

Exhibit No. BTC-5
Dockets UE-151871/UG-151872
Witness: Bradley T. Cebulko

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

DOCKETS UE-151871/UG-151872
(consolidated)

EXHIBIT TO
TESTIMONY OF

BRADLEY T. CEBULKO

STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

Excerpt of RTF Standard Information Workbook v2.6 – Pending QC
<http://rtf.nwcouncil.org/measures/support/files/Default.asp>

June 7, 2016

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Worksheet Title: Air-Source HP	Notes:
Year Data Collected: 2012	
Base Year: 2012	

Note: Do not insert or delete rows or columns above row 4 or left of column C

Description:

Heat pump cost information. Can be used for heat pump conversion and upgrade measures. Also includes data for FAF, Central AC, and Gas furnaces.
Results for Single Family homes are directly below. For Manufactured Homes, the results are to the right.

Method:

The method chosen was to get bids from a single contractor (Mark Jerome). Data from the Energy Trust were also reviewed, but there was too much variation in the data.

Source(s):

Mark Jerome, 2012

Results:

(In 2012 Dollars)

Single Family Housing	
Measure-Related Costs (2012 Dollars)	
Upgrade to 9.0 HSPF/14 SEER (from 8.5)	\$ 89.50
Cost of 8.5 HSPF Heat Pump	\$ 5,594.82
Forced Air Furnace	\$ 1,141.05
Central AC	\$ 1,856.70
Incremental Cost for PTCS Sizing	\$ 342.05

Costs (2012\$)	Costs from prior workbook
\$ 90	63
\$ 5,595	4,985
\$ 1,141	862
\$ 1,857	1,359
\$ 342	

Prototype	Weighting	UA	Heat Pump Size (nominal tons)		Incremental Cost for PTCS Sizing (2012\$)	Conversion Cost (2012\$)
			PTCS	Std. Practice		
1344	25%	295	1.63	1.35	\$129	\$ 5,148
2200	40%	503	2.83	2.34	\$410	\$ 5,737
2688	35%	508	2.85	2.37	\$417	\$ 5,751
Average (2157 sq.ft.)	100%	453	2.54	2.10	\$342	\$ 5,595

Note: Heating load assumes an average 15% duct loss

Measure Workbook Summary Table:

Measure Incremental Costs and Benefits				Year of the Dollars		
Measure Identifiers	Cost or Benefit	Analysis Approach	Baseline	Data Sources	Source Type	Year of the Dollars
All (SF and MF)	Capital	Average costs from a single contractor's bids (Mark Jerome). Data from the Energy Trust were also reviewed, but there was too much variation in the data.	[Left blank]	Mark Jerome, 2012	Contractor Interview	2012

Analysis: