Environment, Energy and Transportation Statistics Division

Industrial Water Survey: Fossil-Fuel and Nuclear Electric Power Generating Plants, 2015

	Please provide your e-mail address.				
0009	E-mail address				
	Correct pre-printed information, if necessary, using the corresponding boxes below:				
0001	Legal name				
0002	Business name				
0021	C/O				
0028	Last name of contact				
0008	First name of contact				
0004	Address				
0005	City Province/Territory or State				
0053	Country Postal code/Zip code				

This document is confidential when completed.

Version française disponible

Please read before completing

Authority

This survey is conducted under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S-19.

COMPLETION OF THIS QUESTIONNAIRE IS A LEGAL REQUIREMENT UNDER THE ACT.

Survey Purpose

This survey collects detailed information on water use in Canada by the manufacturing, mining and electrical power generating industries. The survey asks information on who uses water, how much, where and at what cost. These data will be used in the development of environmental accounts and indicators.

Your information may also be used by Statistics Canada for other statistical and research purposes.

Confidentiality

Statistics Canada is prohibited by law from releasing any information it collects which could identify any person, business, or organization, unless consent has been given by the respondent or as permitted by the *Statistics Act*. Statistics Canada will use the information from this survey for statistical purposes.

Return of Questionnaire(s)

Please return the completed questionnaire(s) to Statistics Canada within 30 days of receipt by mail, using the enclosed envelope, or fax it to 1-888-883-7999. If you are unable to do so, call 1-866-445-4323 (toll free) to inform us of the expected completion date. Lost the return envelope, need help to complete your questionnaire(s)? Call us at 1-866-445-4323 (toll free).

Fax or E-mail Transmission Disclosure

Statistics Canada advises you that there could be a risk of disclosure during the transmission of information by facsimile or e-mail. However, upon receipt, Statistics Canada will provide the guaranteed level of protection afforded all information collected under the authority of the *Statistics Act*.

Data-sharing Agreements

To reduce respondent burden, Statistics Canada has entered into data sharing agreements with provincial and territorial statistical agencies and other government organizations, which have agreed to keep the data confidential and use them only for statistical purposes.

Information on data-sharing agreements and record linkages can be found on the last page of this questionnaire.

Person primarily responsible for completing this questionnaire, if different from above:						
0026 ¹ Mr. ² Mrs. ³ Miss ⁴ Ms ⁵ Dr. 00	Telephone number Extension 17 0027					
Last name 0054 006	Fax number					
First name 0013	Website address 20					
Title 0014	E-mail address					

-2300-12.1: 2015-12-29



REPORTING YEAR: JANUARY 1, 2015 TO DECEMBER 31, 2015

NOTE i) Water volumes are to be reported in the units in use at this facility; please **mark only one selection** and use this unit of measure throughout the questionnaire.

Line	
1	

C0101	1	cubic metres
	2	other – specify C0102
		IMPORTANT If reporting in multiples of a unit of measure, please take care to enter the correct decimal values or number of zeros. (i.e., if <i>other</i> , above, is specified as <i>thousands</i> of litres, note that a reported quantity of 3 = 3,000 (3 thousand) litres, whereas a reported quantity of 3,000 = 3,000,000 (3 million) litres). If reporting in gallons, please specify Imperial or U.S. gallons.

ii) Where data are not available, please estimate.

SECTION 1: MONTHLY AND ANNUAL TOTAL WATER INTAKE AND DISCHARGE

INSTRUCTIONS

- (i) In this section, under intake, please report by month the quantity of "new water" brought into your operation for **all** power plant uses. For the purpose of this questionnaire "new water" is defined as water introduced for the first time into this facility **regardless of source or quality** (including sanitary/domestic water intake). It also includes water diverted from a natural resource into storage ponds or outside holding facilities for later use.
- (ii) Where you supply water to adjacent or tenant industry(ies) or municipality(ies), please report estimated water intake for your establishment only.
- (iii) Under discharge, please report the quantity of water routed to its ultimate point of discharge (including sanitary/domestic discharge).
- (iv) Under discharge do not report the volume of water released to ponds, lagoons or basins and intended for recirculation or reuse until such water is actually discharged to a location beyond the control of the facility.
- (v) Under discharge do not include any water lost in production through evaporation, permanently held in open or closed storage, or otherwise consumed (e.g. included in a final product).

