

Needs For and Alternatives To

APPENDIX 2.3
Economic Impact Assessment

This page is intentionally left blank.

Economic Impact Assessment

Economic Impact Assessment - Overview

Economic impact analysis (EIA) provides an estimate of the total employment impacts as well as estimates of the total Gross Domestic Product, tax revenue impacts, and labour income of a project on the economies of Manitoba and the rest of Canada. It indicates not only the potential impacts generated directly by the project, but also the potential spin-off effects generated as a result of purchases on domestic goods and services and the local recirculation of increased income.

Methodology

The economic modeling framework used for estimating the economic impacts is the Manitoba Bureau of Statistics' Input-Output model. The model is based on statistical information about the flow of goods and services among various sectors of Manitoba's economy. In effect, it allows one to trace the demands placed on one industry resulting from increased activity in another. Thus the model provides estimates of direct, indirect, and induced impacts of the proposed projects on the economy of Manitoba and Canada. In summary, economic impact analysis refers to three different types of impacts:

- **Direct impacts.** These refer to the income and employment generated by the project itself.
- **Indirect impacts.** These refer to the income and employment that develop in other industries as the effects of the initial expenditures for the project work through the provincial and national economies. For example, direct expenditures on vehicles will create an indirect increase in spending on fuel and vehicle repair services.
- **Induced impacts.** As a result of the spending and subsequent re-spending of the direct and indirect income generated by the project, there will be induced impacts /effects upon the consumer goods industries as well as the industries which supply them. This leads to more spending on food, housing, entertainment, transportation, and all of the other expenses that make up a typical household budget.

Economic Impact Analysis are reported with the following data:

- **Employment** is a straightforward measure of the number of person-years of employment (full-time job equivalents) that are generated by the project, including direct employment, indirect employment with suppliers to the main project, and induced employment that is associated with the extra spending by households. **A**

Person-year is defined as one person being fully employed for one year. **Direct employment** is on-site direct employment of Manitoba Hydro (including incremental Manitoba Hydro off-site employees) and contractor employees, which are directly generated by the project; **other direct employment** is employment of **direct** suppliers to support the main project; **indirect employment** is employment of people who supply raw materials, equipment, or services to the initial direct suppliers of the project; and **induced employment** is the employment of people as a result of the spending and subsequent re-spending of the direct and indirect income generated by the project.

- **Labour Income** is the additional income earned by workers as a result of the project. Labour income is an important contributor to economic growth and is a large component of GDP. Availability of labour income enables consumers to buy products and services to support and expand local industry. Total Labour Income represents the sum of wages, supplementary labour income, and net income of unincorporated business.
- **Gross Domestic Product (GDP)**. Also referred to as “value-added,” GDP represents the additional value of production that is generated by the project after removing the cost of intermediate inputs. For the purpose of this analysis, GDP at market price is reported. GDP at market price is the total value of goods and services produced in Manitoba’s economy.
- **Tax Revenue**. Tax revenue is calculated for all three levels of government – federal, provincial, and local. These government revenues do not include capital tax, water rentals and any greenhouse gas taxes associated with the projects (which are considered in the MA-BCA). Tax revenues are based upon the 2012/13 Manitoba Budget and 2009 income tax data, adjusted to current rates.

The analysis is based on cost estimates as of 2012. Any changes to the cost estimates may lead to changes in the economic impacts presented in this report. The economic impact analysis does not include interest and escalation during construction, costs associated with pre-project planning, design, and training, costs associated with environmental studies, any potential local development payments, and contingency costs.

While economic impact analysis can be a useful component in decision making, it does have some limitations. Economic impact analysis differs from socio-economic benefit-cost analysis in that it is a gross, rather than net, measure of benefits and it only considers the impact of project expenditures. It does not consider the opportunity cost of labour and capital in the

project nor does it consider the revenue generated by the project. By itself, it cannot measure the profitability of the project. Thus, the results of this study should be treated as general estimates and never as absolutes.

Potential Economic Impacts for NFAT

The estimated economic impacts for the preferred development plan are summarized in Table 1. A summary of the economic impacts for the Keeyask and Conawapa are also provided in Tables 2 and 3, respectively. Descriptions of the preferred development plan, and the Keeyask and Conawapa projects, can be found in chapter 2 of the NFAT filing. Economic impacts have been calculated separately for construction and operational phases of each project. Impacts during the construction phase include cumulative employment, labour income, GDP, and tax revenue impacts generated over the entire construction period. Impacts during the operating and maintenance phase include the annual impacts (employment, labour income, GDP, and tax revenues) generated for a typical year of operation when the project is at full operation. The total person years of employment during operation and maintenance can be calculated by taking the estimate for a typical year and multiplying it by the operating life of the project.

