

Annex
2015 Trilateral Energy Outlook Results

Canada Trilateral Energy Outlook Results

Variable	Units	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Compound Annual Growth Rate 2013-2029
AEO 2015 Results – Taken as Exogenous Input Assumptions by Canada, Mexico																			
Brent Crude Oil Price	2013 USD / barrel	108.64	97.47	55.62	71.07	76.35	76.25	77.69	79.13	81.29	83.64	86.09	88.60	91.13	93.86	96.68	99.58	102.57	-0.4%
WTI Crude Oil Price	2013 USD / barrel	97.91	91.80	52.72	67.28	70.14	70.06	71.50	72.96	75.10	77.48	79.95	82.48	85.02	87.73	90.55	93.46	96.42	-0.1%
Henry Hub Natural Gas Price	2013 USD / MMBtu	3.73	4.37	3.69	3.70	3.80	4.21	4.55	4.88	5.02	5.09	5.25	5.35	5.46	5.67	5.67	5.67	5.71	2.7%
U.S. Gross Domestic Product	Billion 2009 USD	15,710	16,055	16,553	16,970	17,369	17,835	18,296	18,801	19,259	19,721	20,221	20,753	21,295	21,818	22,344	22,864	23,374	2.5%
Western Canadian Natural Gas Supply Price	2013 USD / MMBtu	2.99	3.28	3.11	3.18	3.82	4.25	4.61	4.98	5.27	5.39	5.49	5.47	5.59	5.77	5.82	5.65	5.63	4.0%
Eastern Canadian Natural Gas Supply Price	2013 USD / MMBtu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mexican Natural Gas Supply Price	2013 USD / MMBtu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
U.S. LNG Exports	Bcf/d	0.0	0.0	0.3	0.8	2.1	3.0	4.3	5.9	6.7	7.0	7.0	7.0	7.0	7.0	7.5	8.1	8.6	55.4%
Canada LNG Exports	Bcf/d	–	–	–	–	–	–	–	0.7	1.3	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.5	N/A
Mexico LNG Exports	Bcf/d	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LNG Import Price (regasified)	2013 USD / MMBtu	7.88	5.04	4.43	4.56	4.73	5.08	5.46	5.91	6.08	6.15	6.26	6.32	6.45	6.63	6.62	6.54	6.53	-1.2%
California Cap and Trade Price	USD / tonne CO ₂	10.00	10.50	11.02	11.58	12.16	12.76	13.40	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	2.2%
Model Output for the Given Country																			
Macroeconomics																			
Gross Domestic Product	Billion 2009 CAD	1,724	1,778	1,808	1,851	1,893	1,932	1,967	2,002	2,032	2,061	2,089	2,124	2,158	2,193	2,229	2,269	2,312	1.9%
Exchange Rate – Canada/US	CAN/USD	1.03	1.105	1.235	1.232	1.233	1.234	1.23	1.23	1.23	1.231	1.22	1.21	1.203	1.196	1.191	1.186	1.182	0.9%
Exchange Rate – Mexico/US	MEX/USD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exchange Rate – Canada/Mexico	CAN/MEX	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Production																			
Crude Oil Production	Million b/d	3.6	3.9	4.1	4.3	4.6	4.9	5.0	5.0	5.0	5.1	5.2	5.4	5.5	5.6	5.7	5.8	5.8	3.0%
Petroleum and Other Liquids	Million b/d	3.1	3.1	3.2	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.5	0.9%
Natural Gas Production	Bcf/d	14.0	14.9	16.1	17.0	17.9	18.6	19.2	19.8	20.4	21.2	22.0	22.9	23.8	24.7	25.4	26.0	26.7	4.1%
Net Electric Generation	TWh	629	642	657	669	666	672	680	686	694	699	704	713	726	732	737	745	752	1.1%
Electric Capacity	GW	139	140	144	147	149	154	154	155	154	155	156	158	160	160	160	162	163	1.0%
Consumption																			
Crude Oil Refinery Feedstock Requirements	Million b/d	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	0.6%
Petroleum and other Liquids	Million b/d	3.1	3.1	3.2	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	0.6%
Natural Gas Demand	Bcf/d	9.2	9.3	9.8	10.2	10.6	10.9	11.1	11.4	11.8	12.0	12.3	12.4	12.7	13.0	13.1	13.5	14.0	2.7%
Electricity Use	TWh	545	550	557	564	572	578	587	592	597	601	606	612	618	624	630	636	642	1.0%
Net Exports																			
Crude Oil	Million b/d	1.7	2.0	2.2	2.4	2.7	2.9	3.0	3.1	3.2	3.2	3.4	3.5	3.6	3.8	4.0	4.1	4.3	5.9%
Petroleum and Other Liquids	Million b/d	0.2	0.1	0.1	0.1	0.0	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	N/A
Natural Gas	Bcf/d	5.4	5.3	6.3	6.7	7.3	7.7	8.1	8.4	8.7	9.2	9.7	10.5	11.1	11.7	12.3	12.5	12.7	5.5%
Electricity	TWh	50	46	48	48	39	38	35	36	39	39	39	41	48	48	47	49	48	-0.2%