		Month	Volume p	er month
		Wolling	Intake	Discharge
	7		C1001	C1101
	2	January		
		\bigcirc ,	C1002	C1102
	3	February	C1003	04400
4			C1003	C1103
	4	March	C1004	C1104
•	5	انس ۱	0.00.	
	U	April	C1005	C1105
	6	May		
		,	C1006	C1106
	7	June		
			C1007	C1107
	8	July	C1008	C1108
	9	A	01000	01100
	9	August	C1009	C1109
	10	September		
		Coptombor	C1010	C1110
	11	October		
			C1011	C1111
	12	November	C1012	C1112
	13	Danamhai	01012	01112
	10	December	C1013	C1113
	1.1	ANNUAL		
	14	TOTAL		

15	If total discharge volume (C1113) is greater than total intake volume (C1013), please indicate reason:
C1201	

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SECTION 2: WATER INTAKE BY SOURCE AND KIND

INSTRUCTIONS

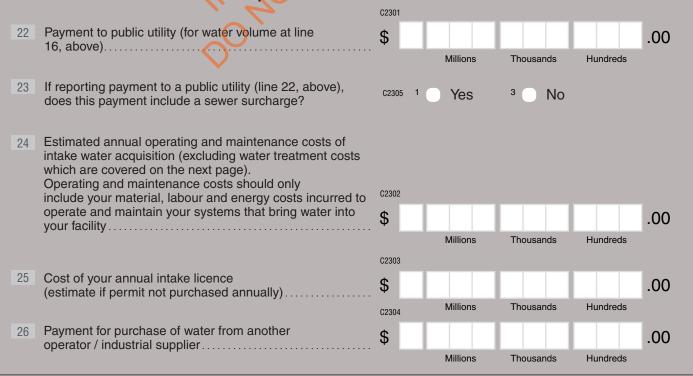
- (i) Please report your volumes of intake water by source and its usual characteristic.
- (ii) Freshwater is defined as water containing 900 parts per million, or less, of total dissolved solids.
- (iii) Saline / brackish water is defined as water containing more than 900 parts per million of total dissolved solids.

Where data are not available, please estimate.

	Source	Volume per year		
	Source	Freshwater	Saline / Brackish	
16	Public water utility system	C2401	XXXX	
		C2402	2000/	
17	Self-supplied surface water system (lake, river, etc.)		XXXX	
	(1.1.6, 1.1.6.)	C2403	C2203	
18	Self-supplied groundwater system (well, spring, etc.)	4		
19	Self-supplied tide water (salt water) body (estuary, bay, ocean, etc.)	XXXX	C2204	
20	Other sources (specify)	C 2405	C2205	
	C2000			
	Z/IV/O	C2406	C2206	
21	TOTAL			

NOTE: The sum of C2406 and C2206 (line 21, above) should equal C1013 at line 14 on previous page.

Estimated annual cost of water acquisition:



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Indicate the volume of intake water treated within your treatment of water for re-use. Where data are not available, please estimate. Category of treatment Screening	CO. C	t prior to	C3201	Volume per year
Category of treatment Screening Filtration Chlorination - disinfection (includes for process and for bid	CORT			Volume per year
Screening Filtration Chlorination - disinfection (includes for process and for big	CORT	· OF		Volume per year
FiltrationChlorination - disinfection (includes for process and for bio	CORT			
FiltrationChlorination - disinfection (includes for process and for bio	CORT		C3202	
Chlorination - disinfection (includes for process and for bid	ological control)	OF	·	
	ological control)		C3203	
Compaign and alima control	2 OV			
Corrosion and slime control				
Alkalinity control				
			C3206	
Hardness (or water softening)			C3207	
Coagulation / flocculation				
C3214			C3211	
C3215			C3212	
Other (Specify)				
Estimated annual operating and maintenance cost of your intake water treatment. Operating and maintenance costs should only include your material, labour and energy costs incurred to operate and	C3101			
the Contract of the Contract o	Coagulation / flocculation Co	Coagulation / flocculation	Coagulation / flocculation	Coagulation / flocculation. Coagulation / fl

SECTION 3: INTAKE WATER - TREATMENT

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SECTION 4: WATER INTAKE BY PURPOSE

INSTRUCTIONS

- (i) Report the amount of water within your facility by **initial** use. This section should not include recirculated water (for a definition of "recirculated water", see section 5).
- (ii) In Line 40 "Other uses" should not include water pumped by the facility, and intended for initial use outside the facility.