Table 1. ECONOMIC IMPACTS OF THE PREFERRED DEVELOPMENT PLAN

Manitoba - Economic Impacts of the Preferred Development Plan ^{1,2}									
	Keyask		Conawapa		North-South Upgrades Construction	750 MW Interconnection			
	Construction	O&M ³	Construction	O&M ³		Construction	O&M ³		
Employment (person years)									
Project Direct	2,436	39	3,238	42	171	119	1		
Other Direct	2,175	2	1,831	2	164	124	0		
Indirect and Induced	3,736	29	4,234	33	251	255	1		
Total Employment (person-years)	8,347	70	9,303	77	586	498	2		
Labour Income	\$ 635,169	\$ 5,921	\$ 761,233	\$ 6,597	\$ 48,627	\$ 35,195	\$ 123		
GDP (\$millions)	\$ 843,908	\$ 6,872	\$ 983,334	\$ 7,676	\$ 67,189	\$ 50,209	\$ 149		
Tax Revenues (\$millions)									
Provincial	204,340	831	\$ 256,096	\$ 931	\$ 13,954	\$ 16,069	\$ 22		
Local	40,915	162	\$ 45,807	\$ 182	\$ 2,186	\$ 2,478	\$ 5		
Federal	161,059	988	195,872	1,099	12,538	10,714	23		
Total Tax Revenue (\$ millions)	\$ 406,314	\$ 1,981	\$ 497,776	\$ 2,212	\$ 28,679	\$ 29,261	\$ 51		

Rest of Canada - Economic Impacts of the Preferred Development Plan ¹									
	Keyask		Conawapa		North-South Upgrades Construction	750 MW Interconnection			
	Construction	O&M ³	Construction	O&M ³		Construction	O&M ³		
Employment (person years)									
Project Direct	2,532	-	3,915	-	-	0	-		
Other Direct	3,198	1	3,448	1	219	144	0		
Indirect and Induced	10,414	16	13,601	18	386	444	1		
Total Employment (person-years)	16,144	17	20,964	19	605	588	1		
Labour Income	\$ 1,021,350	\$ 648	\$ 1,402,932	\$ 734	\$ 30,606	\$ 24,977	\$ 23		
GDP (\$millions)	\$ 1,440,223	\$ 1,054	\$ 1,997,461	\$ 1,184	\$ 54,676	\$ 39,642	\$ 37		
Tax Revenues (\$millions)									
Provincial	\$ 251,927	\$ 117	\$ 342,663	\$ 132	\$ 7,546	\$ 7,146	\$ 5		
Local	\$ 66,289	\$ 31	\$ 90,164	\$ 35	\$ 1,986	\$ 1,880	\$ 1		
Federal	\$ 307,444	\$ 128	\$ 426,252	\$ 144	\$ 10,935	\$ 12,437	\$ 5		
Total Tax Revenue (\$ millions)	\$ 625,660	\$ 276	\$ 859,080	\$ 311	\$ 20,467	\$ 21,463	\$ 12		

All of Canada - Economic Impacts of the Preferred Development Plan ¹									
	Keyask		Conawapa		North-South Upgrades Construction	750 MW Interconnection			
	Construction	O&M ³	Construction	O&M ³		Construction	O&M ³		
Employment (person years)									
Project Direct	4,967	39	7,154	42	171	119	1		
Other Direct	5,374	3	5,279	4	383	268	0		
Indirect and Induced	14,151	45	17,834	50	637	700	1		
Total Employment (person-years)	24,491	87	30,267	96	1,191	1,086	2		
Labour Income	\$ 1,656,519	\$ 6,569	\$ 2,164,166	\$ 7,331	\$ 79,233	\$ 60,173	\$ 145		
GDP (\$millions)	\$ 2,284,131	\$ 7,926	\$ 2,980,795	\$ 8,860	\$ 121,865	\$ 89,851	\$ 186		
Tax Revenues (\$millions)									
Provincial	\$ 456,268	\$ 948	\$ 598,759	\$ 1,063	\$ 21,501	\$ 23,215	\$ 27		
Local	\$ 107,204	\$ 193	\$ 135,972	\$ 217	\$ 4,172	\$ 4,358	\$ 7		
Federal	\$ 468,502	\$ 1,116	\$ 622,124	\$ 1,243	\$ 23,474	\$ 23,150	\$ 29		
Total Tax Revenue (\$ millions)	\$ 1,031,974	\$ 2,257	\$ 1,356,855	\$ 2,523	\$ 49,146	\$ 50,724	\$ 62		

