater Halifax Partnership is also strongly promoting the Halifax area as a hub for financial services investment and provides strong value proposition for that sector in its Financial Services Sector profile. The sector profile includes cost comparison information and testimonials, and given the quality of the document and information, it can be considered as an example of a best practice in place marketing materials for this sector. A copy of that document is available at the following link: <http://www.greaterhalifax.com/site-ghp2/media/greaterhalifax/Halifax-FinancialServicesProfile-September2012.pdf>.

6.2.3. Implications for Antigonish

Antigonish differs significantly from the other communities discussed in this section due to its smaller size and given that, at present, it does not have a large financial services cluster. As such, it is not likely to be on the ‘short list’ of communities that financial services firms and their site selectors consider as a potential location for back office operations. This is evidenced by the fact that no financial services back office operations have located in the Antigonish area to date and there have been no specific inquiries at the ARDA by representatives from such companies or by their site selectors. However, it is quite possible that Antigonish can position itself as being a viable alternative to Halifax for some particularly cost sensitive and small back office operations or those that require a secondary facility in a low cost community that has an ongoing supply of trained labour through a local university.

A proactive approach will be needed to further explore and develop investment attraction opportunities for Antigonish in this sector including:

- Development of compelling value propositions and business case for locating a back office operation in Antigonish, focusing on lower costs, ongoing supply of labour through StFX, a distinct quality of life and lower cost of living that translates into low labour turn-over;
- Working closely with NSBI to fine tune the investment attraction strategy for this sector, tapping their in-depth experience in investment attraction in this sector;
- The financial services companies in the Antigonish area will need to be rallied to provide testimonials on the value propositions and competitive advantages of Antigonish for financial services businesses, including low staffing turn-over levels;
- Testimonials should also be provided by companies in the financial services sector that have recently located in the area (Beacon Securities) and by representatives of the StFX business school and others as appropriate;
- Identifying local champions (including those on the Steering Committee) to work with the ARDA and NSBI in promoting Antigonish's value propositions for this sector;
- Tapping StFX business school alumni who have senior positions in financial services firms elsewhere – alumni that want to return to Nova Scotia could be instrumental in convincing those companies on the merits of expanding to Antigonish, particularly if they offer to relocate and manage the operations, thus helping to minimize risk;
- Strengthening the overall financial services sector in the Antigonish region through business expansion to increase the size and depth of the sector, which will help demonstrate that the area can be a competitive location for businesses in the sector;
- Recognizing that investment attraction will be a long-term process and may not result in 'big wins' but even small 'wins' in terms of new investment and expansion will help strengthen the overall sector and Antigonish region's attractiveness for new investment.

6.3. Partnerships in Promoting Renewable Energy and Clean Technologies

Given the growing interest and support for renewable energy and clean technologies initiatives across government, academia and the private sector in Canada as well as globally, there are numerous examples of how government and universities are working together to market their communities as a place for research and development, and new investment in these sectors. A brief discussion of some of these initiatives in Ontario and Nova Scotia follows.

6.3.1. Ontario Examples

Kingston – Queen’s University

Kingston, a community with a population of around 123,000 and a large university population is promoting itself as the ‘green capital’ of Canada. Green technologies and alternative energy are identified as a business sector on the Kingston Economic Development Corporation (KEDCO) web site (www.kingstoncanada.com). It is stated that Kingston has one of the fastest growing alternative energy communities in North America, and local companies pride themselves in breakthrough innovations and their commitment to a sustainable future. Thirty-six companies in this sector are listed on the web site, and links are provided to company web sites.

It is noted on the web site that Kingston’s ‘internationally renowned’ post-secondary institutions offer a variety of focused programs and initiatives to support green technology businesses in Kingston, as summarized below:

Research & Training Partnerships

Queen's University	<ul style="list-style-type: none">• Thin Film Research Centre• Sustainable Bio-economy Centre• Institute of Energy and Environmental Policy• GreenCentre Canada - national centre of excellence for the development & commercialization of green chemistry technologies• PARTEQ Innovations research commercialization office• Innovation Park at Queen's University research facilities
St. Lawrence College	<ul style="list-style-type: none">• Alternative Energy Technician training and trades programs• Wind Turbine Technician course (unique in Ontario), known as the Solar College of Canada• Energy Systems Engineering Technology course
Royal Military College of Canada	<ul style="list-style-type: none">• Strengths in engineering and renewable energy
Research & Technology Presence	<ul style="list-style-type: none">• 30+ independent research laboratories• SWITCH - Kingston's alternative energy cluster• ELORIN - Eastern Lake Ontario Regional Innovation Network• Kingston Technology Council

A special report on renewable energy and green technologies, which is a supplement to the Trade and Commerce magazine, is also available on KEDCO’s web site and can serve as a good example of a place marketing piece for this sector - see Appendix B.

