

NON-CONFIDENTIAL RESPONSE

QUESTION:**A) Conclusions/Results of the 2018 to 2021 Plan:**

As a comparative baseline for this new three year plan, it would be extremely helpful if a complete set of Conclusions/Results for the 2018 to 2021 Plan was available. Appendices A and E provide the target and results data for both the 2018/19 and the 2019/20 programs explaining that the 2020/21 results were not available at the time of filing the application. In view of the lapsed time since filing, please provide the same target/results data set for the 2020/21 programs. If the Econoler evaluation/reviewed data are still not available, the ePEI calculations would suffice here.

RESPONSE:

Verified data is not yet available for the 2020/21 year. The data presented below is based on a draft report received on March 14, 2022. Verified data for the 2021/22 year will not be available until later this year.

This table contains preliminary information from the Impact Evaluation & Savings Verification report currently being prepared for the PEIEC and ePEI for the fiscal year 2020/21 by ePEI's Measurement & Verification consultant Econoler. Gross and Net energy and demand savings are 1st year savings, at the generator.

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2020/21 Energy and Demand Savings	Participation Level		Gross Savings		NTGR	Net Savings		Planned Net Savings		Actual as a % of planned
	Value	Unit	Value	Unit	Value	Value	Unit	Value	Unit	
IES										
Energy Savings	70,636	Products installed	2.834	GWh	-	2.834	GWh	2.399	GWh	118%
Peak Demand Savings			0.382	MW	-	0.382	MW	0.47	MW	81%
WW										
Energy Savings	742	Participants	0.497	GWh	-	0.497	GWh	0.348	GWh	143%
Peak Demand Savings			0.061	MW	-	0.061	MW	0.08	MW	76%
EEER										
Energy Savings	4,118	Participants	3.019	GWh	-	2.246	GWh	3.126	GWh	72%
Peak Demand Savings			2.554	MW	-	1.936	MW	1.1	MW	176%
HIR										
Energy Savings	87	Projects	0.599	GWh	0.79	0.473	GWh	1.843	GWh	26%
Peak Demand Savings			0.177	MW	0.79	0.14	MW	0.53	MW	26%
NHC										
Energy Savings	95	Projects	0.931	GWh	0.62	0.577	GWh	0.287	GWh	201%
Peak Demand Savings			0.275	MW	0.62	0.171	MW	0.08	MW	214%
BER										
Energy Savings	221	Projects	1.893	GWh	-	1.4	GWh	1.507	GWh	93%
Peak Demand Savings			0.523	MW	-	0.442	MW	0.21	MW	210%
CES										
Energy Savings	1	Projects	0.011	GWh	1	0.011	GWh	3.627	GWh	0%
Peak Demand Savings			0.007	MW	1	0.007	MW	0.42	MW	2%
Total										
Energy Savings			7.88	GWh		6.627	GWh	13.137	GWh	50%
Peak Demand Savings			3.449	MW		2.69	MW	2.89	MW	93%

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QUESTION:

B) Conclusions/Results of the 2021 to 2022 Plan:

a) ePEI received IRAC approval to extend the original three year EE&C plan to a four year plan completing by March 2022. In order to extend the baseline referred to in A) above, please provide the same conclusion data set for the 2021/22 programs. It is again understood that only the ePEI calculations for Q1 to Q3 would be currently available and that only projections for Q4 could be provided to complete the reference baseline.

b) Is this last year still on track to deliver the 13.1GWh energy savings as approved in IRAC Order UE21-06?

RESPONSE:

2021/22 Energy and Demand Savings	Net Savings	
	Value	Unit
IES		
Energy Savings	1.566	GWh
Peak Demand Savings	0.213	MW
WW		
Energy Savings	0.412	GWh
Peak Demand Savings	0.048	MW
EEER		
Energy Savings	2.317	GWh
Peak Demand Savings	2.047	MW
HIR		
Energy Savings	0.473	GWh
Peak Demand Savings	0.140	MW
NHC		
Energy Savings	0.753	GWh
Peak Demand Savings	0.223	MW
BER		
Energy Savings	0.949	GWh
Peak Demand Savings	0.282	MW
CES		
Energy Savings		GWh
Peak Demand Savings		MW
Total		
Energy Savings	6.470	GWh
Peak Demand Savings	2.935	MW