¹2014 dollars

²Total may not add, due to rounding

³Average annual expenditures

Table 2. ECONOMIC IMPACTS OF THE KEYASK PROJECT

Manitoba - Economic Impacts of the Keeyask Project ¹								
	Infrastructure		Generation		Transmission ²		Total ³	
	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴
Employment (person years)								
Project Direct	277	-	2,014	38	145	1	2,436	39
Other Direct	122	-	1,887	2	166	0	2,175	2
Indirect and Induced	290	-	3,089	28	358	1	3,736	29
Total Employment (person-years)	689	-	6,990	68	668	3	8,347	70
Labour Income	\$ 50,054	\$ -	\$ 532,748	\$ 5,708	\$ 52,367	\$ 212	\$ 635,169	\$ 5,921
GDP (\$millions)	\$ 66,408	\$ -	\$ 706,393	\$ 6,618	\$ 71,107	\$ 254	\$ 843,908	\$ 6,872
Tax Revenues (\$millions)								
Provincial	\$ 19,186	\$ -	\$ 171,154	\$ 796	\$ 14,000	\$ 35	\$ 204,340	\$ 831
Local	\$ 3,454	\$ -	\$ 34,745	\$ 154	\$ 2,716	\$ 8	\$ 40,915	\$ 162
Federal	\$ 13,340	\$ -	\$ 135,280	\$ 948	\$ 12,438	\$ 40	\$ 161,059	\$ 988
Total Tax Revenue (\$ millions)	\$ 35,980	\$ -	\$ 341,180	\$ 1,898	\$ 29,153	\$ 83	\$ 406,314	\$ 1,981

Rest of Canada - Economic Impacts of the Keeyask Project ¹								
	Infrastructure		Generation		Transmission ²		Total ³	
	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴
Employment (person years)								
Project Direct	69	-	2,463	-	-	-	2,532	-
Other Direct	405	-	2,644	1	149	0	3,198	1
Indirect and Induced	904	-	9,047	15	464	1	10,414	16
Total Employment (person-years)	1,378	-	14,153	16	613	1	16,144	17
Labour Income	\$ 69,526	\$ -	\$ 925,178	\$ 617	\$ 26,647	\$ 31	\$ 1,021,350	\$ 648
GDP (\$millions)	\$ 111,145	\$ -	\$ 1,285,069	\$ 1,005	\$ 44,009	\$ 49	\$ 1,440,223	\$ 1,054
Tax Revenues (\$millions)								
Provincial	\$ 19,954	\$ -	\$ 225,519	\$ 111	\$ 6,455	\$ 6	\$ 251,927	\$ 117
Local	\$ 5,250	\$ -	\$ 59,340	\$ 29	\$ 1,698	\$ 2	\$ 66,289	\$ 31
Federal	\$ 26,236	\$ -	\$ 272,249	\$ 121	\$ 8,959	\$ 7	\$ 307,444	\$ 128
Total Tax Revenue (\$ millions)	\$ 51,440	\$ -	\$ 557,108	\$ 261	\$ 17,113	\$ 15	\$ 625,660	\$ 276

All of Canada - Economic Impacts of the Keeyask Project ¹								
	Infrastructure		Generation		Transmission ²		Total ³	
	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴
Employment (person years)								
Project Direct	346	-	4,477	38	145	1	4,967	39
Other Direct	527	-	4,531	2	315	0	5,374	3
Indirect and Induced	1,194	-	12,135	43	821	2	14,151	45
Total Employment (person-years)	2,067	-	21,144	84	1,281	3	24,491	87
Labour Income	\$ 119,580	\$ -	\$ 1,457,926	\$ 6,325	\$ 79,014	\$ 243	\$ 1,656,519	\$ 6,569
GDP (\$millions)	\$ 177,553	\$ -	\$ 1,991,462	\$ 7,623	\$ 115,116	\$ 302	\$ 2,284,131	\$ 7,926
Tax Revenues (\$millions)								
Provincial	\$ 39,140	\$ -	\$ 396,673	\$ 907	\$ 20,455	\$ 41	\$ 456,268	\$ 948
Local	\$ 8,705	\$ -	\$ 94,086	\$ 184	\$ 4,414	\$ 10	\$ 107,204	\$ 193
Federal	\$ 39,576	\$ -	\$ 407,529	\$ 1,069	\$ 21,397	\$ 46	\$ 468,502	\$ 1,116
Total Tax Revenue (\$ millions)	\$ 87,421	\$ -	\$ 898,288	\$ 2,159	\$ 46,266	\$ 98	\$ 1,031,974	\$ 2,257