Where data are not available, please estimate.

	Purpose	Volume per year
37	Cooling, condensing and steam - defined as water which does not come in direct contact with the products, materials or by-products of the processing operation. It includes pass-through water used in the operation of cooling or process equipment (including air conditioning) and water introduced into boilers for the production of steam for either process operations or electric power.	
38	Pollution control (e.g. wet flue gas desulphurization, etc.) C4106 C4106	
39	Sanitary service/Domestic use - This is water used for toilets, janitorial services, lawn watering, washing of vehicles, etc.	_
40	Other uses (specify)	_
41	Total (Lines 37 to 40 should equal sum of figures reported in Line 14, C1013)	_
42	What were the estimated water losses (including evaporation and seepage):	
	(i) in cooling cycle?	
	(ii) pollution control (e.g.wet flue gas desulphurization, etc.)?	_
	(iii) in ash control system (include evaporation losses from ponds)?	_
43	What was the amount of boiler make-up water required for power generation purpose (excluding production for steam sales or transfer)?	_
44	Is there a water-cooled condenser in your plant? C4205 1 Yes 3 No	Temperature
45	If yes, what was the actual temperature rise of	°C
	the cooling water in your condenser cooling cycle? Minimum	°C
	Maximum	30
46	Please indicate the type of cooling system employed in your establishment: (i) Once-through	C4208 1 Yes 3 No
	(ii Cooling ponds	C4213 1 Yes 3 No
	(iii) Cooling tower	C4214 1 Yes 3 No
	(iv) Other methods	C4211 1 Yes 3 No
47	Did this plant produce steam for purposes other than electric power generation	C4212
71	(i.e. heating, process or for sale)?	¹ Yes ³ No

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Recirculated water refers to water used at least twice in an industrial establishment a particular subsystem and re-enters it or is used in another subsystem. It does no circulates many times within the same sub-system (i.e. it excludes closed-loop system)	not refer to water that
Did this facility recirculate or reuse water? C5001 1 Yes 3 No → If no, go	to Section 6
INSTRUCTIONS (i) Please report the volume of water recirculated or reused. Where data are not available, please estimate.	
Purpose	Volume per year
49 Cooling, condensing and steam	5102 5105
Pollution control (e.g.wet flue gas desulphurization, etc.)	5103
51 Other uses (specify)	5104
52 Total (Lines 49 to 51)	
Estimated annual operating and maintenance cost of water recirculation. Operating and maintenance costs should only include your material, labour	
and energy costs incurred to operate and maintain systems to recirculate water in your facility\$.00
Willions The	ousanus nundreus

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SECTION 6: WATER DISCHARGE AND ITS TREATMENT

INSTRUCTIONS

- (i) Please report the volume of all water routed by this facility to its ultimate point of discharge by the most advanced treatment process used.
- (ii) Do not report the volume of water released and intended for re-use or recirculation until it is actually discharged to a location beyond the control of the facility.
- (iii) Do not include the volume of water lost in production through evaporation, permanently held in open or closed storage or otherwise consumed and not brought to the ultimate point of discharge.
- 54 Is discharge volume metered or otherwise measured?

^{C6001} 1 Yes

No (If no, please provide your best estimate below.)

INSTRUCTIONS

The sum of all amounts entered below should equal C1113 from Section 1 (page 2).

Water not treated at this facility

56 Primary or mechanical

Type of treatment

before discharge.....

(the physical removal of large solids using grates, screens and settling tanks).
57 Secondary or biological (the promotion of bacterial growth and other microbes that break down the organic wastes)......

