

	2012	2013	2014	2015	2016	Footnote	GRI
Energy							
Energy consumption within the organization, in GJ, all non-renewable *Scope 1: includes natural gas, propane liquid, diesel fuel and vehicle fuel.	2,724,115	2,758,361	3,012,091	2,970,235	2,869,053		G4-EN3
Canada	1,897,339	1,977,236	2,130,186	2,022,377	1,939,422		G4-EN3
France	7,062	26,016	35,351	19,925	25,136	Increased Drillings & Completions/Workover	G4-EN4
Netherlands	31,897	31,248	33,842	14,148	50,336	More robust reporting	G4-EN5
Australia	787,817	723,861	811,060	793,525	743,563		G4-EN6
United States			1,652	120,259	110,596		G4-EN7
Energy consumption outside the organization, in GJ, all non-renewable *Scope 2, all electricity, conversion: 1 MWh=0.2777 GJ	1,011,274	972,957	1,022,429	1,198,584	858,091		G4-EN4
Canada	169,481	169,481	181,438	223,557	238,787		G4-EN4
France	531,306	562,861	551,298	656,877	606,370		G4-EN4
Netherlands	309,845	239,742	287,681	313,423	8,590	Renewable energy purchase program	G4-EN4
Australia	642	867	695.04	772	787		Line 150: G4-EN5
United States			1317.35	3,955	3,556		Line 150: G4-EN5
Energy intensity ratio – oil & gas production (annual energy scope 1 +2/boe) – in GJ/boe	0.34	0.32	0.22	0.21	0.16	Renewable energy purchase program	G4-EN5, SS
Total amount invested in renewable energy, CND \$	\$140,000	\$140,000	\$147,000	\$42,600	\$434,385		OG2
Canada	0	0	0	\$42,600	0		
France	\$140,000	\$140,000	\$147,000	0	0		
Netherlands	0	0	0	0	\$434,385	Investment in geothermal development	
Australia	0	0	0	0	0		
United States			0	0	0		
Total amount invested in renewable energy as % of capital expenditure *Capex 2012 = \$453MM *Capex 2013 = \$543MM *Capex 2014 = \$688MM *Capex 2015 = \$487MM *Capex 2016 = \$242MM	0.03	0.03	0.02	0.01	0.2		OG2
Renewable energy generated and GHG emissions avoided	125,000	125,000	125,000	125,000	125,000	* Tomato greenhouse in Parentis, France. Based on 10,000 tonnes of CO2e not generated per annum assuming electricity would have been used to heat the greenhouse, and using a France Grid Intensity Factor of 0.08 kg CO2/kWh	OG3 OG4 OG5
Total amount of renewable energy generated by source (in MWh): *Actual energy content transferred	0	0	0	31,380	32,800		
Canada				0	0		
France				31,380	32,800		

	2012	2013	2014	2015	2016	Footnote	GRI
Netherlands				0	0		
Australia				0	0		
United States				0	0		
Water							GRI
Total water withdrawal by source (m3)	996,415	819,523	1,091,587	881,029	738,445		G4-EN8
Canada			227,323	92,044	30,835	Decrease due to decreased development	
France			681,734	563,201	478,374		
Netherlands			30	-	30		
Australia			182,500	207,500	207,500		
United States			0	18,284	21,706		
Surface water, including wetlands, rivers, lakes, oceans	348,961	313,262	302,053	233,165	223,221		G4-EN8
Canada			119,553	25,665	6,659	Decreased development activity	
France			0	0	0		
Netherlands			0	0	0		
Australia			182,500	207,500	207,500		
United States			0	0	9,062		
Groundwater	640,854	490,410	755,873	630,537	499,671		G4-EN8
Canada			101,401	61,858	23,967	Decreased development activity	
France			654,442	550,395	463,152		
Netherlands			30	0	30		
Australia			0	0	0		
United States			0	18,284	12,522		
Municipal water supplies or other water utilities	6,600	15,851	33,661	14,455	35,669		G4-EN8
Canada			6,369	1,649	210	Decreased development activity	
France			27,292	12,806	15,222		
Netherlands			0	0	20,115	Improved reporting	
Australia			0	0	0		

