

- 1 **Q. Further to PUB-NP-014 please provide the same information for domestic hot water**
2 **end uses.**
3
- 4 A. Attachment A to this response provides the percentage of residential customers on the
5 Island Interconnected System that used electricity for domestic water heating in 2018, as
6 well as domestic hot water end uses.
7
- 8 Attachment B to this response provides information on water heating systems used in
9 commercial buildings on the Island Interconnected System by rate class and segment, as
10 well as domestic hot water end uses.
11
- 12 Attachments A and B are provided in Excel format on Newfoundland Power's stranded
13 website at <https://ftp.nfpower.nf.ca/>.
14
- 15 Additional information on commercial customers' energy usage is provided in
16 Attachment C of response to Information Request PUB-NP-014.

Residential Domestic Hot Water Use

**Island Interconnected System
Residential Domestic Hot Water
Electricity Fuel Shares
2018**

Dwelling Type	Electricity Fuel Share Domestic Hot Water (%)
Single-family detached, electric space heat	100.0%
Single-family detached, non-electric space heat	75.0%
Attached, electric space heat	100.0%
Attached, non-electric space heat	64.0%
Apartment, electric space heat	100.0%
Apartment, non-electric space heat	79.0%
Other and non-dwellings	90.0%
Vacant and partial	90.0%

**Newfoundland Power
Residential Domestic Hot Water End Uses
2018**

Own a Clothes Washer

Yes	98.0%
No	2.0%

Own an ENERGY STAR Clothes Washer

Yes	67.8%
No	13.7%
Don't know (VOL)	18.5%

Age of Clothes Washer

0 - 5 years	49.1%
6 - 10 years	33.6%
11 - 20 years	12.3%
20 + years	2.2%
Don't know (VOL)	2.8%

Frequency of Washing Clothes in Cold Water

All of the time	53.5%
Most of the time	26.2%
Some of the time	14.3%
Never	5.6%
Don't know (VOL)	0.4%

Loads of Laundry Washed Weekly

Less than one a week	3.6%
1-3 loads	41.8%
4-7 loads	40.0%
8-14 loads	11.6%
15+ loads	2.2%
Don't know (VOL)	0.8%

Own a Dishwasher

Yes	71.7%
No	28.3%

Age of Dish Washer

0 - 5 years	51.2%
6 - 10 years	28.8%
11 - 20 years	15.3%
20 + years	2.5%
Don't know (VOL)	2.2%

Number of Dishwasher Loads Per Week

.00	36.7%
.50	0.2%
1.00	8.4%
2.00	12.2%
3.00	13.8%
4.00	9.6%
5.00	5.5%
6+	13.6%

Frequency of Use of No-Heat Drying and Other Energy Saving Features

All the time	25.2%
Most often	11.2%
Sometimes	17.3%
Rarely	17.3%
None of the time	25.2%
Don't know (VOL)	3.8%

Number of Hot Water Heaters in Home

0	7.5%
1	88.2%
2	4.3%

Age of First Hot Water Heater

0 - 5 years	55.4%
6 - 10 years	31.4%
11 - 20 years	7.4%
20+ years	1.1%
Don't know (VOL)	4.7%

Age of Second Hot Water Heater

0 - 5 years	68.2%
6 - 10 years	18.2%
11 - 20 years	4.5%
20+ years	4.5%
Don't know (VOL)	4.5%

Own a Hot Tub

Indoor hot tub	0.2%
Outdoor hot tub	1.8%
Outdoor hot tub timer/heat control	0.8%
No	97.2%

Months a Year Hot Tub is Heated

.00	7.1%
1.00	14.3%
2.00	7.1%
12.00	71.4%

Use Hot Tub Cover When Not in Use

Yes	92.9%
No	7.1%

Number of Showerheads in Home

.00	4.9%
1.00	53.6%
2.00	31.6%
3.00	7.7%
4.00	1.6%
6+	0.6%

Number of Low Flow Showerheads in Home

.00	62.9%
1.00	21.6%
2.00	11.4%
3.00	2.9%
4.00	0.8%
6+	0.4%

Number of Water Heater Blankets in Home

.00	99.0%
1.00	1.0%

Number of Baths Per Week

.00	47.2%
1.00	10.4%
2.00	9.6%
3.00	7.5%
4.00	4.7%
5.00	5.7%
6+	14.9%

Number of Showers Per Week

.00	6.5%
1.00	0.8%
2.00	2.0%
3.00	3.1%
4.00	5.5%
5.00	7.1%
6+	75.0%

**Total Amount of Time Shower is in Use on a Typical Weekday in Minutes
(total for all members of residence)**

5 or less	13.4%
6-10	26.7%
11-15	17.7%
16-20	15.1%
21-30	13.9%
31-60	7.9%
More than an hour	1.4%
Don't know (VOL)	3.9%

