Environment, Energy and Transportation Statistics Division

Industrial Water Survey: Fossil-Fuel and Nuclear Electric Power Generating Plants, 2013

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

0007

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. This data will be used to track the state of stocks of water on a regional basis in Canada and will also 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 Other Electronic 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.

	Perso	Person primarily responsible for completing this questionnaire, if different from above:							
1				Telephone number	Extension				
	0026	Mr. ² Mrs. ³ Miss ⁴ Ms ⁵ Dr.	0017	00	027				
		Last name		Fax number					
	0054		0016						
4		First name		Website address					
	0013		0020						
1		Title		E-mail address					
	0014		0018						
ı									

4-2300-12: 2014-02-19

STC/ESP-291-75412

Statistics Canada

Statistique Canada



REPORTING YEAR: JANUARY 1, 2013 TO DECEMBER 31, 2013

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	
		or number of zeros. (i quantity of 3 = 3,000 (3 million) litres).	es of a unit of measure, please take care to enter the correct decimal values e.e., if <i>other</i> , above, is specified as <i>thousands</i> of litres, note that a reported (3 thousand) litres, whereas a reported quantity of 3,000 = 3,000 000 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).

		Manth	Volume p	er month
	4	Month	Intake	Discharge
,			C1001	C1101
N	2	January	04000	04400
	3		C1002	C1102
		February	C1003	C1103
1	4	March		
			C1004	C1104
	5	April	C1005	C1105
	6	May		
		way	C1006	C1106
	7	June	C1007	04407
	8	L. L.	C1007	C1107
	U	July	C1008	C1108
	9	August		
	40		C1009	C1109
	10	September	C1010	C1110
	11	October		
			C1011	C1111
	12	November	C1012	C1112
	13	December	0.0.2	
			C1013	C1113
	14	ANNUAL TOTAL		
		IOIAL		

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

Page 2 4230012021

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		
		C2401	XXXX		
16	Public water utility system	C2402			
17	Self-supplied surface water system (lake, river, etc.)		XXXX		
		C2403	C2203		
18	Self-supplied groundwater system (well, spring, etc.)				
19	Self-supplied tide water (salt water) body (estuary, bay, ocean, etc.)	XXXX	C2204		
		C2405	C2205		
20	Other sources (specify)				
	C2000				
		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:

			02001					
	22	Payment to public utility (for water volume at line 16, above)	\$	Т				.00
					Millions	Thousands	Hundreds	
	23	If reporting payment to a public utility (line 22, above), does this payment include a sewer surcharge?	C2305	1	Yes	³ No		
	24	Estimated annual operating and maintenance costs of intake water acquisition (excluding water treatment costs which are covered on the next page). Operating and maintenance costs should only						
4		include your material, labour and energy costs incurred to	C2302					
		operate and maintain your systems that bring water into your facility	\$	Ι				.00
					Millions	Thousands	Hundreds	
			C2303					
	25	Cost of your annual intake licence (estimate if permit not purchased annually)	\$	Ι				.00
			C2304		Millions	Thousands	Hundreds	
	26	Payment for purchase of water from another operator / industrial supplier	\$	Ι				.00
					Millions	Thousands	Hundreds	

Page 3 4230012031

27	The time collaboration from the state of the	'es lo → If no, go to Section 4	ŗ
NS ⁻	TRUCTIONS		
(i)	Indicate the volume of intake water treated within your establishment treatment of water for re-use.	prior to initial use. Do not inclu	de
	Where data are not available, please estimate.		2
	Category of treatment	Volume per y	/ear
0.0	Caranina	63201	
28	Screening	C3202	
29	Filtration	C3203	
30	Chlorination - disinfection (includes for process and for biological control)	C3204	
31	Corrosion and slime control		
32	Alkalinity control		
33	Hardness (or water softening)	C3206	
		C3207	
34	Coagulation / flocculation	C3210	
35	Other (specify)	C3211	
	Other (specify)	C3212	
	Other (specify)	_	_
36	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 maintain systems to treat water brought into your facility		.00

Page 4 4230012041

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.)	
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): C4201	
	(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	C4206	°C
45	If yes, what was the actual temperature rise of the cooling water in your condenser cooling cycle? Minimum	30
	Maximum	°C
	WidAilfluiff	
46	Please indicate the type of cooling system employed in your establishment:	C4208
	(i) Once-through	¹ Yes ³ No
	(ii Cooling ponds	¹ Yes ³ No
	(iii) Cooling tower	1 Yes 3 No
	(iv) Other methods.	¹ Yes ³ No
47	Did this plant produce steam for purposes other than electric power generation (i.e. heating, process or for sale)?	1 Yes 3 No

Page 5 4230012051

SE	CTI	ON 5: WATER RECIRCULATED OR REUSED BY PURPOSE
	a pa	circulated water refers to water used at least twice in an industrial establishment. It is water that leaves articular subsystem and re-enters it or is used in another subsystem. It does not refer to water that ulates many times within the same sub-system (i.e. it excludes closed-loop systems).
	48	Did this facility recirculate or reuse water? C5001 1 Ses Section 6 Yes Section 6
	INS	STRUCTIONS
	(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.
	50	Pollution control (e.g.wet flue gas desulphurization, etc.)
	51	Other uses (specify)
	52	Total (Lines 49 to 51)
	53	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
•		

Page 6 4230012061

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?