	2012	2013	2014	2015	2016	Footnote	GRI
United States			0	0	122	Improved reporting	
Total number of water sources significantly affected by withdrawal of water	0	0	0	0	0		G4-EN9
Volume of water withdrawn in water stressed or water limited areas	0	0	0	0	0		G4-EN9
Total volume of water recycled and reused = reduction in water use	0	7400	21,934	2,872	16,016		G4-EN10
Canada			21,934	2,872	0		
France			0	0	0		
Netherlands			0	0	16,016		
Australia			0	0	0		
United States			0	0	0		
Total percentage of water recycled and reused	0	0.90%	2%	0	2%		G4-EN10
Canada				0	0		
France				0	0		
Netherlands				0	2		
Australia				0	0		
United States				0	0		
Emissions							GRI
Gross direct (Scope 1) GHG emissions, operational control & equity	288,781	310,285	511,213	441,193	355,746		G4-EN15a
CO ₂ Scope 1 emissions (CO ₂ , excluding CH ₄ and N ₂ O)	250,063	259,849	442,839	348,002	283,618		SS
Canada			310,306	202,942	126,429	2014 acquisition of Sask assets, followed by improving infrastructure to reduce emissions	
France			57,374	48,525	50,238		
Netherlands			27,871	43,058	52,159		
Australia			45,822	46,013	40,783		
United States			1,466	7,464	14,009	Increased production	
Methane, in tCO ₂ e	38,718	50,436	68,174	92,927	71,890		SS
Canada	38,718	50,436	16,274	52,975	32,948	2015 restatement for consistency with updated 2016 quantification methodology	
France			12,865	12,852	10,565	Decrease due to replacement of flare with incinerator	
Netherlands			22,233	9,436	10,419		
Australia			16,727	17,294	16,959		
United States			74	371	998	Increased production	
Nitrous Oxide (N ₂ O) - tCO ₂ e	Not tracked	Not tracked	201	263	237		SS
Canada	Not tracked	Not tracked	0	50	50		
France	Not tracked	Not tracked	109	118	113		
Netherlands	Not tracked	Not tracked	0	0	0		
Australia	Not tracked	Not tracked	92	96	66	Reduction in diesel consumption	
United States			0	0	7		
Hydrofluorocarbons, Perfluorocarbons, Sulfur hexafluoride	Not tracked	Not tracked	Not tracked	Not Tracked	Not Tracked		SS
Gross indirect (Scope 2) GHG emissions CO ₂ e	85,223	79,309	73,410	96,600	69,318		G4-EN16

	2012	2013	2014	2015	2016	Footnote	GRI
Canada			41,006.79	48,900	60,064		
France			12,251.06	7,619	7,560		
Netherlands			19,908.05	39,631	1,271	Decrease due to renewable energy purchase program beginning in January 2016	
Australia			151.00	163	166		
United States			93.15	288	257		
Gross other indirect (Scope 3) GHG emissions	2,839	9,860	2,997,538	7,858,296	7,697,489		G4-EN17
Biogenic CO ₂ Scope 3 emissions	0	0	0	0	0		G4-EN17
Estimated scope 3 associated with end use of products	Not tracked	Not tracked	2,250,071	7,160,865	7,010,867		SS
GHG emissions intensity, O&G production, Scope 1, CO ₂ e per barrel of oil equivalent	0.0209	0.0207	0.028	0.023	0.015		G4-EN18SS
GHG emissions intensity, O&G production, Scope 2 CO ₂ e per barrel of oil equivalent	0.0062	0.0053	0.004	0.005	0.003		G4-EN18SS
Emissions of ozone-depleting substances	0	0	0	0	0		G4-EN20
NO _x , SO _x and other significant air emissions, broken down below by gas all for production			2,847	544	695		G4-EN21
NO ₂			0	0	20		G4-EN17
Canada			Not Tracked	Not Tracked	Not Tracked	Estimated to be non-significant in our operations	
France			Not Tracked	Not Tracked	15		
Netherlands			Not Tracked	Not Tracked	6		
Australia			Not Tracked	Not Tracked	0		
United States			Not Tracked	Not Tracked	0		
SO ₂			2,847	544	675		G4-EN17
Canada			1,971	181	364	Change in calculation methodology	
France			876	363	300	2015 flare replaced by incinerator	
Netherlands			0	0	0		
Australia			0	0	0		
United States			0	0	10	Change in calculation methodology	
Effluents and Waste							GRI
Total water discharge by quality and destination, m3	275,299	7,665,326	7,776,122	8,212,284	8,372,121		G4-EN22
Canada			95,661	33,616	7,479	Decreased activity plus focus on waste management	
France			1,596	454	143		
Netherlands			5,835	3,274	6,830		
Australia		7,530,821	7,673,030	8,156,657	8,343,820		