The sector is also identified as a research area and promoted on the Research page of Queen’s University web site (www.queensu.ca). ‘Understanding and Sustaining the Environment and Energy Systems’ is listed as a research category with several themes noted including ‘energy research’ and ‘developing environmentally sustainable technologies’. Links are provided to information on research, faculty and centres/schools at the university specializing in this area.

Waterloo – University of Waterloo, Wilfred Laurier University

The community of Waterloo is also another good example of partnership between an investment attraction agency and a university in marketing the community for the renewable energy and clean technologies sectors. The investment attraction and marketing agency for the Region of Waterloo, Canada's Technology Triangle (CTT), is promoting the region for renewable energy, particularly wind energy (www.techtriangle.com).

The University of Waterloo's Institute for Sustainable Energy is promoted on CTT's web site:

“The Waterloo Institute for Sustainable Energy (WISE, University of Waterloo) is a leader in promoting innovation through research in the development of advanced sustainable energy systems. Waterloo's leadership in alternative energy was recognized by its selection for the Ontario Research Chair in Environmental Policy and Renewable Energy. Researchers have facilities on- and off-campus for designing and evaluating turbines and components that allow large-scale indoor tests with controlled wind speeds to study wind turbine aerodynamics, blade stall, noise generation, power production prediction and rotor/nacelle interaction. Graduate programs (MAsc and PhD) for wind energy specifically are heavily subscribed and students graduating with advanced degrees are readily placed in industry”.

Both the University of Waterloo and Wilfred Laurier University are listed as corporate partners, and information on the universities and links to their web sites are provided on the CTT web site. A link to a document on the Waterloo Institute for Sustainable Energy (WISE) program is also provided on this web site (and attached in Appendix B of this report). This is a good example of how a university can showcase its research expertise in clean technology in a marketing document, which can also be used by the regional investment attraction agency in promoting the community's depth of research skills and highly qualified labour in that sector.

The University of Waterloo's web site is good example of a university promoting its research capabilities (<https://uwaterloo.ca/about/what-we-do/research>) and the role of the Office of Research and the Waterloo Commercialization Office in supporting innovation, collaboration and commercialization efforts.

6.3.2. Nova Scotia Examples

The cleantech sector is identified as a business sector on the NSBI web site. Information from the cleantech page of the NSBI web site is shown below:

Wind

- *“Nova Scotia has a tremendous wind resource. With some of the highest average wind speeds in Canada, ranging up to speeds of +9.51m/s, a wind turbine placed in Nova Scotia can produce large amounts of cost-effective power”.*

Tidal

- *“The Bay of Fundy pushes over 100 billion tonnes of water every tide which is more than all the freshwater rivers and streams in the world combined.”*

- *“Exciting conditions are hence created for developers, researchers, and the public to better understand the potential of in-stream tidal technology to deliver clean, renewable power for generations to come.”*

Forests

- *“Nova Scotia is rich in forests which allows for opportunities to revitalize this industry and its competitiveness by making use of the available wood feedstock for the production of bioenergy, biofuels, biochemical and other bioproducts”.*

Solar

- *“Nova Scotia receives an average of over 1,000 kWh of solar irradiation per metre squared per year. If harnessed, solar energy could contribute significantly to the energy mix of Nova Scotia”.*
- *“Statistics from Natural Resources Canada (NRCan) show that Solar Photovoltaics do have a comparably high potential in the region”.*
- *“Cities like Halifax and Amherst have greater solar potential than Germany at large, which is generally accepted as the international leader in solar technology and solar exports”.*

“You’ll be in good company when you choose Nova Scotia, Canada. We are home to world-class companies in wind, tidal and renewable energy.

- *Green Power Labs*
- *CarbonCure Technologies*
- *Composites Atlantic*
- *Daewoo Shipbuilding & Marine Enterprises Trenton (DSTN)*
- *Enercon Canada Inc.*
- *Fundy Tidal Inc.*
- *LED Roadway Lighting Ltd.*
- *Nu-Air Ventilation*
- *Seaforth Energy/Entegrity Wind Systems*
- *Solartron Energy Systems Inc.*
- *Surette Battery Company*
- *Thermo Dynamics Ltd.”*

Based on a discussion with the renewable energy and clean technologies sectors lead at NSBI, it appears that NSBI is in the very early stages of investment attraction in these sectors, particularly the cleantech sector. A sector team was recently formed and has been tasked with evaluating the value propositions for Nova Scotia’s cleantech sector. Energy efficiency and biofuels have been identified as potential target segments, however, the target segments have not been finalized and there has been no decision to date on the best FDI opportunities or approach for Nova Scotia in the cleantech sector. The FDI attraction approach, value propositions, and target segments will not be determined by NSBI within the time frame for this study. As such, it will be important to follow-up with the sector lead at NSBI once the sector team has completed that work.