58 Tertiary or advanced (the reduction of concentrations of phosphorus or nitrogen through biological or chemical processes)

Point of discharge					
Public utilities	Surface Freshwater bodies	Tide water (Ocean)	Ground water	Other	
		Annual volume			
C6101	C6102	C6106	C6103	C6104	
 C6201	C6202	C6206	C6203	C6204	
C6301	C6302	C6306	C6303	C6304	
C6401	C6402	C6406	C6403	C6404	

Estimated annual operating and maintenance cost for treatment of water discharge. Operating and maintenance costs should only include your material, labour and energy costs incurred to operate and maintain systems to treat water discharged by your facility.

C6501				
\$.00
	Millions	Thousands	Hundreds	

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SEC	TION 7: OTHER DETAILS			
60	nicidae an relevant outlays for machinery and equipment	\$ Millions	Thousands	.00 Hundreds
			C7001	Number
61	Indicate the average number of employees (including administrative staff)			-
62	Indicate the number of days of operation of the facility during the reporting period			-
63	Indicate the average number of hours this facility operates in an average day			_
64	Indicate the amount of electrical power produced at this facility:	AA	C7004	MWh
	(i) net generation	0,00	C7005	MWh
	(ii) station service			10000
65	Indicate the average heat rate of the facility) ~	C7006	BTU/KWh
66	Indicate the electrical generation capacity of this facility		C7007	MW
	(*O, <		C7008	_
67	Indicate the total capacity of water intake pumps (specify unit of m	neasure)	C7009	
68	(i) Does your facility provide water for uses other than in the power	er plant		Yes ³ No
	(ii) If yes, please explain:			
	C7011			_
				_
	C7012			

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Comments					
Approximately how long did it take to collect the data and complete this survey? C9910 Hour(s) Minutes					
We invite your comments or suggestions on the following or any other topic related to the <i>Industrial Water Survey</i> . We appreciate your assistance.					
 Questionnaire content New questions of interest to your industry Clarity of questions Order and flow of questions Timing of receipt of questionnaire and the period given for response Alternative sources of information to further reduce response burden 					
C9920					
C9913					
C9914					
C9915					
C9916					
C9917					
C9918					
C9919					

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General Information

Confidentiality

Your answers are confidential.

Statistics Canada is prohibited by law from releasing any information it collects which could identify any person, business, or organization, unless consent has been given by the respondent or as permitted by the *Statistics Act*. Statistics Canada will use the information from this survey for statistical purposes.

Data-sharing agreements

To reduce respondent burden, Statistics Canada has entered into data sharing agreements with provincial and territorial statistical agencies and other government organizations, which have agreed to keep the data confidential and use them only for statistical purposes. Statistics Canada will only share data from this survey with those organizations that have demonstrated a requirement to use the data.

Section 11 of the *Statistics Act* provides for the sharing of information with provincial and territorial statistical agencies that meet certain conditions. These agencies must have the legislative authority to collect the same information, on a mandatory basis, and the legislation must provide substantially the same provisions for confidentiality and penalties for disclosure of confidential information as the *Statistics Act*. Because these agencies have the legal authority to compel businesses to provide the same information, consent is not requested and businesses may not object to the sharing of the data.

For this survey, there are **Section 11** agreements with the provincial and territorial statistical agencies of Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, and the Yukon.

The shared data will be limited to information pertaining to business establishments located within the jurisdiction of the respective province or territory.

Section 12 of the *Statistics Act* provides for the sharing of information with federal, provincial or territorial government organizations. Under **Section 12**, you may refuse to share your information with any of these organizations by writing a letter of objection to the Chief Statistician and returning it with the completed questionnaire. Please specify the organizations with which you do not want to share your data.

For this survey, there are **Section 12** agreements with the statistical agencies of Prince Edward Island, the Northwest Territories and Nunavut as well as with Environment Canada.

For agreements with provincial and territorial government organizations, the shared data will be limited to information pertaining to business establishments located within the jurisdiction of the respective province or territory.

Record linkages

To enhance the data from this survey and to minimize the reporting burden, Statistics Canada may combine it with information from other surveys or from administrative sources.

If you have questions, please contact us.

Telephone (toll free): 1-866-445-4323

Fax: 1-888-883-7999 (within Canada)

Please return this questionnaire in the envelope provided.
THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY!

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