A. Additional Detail on Unit Specifications

This appendix provides additional detail on the units selected for modeling in this report. It includes basic plant descriptions as well as details on unit performance, operating emissions, and capital and O&M costs.

3x0 Siemens SGT-A65 Dual Fuel with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	3	3	3	3	3	3
Representative Class Gas Turbine	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE
Startup Time to Base Load, min	5	5	5	5	5	5
Startup Time to MECL, min	4	4	4	4	4	4
Cold Startup Time to SCR Compliance, min	45	45	45	45	45	45
Equivalent Forced Outage Rate Demand, %	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Assumed Land Use During Operation, Acres	15	15	15	15	12	15
Fuel Design	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger
NOx Control	Water Injection and SCR	Water Injection and SCR	Water Injection and SCR	Water Injection and SCR	Water Injection and SCR	Water Injection and SCR
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice
Interconnection Voltage, kV	345	345	345	345	345	138
Technology Rating	Mature	Mature	Mature	Mature	Mature	Mature
Permitting & Construction Schedule (Years from FNTP)	3	3	3	3	3	3
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	166,700	166,700	166,500	166,500	166,500	166,600
Net Plant Output - Winter Performance	188,200	188,200	188,200	188,200	188,200	188,200
DMNC Summer	160,900	161,200	160,200	160,200	158,800	160,800
DMNC Winter	188,200	188,200	188,200	188,200	188,200	188,200
DMNC ICAP	158,600	158,600	158,700	158,700	158,700	158,700
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	9,670	9,660	9,670	9,670	9,670	9,670
Net Plant Heat Rate - Winter	9,440	9,440	9,440	9,440	9,460	9,450
Net Plant Heat Rate - DMNC Summer	9,730	9,720	9,730	9,730	9,730	9,720
Net Plant Heat Rate - DMNC Winter	9,380	9,390	9,380	9,380	9,400	9,390
Net Plant Heat Rate - DMNC ICAP	9,730	9,730	9,730	9,730	9,720	9,720
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	100	100	100	100	100	100

3x0 Siemens SGT-A65 Dual Fuel with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	167	167	167	167	167	167
SO_2	3.5	3.5	3.5	3.5	3.5	3.5
CO	302	302	302	302	302	302
CO_2	208,800	208,800	208,800	208,800	208,800	208,800
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	13	13	13	13	13	13
SO_2	3.5	3.5	3.5	3.5	3.5	3.5
CO	7	7	7	7	7	7
CO_2	208,800	208,800	208,800	208,800	208,800	208,800
ESTIMATED BASE LOAD OPERATING EMISSIONS: ULTRA-LOW SULFUR FUEL OIL						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	278	278	278	278	278	278
SO_2	2.6	2.6	2.6	2.6	2.6	2.6
CO	81	81	81	81	81	81
CO_2	278,400	278,400	278,400	278,400	278,400	278,400
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	42	42	42	42	42	42
SO_2	2.6	2.6	2.6	2.6	2.6	2.6
CO	12	12	12	12	12	12
CO_2	278,400	278,400	278,400	278,400	278,400	278,400

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For Siemens A65, 2.5% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

3x0 Siemens SGT-A65 Dual Fuel with SCR, Capital Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$39,780,000	$41,450,000	$45,620,000	$53,790,000	$72,370,000	$69,920,000
Materials	$67,070,000	$67,210,000	$66,610,000	$66,770,000	$66,890,000	$66,950,000
Turbines or Batteries	$66,000,000	$66,000,000	$66,000,000	$66,000,000	$66,000,000	$66,000,000
Other	$51,770,000	$52,310,000	$53,240,000	$53,240,000	$56,220,000	$55,550,000
EPC Project Capital Cost Subtotal, 2020$	**$224,620,000**	**$226,970,000**	**$231,470,000**	**$239,800,000**	**$261,480,000**	**$258,420,000**
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000	$370,000	$480,000	$410,000
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000	$440,000	$570,000	$480,000
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000	$1,020,000	$1,330,000	$1,120,000
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000	$1,130,000	$1,470,000	$1,240,000
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000	$270,000	$350,000	$300,000
Sales Tax	$0	$0	$0	$0	$0	$0
Construction Power and Water	$510,000	$510,000	$510,000	$510,000	$660,000	$560,000
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Switchyard	$17,080,000	$17,080,000	$17,080,000	$17,080,000	$52,030,000	$9,320,000
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000	$13,010,000	$6,500,000
Gas Interconnection and Reinforcement	$18,500,000	$18,500,000	$18,500,000	$18,500,000	$20,000,000	$18,500,000
System Deliverability Upgrade Costs	$0	$0	$0	$0	$0	$0
Water Supply Infrastructure	$0	$0	$0	$0	$10,900,000	$0
Emission Reduction Credits	$100,000	$100,000	$100,000	$400,000	$400,000	$400,000
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000	$650,000	$550,000
Startup/Testing (Fuel & Consumables)	$2,640,000	$2,640,000	$2,640,000	$2,640,000	$2,640,000	$2,640,000
Initial Fuel Inventory	$4,180,000	$4,180,000	$4,180,000	$4,180,000	$4,180,000	$4,180,000
Site Security	$580,000	$580,000	$580,000	$580,000	$750,000	$640,000
Operating Spare Parts	$3,110,000	$3,110,000	$3,110,000	$3,110,000	$3,110,000	$3,110,000
Builders Risk Insurance (0.45% of Construction Costs)	$1,010,790	$1,021,365	$1,041,615	$1,079,100	$1,176,660	$1,162,890
Owner's Contingency (5% for Screening Purposes)	$14,453,040	$14,571,068	$14,797,081	$15,230,455	$18,889,333	$15,586,645
Owner's Cost Allowance Subtotal, 2020$	**$78,893,830**	**$79,022,433**	**$79,268,696**	**$80,039,555**	**$135,195,993**	**$68,899,535**
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%	7.22%	7.22%	7.22%
AFUDC, 2020$						
EPC Portion	$16,217,564	$16,387,234	$16,712,134	$17,313,560	$18,878,856	$18,657,924
Non-EPC Portion	$5,696,134	$5,705,420	$5,723,200	$5,778,856	$9,761,151	$4,974,546
AFUDC Subtotal, 2020$	**$21,913,698**	**$22,092,654**	**$22,435,334**	**$23,092,416**	**$28,640,007**	**$23,632,470**
Total Project Costs, 2020$	**$325,427,528**	**$328,085,087**	**$333,174,030**	**$342,931,971**	**$425,316,000**	**$350,952,005**

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

3x0 Siemens SGT-A65 Dual Fuel with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000	$1,300,000	$1,700,000	$1,500,000
Fixed O&M Cost - Other	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000
Property Insurance Allowance	$1,347,720	$1,361,820	$1,388,820	$1,438,800	$1,568,880	$1,550,520
Site Leasing Allowance	$330,000	$330,000	$330,000	$330,000	$3,240,000	$390,000
Total Fixed O&M Cost 2020$/Yr	**$3,677,720**	**$3,791,820**	**$4,118,820**	**$4,168,800**	**$7,608,880**	**$4,540,520**
Total Fixed O&M Cost 2020$/kW - Yr	**$23.19**	**$23.91**	**$25.95**	**$26.27**	**$47.95**	**$28.61**
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$190	$190	$190	$190	$190	$190
Major Maintenance Cost, 2020$/GT-start	N/A	N/A	N/A	N/A	N/A	N/A
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$8.37	$8.24	$8.14	$8.14	$8.46	$8.01
SCR Related Costs	$0.82	$0.83	$0.83	$0.83	$0.83	$0.83
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90	$0.90	$0.90
Total Variable O&M - Gas Operation, 2020$/MWh	**$10.09**	**$9.97**	**$9.87**	**$9.87**	**$10.19**	**$9.74**
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - FUEL OIL OPERATION, 2020$/MWh						
Water Related O&M	$8.22	$8.12	$8.02	$8.02	$8.30	$7.88
SCR Related Costs	$1.00	$1.00	$1.00	$1.00	$1.03	$1.03
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90	$0.90	$0.90
Total Variable O&M - Fuel Oil Operation, 2020$/MWh	**$10.12**	**$10.02**	**$9.92**	**$9.92**	**$10.23**	**$9.81**

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

3x0 Siemens SGT-A65 Gas Only with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	3	3	3	3		
Representative Class Gas Turbine	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE	Siemens SGT-A65 WLE		
Startup Time to Base Load, min	5	5	5	5		
Startup Time to MECL, min	4	4	4	4		
Cold Startup Time to SCR Compliance, min	45	45	45	45		
Equivalent Forced Outage Rate Demand, %	10.0%	10.0%	10.0%	10.0%		
Assumed Land Use During Operation, Acres	15	15	15	15		
Fuel Design	Natural Gas Only	Natural Gas Only	Natural Gas Only	Natural Gas Only		
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler		
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger		
NOx Control	Water Injection and SCR	Water Injection and SCR	Water Injection and SCR	Water Injection and SCR		
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst		
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice		
Interconnection Voltage, kV	345	345	345	345		
Technology Rating	Mature	Mature	Mature	Mature		
Permitting & Construction Schedule (Years from FNTP)	3	3	3	3		
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	166,700	166,700	166,500	166,500		
Net Plant Output - Winter Performance	188,200	188,200	188,200	188,200		
DMNC Summer	160,900	161,200	160,200	160,200		
DMNC Winter	188,200	188,200	188,200	188,200		
DMNC ICAP	158,600	158,600	158,700	158,700		
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	9,670	9,660	9,670	9,670		
Net Plant Heat Rate - Winter	9,440	9,440	9,440	9,440		
Net Plant Heat Rate - DMNC Summer	9,730	9,720	9,730	9,730		
Net Plant Heat Rate - DMNC Winter	9,380	9,390	9,380	9,380		
Net Plant Heat Rate - DMNC ICAP	9,730	9,730	9,730	9,730		
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	100	100	100	100		

3x0 Siemens SGT-A65 Gas Only with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	167	167	167	167		
SO_2	3.5	3.5	3.5	3.5		
CO	302	302	302	302		
CO_2	208,800	208,800	208,800	208,800		
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	13	13	13	13		
SO_2	3.5	3.5	3.5	3.5		
CO	7	7	7	7		
CO_2	208,800	208,800	208,800	208,800		

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For Siemens A65, 2.5% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US

[6] Emissions estimates are shown for steady state operation at ISO conditions.

3x0 Siemens SGT-A65 Gas Only with SCR, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$37,690,000	$39,310,000	$43,330,000	$51,220,000		
Materials	$63,550,000	$63,740,000	$63,260,000	$63,580,000		
Turbines or Batteries	$63,000,000	$63,000,000	$63,000,000	$63,000,000		
Other	$49,060,000	$49,600,000	$50,570,000	$50,690,000		
EPC Project Capital Cost Subtotal, 2020$	**$213,300,000**	**$215,650,000**	**$220,160,000**	**$228,490,000**		
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000	$370,000		
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000	$440,000		
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000	$1,020,000		
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000	$1,130,000		
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000	$270,000		
Sales Tax	$0	$0	$0	$0		
Construction Power and Water	$510,000	$510,000	$510,000	$510,000		
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Switchyard	$17,080,000	$17,080,000	$17,080,000	$17,080,000		
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000		
Gas Interconnection and Reinforcement	$18,500,000	$18,500,000	$18,500,000	$18,500,000		
System Deliverability Upgrade Costs	$0	$0	$0	$0		
Water Supply Infrastructure	$0	$0	$0	$0		
Emission Reduction Credits	$100,000	$100,000	$100,000	$400,000		
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000		
Startup/Testing (Fuel & Consumables)	$720,000	$720,000	$720,000	$720,000		
Initial Fuel Inventory	$0	$0	$0	$0		
Site Security	$580,000	$580,000	$580,000	$580,000		
Operating Spare Parts	$3,110,000	$3,110,000	$3,110,000	$3,110,000		
Builders Risk Insurance (0.45% of Construction Costs)	$959,850	$970,425	$990,720	$1,028,205		
Owner's Contingency (5% for Screening Purposes)	$13,579,493	$13,697,521	$13,924,036	$14,357,410		
Owner's Cost Allowance Subtotal, 2020$	**$71,869,343**	**$71,997,946**	**$72,244,756**	**$73,015,615**		
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%	7.22%		
AFUDC, 2020$						
EPC Portion	$15,400,260	$15,569,930	$15,895,552	$16,496,978		
Non-EPC Portion	$5,188,967	$5,198,252	$5,216,071	$5,271,727		
AFUDC Subtotal, 2020$	**$20,589,227**	**$20,768,182**	**$21,111,623**	**$21,768,705**		
Total Project Costs, 2020$	**$305,758,569**	**$308,416,128**	**$313,516,379**	**$323,274,321**		

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

3x0 Siemens SGT-A65 Gas Only with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000	$1,300,000		
Fixed O&M Cost - Other	$1,100,000	$1,100,000	$1,100,000	$1,100,000		
Property Insurance Allowance	$1,279,800	$1,293,900	$1,320,960	$1,370,940		
Site Leasing Allowance	$330,000	$330,000	$330,000	$330,000		
Total Fixed O&M Cost 2020$/Yr	**$3,609,800**	**$3,723,900**	**$4,050,960**	**$4,100,940**		
Total Fixed O&M Cost 2020$/kW - Yr	**$22.76**	**$23.48**	**$25.53**	**$25.84**		
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$190	$190	$190	$190		
Major Maintenance Cost, 2020$/GT-start	N/A	N/A	N/A	N/A		
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$8.37	$8.24	$8.14	$8.14		
SCR Related Costs	$0.82	$0.83	$0.83	$0.83		
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90		
Total Variable O&M - Gas Operation, 2020$/MWh	**$10.09**	**$9.97**	**$9.87**	**$9.87**		