	2012	2013	2014	2015	2016	Footnote	GRI
United States			0	18,284	13,850		
Total weight of waste by type and disposal method, tonne	87,189	114,227	113,881	82,143	58,726		G4-EN23
Canada			112,658	50,170	21,624	Decrease in activity	
France			162	8,420	2,644		
Netherlands			114	4,501	18,909		
Australia			-	450	1,700		
United States			948	18,602	13,850		
Reuse, tonne	0	7400	21,935	78	114		
Canada			21,934	0	0		
France			0	0	0		
Netherlands			0	24	24		
Australia			1	54	90		
United States			0	0	0		
Recycling, tonne	36	13	107	2,855	16,247		
Canada			25	43	13		
France			29	2,091	170		
Netherlands			12	664	16,016		
Australia			42	58	49		
United States			0	0	0		
Recovery, including energy recovery	1,551	0	0	0	0		
Incineration, tonne	0	0	6,276	3,396	6,662		
Canada			0	0	3,771		
France			3,000	1,303	139		
Netherlands			3,276	2,094	1,580		
Australia			0	0	1,172		
United States			0	0	0		
Deep well injection, tonne	46,026	3,649	74,323	49,506	21,329		
Canada			74,323	31,223	7,479		
France			0	0	0		
Netherlands			0	0	0		
Australia			0	0	0		
United States			0	18,284	13,850		
Landfill, tonne	27,721	33,015	34,908	20,137	10,284		
Canada			34,860	13,511	6,457		

	2012	2013	2014	2015	2016	Footnote	GRI
France			0	4,573	2,179		
Netherlands			0	1,715	1,259		
Australia			48	338	389		
United States			0	0	0		
On-site storage, tonne	0	0	0	90	0		
Canada			0	90	0		
France			0	0	0		
Netherlands			0	0	0		
Australia			0	0	0		
United States			0	0	0		
Other – Oilfield Waste Processing, tonne	11,855	70,150	4,679	6,081	4,091		
Canada			3,451	5,304	3,905		
France			280	454	156		
Netherlands			0	5	30		
Australia			0	0	0		
United States			948	318	0		
Total number and volume of significant spills *No significant spills requiring reporting in financial statements in 2012-2016	78	137	119	188	145		G4-EN24
Canada				99	81		
France				56	39		
Netherlands				24	15		
Australia				6	7		
United States				3	3		
Volume of Spills, m3				182	179		
Canada				130	164		
France				23	8		
Netherlands				26	6		
Australia				2	0		
United States				0.2	2		
Weight of hazardous materials transported across international borders	0	0	0	0	0		G4-EN25
Water bodies significantly affected by discharges of water & runoff	0	0	0	0	0		G4-EN26
Total volume of produced water, m3			23,156,436	24,457,667	24,545,576	Data capture improvement in 2014	OG5
Canada			2,040,024	2,524,903	2,305,947		
France			13,414,954	13,605,896	13,814,729		
Netherlands			12,736	100,598	16,628	No 2016 production of large water producing well	
Australia			7,673,030	8,156,657	8,343,820		
United States			15,692	69,612	64,452		

	2012	2013	2014	2015	2016	Footnote	GRI
Volume and % of produced water by disposal method, m3:	67%	67%	67%	67%	66%		OG5
Reused, m3	0	0	0	0	0		OG5
Canada	0	0	0	0	0		
France	0	0	0	0	0		
Netherlands	0	0	0	0	0		
Australia	0	0	0	0	0		
United States			0	0	0		
Recycled, m3	0	0	5,096	15,076	9,519		OG5
Canada	0	0	5,096	15,076	0		
France	0	0	0	0	0		
Netherlands	0	0	0	0	9,519		
Australia	0	0	0	0	0		
United States			0	0	0		
Reinjected, m3	1,559,854	1,599,692	15,478,310	16,285,934	16,195,170		OG5
Canada	1,559,854	1,599,692	2,040,024	2,524,903	2,308,880		
France			13,414,954	13,605,896	13,814,729		
Netherlands			7,640	85,522	7,109		
Australia			NA	0	0		
United States			15,692	69,612	64,452		
Total volume of hydrocarbon discharged within produced water (tonnes)	242	244	113	275	131		OG5
Canada			0	0	0		OG6
France			0	0	0		OG6
Netherlands			0	165	27		OG6
Australia *Produced water released to the sea; within our operating approval volume			113	110	104		OG6
United States			0	0	0		OG6
Volume of continuously flared hydrocarbon by business unit (total and by business unit): e3m3	15,033	17,891	71,683	54,405	29,266	2014 acquisition of Sask assets, followed by improving infrastructure to reduce venting and flaring	OG6
Canada	2,173	3,137	46,885	35,000	8,168		OG6
France	11,347	14,108	22,284	17,472	16,564		OG6
Netherlands	779	354	1,771	371	344		OG6
Australia	734	293	513	442	263	Gas cap management	OG6
United States			230	1,119	3,927	Increased production	OG6
Volume of continuously vented hydrocarbon by business unit (total and by business unit)	2,862	3,818	3,583	3,714	2,941		OG6
Canada	864	1,069	1,156	1,007	645		OG6
France	100	953	963	1,185	840		OG6
Netherlands	732	709	381	303	196		OG6
Australia	1,166	1,088	796	1,197	1,180		OG6