Mexico Trilateral Energy Outlook Results

Variable	Units	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Compound Annual Growth Rate 2013-2029
AEO 2015 Results – Taken as Exogenous Input Assumptions by Canada, Mexico^{1/}																			
Brent Crude Oil Price	2013 USD / barrel	108.64	97.47	55.62	71.07	76.35	76.25	77.69	79.13	81.29	83.64	86.09	88.60	91.13	93.86	96.68	99.58	102.57	-0.4%
WTI Crude Oil Price	2013 USD / barrel	97.91	91.80	52.72	67.28	70.14	70.06	71.50	72.96	75.10	77.48	79.95	82.48	85.02	87.73	90.55	93.46	96.42	-0.1%
Henry Hub Natural Gas Price	2013 USD / MMBtu	3.73	4.37	3.69	3.70	3.80	4.21	4.55	4.88	5.02	5.09	5.25	5.35	5.46	5.67	5.67	5.67	5.71	2.7%
U.S. Gross Domestic Product	Billion 2009 USD	15,710	16,055	16,553	16,970	17,369	17,835	18,296	18,801	19,259	19,721	20,221	20,753	21,295	21,818	22,344	22,864	23,374	2.5%
Western Canadian Natural Gas Supply Price	2013 USD / MMBtu	2.99	3.28	3.11	3.18	3.82	4.25	4.61	4.98	5.27	5.39	5.49	5.47	5.59	5.77	5.82	5.65	5.63	4.0%
Eastern Canadian Natural Gas Supply Price	2013 USD / MMBtu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mexican Natural Gas Supply Price	2013 USD / MMBtu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
U.S. LNG Exports	Bcf/d	0.0	0.0	0.3	0.8	2.1	3.0	4.3	5.9	6.7	7.0	7.0	7.0	7.0	7.0	7.5	8.1	8.6	55.4%
Canada LNG Exports	Bcf/d	–	–	–	–	–	–	–	0.7	1.3	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.5	N/A
Mexico LNG Exports	Bcf/d																		N/A
LNG Import Price (regasified)	2013 USD / MMBtu	7.88	5.04	4.43	4.56	4.73	5.08	5.46	5.91	6.08	6.15	6.26	6.32	6.45	6.63	6.62	6.54	6.53	-1.2%
California Cap and Trade Price	USD / tonne CO ₂	10.00	10.50	11.02	11.58	12.16	12.76	13.40	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	2.2%

Model Output for the Given Country

Macroeconomics

Gross Domestic Product	Billion 2008 pesos	13,122	13,404	13,725	14,123	14,692	15,310	15,948	16,615	17,323	18,076	18,815	19,608	20,465	21,354	22,257	23,196	24,174	3.9%
Exchange Rate – Canada/US	CAN/USD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exchange Rate – Mexico/US	MEX/USD	12.772	13.2925	15.9079	16.9817	17.0661	17.3092	17.2291	17.1971	17.1261	17.3541	17.4678	17.4736	17.5728	17.7648	17.9651	18.1488	18.3278	2.3%
Exchange Rate – Canada/Mexico	CAN/MEX	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Production