R&D in the Cleantech Sector

As noted on the NSBI web site (www.novascotiabusiness.com), several universities in Nova Scotia have research and development expertise in the cleantech sector. Those specifically mentioned on the web site include Dalhousie University's Research in Energy, Advanced Materials and Sustainability (DREAMS) program, Acadia University's Centre for Estuarine Research (ACER), and Cape Breton University's Verschuren Centre for Sustainability in Energy and the Environment.

Dalhousie University – DREAMS program

Research on the renewable energy and clean technologies sectors at Dalhousie University are undertaken at the Dalhousie Research in Energy, Advanced Materials and Sustainability (DREAMS) - see <http://dreams.irm.dal.ca/index.html>.

The purpose of the DREAMS program is to train students in chemistry, physics and mechanical engineering to undertake research in aspects of energy production/storage and sustainability. Specific research topics are noted below.

Electrochemical energy storage and conversion:

- Li-ion and related battery materials
- Fuel cell catalysts
- Supercapacitor materials

Sustainable Energy Production and Storage:

- Organic solar cells – experimental studies
- Energy-harvesting (magnetoelastic) materials
- Energy-storage (phase-change) materials

Sustainable Materials:

- Corrosion resistant materials
- Lead-free optical glass
- Thermochromic materials
- Sustainable electrode materials for Li-ion batteries
- Impregnated respirator carbons

St. Mary's University

The Maritimes Centre for Green Chemistry (MCGC) was established at Saint Mary's University in 2010 to advance basic and applied research in green chemistry. It is intended that this research will contribute to the application of chemical products and processes that use benign substances, reduce waste and energy consumption and make the most efficient use of non-renewable resources.

As stated on its web site (<http://www.smu.ca/institutes/mcgc>), the goal for the Centre is to be ‘a nexus for Green Chemical research, outreach, and education’ focusing on:

- *“Providing a research hub for the development of Green and Sustainable Chemistry within the Maritimes;*
- *Facilitating research opportunities and funding for researchers interested in Green Chemistry;*
- *Developing outreach materials for chemistry teachers within the Maritimes;*
- *Providing a research niche to recruit undergraduate and graduate students and members’ institutions;*
- *Providing a unique applied research and instructional facility that is recognized by industry as a leader in Green Chemistry”.*

Information is provided on the web site on the specific research groups, headed by faculty members, including a good overview of the research interests, expertise, partnerships. Three groups are listed:

- Singer Group: green chemistry, ionic liquids as reaction media, organometallic methodology, asymmetric synthesis;
- Clyburne Group: catalysis and green chemistry, solid and liquids for reversible gas absorption, ionic liquids, polymers and gels for separation, synthetic main group chemistry, chemistry of the hydrogen atom;
- Masuda Group (identified but no information provided on the web site at present).

It appears that there are good synergies between the work in green chemistry research being undertaken at St. Mary’s University and that at StFX University.

6.3.3. Implications for Antigonish

At the present time, it may be premature to focus efforts on attracting cleantech FDI to the Antigonish region:

- Unlike the financial services sector where NSBI has been very active in FDI attraction, the cleantech sector is a new target sector for NSBI, and the investment attraction target segments, approach, and value propositions have not been determined. As NSBI is the lead investment attraction agency in the province, the overall provincial strategy needs to be in place before regions and communities can effectively target FDI in this sector.
- While Nova Scotia has attracted FDI in the renewable energy sector (e.g., wind), it appears that FDI has been a very small part of the cleantech sector in Nova Scotia overall, and the sector is relatively small – only seven firms being identified, based on the cleantech company definition used in the *SDTC Cleantech Growth and Go-To-Market Report*: *“a company that is predominantly engaged in the development and marketing and/or use of its proprietary technology to deliver products or services that reduce or eliminate negative environmental impacts, and address social needs, while delivering competitive performance, and/or using fewer resources than conventional technologies or services”.*

- Many of the North American firms in this sector are relatively young firms that are facing significant challenges in terms of access to financing, R&D costs and time required for product development and commercialization. Expanding operations to new geographic areas poses a risk for such firms.
- There is substantial competition for attracting cleantech investment from communities across North America and elsewhere that have very attractive government programs/incentives in place.
- Presently the Antigonish region does not have a cluster of cleantech companies, and a recent start-up company in this sector, spun-off through StFX, relocated to the Halifax area in the past year.