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7F.05 Dual Fuel with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1	1	1	1
Representative Class Gas Turbine	GE 7F.05	GE 7F.05	GE 7F.05	GE 7F.05	GE 7F.05	GE 7F.05
Startup Time to Base Load, min	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional
Cold Startup Time to SCR Compliance, min	45	45	45	45	45	45
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
Assumed Land Use During Operation, Acres	15	15	15	15	12	15
Fuel Design	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger
NOx Control	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice
Interconnection Voltage, kV	345	345	345	345	345	138
Technology Rating	Mature	Mature	Mature	Mature	Mature	Mature
Permitting & Construction Schedule (Years from FNTP)	3	3	3	3	3	3
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	215,800	217,000	217,000	217,000	217,800	218,000
Net Plant Output - Winter Performance	224,900	225,900	226,500	226,500	226,900	227,200
DMNC Summer	208,700	210,000	210,000	210,000	210,100	211,700
DMNC Winter	225,900	227,100	228,000	228,000	229,200	229,200
DMNC ICAP	207,100	208,200	209,100	209,100	210,200	210,200
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	10,180	10,180	10,200	10,200	10,210	10,200
Net Plant Heat Rate - Winter	9,880	9,880	9,890	9,890	9,900	9,890
Net Plant Heat Rate - DMNC Summer	10,360	10,350	10,370	10,350	10,370	10,360
Net Plant Heat Rate - DMNC Winter	9,830	9,830	9,830	9,830	9,850	9,840
Net Plant Heat Rate - DMNC ICAP	10,360	10,360	10,360	10,360	10,360	10,360
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)

1x0 GE 7F.05 Dual Fuel with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	80	80	80	80	80	80
SO_2	4.5	4.5	4.6	4.6	4.6	4.6
CO	49	49	49	49	49	49
CO_2	271,200	272,400	273,600	273,600	276,000	276,000
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	18	18	18	18	18	18
SO_2	4.5	4.5	4.6	4.6	4.6	4.6
CO	11	11	11	11	11	11
CO_2	271,200	272,400	273,600	273,600	276,000	276,000
ESTIMATED BASE LOAD OPERATING EMISSIONS: ULTRA-LOW SULFUR FUEL OIL						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	430	430	430	430	430	430
SO_2	3.4	3.5	3.5	3.5	3.5	3.5
CO	84	84	84	84	84	84
CO_2	361,600	363,200	364,800	364,800	368,000	368,000
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	65	65	65	65	65	65
SO_2	3.4	3.5	3.5	3.5	3.5	3.5
CO	14	14	14	14	14	14
CO_2	361,600	363,200	364,800	364,800	368,000	368,000

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7F.05 Dual Fuel with SCR, Capital Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$53,360,000	$55,770,000	$58,150,000	$64,960,000	$86,490,000	$84,230,000
Materials	$36,100,000	$35,940,000	$37,980,000	$41,070,000	$44,970,000	$44,950,000
Turbines or Batteries	$39,500,000	$39,500,000	$39,500,000	$39,500,000	$39,500,000	$39,500,000
Other	$51,950,000	$52,640,000	$52,520,000	$53,820,000	$56,990,000	$56,230,000
EPC Project Capital Cost Subtotal, 2020$	**$180,910,000**	**$183,850,000**	**$188,150,000**	**$199,350,000**	**$227,950,000**	**$224,910,000**
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000	$370,000	$480,000	$410,000
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000	$440,000	$570,000	$480,000
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000	$1,020,000	$1,330,000	$1,120,000
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000	$1,130,000	$1,470,000	$1,240,000
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000	$270,000	$350,000	$300,000
Sales Tax	$0	$0	$0	$0	$0	$0
Construction Power and Water	$510,000	$510,000	$510,000	$510,000	$660,000	$560,000
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Switchyard	$10,250,000	$10,250,000	$10,250,000	$10,250,000	$43,800,000	$5,590,000
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000	$13,010,000	$6,500,000
Gas Interconnection and Reinforcement	$18,500,000	$18,500,000	$18,500,000	$18,500,000	$20,000,000	$18,500,000
System Deliverability Upgrade Costs	$0	$0	$0	$0	$0	$0
Water Supply Infrastructure	$0	$0	$0	$0	$10,900,000	$0
Emission Reduction Credits	$200,000	$200,000	$200,000	$300,000	$300,000	$300,000
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000	$650,000	$550,000
Startup/Testing (Fuel & Consumables)	$3,100,000	$3,100,000	$3,100,000	$3,100,000	$3,100,000	$3,100,000
Initial Fuel Inventory	$4,880,000	$4,880,000	$4,880,000	$4,880,000	$4,880,000	$4,880,000
Site Security	$580,000	$580,000	$580,000	$580,000	$750,000	$640,000
Operating Spare Parts	$5,500,000	$5,500,000	$5,500,000	$5,500,000	$5,500,000	$5,500,000
Builders Risk Insurance (0.45% of Construction Costs)	$814,095	$827,325	$846,675	$897,075	$1,025,775	$1,012,095
Owner's Contingency (5% for Screening Purposes)	$12,098,705	$12,246,366	$12,462,334	$13,029,854	$16,966,289	$13,889,605
Owner's Cost Allowance Subtotal, 2020$	**$73,162,800**	**$73,323,691**	**$73,559,009**	**$74,276,929**	**$128,342,064**	**$66,771,700**
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%	7.22%	7.22%	7.22%
AFUDC, 2020$						
EPC Portion	$13,061,702	$13,273,970	$13,584,430	$14,393,070	$16,457,990	$16,238,502
Non-EPC Portion	$5,282,354	$5,293,971	$5,310,960	$5,362,794	$9,266,297	$4,820,917
AFUDC Subtotal, 2020$	**$18,344,056**	**$18,567,941**	**$18,895,390**	**$19,755,864**	**$25,724,287**	**$21,059,419**
Total Project Costs, 2020$	**$272,416,856**	**$275,741,632**	**$280,604,399**	**$293,382,793**	**$382,016,351**	**$312,741,118**

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7F.05 Dual Fuel with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000	$1,300,000	$1,700,000	$1,500,000
Fixed O&M Cost - Other	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000
Property Insurance Allowance	$1,085,460	$1,103,100	$1,128,900	$1,196,100	$1,367,700	$1,349,460
Site Leasing Allowance	$330,000	$330,000	$330,000	$330,000	$3,240,000	$390,000
Total Fixed O&M Cost 2020$/Yr	**$3,415,460**	**$3,533,100**	**$3,858,900**	**$3,926,100**	**$7,407,700**	**$4,339,460**
Total Fixed O&M Cost 2020$/kW - Yr	**$16.49**	**$16.97**	**$18.45**	**$18.78**	**$35.24**	**$20.64**
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$350	$350	$350	$350	$350	$350
Major Maintenance Cost, 2020$/GT-start	$9,500	$9,500	$9,500	$9,500	$9,500	$9,500
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.04	$0.04	$0.04	$0.04	$0.06	$0.04
SCR Related Costs	$0.58	$0.58	$0.58	$0.58	$0.57	$0.57
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90	$0.91	$0.91
Total Variable O&M - Gas Operation, 2020$/MWh	**$1.52**	**$1.52**	**$1.52**	**$1.52**	**$1.54**	**$1.52**
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - FUEL OIL OPERATION, 2020$/MWh						
Water Related O&M	$7.14	$7.14	$7.14	$7.14	$7.52	$7.15
SCR Related Costs	$0.80	$0.80	$0.80	$0.80	$0.79	$0.79
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90	$0.90	$0.89
Total Variable O&M - Fuel Oil Operation, 2020$/MWh	**$8.84**	**$8.84**	**$8.84**	**$8.84**	**$9.21**	**$8.83**

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7F.05 Dual Fuel without SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1			
Representative Class Gas Turbine	GE 7F.05	GE 7F.05	GE 7F.05			
Startup Time to Base Load, min	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional			
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional			
Cold Startup Time to SCR Compliance, min	45	45	45			
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%			
Assumed Land Use During Operation, Acres	15	15	15			
Fuel Design	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)			
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler			
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger			
NOx Control	DLN (Gas), Water Injection (Fuel Oil)	DLN (Gas), Water Injection (Fuel Oil)	DLN (Gas), Water Injection (Fuel Oil)			
CO Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice			
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice			
Interconnection Voltage, kV	345	345	345			
Technology Rating	Mature	Mature	Mature			
Permitting & Construction Schedule (Years from FNTP)	3	3	3			
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	215,800	217,000	217,000			
Net Plant Output - Winter Performance	224,900	225,900	226,500			
DMNC Summer	208,700	210,000	210,000			
DMNC Winter	225,900	227,100	228,000			
DMNC ICAP	207,100	208,200	209,100			
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	10,180	10,180	10,200			
Net Plant Heat Rate - Winter	9,880	9,880	9,890			
Net Plant Heat Rate - DMNC Summer	10,360	10,350	10,370			
Net Plant Heat Rate - DMNC Winter	9,830	9,830	9,830			
Net Plant Heat Rate - DMNC ICAP	10,360	10,360	10,360			
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)			

1x0 GE 7F.05 Dual Fuel without SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	80	80	80			
SO_2	4.5	4.5	4.6			
CO	49	49	49			
CO_2	271,200	272,400	273,600			
ESTIMATED BASE LOAD OPERATING EMISSIONS: ULTRA-LOW SULFUR FUEL OIL						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	430	430	430			
SO_2	3.4	3.5	3.5			
CO	84	84	84			
CO_2	361,600	363,200	364,800			

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7F.05 Dual Fuel without SCR, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$45,590,000	$47,810,000	$50,100,000			
Materials	$30,840,000	$30,810,000	$32,710,000			
Turbines or Batteries	$39,500,000	$39,500,000	$39,500,000			
Other	$44,380,000	$45,130,000	$45,240,000			
EPC Project Capital Cost Subtotal, 2020$	**$160,310,000**	**$163,250,000**	**$167,550,000**			
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000			
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000			
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000			
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000			
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000			
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000			
Sales Tax	$0	$0	$0			
Construction Power and Water	$510,000	$510,000	$510,000			
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000			
Switchyard	$10,250,000	$10,250,000	$10,250,000			
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000			
Gas Interconnection and Reinforcement	$18,500,000	$18,500,000	$18,500,000			
System Deliverability Upgrade Costs	$0	$0	$0			
Water Supply Infrastructure	$0	$0	$0			
Emission Reduction Credits	$200,000	$200,000	$200,000			
Political Concessions & Area Development	$500,000	$500,000	$500,000			
Startup/Testing (Fuel & Consumables)	$3,100,000	$3,100,000	$3,100,000			
Initial Fuel Inventory	$4,880,000	$4,880,000	$4,880,000			
Site Security	$580,000	$580,000	$580,000			
Operating Spare Parts	$5,500,000	$5,500,000	$5,500,000			
Builders Risk Insurance (0.45% of Construction Costs)	$721,395	$734,625	$753,975			
Owner's Contingency (5% for Screening Purposes)	$11,064,070	$11,211,731	$11,427,699			
Owner's Cost Allowance Subtotal, 2020$	**$72,035,465**	**$72,196,356**	**$72,431,674**			
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%			
AFUDC, 2020$						
EPC Portion	$11,574,382	$11,786,650	$12,097,110			
Non-EPC Portion	$5,200,961	$5,212,577	$5,229,567			
AFUDC Subtotal, 2020$	**$16,775,343**	**$16,999,227**	**$17,326,677**			
Total Project Costs, 2020$	**$249,120,807**	**$252,445,583**	**$257,308,351**			

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7F.05 Dual Fuel without SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000			
Fixed O&M Cost - Other	$1,100,000	$1,100,000	$1,100,000			
Property Insurance Allowance	$961,860	$979,500	$1,005,300			
Site Leasing Allowance	$330,000	$330,000	$330,000			
Total Fixed O&M Cost 2020$/Yr	**$3,291,860**	**$3,409,500**	**$3,735,300**			
Total Fixed O&M Cost 2020$/kW - Yr	**$15.90**	**$16.38**	**$17.86**			
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$350	$350	$350			
Major Maintenance Cost, 2020$/GT-start	$9,500	$9,500	$9,500			
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.04	$0.04	$0.04			
Other Consumables and Variable O&M	$0.90	$0.90	$0.90			
Total Variable O&M - Gas Operation, 2020$/MWh	**$0.94**	**$0.94**	**$0.94**			
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - FUEL OIL OPERATION, 2020$/MWh						
Water Related O&M	$7.14	$7.14	$7.14			
Other Consumables and Variable O&M	$0.90	$0.90	$0.90			
Total Variable O&M - Fuel Oil Operation, 2020$/MWh	**$8.04**	**$8.04**	**$8.04**			