Crude Oil Production	Million Barrels / Day	2.5	2.4	2.3	2.4	2.5	2.6	3.0	3.1	3.3	3.4	3.3	3.3	3.4	3.4	3.4	3.4	3.3	1.7%
Refined Petroleum Products and Other Liquids ^{2/}	Million b/d	1.3	1.3	1.2	1.2	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.1%
Natural Gas Production	Bcf/d	4.5	4.4	4.1	4.0	4.4	4.9	5.3	5.6	5.9	6.5	6.9	7.2	7.1	7.1	6.9	6.6	6.5	2.3%
Net Electric Generation	TWh	296	301	288	297	309	319	330	342	353	366	379	393	407	423	439	456	470	2.9%
Electric Capacity	GW	64	65	69	74	79	88	88	90	90	92	96	98	99	100	104	107	110	3.5%

Consumption

Crude Oil Refinery Feedstock Requirements	Million b/d	1.2	1.2	1.1	1.1	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.7%
Refined Petroleum Products and Other Liquids	Million b/d	1.9	1.8	1.7	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	1.6%
Natural Gas Demand	Bcf/d	7.0	7.2	7.2	9.1	9.3	9.4	9.5	9.8	9.9	10.0	10.1	10.2	10.2	10.3	10.4	10.3	10.4	2.5%
Electricity Use	TWh	278	280	289	298	307	317	328	340	353	365	378	392	406	422	438	455	472	3.4%

Net Exports

Crude Oil	Million b/d	1.2	1.1	1.2	1.3	1.2	1.3	1.6	1.8	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	3.1%
Refined Petroleum Products and Other Liquids	Million b/d	(0.5)	(0.5)	(0.5)	(0.5)	(0.3)	(0.3)	(0.2)	(0.2)	(0.3)	(0.4)	(0.4)	(0.5)	(0.5)	(0.6)	(0.6)	(0.7)	(0.7)	2.3%
Natural Gas	Bcf/d	(2.5)	(2.8)	(3.1)	(5.1)	(4.9)	(4.5)	(4.2)	(4.2)	(4.0)	(3.5)	(3.2)	(3.1)	(3.0)	(3.3)	(3.5)	(3.7)	(3.9)	2.9%
Electricity ^{3/}	TWh	0	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1/ In preparing the projections, Mexico used all data provided from the EIA up to the U.S. Gross Domestic Product. In our macroeconomic models we can forecast up to 2040, even when the rest of the forecasts just go until 2029.

Since Mexico doesn't have a hub for natural gas, Mexico adjusts the Henry Hub price considering transportation and other factors.

There are currently no LNG export projects, so the Mexican projections do not take LNG exports into account.

Mexico assumes that once the new gas pipelines enter in operation the LNG imports will cease, as a result they do not take into account LNG prices in their models.

2/ For this concept we are adding refinery outputs plus LPG, we don't project natural gasolines and other gas liquids.

3/ For our models we don't make any projections regarding electricity exports/imports

4/ Exports to the US are mainly considered for balancing purposes, that means "exporting" gas through one side of the country and then "importing" gas from another point