It is likely that the Antigonish region's opportunities in the cleantech sector in the short term will be more closely aligned with R&D at StFX and nurturing the growth of start-up and small firms through an incubator facility rather than attracting FDI in this sector. The creation of a cleantech incubator facility at StFX will be an important asset for increasing the attractiveness of the Antigonish region as a location for research and development and start-ups in this sector, and could facilitate cleantech cluster development and growth in the area. StFX is already taking an important step to this end by proceeding with a feasibility study for the incubator facility, focusing on areas of applied research with the aspirations of commercialization.

In further developing this sector in the Antigonish region, it will be important that:

- The ARDA or the new economic development agency representing the Antigonish region (once established), as well as representatives of StFX, follow-up with NSBI once the cleantech sector team at that organization has finalized its strategy and target segments for this sector. Contact information for the NSBI sector lead is provided in the footnote⁴
- The ARDA or the new economic development agency representing the Antigonish region (once established) needs to ensure that NSBI is aware of the assets and value propositions for the cleantech sector in Antigonish, focusing on research and development at StFX, as noted in Section 5.4 of this report, relevant programs and number of graduates, and plans for the incubator facility.
- StFX should request that NSBI publish information on its web site on the research and development in the cleantech sector at the university, and commercialization of companies spun out through StFX (as it has done for other universities).
- As part of the StFX incubator feasibility study, consideration should be given to best practices in cleantech incubator development and case study examples of cleantech incubators in small university towns that have successfully linked entrepreneurs, investors and academic researchers in that sector and facilitated cluster development.

⁴ The NSBI Cleantech sector lead is Alexandra McCann, Director, Science & Technology. She can be reached at amccann@nsbi.ca or 902-424-0139.

- NSBI and the Rural Development section of Nova Scotia Economic Development should be consulted on the assistance they could provide in further developing and promoting the Antigonish region for target cleantech segments.
- The economic development organization that will replace the ARDA will need to work closely with StFX and area stakeholders in developing and promoting a business environment in Antigonish where cleantech operations can thrive.

7.0. Value Propositions

Below are value propositions that can be used in marketing the Antigonish area for investment in the financial services and clean technologies sectors. These value propositions will need to be fine-tuned by the ARDA or the new economic development organization for the area, once established, when additional information and data are available.

Financial Services Sector Value Propositions

- Long-term supply of educated labour through StFX with skills in accounting, business and information management: on average, around 180 business graduates (BBA) and 25 information systems (BIS) graduates per year.
- An ongoing supply of labour with business skills is also available through the Nova Scotia Community College campuses in the broader region, including those in Pictou, Truro and the Strait Area.
- Highly recognized university business school and faculty – Gerald Schwartz School of Business.
- Time zone that overlaps both Europe and North America, allowing Antigonish back office operations to service middle or front offices throughout the United States and in Europe in the same day.
- Stable power grid and supply – Antigonish has its own power utility and linesmen who are available to quickly remedy any power line problems to ensure no business disruption to back office or data centre operations.
- High speed broadband and connectivity: high speed broadband internet service is available throughout Antigonish and is offered at competitive prices through Bell Aliant, Eastlink, and Seaside Communications; and StFX is wired in high-speed fibre optics connections.
- Low operating costs: labour, realty costs, power costs, and property taxes are much lower than larger centres such as Halifax.⁵
- Not prone to severe weather such as hurricanes and have fared better than other locations such as Halifax during winter storms, with little or no power disruption.

Cleantech Sector

- StFX has research and development expertise in various areas of cleantech including green chemistry, greenhouse gas emissions/CO₂ monitoring, carbon dioxide capture and sequestration (CCS).
- StFX has made the commitment to supporting research in renewable energy and environmental/clean technologies: the 'Energy, Natural Resources, and Environmental' cluster is identified as one of six major research areas in the StFX's Strategic Research Plan (2012).

⁵ This should be verified though an operating cost comparison for small back office operation in Antigonish vs. Halifax; this could be provided as part of the consultant aftercare commitment.