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7F.05 Gas Only with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1	1		
Representative Class Gas Turbine	GE 7F.05	GE 7F.05	GE 7F.05	GE 7F.05		
Startup Time to Base Load, min	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional		
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional		
Cold Startup Time to SCR Compliance, min	45	45	45	45		
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%	4.3%		
Assumed Land Use During Operation, Acres	15	15	15	15		
Fuel Design	Natural Gas Only	Natural Gas Only	Natural Gas Only	Natural Gas Only		
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler		
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger		
NOx Control	DLN (Gas), SCR	DLN (Gas), SCR	DLN (Gas), SCR	DLN (Gas), SCR		
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst		
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice		
Interconnection Voltage, kV	345	345	345	345		
Technology Rating	Mature	Mature	Mature	Mature		
Permitting & Construction Schedule (Years from FNTP)	3	3	3	3		
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	215,800	217,000	217,000	217,000		
Net Plant Output - Winter Performance	224,900	225,900	226,500	226,500		
DMNC Summer	208,700	210,000	210,000	210,000		
DMNC Winter	225,900	227,100	228,000	228,000		
DMNC ICAP	207,100	208,200	209,100	209,100		
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	10,180	10,180	10,200	10,200		
Net Plant Heat Rate - Winter	9,880	9,880	9,890	9,890		
Net Plant Heat Rate - DMNC Summer	10,360	10,350	10,370	10,350		
Net Plant Heat Rate - DMNC Winter	9,830	9,830	9,830	9,830		
Net Plant Heat Rate - DMNC ICAP	10,360	10,360	10,360	10,360		
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)		

1x0 GE 7F.05 Gas Only with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	80	80	80	80		
SO_2	4.5	4.5	4.6	4.6		
CO	49	49	49	49		
CO_2	271,200	272,400	273,600	273,600		
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	18	18	18	18		
SO_2	4.5	4.5	4.6	4.6		
CO	11	11	11	11		
CO_2	271,200	272,400	273,600	273,600		

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7F.05 Gas Only with SCR, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$47,550,000	$49,820,000	$52,130,000	$58,700,000		
Materials	$32,170,000	$32,110,000	$34,040,000	$37,110,000		
Turbines or Batteries	$38,000,000	$38,000,000	$38,000,000	$38,000,000		
Other	$46,290,000	$47,020,000	$47,080,000	$48,640,000		
EPC Project Capital Cost Subtotal, 2020$	**$164,010,000**	**$166,950,000**	**$171,250,000**	**$182,450,000**		
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000	$370,000		
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000	$440,000		
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000	$1,020,000		
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000	$1,130,000		
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000	$270,000		
Sales Tax	$0	$0	$0	$0		
Construction Power and Water	$510,000	$510,000	$510,000	$510,000		
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Switchyard	$10,250,000	$10,250,000	$10,250,000	$10,250,000		
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000		
Gas Interconnection and Reinforcement	$18,500,000	$18,500,000	$18,500,000	$18,500,000		
System Deliverability Upgrade Costs	$0	$0	$0	$0		
Water Supply Infrastructure	$0	$0	$0	$0		
Emission Reduction Credits	$200,000	$200,000	$200,000	$300,000		
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000		
Startup/Testing (Fuel & Consumables)	$830,000	$830,000	$830,000	$830,000		
Initial Fuel Inventory	$0	$0	$0	$0		
Site Security	$580,000	$580,000	$580,000	$580,000		
Operating Spare Parts	$5,500,000	$5,500,000	$5,500,000	$5,500,000		
Builders Risk Insurance (0.45% of Construction Costs)	$738,045	$751,275	$770,625	$821,025		
Owner's Contingency (5% for Screening Purposes)	$10,892,402	$11,040,064	$11,256,031	$11,823,551		
Owner's Cost Allowance Subtotal, 2020$	**$64,730,447**	**$64,891,339**	**$65,126,656**	**$65,844,576**		
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%	7.22%		
AFUDC, 2020$						
EPC Portion	$11,841,522	$12,053,790	$12,364,250	$13,172,890		
Non-EPC Portion	$4,673,538	$4,685,155	$4,702,145	$4,753,978		
AFUDC Subtotal, 2020$	**$16,515,060**	**$16,738,945**	**$17,066,395**	**$17,926,868**		
Total Project Costs, 2020$	**$245,255,508**	**$248,580,283**	**$253,443,051**	**$266,221,445**		

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7F.05 Gas Only with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000	$1,300,000		
Fixed O&M Cost - Other	$1,100,000	$1,100,000	$1,100,000	$1,100,000		
Property Insurance Allowance	$984,060	$1,001,700	$1,027,500	$1,094,700		
Site Leasing Allowance	$330,000	$330,000	$330,000	$330,000		
Total Fixed O&M Cost 2020$/Yr	**$3,314,060**	**$3,431,700**	**$3,757,500**	**$3,824,700**		
Total Fixed O&M Cost 2020$/kW - Yr	**$16.00**	**$16.48**	**$17.97**	**$18.29**		
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$350	$350	$350	$350		
Major Maintenance Cost, 2020$/GT-start	$9,500	$9,500	$9,500	$9,500		
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.04	$0.04	$0.04	$0.04		
SCR Related Costs	$0.58	$0.58	$0.58	$0.58		
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90		
Total Variable O&M - Gas Operation, 2020$/MWh	**$1.52**	**$1.52**	**$1.52**	**$1.52**		

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7F.05 Gas Only without SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1			
Representative Class Gas Turbine	GE 7F.05	GE 7F.05	GE 7F.05			
Startup Time to Base Load, min	11 fast / 30 conventional	11 fast / 30 conventional	11 fast / 30 conventional			
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional			
Cold Startup Time to SCR Compliance, min	45	45	45			
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%			
Assumed Land Use During Operation, Acres	15	15	15			
Fuel Design	Natural Gas Only	Natural Gas Only	Natural Gas Only			
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler			
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger			
NOx Control	DLN (Gas)	DLN (Gas)	DLN (Gas)			
CO Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice			
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice			
Interconnection Voltage, kV	345	345	345			
Technology Rating	Mature	Mature	Mature			
Permitting & Construction Schedule (Years from FNTP)	3	3	3			
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	215,800	217,000	217,000			
Net Plant Output - Winter Performance	224,900	225,900	226,500			
DMNC Summer	208,700	210,000	210,000			
DMNC Winter	225,900	227,100	228,000			
DMNC ICAP	207,100	208,200	209,100			
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	10,180	10,180	10,200			
Net Plant Heat Rate - Winter	9,880	9,880	9,890			
Net Plant Heat Rate - DMNC Summer	10,360	10,350	10,370			
Net Plant Heat Rate - DMNC Winter	9,830	9,830	9,830			
Net Plant Heat Rate - DMNC ICAP	10,360	10,360	10,360			
Estimated Startup Fuel Usage						
Start to Base Load, MMBtu	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)	140 (fast) / 325 (typ)			

1x0 GE 7F.05 Gas Only without SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	80	80	80			
SO_2	4.5	4.5	4.6			
CO	49	49	49			
CO_2	271,200	272,400	273,600			

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7F.05 Gas Only without SCR, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$39,780,000	$41,860,000	$44,070,000			
Materials	$26,910,000	$26,980,000	$28,780,000			
Turbines or Batteries	$38,000,000	$38,000,000	$38,000,000			
Other	$38,720,000	$39,510,000	$39,800,000			
EPC Project Capital Cost Subtotal, 2020$	**$143,410,000**	**$146,350,000**	**$150,650,000**			
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000			
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000			
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000			
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000			
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000			
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000			
Sales Tax	$0	$0	$0			
Construction Power and Water	$510,000	$510,000	$510,000			
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000			
Switchyard	$10,250,000	$10,250,000	$10,250,000			
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000			
Gas Interconnection and Reinforcement	$18,500,000	$18,500,000	$18,500,000			
System Deliverability Upgrade Costs	$0	$0	$0			
Water Supply Infrastructure	$0	$0	$0			
Emission Reduction Credits	$200,000	$200,000	$200,000			
Political Concessions & Area Development	$500,000	$500,000	$500,000			
Startup/Testing (Fuel & Consumables)	$830,000	$830,000	$830,000			
Initial Fuel Inventory	$0	$0	$0			
Site Security	$580,000	$580,000	$580,000			
Operating Spare Parts	$5,500,000	$5,500,000	$5,500,000			
Builders Risk Insurance (0.45% of Construction Costs)	$645,345	$658,575	$677,925			
Owner's Contingency (5% for Screening Purposes)	$9,857,767	$10,005,429	$10,221,396			
Owner's Cost Allowance Subtotal, 2020$	**$63,603,112**	**$63,764,004**	**$63,999,321**			
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%			
AFUDC, 2020$						
EPC Portion	$10,354,202	$10,566,470	$10,876,930			
Non-EPC Portion	$4,592,145	$4,603,761	$4,620,751			
AFUDC Subtotal, 2020$	**$14,946,347**	**$15,170,231**	**$15,497,681**			
Total Project Costs, 2020$	**$221,959,459**	**$225,284,235**	**$230,147,002**			

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7F.05 Gas Only without SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000			
Fixed O&M Cost - Other	$1,100,000	$1,100,000	$1,100,000			
Property Insurance Allowance	$860,460	$878,100	$903,900			
Site Leasing Allowance	$330,000	$330,000	$330,000			
Total Fixed O&M Cost 2020$/Yr	**$3,190,460**	**$3,308,100**	**$3,633,900**			
Total Fixed O&M Cost 2020$/kW - Yr	**$15.41**	**$15.89**	**$17.38**			
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$350	$350	$350			
Major Maintenance Cost, 2020$/GT-start	$9,500	$9,500	$9,500			
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.04	$0.04	$0.04			
Other Consumables and Variable O&M	$0.90	$0.90	$0.90			
Total Variable O&M - Gas Operation, 2020$/MWh	**$0.94**	**$0.94**	**$0.94**			

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7HA.02 tuned to emit 25ppm Dual Fuel with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1	1	1	1
Representative Class Gas Turbine	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02
Startup Time to Base Load, min	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional
Cold Startup Time to SCR Compliance, min	45	45	45	45	45	45
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
Assumed Land Use During Operation, Acres	15	15	15	15	12	15
Fuel Design	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger
NOx Control	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR	DLN (Gas), Water Injection (Fuel Oil), SCR
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice
Interconnection Voltage, kV	345	345	345	345	345	138
Technology Rating	Mature	Mature	Mature	Mature	Mature	Mature
Permitting & Construction Schedule (Years from FNTP)	3	3	3	3	3	3
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	355,600	357,700	357,400	357,400	358,700	359,000
Net Plant Output - Winter Performance	367,400	369,200	370,200	370,200	370,200	371,100
DMNC Summer	346,100	348,200	348,300	348,200	348,500	351,100
DMNC Winter	366,000	368,600	369,900	369,900	374,100	373,000
DMNC ICAP	343,700	345,600	347,000	347,000	348,800	348,800
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	9,350	9,350	9,360	9,360	9,370	9,370
Net Plant Heat Rate - Winter	9,280	9,290	9,300	9,300	9,300	9,300
Net Plant Heat Rate - DMNC Summer	9,460	9,450	9,460	9,450	9,470	9,460
Net Plant Heat Rate - DMNC Winter	9,210	9,210	9,210	9,210	9,250	9,230
Net Plant Heat Rate - DMNC ICAP	9,460	9,460	9,460	9,460	9,460	9,460
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)

1x0 GE 7HA.02 tuned to emit 25ppm Dual Fuel with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	331	331	331	331	331	331
SO_2	6.8	6.8	6.9	6.9	6.9	6.9
CO	72	72	72	72	72	72
CO_2	408,000	410,400	411,600	411,600	414,000	414,000
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	26	26	26	26	26	26
SO_2	6.8	6.8	6.9	6.9	6.9	6.9
CO	16	16	16	16	16	16
CO_2	408,000	410,400	411,600	411,600	414,000	414,000
ESTIMATED BASE LOAD OPERATING EMISSIONS: ULTRA-LOW SULFUR FUEL OIL						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	640	640	640	640	640	640
SO_2	5.2	5.2	5.2	5.2	5.3	5.3
CO	109	109	109	109	109	109
CO_2	544,000	547,200	548,800	548,800	552,000	552,000
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	96	96	96	96	96	96
SO_2	5.2	5.2	5.2	5.2	5.3	5.3
CO	19	19	19	19	19	19
CO_2	544,000	547,200	548,800	548,800	552,000	552,000