Commercial Domestic Hot Water Use

Island Interconnected System
Commercial Domestic Hot Water by Rate Class (Average Number of Units)
2018

Hot Water System	Total	Rate 2.1	Rate 2.3	Rate 2.4
Number of electric waterheater tanks – 40 gallons (150 L) or smaller	1.66	1.84	1.21	1.91
Number of electric waterheater tanks – Greater than 40 gallons (150 L) and up to 60gallons (230 L)	0.41	0.21	0.83	0.7
Number of electric waterheater tanks – Larger than 60 gallons (230L)	0.2	0.03	0.55	0.46
Number of electric boilers (with hot-water holding tanks)	0.13	0.03	0.34	0.39
Number of propane waterheater tanks	0.07	0.03	0.17	-
Number of propane tankless, on-demand systems	0.01	-	0.01	-
Number of fuel oil boilers(with hot-water holding tanks)	0.07	0.04	0.12	0.23
Other systems for heating water	0.02	0.02	0.04	-
Capacity of electric steam or hotwater system in kW	400.51	700	126.15	*
Capacity of electric steam or hotwater system in BTUs per hour	400,000	*	400,000	*

* No data available

Island Interconnected System
Commercial Domestic Hot Water by Segment (Average Number of Units)
2018

Hot Water System	Office	Retail	Grocery & Restaurant	Health Services	Education	Warehouse	Lodging, Hospitality & Multiple Unit Residential Buildings	Other Commercial	Fishing	Manufacturing Refining Pulp & Paper
Number of electric waterheater tanks – 40 gallons (150 L) or smaller	0.74	1.19	0.83	1.36	1.65	1.17	2.01	2.65	1.61	0.8
Number of electric waterheater tanks – Greater than 40 gallons (150 L) and up to 60gallons (230 L)	0.32	0.35	0.3	2.14	1.06	0.06	0.43	0.36	0.61	0.34
Number of electric waterheater tanks – Larger than 60 gallons (230L)	0.06	0.03	0.17	2.36	-	0.17	0.45	0.14	-	0.1
Number of Electric boilers(with hot-water holding tanks)	0.1	0.31	0.02	0.46	-	-	0.72	0.09	0.06	0.04
Number of propane waterheater tanks	-	-	0.04	0.46	-	-	1.34	0.02	-	0.04
Number of propane tankless, on-demand systems	-	-	0.02	-	-	-	-	0.01	-	-
Number of fuel oil boilers(with hot-water holding tanks)	0.07	-	0.04	0.21	-	0.1	0.25	0.04	0.43	-
Other systems for heating water	0.01	0.02	0.03	-	0.35	-	-	0.03	-	-
Capacity of electric steam or hotwater system in kW	*	*	6	342	*	100	*	652.25	*	*
Capacity of electric steam or hotwater system in BTUs per hour	*	*	*	400,000	*	*	*	*	*	*

* No data available

**Island Interconnected System
2018**

Percentage of Total Commercial Customers with Residential Dishwashers	19%
Average Number of Residential Dishwashers	1.42
Average Number of Residential Dishwashers that are ENERGY STAR rated	0.99

**Commercial Customers with Residential Dishwashers
Water Heating Fuel Source by Rate Class
2018**

	Rate 2.1	Rate 2.3	Rate 2.4
Electric Water Heaters	12.8%	17.5%	50.0%
Electric Boilers	0.3%	5.0%	25.0%
Propane Water Heaters	0.3%	0.0%	0.0%
Fuel Oil Boilers	0.3%	1.7%	25.0%
Other	1.0%	1.7%	0.0%

Not all customers have this equipment therefore totals may not equal 100. Additionally customers may have multiple water heating sources. It is not possible to determine which source is used for this technology. Customers with multiple water heating sources may be captured in multiple categories which may result in the total exceeding 100.

**Commercial Customers with Residential Dishwashers
Water Heating Fuel Source by Segment
2018**

	Office	Retail	Grocery & Restaurant	Health Services	Education	Warehouse	Lodging, Hospitality & Multiple Unit Residential Buildings	Other Commercial	Fishing	Manufacturing, Refining, Pulp & Paper
Electric Water Heaters	23.7%	3.1%	11.1%	11.1%	33.3%	17.4%	15.4%	12.0%	36.4%	10.0%
Electric Boilers	3.9%	3.1%	0.0%	0.0%	0.0%	0.0%	7.7%	1.6%	9.1%	0.0%
Propane Water Heaters	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	0.0%	0.0%	0.0%
Fuel Oil Boilers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.4%	0.0%	27.3%	0.0%
Other	2.6%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%

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Island Interconnected System
2018