- The StFX Industry Liaison and Knowledge Transfer Office (ILKTO) is an available resource for researchers and start-up companies in accessing funding and facilitating commercialization of research.
- Successful cleantech companies have had their start in Antigonish and spun off from StFX: Forerunner Research Inc, Enterre, and GMS Surface Tech.
- Ongoing supply of new labour - graduates in the Earth Sciences, Chemistry and Environmental Sciences programs at StFX.
- An incubation centre on campus is in the feasibility assessment phase, and when developed, could serve as a focal point for new companies in the clean/green technologies sector, and support synergies and collaboration between the university researchers and industry.

8.0. Potential FDI Prospects

A component of this study was the identification of FDI potential target prospects in the financial services sector and renewable energy/cleantech sectors. Based on discussions with the Steering Committee, it was decided that prospects would be identified in the financial services sector for back office operations, and for the cleantech sector.

8.1. Financial Services Sector

In determining which segments within the financial services sector to be the focus for the company identification and screening, we first reviewed the information on the companies that have back office operations in Nova Scotia. Of the 13 financial services companies with back office operations in Nova Scotia, 4 are Canadian companies, 1 is a U.S. company headquartered in New York, 4 are headquartered in Bermuda or the Cayman Islands, and 3 are headquartered in Europe (UK and the Netherlands). These firms are asset management, hedge fund, due diligence, and reinsurance firms, which have back office operations in the Greater Halifax Area. Additionally, one firm has an information technology/data centre in Bedford. This type of operation could also be a viable target segment in the financial services sector for Antigonish, particularly for firms headquartered in areas prone to hurricanes such as Bermuda.

The companies that have located back office operations, and one which has located a data centre, in Nova Scotia are described below:

CIBC Mellon

- CIBC Mellon is a leading asset servicing provider in Canada. The company is 50-50 jointly owned by Canadian Imperial Bank of Commerce (CIBC) and the Bank of New York Mellon Corporation (BNY Mellon).
- Head office in Toronto; other Canadian offices in Vancouver, Calgary, Montreal, London, and Halifax; more than 1,100 employees in six offices across the country.

Manulife

- Canada-based financial services group with principal operations in Asia, Canada and the United States; in business for over 125 years; headquartered in Toronto, Ontario.
- The Company operates in Canada and Asia through the brand name “Manulife Financial” and in the United States primarily through the brand name “John Hancock”.
- Products and services include individual life insurance, group life and health insurance, long-term care services, pension products, annuities, mutual funds and banking products, asset management services, reinsurance solutions.
- 26,000 employees; 8.3% employee growth; 32.8% sales growth.

Medavie Bluecross

- Non-profit Canadian medical care insurance company headquartered in Moncton, New Brunswick.
- Medavie Blue Cross operates from offices in Moncton, Fredericton, Saint John, Bathurst, Charlottetown, Halifax, St. John's, Quebec City, Montreal and Toronto.

- About 1,625 employees.

Castle Hall Alternatives (Enterprise Castle Hall Alternatives Inc.)

- Headquartered in Quebec.
- Offices in UK: London; Australia: Sydney; Canada: Toronto, Montreal, Halifax.
- Financial due diligence – provides outsourced due diligence on entire portfolios, or to supplement the work of an existing, in-house due diligence team.
- Classified as financial consultants.
- Small company ('more than 20 professionals' noted on web site).

Marsh Captive Solutions

- Marsh is the flagship operation of Marsh & McLennan Companies (MMC), one of the world's largest insurance brokerages. The company brokers insurance and provides risk management and consulting services to corporate clients, government agencies, and other organizations.
- 26,000 employees; revenues of \$5.25 billion; employee growth: 13%; income growth: 9.9%.
- Headquartered in New York; offices in more than 100 companies; 14 locations across Canada including Halifax.
- Captive solutions: a captive insurer is a legal entity formed primarily to insure the risks of one corporate parent or a number of similar corporations (e.g., trade associations) thereby contributing to a reduction in its parent's total cost of risk (see: <http://canada.marsh.com/ProductsServices/CaptiveSolutions.aspx>).

Flagstone Management Services

- Parent company was Flagstone Reinsurance Limited in Bermuda.
- Flagstone opened an office in Halifax in 2005; received \$1.68 million from Nova Scotia taxpayers through payroll rebates and recruitment incentives.
- Flagstone was recently purchased by Bermuda reinsurance company – Validus Holdings Ltd. (revenues of around \$2 billion; 5% income growth) for \$623.2 million.
- Flagstone had hired nearly 100 workers – CBC reported in November, 2012 that a large portion would lose jobs due to overlapping job responsibilities.