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7HA.02 tuned to emit 25ppm Dual Fuel with SCR, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$59,800,000	$62,960,000	$63,180,000	$72,900,000	$99,220,000	$96,770,000
Materials	$56,700,000	$55,890,000	$61,160,000	$61,860,000	$65,190,000	$65,300,000
Turbines or Batteries	$68,500,000	$68,500,000	$68,500,000	$68,500,000	$68,500,000	$68,500,000
Other	$64,570,000	$65,290,000	$64,290,000	$64,180,000	$69,580,000	$68,860,000
EPC Project Capital Cost Subtotal, 2020$	**$249,570,000**	**$252,640,000**	**$257,130,000**	**$267,440,000**	**$302,490,000**	**$299,430,000**
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000	$370,000	$480,000	$410,000
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000	$440,000	$570,000	$480,000
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000	$1,020,000	$1,330,000	$1,120,000
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000	$1,130,000	$1,470,000	$1,240,000
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000	$270,000	$350,000	$300,000
Sales Tax	$0	$0	$0	$0	$0	$0
Construction Power and Water	$550,000	$550,000	$550,000	$550,000	$720,000	$610,000
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Switchyard	$10,250,000	$10,250,000	$10,250,000	$10,250,000	$43,800,000	$5,590,000
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000	$13,010,000	$6,500,000
Gas Interconnection and Reinforcement	$23,500,000	$23,500,000	$23,500,000	$23,500,000	$20,000,000	$23,500,000
System Deliverability Upgrade Costs	$0	$0	$0	$0	$0	$0
Water Supply Infrastructure	$0	$0	$0	$0	$10,900,000	$0
Emission Reduction Credits	$70,000	$70,000	$70,000	$400,000	$400,000	$400,000
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000	$650,000	$550,000
Startup/Testing (Fuel & Consumables)	$4,500,000	$4,500,000	$4,500,000	$4,500,000	$4,500,000	$4,500,000
Initial Fuel Inventory	$7,240,000	$7,240,000	$7,240,000	$7,240,000	$7,240,000	$7,240,000
Site Security	$580,000	$580,000	$580,000	$580,000	$750,000	$640,000
Operating Spare Parts	$6,500,000	$6,500,000	$6,500,000	$6,500,000	$6,500,000	$6,500,000
Builders Risk Insurance (0.45% of Construction Costs)	$1,123,065	$1,136,880	$1,157,085	$1,203,480	$1,361,205	$1,347,435
Owner's Contingency (5% for Screening Purposes)	$16,030,653	$16,184,844	$16,410,354	$16,944,674	$20,956,060	$18,127,872
Owner's Cost Allowance Subtotal, 2020$	**$87,073,718**	**$87,241,724**	**$87,487,439**	**$88,398,154**	**$137,587,265**	**$81,255,307**
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%	7.22%	7.22%	7.22%
AFUDC, 2020$						
EPC Portion	$18,018,954	$18,240,608	$18,564,786	$19,309,168	$21,839,778	$21,618,846
Non-EPC Portion	$6,286,722	$6,298,852	$6,316,593	$6,382,347	$9,933,801	$5,866,633
AFUDC Subtotal, 2020$	**$24,305,676**	**$24,539,460**	**$24,881,379**	**$25,691,515**	**$31,773,579**	**$27,485,479**
Total Project Costs, 2020$	**$360,949,395**	**$364,421,184**	**$369,498,818**	**$381,529,669**	**$471,850,844**	**$408,170,786**

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7HA.02 tuned to emit 25ppm Dual Fuel with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000	$1,300,000	$1,700,000	$1,500,000
Fixed O&M Cost - Other	$1,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000
Property Insurance Allowance	$1,497,420	$1,515,840	$1,542,780	$1,604,640	$1,814,940	$1,796,580
Site Leasing Allowance	$330,000	$330,000	$330,000	$330,000	$3,240,000	$390,000
Total Fixed O&M Cost 2020$/Yr	**$4,227,420**	**$4,345,840**	**$4,672,780**	**$4,734,640**	**$8,254,940**	**$5,186,580**
Total Fixed O&M Cost 2020$/kW - Yr	**$12.30**	**$12.57**	**$13.47**	**$13.64**	**$23.67**	**$14.87**
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$600	$600	$600	$600	$600	$600
Major Maintenance Cost, 2020$/GT-start	$26,600	$26,600	$26,600	$26,600	$26,600	$26,600
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.03	$0.03	$0.03	$0.03	$0.05	$0.03
SCR Related Costs	$0.47	$0.46	$0.46	$0.46	$0.48	$0.46
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90	$0.90	$0.90
Total Variable Variable O&M - Gas Operation, 2020$/MWh	**$1.40**	**$1.39**	**$1.39**	**$1.39**	**$1.43**	**$1.39**
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - FUEL OIL OPERATION, 2020$/MWh						
Water Related O&M	$9.31	$9.31	$9.33	$9.33	$9.86	$9.33
SCR Related Costs	$0.70	$0.70	$0.70	$0.70	$0.70	$0.70
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90	$0.90	$0.90
Total Variable Variable O&M - Fuel Oil Operation, 2020$/MWh	**$10.91**	**$10.91**	**$10.93**	**$10.93**	**$11.46**	**$10.93**

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7HA.02 tuned to emit 15ppm Dual Fuel without SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1			
Representative Class Gas Turbine	GE 7HA.02	GE 7HA.02	GE 7HA.02			
Startup Time to Base Load, min	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional			
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional			
Cold Startup Time to SCR Compliance, min	45	45	45			
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%			
Assumed Land Use During Operation, Acres	15	15	15			
Fuel Design	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)			
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler			
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger			
NOx Control	DLN (Gas), Water Injection (Fuel Oil)	DLN (Gas), Water Injection (Fuel Oil)	DLN (Gas), Water Injection (Fuel Oil)			
CO Control	CO Catalyst	CO Catalyst	CO Catalyst			
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice			
Interconnection Voltage, kV	345	345	345			
Technology Rating	Mature	Mature	Mature			
Permitting & Construction Schedule (Years from FNTP)	3	3	3			
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	338,000	341,200	340,900			
Net Plant Output - Winter Performance	346,100	351,000	350,500			
DMNC Summer	329,300	334,000	331,600			
DMNC Winter	344,700	350,500	350,200			
DMNC ICAP	326,700	328,500	329,900			
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	9,370	9,390	9,390			
Net Plant Heat Rate - Winter	9,320	9,320	9,340			
Net Plant Heat Rate - DMNC Summer	9,470	9,470	9,480			
Net Plant Heat Rate - DMNC Winter	9,250	9,250	9,250			
Net Plant Heat Rate - DMNC ICAP	9,490	9,500	9,490			
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)			

1x0 GE 7HA.02 tuned to emit 15ppm Dual Fuel without SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	189	189	189			
SO_2	6.4	6.4	6.4			
CO	69	69	69			
CO_2	381,600	384,000	385,200			
ESTIMATED BASE LOAD OPERATING EMISSIONS: ULTRA-LOW SULFUR FUEL OIL						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	640	640	640			
SO_2	4.8	4.9	4.9			
CO	109	109	109			
CO_2	508,800	512,000	513,600			

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7HA.02 tuned to emit 15ppm Dual Fuel without SCR, Capital Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$47,220,000	$50,460,000	$50,280,000			
Materials	$35,740,000	$34,870,000	$41,480,000			
Turbines or Batteries	$68,500,000	$68,500,000	$68,500,000			
Other	$54,670,000	$55,350,000	$53,430,000			
EPC Project Capital Cost Subtotal, 2020$	**$206,130,000**	**$209,180,000**	**$213,690,000**			
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000			
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000			
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000			
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000			
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000			
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000			
Sales Tax	$0	$0	$0			
Construction Power and Water	$550,000	$550,000	$550,000			
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000			
Switchyard	$10,250,000	$10,250,000	$10,250,000			
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000			
Gas Interconnection and Reinforcement	$23,500,000	$23,500,000	$23,500,000			
System Deliverability Upgrade Costs	$0	$0	$0			
Water Supply Infrastructure	$0	$0	$0			
Emission Reduction Credits	$400,000	$400,000	$400,000			
Political Concessions & Area Development	$500,000	$500,000	$500,000			
Startup/Testing (Fuel & Consumables)	$4,500,000	$4,500,000	$4,500,000			
Initial Fuel Inventory	$7,240,000	$7,240,000	$7,240,000			
Site Security	$580,000	$580,000	$580,000			
Operating Spare Parts	$6,500,000	$6,500,000	$6,500,000			
Builders Risk Insurance (0.45% of Construction Costs)	$927,585	$941,310	$961,605			
Owner's Contingency (5% for Screening Purposes)	$13,865,379	$14,018,566	$14,245,080			
Owner's Cost Allowance Subtotal, 2020$	**$85,042,964**	**$85,209,876**	**$85,456,685**			
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%			
AFUDC, 2020$						
EPC Portion	$14,882,586	$15,102,796	$15,428,418			
Non-EPC Portion	$6,140,102	$6,152,153	$6,169,973			
AFUDC Subtotal, 2020$	**$21,022,688**	**$21,254,949**	**$21,598,391**			
Total Project Costs, 2020$	**$312,195,652**	**$315,644,825**	**$320,745,076**			

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7HA.02 tuned to emit 15ppm Dual Fuel without SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000			
Fixed O&M Cost - Other	$1,500,000	$1,500,000	$1,500,000			
Property Insurance Allowance	$1,236,780	$1,255,080	$1,282,140			
Site Leasing Allowance	$330,000	$330,000	$330,000			
Total Fixed O&M Cost 2020$/Yr	**$3,966,780**	**$4,085,080**	**$4,412,140**			
Total Fixed O&M Cost 2020$/kW - Yr	**$12.14**	**$12.44**	**$13.37**			
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$600	$600	$600			
Major Maintenance Cost, 2020$/GT-start	$26,600	$26,600	$26,600			
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.03	$0.03	$0.03			
Other Consumables and Variable O&M	$0.90	$0.90	$0.90			
Total Variable O&M - Gas Operation, 2020$/MWh	**$0.93**	**$0.93**	**$0.93**			
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - FUEL OIL OPERATION, 2020$/MWh						
Water Related O&M	$9.31	$9.31	$9.31			
Other Consumables and Variable O&M	$0.90	$0.90	$0.90			
Total Variable O&M - Fuel Oil Operation, 2020$/MWh	**$10.21**	**$10.21**	**$10.21**			

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7HA.02 tuned to emit 25ppm Gas Only with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1	1		
Representative Class Gas Turbine	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02		
Startup Time to Base Load, min	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional		
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional		
Cold Startup Time to SCR Compliance, min	45	45	45	45		
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%	4.3%		
Assumed Land Use During Operation, Acres	15	15	15	15		
Fuel Design	Natural Gas Only	Natural Gas Only	Natural Gas Only	Natural Gas Only		
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler		
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger		
NOx Control	DLN (Gas), SCR	DLN (Gas), SCR	DLN (Gas), SCR	DLN (Gas), SCR		
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst		
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice		
Interconnection Voltage, kV	345	345	345	345		
Technology Rating	Mature	Mature	Mature	Mature		
Permitting & Construction Schedule (Years from FNTP)	3	3	3	3		
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	355,600	357,700	357,400	357,400		
Net Plant Output - Winter Performance	367,400	369,200	370,200	370,200		
DMNC Summer	346,100	348,200	348,300	348,200		
DMNC Winter	366,000	368,600	369,900	369,900		
DMNC ICAP	343,700	345,600	347,000	347,000		
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	9,350	9,350	9,360	9,360		
Net Plant Heat Rate - Winter	9,280	9,290	9,300	9,300		
Net Plant Heat Rate - DMNC Summer	9,460	9,450	9,460	9,450		
Net Plant Heat Rate - DMNC Winter	9,210	9,210	9,210	9,210		
Net Plant Heat Rate - DMNC ICAP	9,460	9,460	9,460	9,460		
Estimated Startup Fuel Usage, MMBtu						
Start to Base Load	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)		

1x0 GE 7HA.02 tuned to emit 25ppm Gas Only with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	331	331	331	331		
SO_2	6.8	6.8	6.9	6.9		
CO	72	72	72	72		
CO_2	408,000	410,400	411,600	411,600		
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	26	26	26	26		
SO_2	6.8	6.8	6.9	6.9		
CO	16	16	16	16		
CO_2	408,000	410,400	411,600	411,600		

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7HA.02 tuned to emit 25ppm Gas Only with SCR, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$51,910,000	$54,790,000	$55,180,000	$64,140,000		
Materials	$49,220,000	$48,640,000	$53,420,000	$54,430,000		
Turbines or Batteries	$67,000,000	$67,000,000	$67,000,000	$67,000,000		
Other	$56,040,000	$56,810,000	$56,130,000	$56,470,000		
EPC Project Capital Cost Subtotal, 2020$	**$224,170,000**	**$227,240,000**	**$231,730,000**	**$242,040,000**		
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000	$370,000		
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000	$440,000		
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000	$1,020,000		
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000	$1,130,000		
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000	$270,000		
Sales Tax	$0	$0	$0	$0		
Construction Power and Water	$550,000	$550,000	$550,000	$550,000		
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Switchyard	$10,250,000	$10,250,000	$10,250,000	$10,250,000		
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000		
Gas Interconnection and Reinforcement	$23,500,000	$23,500,000	$23,500,000	$23,500,000		
System Deliverability Upgrade Costs	$0	$0	$0	$0		
Water Supply Infrastructure	$0	$0	$0	$0		
Emission Reduction Credits	$70,000	$70,000	$70,000	$400,000		
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000		
Startup/Testing (Fuel & Consumables)	$1,150,000	$1,150,000	$1,150,000	$1,150,000		
Initial Fuel Inventory	$0	$0	$0	$0		
Site Security	$580,000	$580,000	$580,000	$580,000		
Operating Spare Parts	$6,500,000	$6,500,000	$6,500,000	$6,500,000		
Builders Risk Insurance (0.45% of Construction Costs)	$1,008,765	$1,022,580	$1,042,785	$1,089,180		
Owner's Contingency (5% for Screening Purposes)	$14,225,438	$14,379,629	$14,605,139	$15,139,459		
Owner's Cost Allowance Subtotal, 2020$	**$74,564,203**	**$74,732,209**	**$74,977,924**	**$75,888,639**		
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%	7.22%		
AFUDC, 2020$						
EPC Portion	$16,185,074	$16,406,728	$16,730,906	$17,475,288		
Non-EPC Portion	$5,383,535	$5,395,665	$5,413,406	$5,479,160		
AFUDC Subtotal, 2020$	**$21,568,609**	**$21,802,393**	**$22,144,312**	**$22,954,448**		
Total Project Costs, 2020$	**$320,302,813**	**$323,774,602**	**$328,852,236**	**$340,883,087**		