Percentage of Total Commercial Customers With Residential Washers	21%
Average Number of Residential Washers	1.74
Average number of Residential Washers that are ENERGY STAR rated	1.17

Commercial Customers with Residential Washers
Water Heating Fuel Source by Rate Class

2018

	Rate 2.1	Rate 2.3	Rate 2.4
Electric Water Heaters	12.5%	25.0%	37.5%
Electric Boilers	0.7%	6.7%	12.5%
Propane Water Heaters	1.0%	2.5%	0.0%
Fuel Oil Boilers	0.7%	3.3%	25.0%
Other	1.7%	0.0%	0.0%

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Commercial Customers with Residential Washers
Water Heating Fuel Source by Segment

2018

	Office	Retail	Grocery & Restaurant	Health Services	Education	Warehouse	Lodging, Hospitality & Multiple Unit Residential Buildings	Other Commercial	Fishing	Manufacturing, Refining, Pulp & Paper
Electric Water Heaters	6.6%	15.6%	16.7%	55.6%	33.3%	13.0%	30.8%	16.8%	36.4%	15.0%
Electric Boilers	0.0%	0.0%	2.8%	22.2%	0.0%	0.0%	23.1%	2.1%	9.1%	0.0%
Propane Water Heaters	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	23.1%	1.0%	0.0%	0.0%
Fuel Oil Boilers	0.0%	0.0%	0.0%	11.1%	0.0%	4.3%	15.4%	0.5%	27.3%	0.0%
Other	0.0%	0.0%	2.8%	11.1%	0.0%	4.3%	0.0%	1.0%	0.0%	0.0%

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Island Interconnected System
2018

Percentage of Commercial Customers With Showerheads 24.7%
Average Number of Showerheads 20.17

Commercial Customers with Showerheads
Water Heating Fuel Source by Rate Class
2018

	Rate 2.1	Rate 2.3	Rate 2.4
Electric Water Heaters	11.8%	33.3%	62.5%
Electric Boilers	0.0%	7.5%	12.5%
Propane Water Heaters	0.7%	5.0%	0.0%
Fuel Oil Boilers	0.7%	3.3%	12.5%
Other	0.7%	1.7%	0.0%

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Commercial Customers with Showerheads
Water Heating Fuel Source by Segment
2018

	Office	Retail	Grocery & Restaurant	Health Services	Education	Warehouse	Lodging, Hospitality & Multiple Unit Residential Buildings	Other Commercial	Fishing	Manufacturing, Refining, Pulp & Paper
Electric Water Heaters	14.5%	9.4%	2.8%	66.7%	33.3%	13.0%	38.5%	21.5%	18.2%	20.0%
Electric Boilers	1.3%	0.0%	0.0%	22.2%	0.0%	0.0%	15.4%	2.6%	0.0%	0.0%
Propane Water Heaters	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	30.8%	1.6%	0.0%	0.0%
Fuel Oil Boilers	1.3%	0.0%	0.0%	11.1%	0.0%	4.3%	15.4%	0.5%	9.1%	0.0%
Other	1.3%	0.0%	0.0%	11.1%	0.0%	0.0%	7.7%	0.5%	0.0%	0.0%

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**Island Interconnected System
2018**

Percentage of Commercial Customers With Swimming Pools, Hot Tubs or Jacuzzis	2.5%
Average number of indoor heated swimming pools	0.52
Average number of outdoor heated swimming pools	0.22
Average number of indoor hot tubs or jacuzzis	3.77
Average number of outdoor hot tubs or jacuzzis	0.00

**Commercial Customers with Swimming Pools, Hot Tubs or Jacuzzis
Water Heating Fuel Source by Rate Class
2018**

	Rate 2.1	Rate 2.3	Rate 2.4
Electric Water Heaters	0.3%	4.2%	0.0%
Electric Boilers	0.0%	1.7%	0.0%
Propane Water Heaters	0.0%	1.7%	0.0%
Fuel Oil Boilers	0.0%	1.7%	0.0%
Other	0.3%	0.8%	0.0%

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**Commercial Customers with Swimming Pools, Hot Tubs or Jacuzzis
Water Heating Fuel Source by Segment**

	2018									
	Office	Retail	Grocery & Restaurant	Health Services	Education	Warehouse	Lodging, Hospitality & Multiple Unit Residential Buildings	Other Commercial	Fishing	Manufacturing, Refining, Pulp & Paper
Electric Water Heaters	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.1%	1.0%	0.0%	0.0%
Electric Boilers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	0.5%	0.0%	0.0%
Propane Water Heaters	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	0.5%	0.0%	0.0%
Fuel Oil Boilers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	0.5%	0.0%	0.0%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	7.7%	0.0%	0.0%	0.0%

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