Meridian Fund Services

- Hedge fund administration services; headquartered in Bermuda; offices in Cayman Islands; Halifax; New York; Cambridge, Massachusetts.
- As noted on the company web site: "After an extensive review of the various options that were available to us, we decided to open an operational center in Halifax, Nova Scotia, Canada, in January 2007... In addition to supporting the valuation, accounting and investor relations needs of our other offices, our Halifax office is our major data processing center."

Butterfield Fulcrum

- Hedge fund management company; headquartered in Bermuda; offices in the Cayman Islands, London, Dublin, New York, Canadian offices in Waterloo and Halifax.

BF&M Insurance

- Headquartered in Bermuda.
- BF&M has a satellite information technology/data centre in Bedford Nova Scotia.
- As noted in an article in the Chronicle Herald, January, 30, 2009, "*It is difficult to attract and retain skilled IT professionals when the permanent population of the island is so small,*" President and CEO John Wight said Thursday. He said "*Nova Scotia has lots of skilled people in the information technology sector and is also a safe and accessible place to store essential data, far and away from Bermuda, where the fear of serious damage to computer systems from a hurricane is very real.*"
- The Nova Scotia site serves as an emergency backup operation for the Bermuda insurance company in cases of natural disasters such as hurricanes.

Admiral Administrative Ltd.

- Branch of Admiral Financial which is a hedge fund administrator with head office offices in the Cayman Islands; other locations are Dublin, and Virginia.
- Opened up an office in Halifax in 2012, with plans to create 175 jobs in 6 years.
- NSBI providing rebates of around \$2.2 million.

Citco Fund Services

- Hedge fund administration, custody and fund trading, financial products and corporate and trust planning solutions.
- Headquartered in London, UK.
- Very large company with offices across the US, Europe, Asia-Pacific, Canada, South America, Caribbean, Middle East and Africa.
- Canadian locations are in Toronto and Halifax.

Admiral Insurance

- Headquartered in South Wales, UK.
- Sells private car insurance and related ancillary products to motorists throughout the United Kingdom, Spain, Italy, France and the United States.
- Employs over 3,500 staff worldwide.
- Admiral's first overseas venture, opened in Halifax, Nova Scotia in 2007. The office employs over 400 staff who provide support through the sale and renewal of policies to the company's more than 3 million customers in the UK.

ING (Nederlanden Groep)

- ING is a global financial institution based in Amsterdam.
- One of the world's largest insurance and financial services companies; services include banking, investments, life insurance and retirement services.
- Over 104,000 employees.
- 2011 sales of \$136.76B; 1-year sales growth of -5.6%.

Based on the foregoing as well as a discussion of the NSBI financial services sector lead, it was determined that the prospect identification and screening of companies in this sector should focus on companies located in New York, Bermuda and the Cayman Islands and Europe, and the following segments: asset management, hedge fund, due diligence, and reinsurance firms. It was also believed that high growth firms as well as firms going through restructuring and dealing with revenue losses could also be prospects (given their need to decrease overall operating costs, which could be partly achieved by relocating back office operations to low cost environments).

Information on short-listed companies in the financial services sector for consideration as investment attraction prospects is summarized in Appendix D.

8.2. Cleantech Sector

In determining which segments within the cleantech sector should be the focus for the company identification and screening component, information was first reviewed on the companies that have cleantech operations in Nova Scotia as shown in Section 4.2 of this report, as well as from discussions with the sector lead at NSBI; and taking into consideration the R&D and commercialization work in this sector being undertaken by StFX. Based on that review, the focus of the company identification and screening component was on the following segments:

- Biofuels and biochemicals
- Conventional fuels
- Energy Efficiency
- Recycling and waste
- Cleantech used in oil and gas operations

Rather than being strong targets for FDI (as stated, at this time, focusing efforts on FDI in this sector in the Antigonish region is premature), these companies are examples of the types of companies that could potentially be developed through R&D initiatives at StFX. Most of the companies on this list have been classified by the Cleantech Group and Deloitte & Touche as being likely to have a significant market impact over the next 5-10 years. In selecting companies for this current study, the databases of cleantech companies for 2012, 2011, and 2010 were reviewed (<http://www.cleantech.com/global-cleantech-100/>). This was supplemented by a review of other sources.

For the most part, the companies identified are relatively small operations. However, a few examples of large global companies similar to Liquide Air are identified, which has operations in Dartmouth. The list of cleantech companies is provided in Appendix E.

9.0. Recommendations

A number of recommendations have been identified for advancing sector development and investment attraction in the financial services and cleantech sectors in the Antigonish region in the previous chapters of this report. While the focus of the study has been on investment attraction, particularly FDI, many of the recommendations also pertain to broader economic development planning. A summary of the key recommendations is provided in this chapter.