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7HA.02 tuned to emit 25ppm Dual Fuel with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000	$1,300,000		
Fixed O&M Cost - Other	$1,500,000	$1,500,000	$1,500,000	$1,500,000		
Property Insurance Allowance	$1,345,020	$1,363,440	$1,390,380	$1,452,240		
Site Leasing Allowance	$330,000	$330,000	$330,000	$330,000		
Total Fixed O&M Cost 2020$/Yr	**$4,075,020**	**$4,193,440**	**$4,520,380**	**$4,582,240**		
Total Fixed O&M Cost 2020$/kW - Yr	**$11.86**	**$12.13**	**$13.03**	**$13.21**		
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$600	$600	$600	$600		
Major Maintenance Cost, 2020$/GT-start	$26,600	$26,600	$26,600	$26,600		
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.03	$0.03	$0.03	$0.03		
SCR Related Costs	$0.47	$0.46	$0.46	$0.46		
Other Consumables and Variable O&M	$0.90	$0.90	$0.90	$0.90		
Total Variable O&M - Gas Operation, 2020$/MWh	**$1.40**	**$1.39**	**$1.39**	**$1.39**		

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x0 GE 7HA.02 tuned to emit 15ppm Gas Only without SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1			
Representative Class Gas Turbine	GE 7HA.02	GE 7HA.02	GE 7HA.02			
Startup Time to Base Load, min	10 fast / 30 conventional	10 fast / 30 conventional	10 fast / 30 conventional			
Startup Time to MECL, min	8 fast / 24 conventional	8 fast / 24 conventional	8 fast / 24 conventional			
Cold Startup Time to SCR Compliance, min	45	45	45			
Equivalent Forced Outage Rate Demand, %	4.3%	4.3%	4.3%			
Assumed Land Use During Operation, Acres	15	15	15			
Fuel Design	Natural Gas Only	Natural Gas Only	Natural Gas Only			
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler			
Heat Rejection	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger	Fin Fan Heat Exchanger			
NOx Control	DLN (Gas)	DLN (Gas)	DLN (Gas)			
CO Control	CO Catalyst	CO Catalyst	CO Catalyst			
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice			
Interconnection Voltage, kV	345	345	345			
Technology Rating	Mature	Mature	Mature			
Permitting & Construction Schedule (Years from FNTP)	3	3	3			
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	338,000	341,200	340,900			
Net Plant Output - Winter Performance	346,100	351,000	350,500			
DMNC Summer	329,300	334,000	331,600			
DMNC Winter	344,700	350,500	350,200			
DMNC ICAP	326,700	328,500	329,900			
Net Plant Heat Rate (HHV Basis), Btu/kWh						
Net Plant Heat Rate - Summer	9,370	9,390	9,390			
Net Plant Heat Rate - Winter	9,320	9,320	9,340			
Net Plant Heat Rate - DMNC Summer	9,470	9,470	9,480			
Net Plant Heat Rate - DMNC Winter	9,250	9,250	9,250			
Net Plant Heat Rate - DMNC ICAP	9,490	9,500	9,490			
Estimated Startup Fuel Usage						
Start to Base Load, MMBtu	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)	240 (fast) / 490 (typ)			

1x0 GE 7HA.02 tuned to emit 15ppm Gas Only without SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs Operating, NO SCR / CO Catalyst (lb/hr, HHV)						
NO_X	189	189	189			
SO_2	6.4	6.4	6.4			
CO	69	69	69			
CO_2	381,600	384,000	385,200			

Notes:

[1] Simple cycle GT starts are not affected by hot, warm or cold conditions. Simple cycle starts assume purge credits are available.

[2] MECL start time assumes the min load at which the GT achieves the steady state NOx emissions ppm rate. The SCR compliance start time assumes a cold start, ending at the time when the catalysts are heated and the NOx levels meet the desired SCR emissions.

[3] Outage and availability statistics are collected using the NERC Generating Availability Data System. Simple cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[4] Degraded performance assumed for all scenarios. For frame units, 3% average degradation is assumed. All performance ratings based on natural gas operation. Minimum loads are based on OEM information at requested ambient conditions.

[5] Fuel Oil emissions based on ultra low sulfur diesel. Per the US EPA, this fuel must meet 15 ppm sulfur.

[6] Emissions estimates are shown for steady state operation at ISO conditions.

1x0 GE 7HA.02 tuned to emit 15ppm Gas Only without SCR, Capital Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$39,020,000	$41,890,000	$42,010,000			
Materials	$29,530,000	$28,950,000	$34,650,000			
Turbines or Batteries	$67,000,000	$67,000,000	$67,000,000			
Other	$45,180,000	$45,940,000	$44,630,000			
EPC Project Capital Cost Subtotal, 2020$	**$180,730,000**	**$183,780,000**	**$188,290,000**			
Owner's Cost Allowances, 2020$						
Owner's Project Development	$370,000	$370,000	$370,000			
Owner's Operational Personnel Prior to COD	$440,000	$440,000	$440,000			
Owner's Engineer	$1,020,000	$1,020,000	$1,020,000			
Owner's Project Management	$1,130,000	$1,130,000	$1,130,000			
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000			
Owner's Start-up Engineering and Commissioning	$270,000	$270,000	$270,000			
Sales Tax	$0	$0	$0			
Construction Power and Water	$550,000	$550,000	$550,000			
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000			
Switchyard	$10,250,000	$10,250,000	$10,250,000			
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000			
Gas Interconnection and Reinforcement	$23,500,000	$23,500,000	$23,500,000			
System Deliverability Upgrade Costs	$0	$0	$0			
Water Supply Infrastructure	$0	$0	$0			
Emission Reduction Credits	$400,000	$400,000	$400,000			
Political Concessions & Area Development	$500,000	$500,000	$500,000			
Startup/Testing (Fuel & Consumables)	$1,150,000	$1,150,000	$1,150,000			
Initial Fuel Inventory	$0	$0	$0			
Site Security	$580,000	$580,000	$580,000			
Operating Spare Parts	$6,500,000	$6,500,000	$6,500,000			
Builders Risk Insurance (0.45% of Construction Costs)	$813,285	$827,010	$847,305			
Owner's Contingency (5% for Screening Purposes)	$12,060,164	$12,213,351	$12,439,865			
Owner's Cost Allowance Subtotal, 2020$	**$72,533,449**	**$72,700,361**	**$72,947,170**			
AFUDC as a Percentage of Capital Costs (%)	7.22%	7.22%	7.22%			
AFUDC, 2020$						
EPC Portion	$13,048,706	$13,268,916	$13,594,538			
Non-EPC Portion	$5,236,915	$5,248,966	$5,266,786			
AFUDC Subtotal, 2020$	**$18,285,621**	**$18,517,882**	**$18,861,324**			
Total Project Costs, 2020$	**$271,549,070**	**$274,998,243**	**$280,098,494**			

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated Costs exclude decommissioning costs and salvage values.

[4] Assumes incoming gas pressure of 250 psig. Compression included in EPC scope. Owner's costs include 5 miles pipeline for all zones except Zone J, which assumes 1 mile. 12" pipeline for aero and F class. 16" pipeline for J class.

1x0 GE 7HA.02 tuned to emit 15ppm Gas Only without SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$900,000	$1,000,000	$1,300,000			
Fixed O&M Cost - Other	$1,500,000	$1,500,000	$1,500,000			
Property Insurance Allowance	$1,084,380	$1,102,680	$1,129,740			
Site Leasing Allowance	$330,000	$330,000	$330,000			
Total Fixed O&M Cost 2020$/Yr	**$3,814,380**	**$3,932,680**	**$4,259,740**			
Total Fixed O&M Cost 2020$/kW - Yr	**$11.68**	**$11.97**	**$12.91**			
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$600	$600	$600			
Major Maintenance Cost, 2020$/GT-start	$26,600	$26,600	$26,600			
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.03	$0.03	$0.03			
Other Consumables and Variable O&M	$0.90	$0.90	$0.90			
Total Variable O&M - Gas Operation, 2020$/MWh	**$0.93**	**$0.93**	**$0.93**			

Notes:

[1] Fixed O&M costs are presented in 2020 USD $.

[2] FOM costs assume 7 full time personnel. FOM costs do not include engine lease fees that may be available with LTSA, depending on OEM.

[3] Major maintenance $/hr holds for all aero gas turbines. Major maintenance $/hr holds for frame gas turbines where hours per start is >27 (7F.05) or >44.4 (7HA.02).

[4] VOM assumes the use of temporarily trailers for demineralized water treatment.

1x1 GE 7HA.02 Dual Fuel with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1	1	1	1
Number of Steam Turbines	1	1	1	1	1	1
Representative Class Gas Turbine	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02
Steam Conditions (Main Steam / Reheat)	1,085°F / 1,085°F	1,085°F / 1,085°F	1,085°F / 1,085°F	1,085°F / 1,085°F	1,085°F / 1,085°F	1,085°F / 1,085°F
Main Steam Pressure	2330	2330	2330	2330	2330	2330
Steam Cycle Type	Subcritical	Subcritical	Subcritical	Subcritical	Subcritical	Subcritical
Startup Time, Minutes (Cold Start to Unfired Base Load)	180	180	180	180	180	180
Startup Time, Minutes (Warm Start to Unfired Base Load)	120	120	120	120	120	120
Startup Time, Minutes (Hot Start to Unfired Base Load)	80	80	80	80	80	80
Startup Time, Minutes (Cold Start to Stack Emissions Compliance)	60	60	60	60	60	60
Equivalent Forced Outage Rate Demand, %	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Assumed Land Use During Operation, Acres	30	30	30	30	27	30
Fuel Design	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)	Dual Fuel (Natural Gas and Fuel Oil)
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler
Heat Rejection	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)
NOx Control	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice
Interconnection Voltage, kV	345	345	345	345	345	345
Technology Rating	Mature	Mature	Mature	Mature	Mature	Mature
Permitting & Construction Schedule (Years from FNTP)	4	4	4	4	4	4

1x1 GE 7HA.02 Dual Fuel with SCR, Performance						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED PERFORMANCE						
Net Plant Capacity - Base Load, kW						
Net Plant Output - Summer Performance	509,900	513,300	514,700	514,700	512,300	517,900
Net Plant Output - Winter Performance	539,200	542,100	544,800	544,800	546,700	547,800
DMNC Summer	486,000	488,300	486,500	486,500	484,700	501,600
DMNC Winter	530,000	532,500	536,300	536,300	544,900	542,600
DMNC ICAP	495,100	498,500	500,600	500,600	502,200	502,500
Net Plant Heat Rate (HHV Basis) - Base Load, Btu/kWh						
Net Plant Heat Rate - Summer	6,370	6,360	6,360	6,360	6,370	6,370
Net Plant Heat Rate - Winter	6,360	6,360	6,350	6,350	6,350	6,340
Net Plant Heat Rate - DMNC Summer	6,410	6,410	6,410	6,410	6,440	6,400
Net Plant Heat Rate - DMNC Winter	6,390	6,390	6,390	6,390	6,380	6,380
Net Plant Heat Rate - DMNC ICAP	6,410	6,400	6,400	6,400	6,410	6,410
Net Plant Capacity - Single Turbine at MECL, kW						
Net Plant Output - Summer Performance	232,100	233,400	234,000	234,000	232,300	235,700
Net Plant Output - Winter Performance	197,000	198,000	198,700	198,700	199,300	199,500
DMNC Summer	216,900	218,300	217,400	217,400	216,500	224,300
DMNC Winter	196,100	197,100	198,400	198,400	200,400	200,000
DMNC ICAP	221,500	223,400	224,400	224,400	225,300	224,900
Net Plant Heat Rate (HHV Basis) - Single Turbine at MECL, Btu/kWh						
Net Plant Heat Rate - Summer	7,130	7,130	7,130	7,130	7,180	7,130
Net Plant Heat Rate - Winter	7,570	7,560	7,550	7,550	7,530	7,540
Net Plant Heat Rate - DMNC Summer	7,370	7,350	7,370	7,370	7,400	7,330
Net Plant Heat Rate - DMNC Winter	7,650	7,650	7,630	7,630	7,590	7,620
Net Plant Heat Rate - DMNC ICAP	7,340	7,320	7,320	7,320	7,320	7,340
Estimated Startup Fuel Usage, MMBtu						
Start to Unfired Base Load (Warm Start)	3,940	3,940	3,940	3,940	3,940	3,940

1x1 GE 7HA.02 Dual Fuel with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	26	26	26	26	26	26
SO_2	6.6	6.7	6.7	6.7	6.8	6.8
CO	16	16	16	16	16	16
CO_2	393,600	403,200	404,400	404,400	406,800	406,800
ESTIMATED BASE LOAD OPERATING EMISSIONS: ULTRA-LOW SULFUR FUEL OIL						
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	96	96	96	96	96	96
SO_2	5.2	5.2	5.2	5.2	5.3	5.3
CO	19	19	19	19	19	19
CO_2	544,000	547,200	548,800	548,800	552,000	552,000

Notes:

[1] Performance ratings were determined using heat balance modeling software. Performance is based on 1.8% average degradation for capacity and 1.1% average degradation for heat rate. All performance is based on NATURAL GAS operation. Min load ratings are based on OEM performance information at specified ambient conditions.