United States Trilateral Energy Outlook Results

Variable	Units	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Compound Annual Growth Rate 2013-2029
AEO 2015 Results – Taken as Exogenous Input Assumptions by Canada, Mexico																			
Brent Crude Oil Price	2013 USD / barrel	108.64	97.47	55.62	71.07	76.35	76.25	77.69	79.13	81.29	83.64	86.09	88.60	91.13	93.86	96.68	99.58	102.57	-0.4%
WTI Crude Oil Price	2013 USD / barrel	97.91	91.80	52.72	67.28	70.14	70.06	71.50	72.96	75.10	77.48	79.95	82.48	85.02	87.73	90.55	93.46	96.42	-0.1%
Henry Hub Natural Gas Price	2013 USD / MMBtu	3.73	4.37	3.69	3.70	3.80	4.21	4.55	4.88	5.02	5.09	5.25	5.35	5.46	5.67	5.67	5.67	5.71	2.7%
U.S. Gross Domestic Product	Billion 2009 USD	15,710	16,055	16,553	16,970	17,369	17,835	18,296	18,801	19,259	19,721	20,221	20,753	21,295	21,818	22,344	22,864	23,374	2.5%
Western Canadian Natural Gas Supply Price	2013 USD / MMBtu	2.99	3.28	3.11	3.18	3.82	4.25	4.61	4.98	5.27	5.39	5.49	5.47	5.59	5.77	5.82	5.65	5.63	4.0%
Eastern Canadian Natural Gas Supply Price	2013 USD / MMBtu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mexican Natural Gas Supply Price	2013 USD / MMBtu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
U.S. LNG Exports	Bcf/d	0.0	0.0	0.3	0.8	2.1	3.0	4.3	5.9	6.7	7.0	7.0	7.0	7.0	7.0	7.5	8.1	8.6	55.4%
Canada LNG Exports	Bcf/d	–	–	–	–	–	–	–	0.7	1.3	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.5	N/A
Mexico LNG Exports	Bcf/d	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LNG Import Price (regasified)	2013 USD / MMBtu	7.88	5.04	4.43	4.56	4.73	5.08	5.46	5.91	6.08	6.15	6.26	6.32	6.45	6.63	6.62	6.54	6.53	-1.2%
California Cap and Trade Price	USD / tonne CO ₂	10.00	10.50	11.02	11.58	12.16	12.76	13.40	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	2.2%
Model Output for the Given Country																			
Macroeconomics																			
Gross Domestic Product	Billion 2009 USD	15,710	16,055	16,553	16,970	17,369	17,835	18,296	18,801	19,259	19,721	20,221	20,753	21,295	21,818	22,344	22,864	23,374	2.5%
Exchange Rate – Canada/US	CAN/USD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exchange Rate – Mexico/US	MEX/USD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exchange Rate – Canada/Mexico	CAN/MEX	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Production																			
Crude Oil Production	Million b/d	7.4	8.6	9.3	9.6	10.0	10.4	10.6	10.6	10.5	10.4	10.4	10.4	10.3	10.1	10.1	10.1	10.1	1.9%
Refined Petroleum Products and Other Liquids	Million b/d	20.6	21.2	21.4	21.9	22.4	22.6	22.7	22.8	23.0	23.1	23.2	23.2	23.2	23.2	23.2	23.2	23.3	0.8%
Natural Gas Production	Bcf/d	66.9	70.1	72.4	74.8	74.5	75.8	77.5	79.0	79.9	80.9	81.8	82.7	83.6	84.3	86.0	87.5	89.0	1.8%
Net Electric Generation	TWh	4,070	4,119	4,134	4,183	4,229	4,287	4,333	4,351	4,370	4,400	4,435	4,477	4,513	4,548	4,584	4,622	4,657	0.8%
Electric Capacity	GW	1,065	1,077	1,085	1,082	1,092	1,085	1,081	1,079	1,076	1,076	1,078	1,083	1,091	1,096	1,104	1,113	1,123	0.3%
Consumption																			
Crude Oil Refinery Feedstock Requirements	Million b/d	15.7	16.0	15.9	16.1	16.3	16.4	16.4	16.5	16.6	16.7	16.7	16.7	16.7	16.7	16.8	16.8	16.8	0.4%
Refined Petroleum Products and Other Liquids	Million b/d	19.0	19.0	19.3	19.4	19.3	19.5	19.6	19.6	19.6	19.7	19.7	19.7	19.6	19.6	19.5	19.5	19.4	0.2%
Natural Gas Demand	Bcf/d	71.7	74.3	72.8	74.1	72.3	72.4	72.1	71.6	71.5	71.8	72.3	73.0	73.6	74.2	74.9	75.6	76.4	0.4%
Electricity Use	TWh	3,836	3,888	3,904	3,955	4,003	4,059	4,103	4,121	4,143	4,175	4,208	4,247	4,282	4,316	4,348	4,381	4,415	0.9%
Net Exports																			
Crude Oil	Million b/d	(7.6)	(7.0)	(6.4)	(6.3)	(5.9)	(5.6)	(5.5)	(5.5)	(5.7)	(5.8)	(6.0)	(6.0)	(6.1)	(6.3)	(6.3)	(6.3)	(6.4)	-1.1%
Refined Petroleum Products and Other Liquids	Million b/d	1.4	2.0	2.2	2.5	2.7	2.7	2.7	2.8	3.0	3.1	3.2	3.2	3.2	3.3	3.4	3.4	3.5	6.0%
Natural Gas	Bcf/d	(3.5)	(3.1)	(2.2)	(1.0)	1.3	3.1	5.0	7.0	8.1	8.8	9.1	9.3	9.6	9.8	10.7	11.5	12.3	N/A
Electricity	TWh	(52)	(46)	(42)	(42)	(42)	(37)	(36)	(33)	(35)	(37)	(36)	(35)	(35)	(36)	(34)	(31)	(33)	-2.8%

Description of Terms		
Variable	Units	Description
AEO 2015 Results – Taken as Exogenous Input Assumptions by Canada, Mexico		
Brent Crude Oil Price	2013 USD / barrel	Annual average Brent crude oil price
WTI Crude Oil Price	2013 USD / barrel	Annual average West Texas Intermediate (WTI) crude oil price
Henry Hub Natural Gas Price	2013 USD / MMBtu	Annual average Henry Hub natural gas price
U.S. Gross Domestic Product	Billion 2009 USD	
Western Canadian Natural Gas Supply Price	2013 USD / MMBtu	Average spot price in Western Canada (i.e., AECO proxy (Alberta Energy Company))
Eastern Canadian Natural Gas Supply Price	2013 USD / MMBtu	Average spot price in Eastern Canada
Mexican Natural Gas Supply Price	2013 USD / MMBtu	Average spot price in Mexico
U.S. LNG Exports	Bcf/d	Volume of liquefied gas exported (net of liquefaction gas use or losses)
Canada LNG Exports	Bcf/d	Volume of liquefied gas exported (net of liquefaction gas use or losses)
Mexico LNG Exports	Bcf/d	Volume of liquefied gas exported (net of liquefaction gas use or losses)
LNG Import Price (regasified)	2013 USD / MMBtu	Price of natural gas paid by LNG importing facility
California Cap and Trade Price	USD / tonne CO ₂	
Model Output for the Given Country		
Macroeconomics		
Gross Domestic Product	(given country's unit of currency)	
Exchange Rate – Canada/US	CAD/USD	
Exchange Rate – Mexico/US	MXN/USD	
Exchange Rate – Canada/Mexico	CAD/MXN	
Production		
Crude Oil Production	Million b/d	Production includes lease condensate and bitumen, as marketed
Refined Petroleum Products and Other Liquids	Million b/d	Production of all refinery products and any non-refined liquid fuels (e.g., biofuels, natural gas plant liquids) excluding crude oil
Natural Gas Production	Bcf/d	Production of dry, pipeline quality natural gas
Net Electric Generation	TWh	Electric generation net of on-site generator use and losses
Electric Capacity	GW	Nameplate capacity for all electric generators
Consumption		
Crude Oil Refinery Feedstock Requirements	Million b/d	Crude oil inputs to the atmospheric distillation unit
Refined Petroleum Products and Other Liquids	Million b/d	Consumption of all refinery products and any non-refined liquid fuels (e.g., biofuels, natural gas plant liquids) excluding crude oil
Natural Gas	Bcf/d	Consumption dry, pipeline quality natural gas
Electricity Use	TWh	Consumption by all end-users, includes grid sales and own generation
Net Exports (exports-imports)		
Crude Oil	Million b/d	Net exports of crude oil, including lease condensate and bitumen, as marketed
Refined Petroleum Products and Other Liquids	Million b/d	Net exports of all refinery products and any non-refined liquid fuels (e.g., biofuels, natural gas plant liquids) excluding crude oil
Natural Gas	Bcf/d	Net exports of dry, pipeline quality natural gas
Electricity	TWh	Net exports of electricity