

- 1 **Q. Please provide in Excel file format, if applicable, summary data and information**
2 **Newfoundland Power has in its possession concerning the adoption rates of heat**
3 **pumps in their service territory over the past five years. If or as available, please**
4 **provide indication of the type of heat pump, the monthly or seasonal or annual**
5 **pattern of increases in adoption of heat pumps, and any other information**
6 **Newfoundland Power has that would assist in determining an overall estimation of**
7 **heat pump adoption over the next five years. As available, please indicate if the**
8 **adoption rates apply to those customers with existing electric heat, oil heat, or other**
9 **fuel.**
- 10
- 11 A. Newfoundland Power surveys its residential customers annually to understand their
12 adoption of heat pumps. Attachment A to this response provides information on: (i) the
13 percentage of residential customers with a heat pump installed from 2014 through 2018;
14 (ii) the percentage of heat pumps installed by heat source in 2018; and (iii) the percentage
15 of customers that indicated in 2018 that they intend to install a heat pump.
- 16
- 17 Newfoundland Power partners with the Government of Newfoundland and Labrador to
18 provide reduced interest financing to customers through the Energy Efficiency Loan
19 Program (“EELP”). Financing is available for heat pumps, insulation and home energy
20 assessments. Attachment B to this response provides the number of heat pump
21 applications received through the EELP each month from November 2017, when the
22 program began, to February 2019.
- 23
- 24 Newfoundland Power’s commercial customers are also surveyed periodically to
25 understand their adoption of heat pumps. Attachment C to this response provides the
26 percentage of commercial customers with a heat pump installed by rate class and segment
27 in 2018.
- 28
- 29 Attachments A through C are available in Excel format on Newfoundland Power’s
30 stranded website at <https://ftp.nfpower.nf.ca>.

Residential Heat Pump Installations
(2014 – 2018)

Newfoundland Power
Percentage of Residential Customers with a Heat Pump installed
All Heat Sources
(2014-2018)

	2014*	2015	2016	2017	2018
Mini Split Heat Pump		2.0%	4.0%	6.0%	10.0%
Central Air Source Heat Pump		4.0%	3.0%	3.0%	2.0%
Ground Source Heat Pump		0.0%	1.0%	0.0%	1.0%
Total	4.0%	6.0%	8.0%	9.0%	13.0%

*Customer breakdown by heat pump type is not available for 2014.

Newfoundland Power
Percentage of Residential Customers with a Heat Pump Installed
By Heat Source
(2018)

	Main Heat Source			
	Total	Electricity	Oil	Other
Mini Split Heat Pump	10.0%	13.5%	0.9%	7.4%
Central Air Source Heat Pump	2.4%	2.6%	0.9%	3.7%
Ground Source Heat Pump	1.0%	1.5%	0.0%	0.0%
Total	13.3%	17.5%	1.8%	11.1%

Newfoundland Power
Percentage of Residential Customers Planning to Install a Heat Pump
By Heat Source
(2018)

	Total	Main Heat Source		
		Electricity	Oil	Other
Yes	15.7%	19.0%	11.6%	6.5%
No	73.2%	67.9%	83.0%	80.4%
Already Fully Upgraded	0.5%	0.4%	0.0%	2.2%
Don't Know	10.6%	12.7%	5.4%	10.9%

Newfoundland Power
Percentage of Residential Customers Planning to Install Another Heat Pump
By Heat Source
(2018)

	Total	Main Heat Source		
		Electricity	Oil	Other
Yes	7.9%	8.8%	0.0%	0.0%
No	86.8%	85.3%	100.0%	100.0%
Don't Know	5.3%	5.9%	0.0%	0.0%

Newfoundland Power
Type of Heat Pump Residential Customers are Planning to Install
By Heat Source
(2018)

	Total	Main Heat Source		
		Electricity	Oil	Other
Don't Know	50.7%	49.0%	53.8%	66.7%
Mini-split (multi-zone or two or more indoor units)	25.4%	23.5%	30.8%	33.3%
Mini-split (single zone or one indoor unit)	23.9%	27.5%	15.4%	0.0%

**Energy Efficiency Loan Program Applications by Month
(2017 – 2019)**

**Newfoundland Power
Energy Efficiency Loan Program
Number of Heat Pump Applications by Month
(2017-2019)**

	2017	2018	2019
January	-	36	17
February	-	26	20
March	-	21	-
April	-	32	-
May	-	40	-
June	-	55	-
July	-	55	-
August	-	88	-
September	-	85	-
October	-	79	-
November	152	53	-
December	44	16	-