[2] The duct firing incremental values note incremental performance output. The incremental heat rate reflects the effective heat rate of the additional output due to the duct burners.

[3] Startup time to stack emissions compliance is not the same as the start time for gas turbine MECL. Stack emissions compliance is expected to be limited by the temperature of the CO catalyst, which impacts VOC emissions.

[4] Outage and availability statistics are collected using the NERC Generating Availability Data System. Combined cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[5] Cold start is >72 hours after shutdown. Hot start is <8 hours after shutdown.

[6] Startup times reflect unrestricted, conventional starts for all gas turbines. These start times assume the inclusion of terminal point desuperheaters, full bypass, and associated controls. Fast start packages are not included in CCGT plants.

[7] Emissions estimates are shown for steady state operation at ISO conditions. Estimates account for the impacts of SCR and CO catalysts.

1x1 GE 7HA.02 Dual Fuel with SCR, Capital Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$163,310,000	$175,100,000	$189,840,000	$228,420,000	$295,850,000	$291,030,000
Materials	$170,420,000	$170,820,000	$168,290,000	$169,240,000	$171,930,000	$170,670,000
Turbines or Batteries	$68,500,000	$68,500,000	$68,500,000	$68,500,000	$68,500,000	$68,500,000
Other	$134,770,000	$135,130,000	$142,200,000	$145,200,000	$160,190,000	$160,170,000
EPC Project Capital Cost Subtotal, 2020$	**$537,000,000**	**$549,550,000**	**$568,830,000**	**$611,360,000**	**$696,470,000**	**$690,370,000**
Owner's Cost Allowances, 2020$						
Owner's Project Development	$3,500,000	$3,500,000	$3,500,000	$3,500,000	$4,550,000	$3,850,000
Owner's Operational Personnel Prior to COD	$2,400,000	$2,400,000	$2,400,000	$2,400,000	$3,120,000	$2,640,000
Owner's Engineer	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$3,380,000	$2,860,000
Owner's Project Management	$4,800,000	$4,800,000	$4,800,000	$4,800,000	$6,240,000	$5,280,000
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Owner's Start-up Engineering and Commissioning	$540,000	$540,000	$540,000	$540,000	$700,000	$590,000
Sales Tax	$0	$0	$0	$0	$0	$0
Construction Power and Water	$1,540,000	$1,540,000	$1,540,000	$1,540,000	$2,000,000	$1,690,000
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,300,000	$1,100,000
Switchyard	$18,940,000	$18,940,000	$18,940,000	$18,940,000	$54,630,000	$18,940,000
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000	$13,010,000	$11,000,000
Gas Interconnection and Reinforcement	$23,500,000	$23,500,000	$23,500,000	$23,500,000	$20,000,000	$23,500,000
System Deliverability Upgrade Costs	$0	$0	$0	$0	$0	$0
Water Supply Infrastructure	$0	$0	$0	$0	$10,900,000	$0
Emission Reduction Credits	$200,000	$200,000	$200,000	$1,200,000	$1,200,000	$1,200,000
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000	$650,000	$550,000
Startup/Testing (Fuel & Consumables)	$5,450,000	$5,450,000	$5,450,000	$5,450,000	$5,450,000	$5,450,000
Initial Fuel Inventory	$7,240,000	$7,240,000	$7,240,000	$7,240,000	$7,240,000	$7,240,000
Site Security	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,430,000	$1,210,000
Operating Spare Parts	$6,500,000	$6,500,000	$6,500,000	$6,500,000	$6,500,000	$6,500,000
Builders Risk Insurance (0.45% of Construction Costs)	$2,416,500	$2,472,975	$2,559,735	$2,751,120	$3,134,115	$3,106,665
Owner's Contingency (5% for Screening Purposes)	$31,561,325	$32,191,649	$33,159,987	$35,346,056	$42,160,206	$39,408,833
Owner's Cost Allowance Subtotal, 2020$	**$125,787,825**	**$126,474,624**	**$127,529,722**	**$130,907,176**	**$188,894,321**	**$137,215,498**
AFUDC as a Percentage of Capital Costs (%)	11.22%	11.22%	11.22%	11.22%	11.22%	11.22%
AFUDC, 2020$						
EPC Portion	$60,251,400	$61,659,510	$63,822,726	$68,594,592	$78,143,934	$77,459,514
Non-EPC Portion	$14,113,394	$14,190,453	$14,308,835	$14,687,785	$21,193,943	$15,395,579
AFUDC Subtotal, 2020$	**$74,364,794**	**$75,849,963**	**$78,131,561**	**$83,282,377**	**$99,337,877**	**$92,855,093**
Total Project Costs, 2020$	**$737,152,619**	**$751,874,587**	**$774,491,283**	**$825,549,553**	**$984,702,198**	**$920,440,591**

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. CCGT unit includes duct firing capability.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated costs exclude decommissioning costs and salvage values.

1x1 GE 7HA.02 Dual Fuel with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$2,828,571	$3,142,857	$4,085,714	$4,085,714	$5,342,857	$4,714,286
Fixed O&M Cost - Other	$2,140,000	$2,140,000	$2,140,000	$2,140,000	$2,140,000	$2,140,000
Property Insurance Allowance	$3,222,000	$3,297,300	$3,412,980	$3,668,160	$4,178,820	$4,142,220
Site Leasing Allowance	$660,000	$660,000	$660,000	$660,000	$7,290,000	$780,000
Total Fixed O&M Cost 2020$/Yr	**$8,850,571**	**$9,240,157**	**$10,298,694**	**$10,553,874**	**$18,951,677**	**$11,776,506**
Total Fixed O&M Cost 2020$/kW - Yr	**$17.88**	**$18.54**	**$20.57**	**$21.08**	**$37.74**	**$23.44**
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$600	$600	$600	$600	$600	$600
Major Maintenance Cost, 2020$/GT-start	$26,600	$26,600	$26,600	$26,600	$26,600	$26,600
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.05	$0.05	$0.05	$0.05	$0.07	$0.05
SCR Related Costs	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32
Other Consumables and Variable O&M	$1.22	$1.22	$1.22	$1.22	$1.22	$1.21
Total Variable O&M - Gas Operation, 2020$/MWh	**$1.59**	**$1.59**	**$1.59**	**$1.59**	**$1.61**	**$1.58**
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - FUEL OIL OPERATION, 2020$/MWh						
Water Related O&M	$0.75	$0.75	$0.75	$0.75	$1.15	$0.78
SCR Related Costs	$0.50	$0.50	$0.50	$0.50	$0.46	$0.48
Other Consumables and Variable O&M	$1.20	$1.20	$1.20	$1.20	$1.23	$1.22
Total Variable O&M - Fuel Oil Operation, 2020$/MWh	**$2.45**	**$2.45**	**$2.45**	**$2.45**	**$2.84**	**$2.48**

Notes:

[1] Variable O&M costs are based on performance at annual average conditions.

[2] Fixed O&M costs are presented in 2020 USD $.

[3] Fixed O&M assumes 22 FTE for a 1x1 configuration.

[4] Variable O&M costs assume onsite demineralized water treatment system (included in EPC cost).

1x1 GE 7HA.02 Gas Only with SCR, Performance						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
BASE PLANT DESCRIPTION						
Number of Gas Turbines	1	1	1	1		
Number of Steam Turbines	1	1	1	1		
Representative Class Gas Turbine	GE 7HA.02	GE 7HA.02	GE 7HA.02	GE 7HA.02		
Steam Conditions (Main Steam / Reheat)	1,085°F / 1,085°F	1,085°F / 1,085°F	1,085°F / 1,085°F	1,085°F / 1,085°F		
Main Steam Pressure	2,330	2,330	2,330	2,330		
Steam Cycle Type	Subcritical	Subcritical	Subcritical	Subcritical		
Startup Time, Minutes (Cold Start to Unfired Base Load)	180	180	180	180		
Startup Time, Minutes (Warm Start to Unfired Base Load)	120	120	120	120		
Startup Time, Minutes (Hot Start to Unfired Base Load)	80	80	80	80		
Startup Time, Minutes (Cold Start to Stack Emissions Compliance)	60	60	60	60		
Equivalent Forced Outage Rate Demand, %	3%	3%	3%	3%		
Assumed Land Use During Operation, Acres	30	30	30	30		
Fuel Design	Natural Gas Only	Natural Gas Only	Natural Gas Only	Natural Gas Only		
Inlet Conditioning	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler	Evaporative Cooler		
Heat Rejection	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)	Air Cooled Condenser (ACC)		
NO_x Control	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR		
CO Control	CO Catalyst	CO Catalyst	CO Catalyst	CO Catalyst		
Particulate Control	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice	Good Combustion Practice		
Interconnection Voltage, kV	345	345	345	345		
Technology Rating	Mature	Mature	Mature	Mature		
Permitting & Construction Schedule (Years from FNTP)	4	4	4	4		

1x1 GE 7HA.02 Gas Only with SCR, Performance						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED PERFORMANCE						
Net Plant Capacity - Base Load, kW						
Net Plant Output - Summer Performance	509,900	513,300	514,700	514,700		
Net Plant Output - Winter Performance	539,200	542,100	544,800	544,800		
DMNC Summer	486,000	488,300	486,500	486,500		
DMNC Winter	530,000	532,500	536,300	536,300		
DMNC ICAP	495,100	498,500	500,600	500,600		
Net Plant Heat Rate (HHV Basis) - Base Load, Btu/kWh						
Net Plant Heat Rate - Summer	6,370	6,360	6,360	6,360		
Net Plant Heat Rate - Winter	6,360	6,360	6,350	6,350		
Net Plant Heat Rate - DMNC Summer	6,410	6,410	6,410	6,410		
Net Plant Heat Rate - DMNC Winter	6,390	6,390	6,390	6,390		
Net Plant Heat Rate - DMNC ICAP	6,410	6,400	6,400	6,400		
Net Plant Capacity - Single Turbine at MECL, kW						
Net Plant Output - Summer Performance	232,100	233,400	234,000	234,000		
Net Plant Output - Winter Performance	197,000	198,000	198,700	198,700		
DMNC Summer	216,900	218,300	217,400	217,400		
DMNC Winter	196,100	197,100	198,400	198,400		
DMNC ICAP	221,500	223,400	224,400	224,400		
Net Plant Heat Rate (HHV Basis) - Single Turbine at MECL, Btu/kWh						
Net Plant Heat Rate - Summer	7,130	7,130	7,130	7,130		
Net Plant Heat Rate - Winter	7,570	7,560	7,550	7,550		
Net Plant Heat Rate - DMNC Summer	7,370	7,350	7,370	7,370		
Net Plant Heat Rate - DMNC Winter	7,650	7,650	7,630	7,630		
Net Plant Heat Rate - DMNC ICAP	7,340	7,320	7,320	7,320		
Estimated Startup Fuel Usage, MMBtu						
Start to Unfired Base Load (Warm Start)	3,940	3,940	3,940	3,940		

1x1 GE 7HA.02 Gas Only with SCR, Emissions						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED BASE LOAD OPERATING EMISSIONS: NATURAL GAS						
All GTs with SCR and CO Catalyst (lb/hr, HHV)						
NO_X	26	26	26	26		
SO_2	6.6	6.7	6.7	6.7		
CO	16	16	16	16		
CO_2	393,600	403,200	404,400	404,400		

Notes:

[1] Performance ratings were determined using heat balance modeling software. Performance is based on 1.8% average degradation for capacity and 1.1% average degradation for heat rate. All performance is based on NATURAL GAS operation. Min load ratings are based on OEM performance information at specified ambient conditions.

[2] The duct firing incremental values note incremental performance output. The incremental heat rate reflects the effective heat rate of the additional output due to the duct burners.

[3] Startup time to stack emissions compliance is not the same as the start time for gas turbine MECL. Stack emissions compliance is expected to be limited by the temperature of the CO catalyst, which impacts VOC emissions.

[4] Outage and availability statistics are collected using the NERC Generating Availability Data System. Combined cycle data is based on North American units that came online in 2010 or later. Reporting period is 2012-2019.

[5] Cold start is >72 hours after shutdown. Hot start is <8 hours after shutdown.

[6] Startup times reflect unrestricted, conventional starts for all gas turbines. These start times assume the inclusion of terminal point desuperheaters, full bypass, and associated controls. Fast start packages are not included in CCGT plants.

[7] Emissions estimates are shown for steady state operation at ISO conditions. Estimates account for the impacts of SCR and CO catalysts.