9.1. Local Economic Development/Investment Attraction Function

Initiatives related to building competitiveness, capitalizing on market opportunities and investment attraction in the Antigonish area are currently the responsibilities of the Antigonish Regional Development Authority (ARDA). However, that agency will cease to exist after June 2013 as a result of the restructuring of RDAs in Nova Scotia. Six new RENs are expected to be formed, with each REN representing a large geographic area comprised of several counties. At this stage, it is not known where the new REN for the region that encompasses Antigonish county will be located or what portion of staff efforts will be spent on any one particular sector or geographic area.

A review of the economic development or investment attraction function is beyond the scope of this current study. However, given that investment attraction efforts in the target sectors for the Antigonish area could be impacted by the restructuring, it is recommended that consideration be given to the merits and feasibility of creating a local economic development/investment attraction planning function that could complement broader regional initiatives, while specifically representing the interests of the Antigonish area. There are many examples elsewhere where small communities and rural counties have their own economic development/investment attraction departments or corporations in addition to being represented by a broader regional economic development agency for regional planning purposes. This could include a review of the roles of agencies involved in economic development work in the Antigonish area (for example, the Economic Development and Rural Department of the Nova Scotia Government has an office in Antigonish), and identification of gaps in service after the closure of the ARDA. Consideration could be given to best practices and the most appropriate model for local economic development/investment attraction in the Antigonish area.

9.2. Investment Readiness

To be attractive for new investment, communities need to be 'investment ready'. Investment readiness covers a wide range of considerations including a community's or region's preparedness in dealing with potential investors in terms of having the required information readily available, the presence of high quality assets and value propositions, a concise community profile, sector profiles and lure brochures, land use planning, appropriately located and serviced land, etc.

It is recommended that the ARDA (or the new economic development agency representing the Antigonish region, once established) review the area's investment readiness using an Investment Readiness Test, such as that available at http://www.growourregion.ca/images/file/Assessing-Readiness/Municipal_Readiness_formcomplete.pdfm and address the gaps where needed.

In moving forward with investment attraction planning, it is recommended that the ARDA or the new economic development agency representing the Antigonish region (once established), consider and adopt as appropriate, the best practices identified in Section 6.1 of this report.

9.3. Financial Services Sector

A proactive approach is needed to further explore and develop investment attraction opportunities for Antigonish in the financial services sector.

Short-Term Recommendations

- A local sector team should be developed to help advance investment attraction in this sector, including representatives from the Steering Committee as well as other key stakeholders in the financial services sector in the Antigonish area.
- The ARDA or the new economic development agency representing the Antigonish region (once established) and local sector team should build on the value propositions developed in this study, through consultation with local businesses in the financial services sector, including established and relatively new businesses. Testimonials should be obtained from those businesses on staff commitment and low turnover, and the positive business environment for financial services sector businesses, and other factors that have been significant in those companies deciding to locate and remain in Antigonish. The resulting testimonials should be used in the sector profiles and value proposition section of the new economic development organization's web site.
- A cost comparison analysis should be undertaken of the cost of operating a small financial services back office operation in Antigonish relative to the Halifax area, and business case developed. The NSBI sector lead for investment attraction of financial services back office operations should be consulted regarding assumptions (numbers of employees by position, square footage, cost variables to be included, etc.). It will be important that the analysis is based on up-to-date and accurate data, and that the analysis is accepted as factual by NSBI.⁶
- The ARDA or the new economic development agency representing the Antigonish region (once established), with input from the local sector team, should develop a financial services sector profile/promotional brochure focusing on low operating costs, ongoing supply of labour through StFX, a high quality of life for transferees, and low cost of living that translates into low labour turn-over. In developing the sector profile, it is recommended that consideration be given to the examples of marketing approaches of other communities for this sector, as discussed in Section 6.3 of this report. In particular, the sector profiles and marketing materials of the NSBI and GHP for the financial services sector could be particularly useful in this regard.

⁶ The consultants could assist with this work as part of their aftercare commitment for this project.