**Commercial Heat Pump Installations
(2018)**

**Island Interconnected
Commercial Customers Central Heating Source by Rate Class
(2018)**

	Rate 2.1 (0-100 kW)	Rate 2.3 (110 kVA – 1000 kVA)	Rate 2.4 (1000 kVA and over)
Furnace	49.4%	18.0%	-
Boiler	13.8%	14.1%	74.4%
Air Source Heat Pump	28.0%	41.0%	-
Ground Source Heat Pump	3.6%	12.0%	25.6%
Other	5.3%	15.0%	-

**Island Interconnected
Commercial Customers Central Heating Source by Segment
(2018)**

	Office	Retail	Grocery	Health	Education	Warehouse	Lodging	Other	Fishing	Manufacturing
Furnace	29.1%	27.0%	29.4%	-	-	38.4%	100.0%	40.3%	29.7%	75.9%
Boiler	7.3%	6.7%	9.0%	63.0%	-	-	-	20.8%	70.3%	13.0%
Air Source Heat Pump	45.2%	58.2%	21.8%	-	100.0%	61.6%	-	23.7%	-	11.1%
Ground Source Heat Pump	8.8%	-	6.8%	37.0%	-	-	-	10.1%	-	-
Other	9.6%	8.2%	32.9%	-	-	-	-	5.1%	-	-

**Island Interconnected
Commercial Customers Auxiliary Heating Source by Rate Class
(2018)**

	Rate 2.1 (0-100 kW)	Rate 2.3 (110 kVA – 1000 kVA)	Rate 2.4 (1000 kVA and over)
Rooftop Units - Electric Resistance Coils	2.4%	11.1%	-
Rooftop Units - Electric Heat Pumps	1.0%	13.6%	-
Rooftop Units - Propane	0.3%	0.9%	-
Baseboards - Electric	47.3%	59.1%	68.6%
Air Handling Units - Electric Resistance Coils	3.7%	16.3%	7.1%
Unit Heaters - Electric	21.1%	32.6%	47.1%
Unit Heaters - Propane	1.0%	0.9%	7.1%
Infrared Radiant Heaters - Electric	2.0%	0.9%	15.7%
Infrared Radiant Heaters - Propane	-	-	15.7%
Packaged Terminal Air Conditioners	0.7%	6.4%	-
Ductless Heat Pumps - Independents	6.8%	13.6%	31.4%
Radiant In-Floor/Ceiling Heating - Electric	1.0%	3.4%	31.4%
Fireplaces - Electric	1.3%	2.8%	-
Fireplaces - Propane	1.1%	1.8%	-
Fireplaces - Wood or Pellet	1.3%	0.9%	-
Other	6.4%	6.2%	-

**Island Interconnected
Commercial Customers Auxiliary Heating Source by Segment
(2018)**

	Office	Retail	Grocery	Health	Education	Warehouse	Lodging	Other	Fishing	Manufacturing
Rooftop Units - Electric Resistance Coils	5.9%	6.6%	5.7%	-	-	-	18.0%	3.9%	-	11.2%
Rooftop Units - Electric Heat Pumps	2.8%	10.8%	5.7%	8.6%	-	5.7%	-	4.8%	-	-
Rooftop Units - Propane	-	3.6%	2.6%	-	-	-	-	-	-	-
Baseboards - Electric	60.2%	42.0%	24.5%	87.9%	100.0%	60.0%	58.2%	46.7%	79.4%	62.9%
Air Handling Units - Electric Resistance Coils	11.3%	3.6%	15.0%	8.6%	35.4%	9.5%	27.0%	3.4%	6.4%	10.3%
Unit Heaters - Electric	14.6%	30.5%	28.2%	17.1%	64.6%	24.8%	18.0%	27.0%	55.3%	21.5%
Unit Heaters - Propane	-	3.0%	2.6%	-	-	4.8%	-	0.3%	11.3%	-
Infrared Radiant Heaters - Electric	-	6.6%	-	-	-	-	-	3.3%	-	-
Infrared Radiant Heaters - Propane	-	-	-	-	-	-	-	-	-	7.0%
Packaged Terminal Air Conditioners	1.3%	-	2.6%	-	-	-	53.9%	-	-	5.6%
Ductless Heat Pumps - Independents	4.1%	6.6%	21.7%	12.1%	-	20.0%	9.0%	8.3%	11.3%	9.6%
Radiant In-Floor/Ceiling Heating - Electric	-	-	-	8.6%	-	-	-	3.7%	-	5.6%
Fireplaces - Electric	-	3.0%	2.6%	12.1%	-	-	9.0%	1.6%	-	-
Fireplaces - Propane	-	-	5.1%	-	-	-	18.0%	0.7%	-	-
Fireplaces - Wood or Pellet	-	-	-	-	-	4.8%	7.4%	1.0%	-	5.6%
Other	6.4%	-	6.0%	-	-	5.7%	16.4%	7.9%	-	4.0%