1x1 GE 7HA.02 Gas Only with SCR, Capital Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$154,980,000	$166,400,000	$180,770,000	$218,360,000		
Materials	$161,720,000	$162,330,000	$160,250,000	$161,790,000		
Turbines or Batteries	$67,000,000	$67,000,000	$67,000,000	$67,000,000		
Other	$127,900,000	$128,420,000	$135,410,000	$138,810,000		
EPC Project Capital Cost Subtotal, 2020$	**$511,600,000**	**$524,150,000**	**$543,430,000**	**$585,960,000**		
Owner's Cost Allowances, 2020$						
Owner's Project Development	$3,500,000	$3,500,000	$3,500,000	$3,500,000		
Owner's Operational Personnel Prior to COD	$2,400,000	$2,400,000	$2,400,000	$2,400,000		
Owner's Engineer	$2,600,000	$2,600,000	$2,600,000	$2,600,000		
Owner's Project Management	$4,800,000	$4,800,000	$4,800,000	$4,800,000		
Owner's Legal Costs	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Owner's Start-up Engineering and Commissioning	$540,000	$540,000	$540,000	$540,000		
Sales Tax	$0	$0	$0	$0		
Construction Power and Water	$1,540,000	$1,540,000	$1,540,000	$1,540,000		
Permitting and Licensing Fees	$1,000,000	$1,000,000	$1,000,000	$1,000,000		
Switchyard	$18,940,000	$18,940,000	$18,940,000	$18,940,000		
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000		
Gas Interconnection and Reinforcement	$23,500,000	$23,500,000	$23,500,000	$23,500,000		
System Deliverability Upgrade Costs	$0	$0	$0	$0		
Water Supply Infrastructure	$0	$0	$0	$0		
Emission Reduction Credits	$200,000	$200,000	$200,000	$1,200,000		
Political Concessions & Area Development	$500,000	$500,000	$500,000	$500,000		
Startup/Testing (Fuel & Consumables)	$1,150,000	$1,150,000	$1,150,000	$1,150,000		
Initial Fuel Inventory	$0	$0	$0	$0		
Site Security	$1,100,000	$1,100,000	$1,100,000	$1,100,000		
Operating Spare Parts	$6,500,000	$6,500,000	$6,500,000	$6,500,000		
Builders Risk Insurance (0.45% of Construction Costs)	$2,302,200	$2,358,675	$2,445,435	$2,636,820		
Owner's Contingency (5% for Screening Purposes)	$29,708,610	$30,338,934	$31,307,272	$33,493,341		
Owner's Cost Allowance Subtotal, 2020$	**$112,280,810**	**$112,967,609**	**$114,022,707**	**$117,400,161**		
AFUDC as a Percentage of Capital Costs (%)	11.22%	11.22%	11.22%	11.22%		
AFUDC, 2020$						
EPC Portion	$57,401,520	$58,809,630	$60,972,846	$65,744,712		
Non-EPC Portion	$12,597,907	$12,674,966	$12,793,348	$13,172,298		
AFUDC Subtotal, 2020$	**$69,999,427**	**$71,484,596**	**$73,766,194**	**$78,917,010**		
Total Project Costs, 2020$	**$693,880,237**	**$708,602,204**	**$731,218,900**	**$782,277,171**		

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes gas, water, sewer, communications are available at plant fenceline. CCGT unit includes duct firing capability.

[2] Capital costs are presented in 2020 USD $.

[3] Estimated costs exclude decommissioning costs and salvage values.

1x1 GE 7HA.02 Gas Only with SCR, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Labor	$2,828,571	$3,142,857	$4,085,714	$4,085,714		
Fixed O&M Cost - Other	$2,140,000	$2,140,000	$2,140,000	$2,140,000		
Property Insurance Allowance	$3,069,600	$3,144,900	$3,260,580	$3,515,760		
Site Leasing Allowance	$660,000	$660,000	$660,000	$660,000		
Total Fixed O&M Cost 2020$/Yr	**$8,698,171**	**$9,087,757**	**$10,146,294**	**$10,401,474**		
Total Fixed O&M Cost 2020$/kW - Yr	**$17.57**	**$18.23**	**$20.27**	**$20.78**		
LEVELIZED MAJOR MAINTENANCE COSTS						
Major Maintenance Cost, 2020$/GT-hr or $/engine-hr	$600	$600	$600	$600		
Major Maintenance Cost, 2020$/GT-start	$26,600	$26,600	$26,600	$26,600		
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - GAS OPERATION, 2020$/MWh						
Water Related O&M	$0.05	$0.05	$0.05	$0.05		
SCR Related Costs	$0.32	$0.32	$0.32	$0.32		
Other Consumables and Variable O&M	$1.22	$1.22	$1.22	$1.22		
Total Variable O&M - Gas Operation, 2020$/MWh	**$1.59**	**$1.59**	**$1.59**	**$1.59**		

Notes:

[1] Variable O&M costs are based on performance at annual average conditions.

[2] Fixed O&M costs are presented in 2020 USD $.

[3] Fixed O&M assumes 22 FTE for a 1x1 configuration.

[4] Variable O&M costs assume onsite demineralized water treatment system (included in EPC cost).

BESS 4h Battery, Performance						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
BASE PLANT DESCRIPTION						
Nominal Output, MW	200	200	200	200	200	200
Nominal Duration, hr	4	4	4	4	4	4
Assumed Useful Life (years)	20	20	20	20	20	20
Equivalent Planned Outage Rate (%)	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%
Equivalent Forced Outage Rate (%)	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%
Equivalent Availability Factor (%)	97%	97%	97%	97%	97%	97%
Assumed Land Use During Operation, Acres	12	12	12	12	9	12
Heat Rejection	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC
Annual System Cycles	350	350	350	350	350	350
Storage System Initial Overbuild (%)	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%
Storage System Degradation (%/yr)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Storage System AC Roundtrip Efficiency (%)	85%	85%	85%	85%	85%	85%
Interconnection Voltage, kV	345	345	345	345	345	138
Technology Rating	Mature	Mature	Mature	Mature	Mature	Mature
Permitting & Construction Schedule (Years from FNTP)	2	2	2	2	2	2
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	200,000	200,000	200,000	200,000	200,000	200,000
Net Plant Output - Winter Performance	200,000	200,000	200,000	200,000	200,000	200,000
DMNC Summer	200,000	200,000	200,000	200,000	200,000	200,000
DMNC Winter	200,000	200,000	200,000	200,000	200,000	200,000
DMNC ICAP	200,000	200,000	200,000	200,000	200,000	200,000
Output Duration, hrs						
Output Duration - Summer	4	4	4	4	4	4
Output Duration - Winter	4	4	4	4	4	4
Output Duration - DMNC Summer	4	4	4	4	4	4
Output Duration - DMNC Winter	4	4	4	4	4	4
Output Duration - DMNC ICAP	4	4	4	4	4	4
Net Plant Energy Capacity, kWh						
Net Plant Energy Capacity - Summer	800,000	800,000	800,000	800,000	800,000	800,000
Net Plant Energy Capacity - Winter	800,000	800,000	800,000	800,000	800,000	800,000
Net Plant Energy Capacity - DMNC Summer	800,000	800,000	800,000	800,000	800,000	800,000
Net Plant Energy Capacity - DMNC Winter	800,000	800,000	800,000	800,000	800,000	800,000
Net Plant Energy Capacity - DMNC ICAP	800,000	800,000	800,000	800,000	800,000	800,000

Notes:

[1] NERC GADS performance statistics are not available for battery storage technologies. Availability and outage rate assumptions are based on vendor correspondence and industry publications.

BESS 4h Battery, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$28,380,000	$30,470,000	$32,280,000	$41,220,000	$53,470,000	$52,570,000
Materials	$42,530,000	$42,730,000	$42,600,000	$43,260,000	$44,330,000	$43,710,000
Turbines or Batteries	$139,800,000	$139,800,000	$139,800,000	$139,800,000	$139,800,000	$139,800,000
Other	$40,130,000	$40,270,000	$40,880,000	$41,140,000	$43,580,000	$43,300,000
EPC Project Capital Cost Subtotal, 2020$	**$250,840,000**	**$253,270,000**	**$255,560,000**	**$265,420,000**	**$281,180,000**	**$279,380,000**
Owner's Cost Allowances, 2020$						
Owner's Project Development	$170,000	$170,000	$170,000	$170,000	$220,000	$190,000
Owner's Operational Personnel Prior to COD	$110,000	$110,000	$110,000	$110,000	$140,000	$120,000
Owner's Engineer	$190,000	$190,000	$190,000	$190,000	$250,000	$210,000
Owner's Project Management	$350,000	$350,000	$350,000	$350,000	$460,000	$390,000
Owner's Legal Costs	$500,000	$500,000	$500,000	$500,000	$650,000	$550,000
Owner's Start-up Engineering and Commissioning	$70,000	$70,000	$70,000	$70,000	$90,000	$80,000
Sales Tax	$0	$0	$0	$0	$0	$0
Construction Power and Water	$450,000	$450,000	$450,000	$450,000	$590,000	$500,000
Permitting and Licensing Fees	$250,000	$250,000	$250,000	$250,000	$330,000	$280,000
Switchyard	$10,250,000	$10,250,000	$10,250,000	$10,250,000	$43,800,000	$5,590,000
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000	$13,010,000	$6,500,000
Gas Interconnection and Reinforcement	$0	$0	$0	$0	$0	$0
System Deliverability Upgrade Costs	$0	$0	$0	$0	$0	$0
Water Supply Infrastructure	$0	$0	$0	$0	$0	$0
Emission Reduction Credits	$0	$0	$0	$0	$0	$0
Political Concessions & Area Development	$100,000	$100,000	$100,000	$100,000	$130,000	$110,000
Startup/Testing (Fuel & Consumables)	$0	$0	$0	$0	$0	$0
Initial Fuel Inventory	$0	$0	$0	$0	$0	$0
Site Security	$370,000	$370,000	$370,000	$370,000	$480,000	$410,000
Operating Spare Parts	$770,000	$770,000	$770,000	$770,000	$770,000	$770,000
Builders Risk Insurance (0.45% of Construction Costs)	$1,128,780	$1,139,715	$1,150,020	$1,194,390	$1,265,310	$1,257,210
Owner's Contingency (5% for Screening Purposes)	$13,827,439	$13,949,486	$14,064,501	$14,559,720	$17,168,266	$14,816,861
Owner's Cost Allowance Subtotal, 2020$	**$39,536,219**	**$39,669,201**	**$39,794,521**	**$40,334,110**	**$79,353,576**	**$31,774,071**
AFUDC as a Percentage of Capital Costs (%)	5.98%	5.98%	5.98%	5.98%	5.98%	5.98%
AFUDC, 2020$						
EPC Portion	$15,000,232	$15,145,546	$15,282,488	$15,872,116	$16,814,564	$16,706,924
Non-EPC Portion	$2,364,266	$2,776,900	$2,785,300	$2,823,100	$5,555,200	$2,224,600
AFUDC Subtotal, 2020$	**$17,364,498**	**$17,922,446**	**$18,067,788**	**$18,695,216**	**$22,369,764**	**$18,931,524**
Total Project Costs, 2020$	**$307,740,717**	**$310,861,647**	**$313,422,309**	**$324,449,326**	**$382,903,340**	**$330,085,595**

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes utilities are available at plant fenceline.

[2] EPC cost includes initial overbuild to account for stystem losses, minimum state of charge, auxiliaries, and first year of assumed degradation.

[3] Estimated Costs exclude decommisioning costs and salvage values.

BESS 4h Battery, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Assumes LTSA with Integrator/OEM	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Augmentation (via LTSA)	$1,140,000	$1,140,000	$1,140,000	$1,140,000	$1,140,000	$1,140,000
Property Insurance Allowance	$1,505,040	$1,519,620	$1,533,360	$1,592,520	$1,687,080	$1,676,280
Site Leasing Allowance	$260,000	$260,000	$260,000	$260,000	$2,430,000	$310,000
Total Fixed O&M Cost 2020$/Yr	**$3,905,040**	**$3,919,620**	**$3,933,360**	**$3,992,520**	**$6,257,080**	**$4,126,280**
Total Fixed O&M Cost 2020$/kW - Yr	**$19.53**	**$19.60**	**$19.67**	**$19.96**	**$31.29**	**$20.63**
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - BATTERY OPERATION, 2020$/MWh						
Capacity Augmentation (via LTSA) Levelized	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Total Variable Variable O&M - Battery Operation, 2020$/MWh	**$8.12**	**$8.12**	**$8.12**	**$8.12**	**$8.12**	**$8.12**

Notes:

[1] Battery FOM accounts for routine system maintenance and assumes the site is remotely controlled.

[2] Variable O&M is modeled to account for augmentation for assumed capacity requirement (costs are levelized).