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QUESTION:**C: Heat Pump Rebate Program – Displaced Electricity Consumption**

Recognizing that this program was a major contributor to the annual net Energy and Demand savings achieved in the EE&C program from 2018 to 2022 please provide the Heat Pump Energy (MWh) and Demand (MW) savings for:

- a) The two years of 2018/19 and 2019/20
- b) The single year of 2020/21
- c) And the current estimated data for the extended year of 2021/22

It is understood that the data for item (c) above will be a projection for Q4.

RESPONSE:

a) Savings for mini split air source heat pumps for fiscal year 2018/19 were:

- 1693 MWh net 1st year energy savings at the generator
- 1.617 MW net peak demand savings at the generator

Savings for mini split air source heat pumps for fiscal year 2019/20 were:

- 1713 MWh net 1st year energy savings at the generator
- 1.637 MW net peak demand savings at the generator

b) Preliminary savings for mini split air source heat pumps for fiscal year 2020/21 are:

- 1884 MWh net 1st year energy savings at the generator
- 1.800 MW net peak demand savings at the generator

c) Unverified savings for mini split air source heat pumps to March 16, 2022 for the fiscal year 2021/22 are:

- 2038 MWh net 1st year energy savings at the generator
- 1.947 MW net peak demand savings at the generator

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1 **QUESTION:**

2 **D) Heat Pump Rebate Program – Displaced Alternative Heating Fuels**

3 As the heat pump rebate program is offered to all PEI residents, it is understood that a 20% allocation of
4 all approved heat pump installations was used in calculating both annual displaced electrical energy
5 (GWh.) and annual displaced electricity peak demand (MW). The remaining 80% of heat pump
6 installations, which involved switching from alternative heating fuels to electricity, increase the electrical
7 energy consumed and the peak demand presented. For these installations please provide the Energy
8 (MWh) and Demand (MW) increases for:

- 9 a) The two years of 2018/19 and 2019/20
10 b) The single year of 2020/21
11 c) And the current data for the extended year of 2021/22

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13 It is understood that the data for item (c) above will be a projection for Q4.

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15 **RESPONSE:**

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17 Verified data is not yet available for the 2020/21 year. The data presented below is based on a draft
18 report received on March 14, 2022. Verified data for the 2021/22 year will not be available until later this
19 year.

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21 Our assessed Net to Gross ratio for MSHPs is 0.77, meaning that 23% of participants would have
22 purchased heat pumps with or without our incentive program. Assigning this NTG ratio to the non-
23 electrically heated homes results in the following:

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SEE PAGE 2 FOR TABLE

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			Draft	Projection
Fiscal Year:	2018/19	2019/20	2020/21	2021/22
# MSHPs	3721	3767	4139	4479
Percentage of homes non-electrically heated	80%	80%	80%	80%
Units displacing heating fuel - gross	2977	3014	3311	3583
NTG Ratio	0.77	0.77	0.77	0.77
Units displacing heating fuel - net	2292	2320	2550	2759
Unitary Energy in kWh	2967	2967	2967	2967
Net Energy at Meter in GWh	6.801	6.885	7.565	8.186
Line Loss Factor	1.120	1.120	1.120	1.120
Net Energy at Generator in GWh	7.617	7.711	8.473	9.168
Demand in W	2411	2411	2411	2411
Net Peak Demand at Meter in MW	5.526	5.595	6.147	6.652
Line Loss Factor	1.171	1.171	1.171	1.171
Net Peak Demand at Generator in MW	6.471	6.551	7.198	7.790

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1 **QUESTION:**

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3 E) The new EE&C 2022/25 Plan - Heat Pump Rebate Programs

4 a) What are the planned contributions from newly installed Heat Pumps to both the annual
5 displaced electrical energy (GWh.) and annual displaced electricity peak demand (MW)
6 forecasted for this second three-year program?

7 b) In which of the two Residential Demand Response categories – Energy Storage or Load
8 Control – are Heat Pumps accounted?

9 **RESPONSE:**

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11 a) Please refer to the table provided below.

12 - Energy Savings reflect the displaced electrical energy and,

13 - Demand Savings reflect the annual displaced electricity peak.

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SEE PAGE 2 FOR TABLE

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Sector	Program	Measure	Incremental Energy Savings Gross at Generator (GWh)	Incremental Energy Savings Net at Generator (GWh)	Incremental Demand Savings Gross at Generator (MW)	Incremental Demand Savings Net at Generator (MW)
2022 - 2023						
Residential Programs & Measures	EEERs	MSHPs	4.73	3.74	4.52	3.57
		CASHP	0.04	0.03	0.01	0.01
		GSHP	0.01	0.01	0.00	0.00
		ASHPHWH	0.01	0.00	0.00	0.00
Commercial & Industrial Programs & Measures	BERs	MSHPs	0.34	0.34	0.52	0.52
		PTHPs	0.00	0.00	0.00	0.00
2023 - 2024						
Residential Programs & Measures	EEERs	MSHPs	4.73	3.74	4.52	3.57
		CASHP	0.04	0.03	0.01	0.01
		GSHP	0.01	0.01	0.00	0.00
		ASHPHWH	0.01	0.00	0.00	0.00
Commercial & Industrial Programs & Measures	BERs	MSHPs	0.36	0.36	0.54	0.54
		PTHPs	0.00	0.00	0.00	0.00
2024 - 2025						
Residential Programs & Measures	EEERs	MSHPs	4.73	3.74	4.52	3.57
		CASHP	0.04	0.03	0.01	0.01
		GSHP	0.01	0.01	0.00	0.00
		ASHPHWH	0.01	0.00	0.00	0.00
Commercial & Industrial Programs & Measures	BERs	MSHPs	0.37	0.37	0.57	0.57
		PTHPs	0.00	0.00	0.00	0.00
Totals – 2022 - 2025						
Residential Programs & Measures	EEERs	MSHPs	14.19	11.22	13.56	10.71
		CASHP	0.12	0.09	0.03	0.03
		GSHP	0.03	0.03	0.00	0.00
		ASHPHWH	0.03	0.00	0.00	0.00
Commercial & Industrial Programs & Measures	BERs	MSHPs	1.07	1.07	1.63	1.63
		PTHPs	0.00	0.00	0.00	0.00

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- 1 b) Heat pumps are accounted for within the Load Control category under the Residential Demand
- 2 Response.

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QUESTION:

F) The new EE&C 2022/25 Plan – Demand Response Savings and Planned Spending

Table 16 shows three budget allocations of \$1.0M, \$1.13M and \$3.25M for the years 2022/23 to 2023/24 to 2024/25 respectively. Noting that the major proportion of the planned Demand Response initiatives will be implemented via the two PEI Electricity Supply Utilities, please explain in detail the specific projects that produce the forecasted Demand reduction and how the \$5.38M will be distributed between the Utilities and other contractors?

RESPONSE:

Please refer to the table below for the breakdown of the \$5.38 million:

Year	Annual costs (\$M)	Upfront costs (\$M)	Total (\$M)
2022/2023	0.35	0.65	1.00
2023/2024	0.565	0.565	1.13
2024/2025	1.0	2.25	3.25
Total	1.915	3.465	5.38

As noted on pages 26-29 of Appendix A – 2022-23 to 2024-25 Electricity Efficiency and Conservation Plan in year one the focus will be on piloting programs and working with the utilities and the program participants to develop a program model which will be rolled out in further detail in year two and three. At this point the pilot programs contemplated in year one is as follows:

- Energy storage
- Interruptible rates and curtailment
- Dual fuel systems, and
- Demand load control systems.

The distribution between the Utilities would be calculated using the customer base for both Maritime Electric and City of Summerside as a percentage of the forecast total energy sales, which is approximately 90% and 10% respectively.

In addition, the execution of the pilot programs in year 1 will help determine how much, if any, of the budgeted \$5.38 million will be allocated to Utilities and/or other contractors for the years 2 and 3 of the EE&C Plan.