Medium- to Long-Term Recommendations

- The new economic development agency representing the Antigonish region, once established, and local sector team representatives should meet with the sector lead⁷ at NSBI to discuss Antigonish's interest in attracting back office operations in the financial services sector and how the NSBI could be of assistance. The potential prospects identified in this report and those that NSBI is currently targeting should be discussed, as well as the Antigonish area's potential for attracting such operations. The local responsibilities and approach for prospect targeting should be discussed and confirmed.
- Key representatives of the local sector team with industry depth should have informal discussions with their industry contacts in target geographic markets on Antigonish's value propositions in this sector and its potential for attracting back office and data centre operations.
- The new economic development agency representing the Antigonish region, once established, should promote Antigonish as a viable location for domestic and regional financial services operations, not just back office operations. For example, the attraction of small financial planning and asset management companies would help to strengthen the size and depth of the sector and demonstrate that the area can be a competitive location for businesses in this sector, thereby making the area more attractive for further investment in the financial services sector.
- Consideration should also be given to promoting Antigonish as a location for financial services sector data centres as well as back office operations. The Antigonish area could potentially be an attractive data centre location for companies headquartered in areas prone to hurricanes as noted earlier in this report.
- StFX business school alumni who have senior positions in financial services firms elsewhere should be contacted and provided with information on Antigonish's value propositions for this sector.

9.4. Renewable Energy and Cleantech Sectors

A proactive approach is needed to further explore sector development and investment attraction opportunities for the Antigonish area in the renewable energy and cleantech sectors. However, it is recommended that sector development and investment attraction efforts focus on the cleantech sector rather than the renewable energy sector at this time, and opportunities for that sector be considered when the grid issues are resolved. As noted in the SWOT analysis provided in this report, new and planned wind power developments will bring the NS power grid to maximum capacity of approximately 500 megawatts, meaning there is no additional capacity for large new wind projects at this time and to accommodate new projects at a later point (2020) would require the Maritime link, which will force new grid upgrades. Therefore, except for small wind power generation projects, there are limited opportunities in wind energy projects at present.

⁷ The sector lead at NSBI is JP Robicheau, Director, Financial Services & Nearshore Solutions. He can be reached at 902-424-7926 or at jprobicheau@nsbi.ca

Short-Term Recommendations

- The potential for wind power in Antigonish county is highly rated on the Province's Energy Map, and this should be promoted on the web site of the new economic development agency representing the Antigonish region, once established.
- The cleantech StFX incubator feasibility study should be undertaken as soon as possible and the recommendations implemented for the development of a cleantech incubator facility at StFX.
- The ARDA or the new economic development agency representing the Antigonish region (once established) should follow-up with NSBI after the cleantech sector team at that organization has finalized its strategy and target segments for this sector. Contact information for the NSBI sector lead is provided in the footnote.⁸
- NSBI and the Rural Development section of Nova Scotia Economic Development should be consulted on the assistance they could provide in further developing and promoting the Antigonish region for target cleantech segments.
- The ARDA or the new economic development agency representing the Antigonish region (once established) should provide NSBI with information on assets and value propositions for the cleantech sector in Antigonish, focusing on research and development at StFX (as noted in Section 5.4 of this report), relevant programs and number of graduates, and plans for the incubator facility.
- StFX should request that NSBI publish information on its web site on the research and development in the cleantech sector at the university, and commercialization of companies spun out through StFX (as it has done for other universities).

Medium- to Long-Term Recommendations

- The new economic development agency representing the Antigonish area, once established, should work with StFX to build capacity in the cleantech sector. The focus in the medium term should be on R&D, start-up and small local or regional firms rather than FDI.
- Information on financing and incentives for cleantech firms offered by various levels of government and groups such as Innovacorp (www.innovacorp.ca) should be reviewed, and links provided on the web site of the new economic development organization, once established.
- The new economic development agency representing the Antigonish area, once established, and StFX should consider reaching out to key companies that could use clean technology that could be developed in Antigonish. Examples of companies include Royal Dutch Shell and BP to ascertain what needs they may have for cleantech pollution controls in their new seismic and drilling programs (valued at almost \$2 billion), and DSTN in Trenton.

⁸ The NSBI cleantech sector lead is Alexandra McCann, Director, Science & Technology. She can be reached at amccann@nsbi.ca or 902-424-0139.

- Once local capacity builds and the incubator is developed and operational, further consideration should be given to pursuing FDI for this sector for Antigonish. Value propositions will need to be further developed, testimonials obtained from companies in this sector that have located in Antigonish, and the local responsibilities and approach for prospect targeting will need to be discussed and confirmed with NSBI.

Appendix A

Examples of Place Marketing for the Financial Services Sector

Appendix B

Examples of Place Marketing for the Renewable Energy and Clean/Green Technologies Sectors

Appendix C

Sample Companies in Cleantech/Green Tech in Nova Scotia

Appendix D

Financial Services Sector Target Prospects

Appendix E

Cleantech Sector Target Prospects