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).

56 Primary or mechanical

(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

sum of all amounts entered below should	Point of discharge				
al C1113 from Section 1 (page 2).	Public utilities	Surface Freshwater bodies	Tide water (Ocean)	Ground water	Other
Type of treatment			Annual volume		
Water not treated at this facility before discharge	C6101	C6102	C6 106	C6103	C6104
Primary or mechanical (the physical removal of large solids using grates, screens and settling tanks)	C6201	C6202	C6206	C6203	C6204
Secondary or biological (the promotion of bacterial growth and other microbes that break down the organic wastes)	C6301	G6302	C6306	C6303	C6304
Tertiary or advanced (the reduction of concentrations of phosphorus or nitrogen through biological or chemical processes)	C6401	C6402	C6406	C6403	C6404

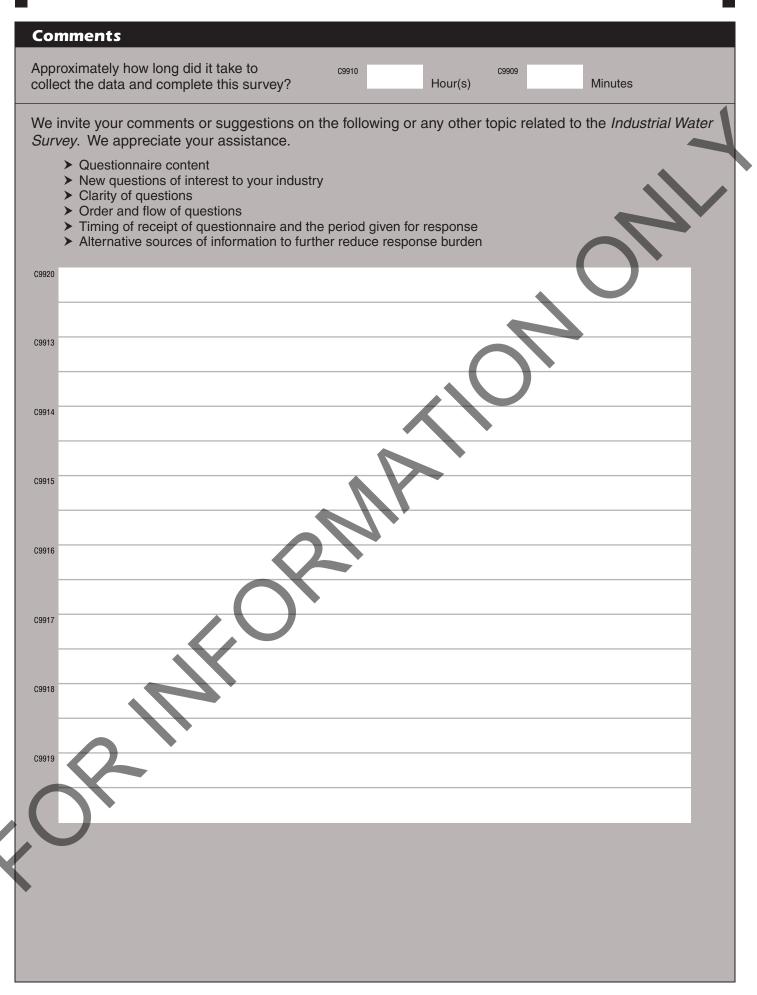
59 Estimated annual operating and maintenance cost for treatment of water discharge. Operating and maintenance costs should only include your material, labour and energy costs incurred to operate and maintain systems to treat water discharged by your facility.

C6501 \$.00 Millions Thousands Hundreds

4230012071 Page 7

SEC	TION 7: OTHER DETAILS			
60	Capital expenditures on water intake, discharge or treatment facilities made at this establishment for 2013. Include all relevant outlays for machinery and equipment	C7010		4
	purchases, and their installation, as well as for construction related to water intake, discharge and treatment	\$ Millions	Thousands	Hundreds
		Willions	mousands	Tiulideus
			C7001	Number
61	Indicate the average number of employees (including administra	ative staff)	 C7002	
62	Indicate the number of days of operation of the facility during the	e reporting period	 C7003	
63	Indicate the average number of hours this facility operates in an	average day	7	_
64	Indicate the amount of electrical power produced at this facility:		C7004	MWh
	(i) net generation		C7005	MWh
	(ii) station service.		C7006	
65	Indicate the average heat rate of the facility			BTU/KWh
			C7007	MW
66	Indicate the electrical generation capacity of this facility		07000	
67	Indicate the total capacity of water intake pumps (specify unit of	measure)	C7008	
			C7009	
68	(i) Does your facility provide water for uses other than in the po	wer plant	¹ C	Yes ³ No
	(ii) If yes, please explain:			
	C7011			_
	C7012			
				-

Page 8 4230012081



Page 9 4230012091

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, 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.

HANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY!

Page 10 4230012101