¹2014 dollars

²Includes: Generation Outlet Transmission, Construction Power T-Line, Construction Power Station, Switching Station

³Total may not add, due to rounding

⁴Average annual expenditures

Table 3. ECONOMIC IMPACTS OF THE CONAWAPA PROJECT

Manitoba - Economic Impacts of the Conawapa Project ¹						
	Generation		Transmission ²		Total ³	
	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴
Employment (person years)						
Project Direct	3,203	42	35	0	3,238	42
Other Direct	1,823	2	9	0	1,831	2
Indirect and Induced	4,191	32	42	0	4,234	33
Total Employment (person-years)	9,217	77	86	0	9,303	77
Labour Income	\$ 753,486	\$ 6,574	\$ 7,748	\$ 23	\$ 761,233	\$ 6,597
GDP (\$millions)	\$ 973,953	\$ 7,648	\$ 9,382	\$ 28	\$ 983,334	\$ 7,676
Tax Revenues (\$millions)						
Provincial	\$ 253,873	\$ 927	\$ 2,224	\$ 4	\$ 256,096	\$ 931
Local	\$ 45,499	\$ 181	\$ 308	\$ 1	\$ 45,807	\$ 182
Federal	\$ 193,934	\$ 1,094	\$ 1,938	\$ 4	\$ 195,872	\$ 1,099
Total Tax Revenue (\$ millions)	\$ 493,305	\$ 2,202	\$ 4,470	\$ 10	\$ 497,776	\$ 2,212

Rest of Canada - Economic Impacts of the Conawapa Project ¹						
	Generation		Transmission ²		Total ³	
	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴
Employment (person years)						
Project Direct	3,915	-	-	-	3,915	-
Other Direct	3,430	1	18	0	3,448	1
Indirect and Induced	13,542	18	58	0	13,601	18
Total Employment (person-years)	20,887	19	77	0	20,964	19
Labour Income	\$ 1,399,571	\$ 730	\$ 3,362	\$ 4	\$ 1,402,932	\$ 734
GDP (\$millions)	\$ 1,991,780	\$ 1,178	\$ 5,681	\$ 7	\$ 1,997,461	\$ 1,184
Tax Revenues (\$millions)						
Provincial	\$ 341,849	\$ 131	\$ 814	\$ 1	\$ 342,663	\$ 132
Local	\$ 89,950	\$ 35	\$ 214	\$ 0	\$ 90,164	\$ 35
Federal	\$ 424,846	\$ 143	\$ 1,407	\$ 1	\$ 426,252	\$ 144
Total Tax Revenue (\$ millions)	\$ 856,645	\$ 309	\$ 2,434	\$ 2	\$ 859,080	\$ 311

All of Canada - Economic Impacts of the Conawapa Project ¹						
	Generation		Transmission ²		Total ³	
	Construction	O&M ⁴	Construction	O&M ⁴	Construction	O&M ⁴
Employment (person years)						
Project Direct	7,118	42	35	0	7,154	42
Other Direct	5,253	4	27	0	5,279	4
Indirect and Induced	17,734	50	101	0	17,834	50
Total Employment (person-years)	30,105	96	163	0	30,267	96
Labour Income	\$ 2,153,056	\$ 7,055	\$ 11,109	\$ 27	\$ 2,164,166	\$ 7,331
GDP (\$millions)	\$ 2,965,733	\$ 8,524	\$ 15,063	\$ 35	\$ 2,980,795	\$ 8,860
Tax Revenues (\$millions)						
Provincial	\$ 595,722	\$ 1,058	\$ 3,038	\$ 5	\$ 598,759	\$ 1,063
Local	\$ 135,449	\$ 216	\$ 523	\$ 1	\$ 135,972	\$ 217
Federal	\$ 618,780	\$ 1,237	\$ 3,344	\$ 5	\$ 622,124	\$ 1,243
Total Tax Revenue (\$ millions)	\$ 1,349,951	\$ 2,511	\$ 6,905	\$ 12	\$ 1,356,855	\$ 2,523

¹ 2014 dollars

² Includes GOT and Station Upgrades

³ Total may not add, due to rounding

⁴ Average annual expenditures