

## 9. SUPPLEMENTARY INFORMATION



**FIGURE 7:** Cash flow of 50MW Natural Gas Combustion Turbine power plant operating in PJM-COMED, NYISO-Long Island, NYISO-Dunwood. It shows the revenue from capacity, energy and ancillary services markets as positive values, and the fixed O&M cost, variable cost and capital cost payment as negative values and the profit in each year. It shows that in each of the market the

revenue from energy markets and variable cost, most of which is fuel cost, constitute the major portion of the total revenue and total cost respectively.

**TABLE 4:** Utilization of the NCGT plant in NYISO-NYC for various services represented as percentage of hours in a year.

Year	NYISO-NYC			
	Off-line/Non-spinning Reserves (% of hours in a year)	Energy (% of hours in a year)	Spinning Reserve (% of hours in a year)	Regulation (% of hours in a year)
2007	53.3	14.7	0.1	31.9
2008	66.2	13.4	0.6	19.8
2009	79.9	8.7	0.3	11.2
2010	81.0	11.9	1.3	5.8
2011	87.4	8.9	2.0	1.7
2012	86.7	7.5	5.1	0.7
2013	83.0	12.1	4.1	0.8
2014	81.1	14.3	3.5	1.1
2015	81.6	13.5	2.8	2.1
2016	86.9	8.8	2.9	1.4

**TABLE 5:** Utilization of the NCGT plant in NYISO-Long Island for various services represented as percentage of hours in a year.

Year	NYISO-Long Island			
	Off-line/Non-spinning Reserves (% of hours in a year)	Energy (% of hours in a year)	Spinning Reserve (% of hours in a year)	Regulation (% of hours in a year)
2007	37.9	23.7	0.0	38.4
2008	49.0	22.8	0.4	27.9
2009	67.0	15.6	0.2	17.3
2010	71.6	20.8	1.0	6.6
2011	79.3	16.8	1.7	2.2
2012	79.0	15.8	4.4	0.9
2013	71.7	23.5	3.8	0.9
2014	75.0	20.5	3.1	1.4
2015	73.8	21.3	2.5	2.3
2016	80.7	15.2	2.4	1.7

**TABLE 6:** Utilization of the NCGT plant in NYISO-Dunwood for various services represented as percentage of hours in a year

Year	NYISO-Dunwood			
	Off-line/Non-spinning Reserves (% of hours in a year)	Energy (% of hours in a year)	Spinning Reserve (% of hours in a year)	Regulation (% of hours in a year)
2007	53.34	14.70	0.08	31.87
2008	66.20	13.44	0.59	19.76
2009	79.85	8.65	0.25	11.24
2010	80.96	11.93	1.31	5.80
2011	87.35	8.89	2.03	1.72
2012	86.75	7.49	5.10	0.66
2013	83.03	12.12	4.09	0.76
2014	81.08	14.35	3.48	1.08
2015	81.58	13.48	2.84	2.10
2016	86.92	8.78	2.88	1.42

**TABLE 7:** Utilization of the NCGT plant in PJM-Chicago for various services represented as percentage of hours in a year

Year	PJM-Chicago			
	Off-line/Non-spinning Reserves (% of hours in a year)	Energy (% of hours in a year)	Spinning Reserve (% of hours in a year)	Regulation (% of hours in a year)
2007	89.53	10.47		
2008	94.19	5.81		
2009	96.66	3.34		
2010	93.47	6.53		
2011	93.01	6.99		
2012	89.74	7.43	0.02	2.80
2013	86.78	3.73	0.72	8.77
2014	84.92	5.81	1.83	7.44
2015	78.34	8.39	5.14	8.13
2016	79.78	8.42	5.32	6.48
2017	83.80	4.41	4.20	7.59

**TABLE 8:** Utilization of the NCGT plant in ERCOT-Houston for various services represented as percentage of hours in a year

Year	ERCOT-Houston				
	Off-line/Non-spinning Reserves (% of hours in a year)	Energy (% of hours in a year)	Spinning Reserve (% of hours in a year)	Regulation-Up (% of hours in a year)	Regulation-Down (% of hours in a year)
2010	89.8	2.8	2.0	5.4	0.0
2011	86.3	6.6	3.4	3.5	0.1
2012	85.7	4.0	9.1	1.1	0.1
2013	82.6	4.9	11.0	1.2	0.2
2014	79.8	7.3	9.6	1.5	1.8
2015	86.4	4.5	7.3	0.8	0.9
2016	74.9	5.2	17.9	1.0	0.9
2017	73.9	7.0	15.0	2.9	1.3