

## Big Flats Innovation Center – Database Notes

Table 1 Database Notes

<b>Data Collection</b>	<u>Data Logger:</u> <u>Data Collection Interval:</u> <u>Collection Method:</u>	Capstone PowerSync MultiMaster Controller 15 – Minute Frontier Energy connects to site hosted web server to download data nightly.
<b>Site Information</b>	<u>Cogeneration Units:</u> <u>Nameplate Capacity:</u> <u>Heat Recovery Medium:</u> <u>Heat Recovery Uses:</u>	One (1) Capstone C1000S Microturbine System 1,000 kW Hot Water Other
<b>DG/CHP Generator Electrical Output</b>	<u>Engineering Units:</u> <u>Energy Measurement (net/gross):</u> <u>Measurement Type:</u>	kWh Net Power (stipulated 15.84 kW parasitic loads from pump VFD's) Calculated using measured gross kW / Interval by Eaton Power Xpert2000 meter and stipulated parasitic loads.
<b>DG/CHP Generator Fuel Input</b>	<u>Engineering Units:</u> <u>Measurement type:</u>	CF Average gas flow rate (scfh) – Fox FT2A Thermal Mass Flowmeter
<b>DG/CHP Useful Heat Recovery</b>	<u>Engineering Units:</u> <u>Heat Measurement Type:</u>	MBtu/hr Integrated MBtu/h provided by Onicon System 10 Btu Meter (fundamental temperatures and flows provided as well).
<b>DG/CHP Unused Heat Recovery</b>	<u>Engineering Units:</u> <u>Heat Measurement Type:</u>	- -
<b>Facility Purchased Energy</b>	<u>Engineering Units:</u> <u>Measurement Type:</u>	kWh Average kW for each 15-minute interval from SEL-700G protection relay.
<b>Other Facility Gas Use</b>	<u>Engineering Units:</u> <u>Measurement Type:</u>	- -

## **Big Flats Innovation Center – Database Notes**

**Table 2 Event Timeline**

<b>Date</b>	<b>Event</b>
May 8, 2018	Complete data begins. Data added to NYSERDA DER website.
December 11, 2018	Data reviewed, calculations updated, and data updated on website. Changes had been made to power and heat recovery data points that required attention.

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### *Range Checks*

**Table 3. Range Checks**

<b>Data Point</b>	<b>Units</b>	<b>Hourly Data Calculation Method</b>	<b>Database Lower Range</b>	<b>Database Upper Range</b>	<b>Notes</b>
DG/CHP Generator Output (WG_KW_d)	kWh/int	Sum	-50	11,00	-
DG/CHP Generator Gas Use (FG_d)	cf/int	Sum	0	15,000	-
Total Facility Purchased Energy (WT_d)	kWh/int	Sum	0	1,000	-
Other Facility Gas Use (FT_d)	cf/int	-	-	-	-
Useful Heat Recovery (QHR_d)	MBtu/hr	Avg	-500	1,500	-
Unused Heat Recovery (QD_d)	MBtu/hr	Avg	-	-	-
Ambient Temperature (TAO)	°F	Avg	-20	130	<i>WUG Airport Code - SYR</i>

Notes:

1. This table contains values from *big\_flats.csv*

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## *Relational Checks*

Table 4. Relational Checks

Evaluated Point	Criteria	Result

Notes:

1. This table contains values from *relational\_checks.pro*