	2012	2013	2014	2015	2016	Footnote	GRI
United States			286	23	79		
Volume vented and flared in relation to volume of O&G produced (e3m3/BOE)	0.00130	0.00145	0.00420	0.00290	0.00139		OG6
Amount of drill mud & cuttings produced using non-aqueous drilling fluid, by disposal method: onshore disposal to controlled sites Total - Tonne	Canada only: 14,085 m3 onsite 2,252 t landfill	NBU: 0 Canada & France: 18,844 t landfill	23,823	9,358	4,950		
Canada				8,351	3,746		
France				0	778		
Netherlands				689	426		
Australia				0	0		
United States				318	0		
Amount of drill mud & cuttings produced using aqueous drilling fluid, by disposal method: onshore disposal to controlled sites Total - Tonne	Canada only: 14,085 m3 onsite 2,252 t landfill	NBU: 0 Canada & France: 5273 m3 onsite 6701 t landfill	7,563	4,337	6,182		
Canada				2,562	2,509		
France				0	2,200		
Netherlands				1,775	875		
Australia				0	0		
United States				0	598		
Volume of Non-Aqueous drilling fluid re-used at another location (i.e. recovered and transported invert).	New in 2015	New in 2015	New in 2015	2,192	824		
Canada				2,192	611		
France				0	0		
Netherlands				0	213		
Australia				0	0		
United States				0	0		
Amount of drill mud & cuttings produced using aqueous drilling fluid, by disposal method: disposal at Vermilion controlled location (Onsite/Remote Sump) - Tonne	New in 2015	New in 2015	New in 2015	444	1,760		
Canada				444	1,760		
Total environmental protection expenditures \$	39,954,133	37,441,842	36,956,969	25,714,010	25,232,972	In the 2010 to 2014 timeframe, we addressed abandonment spending for older fields related to acquisitions and regulatory obligations, which increased our spending in this area.	

	2012	2013	2014	2015	2016	Footnote	GRI
Canada	6,528,629	6,377,661	6,099,464	6,008,486	8,451,587		
France	10,786,743	13,385,250	10,907,708	4,555,225	4,513,376		
Netherlands	8,126,837	4,997,494	2,815,841	3,914,342	9,754,499		
Australia	811,924	981,437	1,177,894	614,884	1,026,713		
United States	-	-	0	516,060	1,486,796		
Waste disposal, emissions treatment and remediation	3,438,407	6,069,660	15,805,157	10,043,909	9,822,917		G4-EN31
Canada	899,825	1,817,792	3,456,493	2,467,810	1,076,807		
France	1,568,838	3,575,837	10,258,340	3,625,814	2,140,827		
Netherlands	879,998	577,981	1,510,210	3,772,342	5,409,635		
Australia	89,746	98,050	580,114	177,942	186,311		
United States	-	-	0	0	1,009,337		
Prevention and environmental management costs	22,815,727	19,672,182	5,195,750	5,565,089	6,924,610		G4-EN31
Canada	5,628,804	4,559,869	2,642,971	3,540,676	5,141,019		
France	9,217,906	9,809,414	649,368	929,411	352,033		
Netherlands	7,246,839	4,419,513	1,305,630	142,000	220,500		
Australia	722,178	883,387	597,780	436,942	840,402		

	2012	2013	2014	2015	2016	Footnote	GRI
United States			0	516,060	370,656		
Discharge of Abandonment	13,700,000	11,700,000	15,956,061	10,105,012	8,485,445		
Canada					2,233,761		
France					2,020,516		
Netherlands					4,124,364		
Australia					0		
United States					106,803		
Asset integrity and process safety							OG13
Number of Tier 1 process safety events	0	0	0	0	0		
Canada	0	0	0	0	0		
France	0	0	0	0	0		
Netherlands	0	0	0	0	0		
Australia	0	0	0	0	0		
United States	0	0	0	0	0		
Number of Tier 2 process safety events	13	27	36	78	42	Process safety became a focus for us in 2014, including the introduction of different reporting criteria such as energy type, which increased our reporting in this area. In 2016, we began seeing the benefits of this focus, as our work on process safety began to reduce event numbers.	
Canada			26	54	30		
France			4	12	5		
Netherlands			4	12	5		
Australia			2	0	2		
United States			0	0	0		