BESS 6h Battery, Performance						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
BASE PLANT DESCRIPTION						
Nominal Output, MW	200	200	200	200	200	200
Nominal Duration, hr	6	6	6	6	6	6
Assumed Useful Life (years)	20	20	20	20	20	20
Equivalent Planned Outage Rate (%)	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%
Equivalent Forced Outage Rate (%)	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%
Equivalent Availability Factor (%)	97%	97%	97%	97%	97%	97%
Assumed Land Use During Operation, Acres	15	15	15	15	12	15
Heat Rejection	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC
Annual System Cycles	350	350	350	350	350	350
Storage System Initial Overbuild (%)	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%
Storage System Degradation (%/yr)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Storage System AC Roundtrip Efficiency (%)	85%	85%	85%	85%	85%	85%
Interconnection Voltage, kV	345	345	345	345	345	138
Technology Rating	Mature	Mature	Mature	Mature	Mature	Mature
Permitting & Construction Schedule (Years from FNTP)	2	2	2	2	2	2
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	200,000	200,000	200,000	200,000	200,000	200,000
Net Plant Output - Winter Performance	200,000	200,000	200,000	200,000	200,000	200,000
DMNC Summer	200,000	200,000	200,000	200,000	200,000	200,000
DMNC Winter	200,000	200,000	200,000	200,000	200,000	200,000
DMNC ICAP	200,000	200,000	200,000	200,000	200,000	200,000
Output Duration, hrs						
Output Duration - Summer	6	6	6	6	6	6
Output Duration - Winter	6	6	6	6	6	6
Output Duration - DMNC Summer	6	6	6	6	6	6
Output Duration - DMNC Winter	6	6	6	6	6	6
Output Duration - DMNC ICAP	6	6	6	6	6	6
Net Plant Energy Capacity, kWh						
Net Plant Energy Capacity - Summer	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Net Plant Energy Capacity - Winter	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Net Plant Energy Capacity - DMNC Summer	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Net Plant Energy Capacity - DMNC Winter	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Net Plant Energy Capacity - DMNC ICAP	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000

Notes:

[1] NERC GADS performance statistics are not available for battery storage technologies. Availability and outage rate assumptions are based on vendor correspondence and industry publications.

BESS 6h Battery, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$40,830,000	$43,410,000	$45,950,000	$59,310,000	$76,840,000	$75,640,000
Materials	$52,700,000	$53,100,000	$53,290,000	$53,850,000	$55,480,000	$54,640,000
Turbines or Batteries	$209,700,000	$209,700,000	$209,700,000	$209,700,000	$209,700,000	$209,700,000
Other	$55,630,000	$56,160,000	$56,660,000	$56,970,000	$60,360,000	$60,000,000
EPC Project Capital Cost Subtotal, 2020$	**$358,860,000**	**$362,370,000**	**$365,600,000**	**$379,830,000**	**$402,380,000**	**$399,980,000**
Owner's Cost Allowances, 2020$						
Owner's Project Development	$170,000	$170,000	$170,000	$170,000	$220,000	$190,000
Owner's Operational Personnel Prior to COD	$110,000	$110,000	$110,000	$110,000	$140,000	$120,000
Owner's Engineer	$230,000	$230,000	$230,000	$230,000	$300,000	$250,000
Owner's Project Management	$410,000	$410,000	$410,000	$410,000	$530,000	$450,000
Owner's Legal Costs	$500,000	$500,000	$500,000	$500,000	$650,000	$550,000
Owner's Start-up Engineering and Commissioning	$140,000	$140,000	$140,000	$140,000	$180,000	$150,000
Sales Tax	$0	$0	$0	$0	$0	$0
Construction Power and Water	$510,000	$510,000	$510,000	$510,000	$660,000	$560,000
Permitting and Licensing Fees	$250,000	$250,000	$250,000	$250,000	$330,000	$280,000
Switchyard	$10,250,000	$10,250,000	$10,250,000	$10,250,000	$43,800,000	$5,590,000
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000	$13,010,000	$6,500,000
Gas Interconnection and Reinforcement	$0	$0	$0	$0	$0	$0
System Deliverability Upgrade Costs	$0	$0	$0	$0	$0	$0
Water Supply Infrastructure	$0	$0	$0	$0	$0	$0
Emission Reduction Credits	$0	$0	$0	$0	$0	$0
Political Concessions & Area Development	$100,000	$100,000	$100,000	$100,000	$130,000	$110,000
Startup/Testing (Fuel & Consumables)	$0	$0	$0	$0	$0	$0
Initial Fuel Inventory	$0	$0	$0	$0	$0	$0
Site Security	$440,000	$440,000	$440,000	$440,000	$570,000	$480,000
Operating Spare Parts	$1,120,000	$1,120,000	$1,120,000	$1,120,000	$1,120,000	$1,120,000
Builders Risk Insurance (0.45% of Construction Costs)	$1,614,870	$1,630,665	$1,645,200	$1,709,235	$1,810,710	$1,799,910
Owner's Contingency (5% for Screening Purposes)	$19,285,244	$19,461,533	$19,623,760	$20,338,462	$23,291,536	$20,906,496
Owner's Cost Allowance Subtotal, 2020$	**$46,130,114**	**$46,322,198**	**$46,498,960**	**$47,277,697**	**$86,742,246**	**$39,056,406**
AFUDC as a Percentage of Capital Costs (%)	5.98%	5.98%	5.98%	5.98%	5.98%	5.98%
AFUDC, 2020$						
EPC Portion	$21,459,828	$21,669,726	$21,862,880	$22,713,834	$24,062,324	$23,918,804
Non-EPC Portion	$2,758,581	$3,242,400	$3,255,000	$3,309,600	$6,071,800	$2,734,200
AFUDC Subtotal, 2020$	**$24,218,409**	**$24,912,126**	**$25,117,880**	**$26,023,434**	**$30,134,124**	**$26,653,004**
Total Project Costs, 2020$	**$429,208,522**	**$433,604,324**	**$437,216,840**	**$453,131,131**	**$519,256,370**	**$465,689,410**

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes utilities are available at plant fenceline.

[2] EPC cost includes initial overbuild to account for stystem losses, minimum state of charge, auxiliaries, and first year of assumed degradation.

[3] Estimated Costs exclude decommisioning costs and salvage values.

BESS 6h Battery, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Assumes LTSA with Integrator/OEM	$1,240,000	$1,240,000	$1,240,000	$1,240,000	$1,240,000	$1,240,000
Augmentation (via LTSA)	$1,710,000	$1,710,000	$1,710,000	$1,710,000	$1,710,000	$1,710,000
Property Insurance Allowance	$2,153,160	$2,174,220	$2,193,600	$2,278,980	$2,414,280	$2,399,880
Site Leasing Allowance	$330,000	$330,000	$330,000	$330,000	$3,240,000	$390,000
Total Fixed O&M Cost 2020$/Yr	**$5,433,160**	**$5,454,220**	**$5,473,600**	**$5,558,980**	**$8,604,280**	**$5,739,880**
Total Fixed O&M Cost 2020$/kW - Yr	**$27.17**	**$27.27**	**$27.37**	**$27.79**	**$43.02**	**$28.70**
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - BATTERY OPERATION, 2020$/MWh						
Capacity Augmentation (via LTSA) Levelized	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Total Variable Variable O&M - Battery Operation, 2020$/MWh	**$8.12**	**$8.12**	**$8.12**	**$8.12**	**$8.12**	**$8.12**

Notes:

[1] Battery FOM accounts for routine system maintenance and assumes the site is remotely controlled.

[2] Variable O&M is modeled to account for augmentation for assumed capacity requirement (costs are levelized).

BESS 8h Battery, Performance						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
BASE PLANT DESCRIPTION						
Nominal Output, MW	200	200	200	200	200	200
Nominal Duration, hr	8	8	8	8	8	8
Assumed Useful Life (years)	20	20	20	20	20	20
Equivalent Planned Outage Rate (%)	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%
Equivalent Forced Outage Rate (%)	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%
Equivalent Availability Factor (%)	97%	97%	97%	97%	97%	97%
Assumed Land Use During Operation, Acres	18	18	18	18	15	18
Heat Rejection	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC	Air-cooled HVAC
Annual System Cycles	350	350	350	350	350	350
Storage System Initial Overbuild (%)	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%
Storage System Degradation (%/yr)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Storage System AC Roundtrip Efficiency (%)	85%	85%	85%	85%	85%	85%
Interconnection Voltage, kV	345	345	345	345	345	138
Technology Rating	Mature	Mature	Mature	Mature	Mature	Mature
Permitting & Construction Schedule (Years from FNTP)	2	2	2	2	2	2
ESTIMATED PERFORMANCE						
Net Plant Capacity, kW						
Net Plant Output - Summer Performance	200,000	200,000	200,000	200,000	200,000	200,000
Net Plant Output - Winter Performance	200,000	200,000	200,000	200,000	200,000	200,000
DMNC Summer	200,000	200,000	200,000	200,000	200,000	200,000
DMNC Winter	200,000	200,000	200,000	200,000	200,000	200,000
DMNC ICAP	200,000	200,000	200,000	200,000	200,000	200,000
Output Duration, hrs						
Output Duration - Summer	8	8	8	8	8	8
Output Duration - Winter	8	8	8	8	8	8
Output Duration - DMNC Summer	8	8	8	8	8	8
Output Duration - DMNC Winter	8	8	8	8	8	8
Output Duration - DMNC ICAP	8	8	8	8	8	8
Net Plant Energy Capacity, kWh						
Net Plant Energy Capacity - Summer	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
Net Plant Energy Capacity - Winter	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
Net Plant Energy Capacity - DMNC Summer	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
Net Plant Energy Capacity - DMNC Winter	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
Net Plant Energy Capacity - DMNC ICAP	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000

Notes:

[1] NERC GADS performance statistics are not available for battery storage technologies. Availability and outage rate assumptions are based on vendor correspondence and industry publications.

BESS 8h Battery, Capital Costs						
	ZONE C - Central	ZONE F - Capital	ZONE G - Dutchess	ZONE G - Rockland	ZONE J - NYC	ZONE K - Long Island
ESTIMATED CAPITAL AND O&M COSTS						
EPC Project Capital Costs, 2020$ (w/o Owner's Costs)						
Labor	$53,290,000	$56,640,000	$59,960,000	$77,390,000	$100,210,000	$98,710,000
Materials	$62,500,000	$63,050,000	$63,260,000	$64,300,000	$67,800,000	$66,730,000
Turbines or Batteries	$279,600,000	$279,600,000	$279,600,000	$279,600,000	$279,600,000	$279,600,000
Other	$71,420,000	$72,130,000	$72,770,000	$72,900,000	$75,900,000	$75,470,000
EPC Project Capital Cost Subtotal, 2020$	**$466,810,000**	**$471,420,000**	**$475,590,000**	**$494,190,000**	**$523,510,000**	**$520,510,000**
Owner's Cost Allowances, 2020$						
Owner's Project Development	$170,000	$170,000	$170,000	$170,000	$220,000	$190,000
Owner's Operational Personnel Prior to COD	$110,000	$110,000	$110,000	$110,000	$140,000	$120,000
Owner's Engineer	$260,000	$260,000	$260,000	$260,000	$340,000	$290,000
Owner's Project Management	$480,000	$480,000	$480,000	$480,000	$620,000	$530,000
Owner's Legal Costs	$500,000	$500,000	$500,000	$500,000	$650,000	$550,000
Owner's Start-up Engineering and Commissioning	$180,000	$180,000	$180,000	$180,000	$230,000	$200,000
Sales Tax	$0	$0	$0	$0	$0	$0
Construction Power and Water	$550,000	$550,000	$550,000	$550,000	$720,000	$610,000
Permitting and Licensing Fees	$250,000	$250,000	$250,000	$250,000	$330,000	$280,000
Switchyard	$10,250,000	$10,250,000	$10,250,000	$10,250,000	$43,800,000	$5,590,000
Electrical Interconnection and Deliverability	$11,000,000	$11,000,000	$11,000,000	$11,000,000	$13,010,000	$6,500,000
Gas Interconnection and Reinforcement	$0	$0	$0	$0	$0	$0
System Deliverability Upgrade Costs	$0	$0	$0	$0	$0	$0
Water Supply Infrastructure	$0	$0	$0	$0	$0	$0
Emission Reduction Credits	$0	$0	$0	$0	$0	$0
Political Concessions & Area Development	$100,000	$100,000	$100,000	$100,000	$130,000	$110,000
Startup/Testing (Fuel & Consumables)	$0	$0	$0	$0	$0	$0
Initial Fuel Inventory	$0	$0	$0	$0	$0	$0
Site Security	$510,000	$510,000	$510,000	$510,000	$660,000	$560,000
Operating Spare Parts	$1,470,000	$1,470,000	$1,470,000	$1,470,000	$1,470,000	$1,470,000
Builders Risk Insurance (0.45% of Construction Costs)	$2,100,645	$2,121,390	$2,140,155	$2,223,855	$2,355,795	$2,342,295
Owner's Contingency (5% for Screening Purposes)	$24,737,032	$24,968,570	$25,178,008	$26,112,193	$29,409,290	$26,992,615
Owner's Cost Allowance Subtotal, 2020$	**$52,667,677**	**$52,919,960**	**$53,148,163**	**$54,166,048**	**$94,085,085**	**$46,334,910**
AFUDC as a Percentage of Capital Costs (%)	5.98%	5.98%	5.98%	5.98%	5.98%	5.98%
AFUDC, 2020$						
EPC Portion	$27,915,238	$28,190,916	$28,440,282	$29,552,562	$31,305,898	$31,126,498
Non-EPC Portion	$3,149,527	$3,704,400	$3,720,500	$3,791,200	$6,586,300	$3,243,100
AFUDC Subtotal, 2020$	**$31,064,765**	**$31,895,316**	**$32,160,782**	**$33,343,762**	**$37,892,198**	**$34,369,598**
Total Project Costs, 2020$	**$550,542,442**	**$556,235,276**	**$560,898,945**	**$581,699,810**	**$655,487,283**	**$601,214,508**

Notes:

[1] Capital cost assumes EPC full wrap methodology. EPC electrical scope ends at the high side of the GSU. Assumes utilities are available at plant fenceline.

[2] EPC cost includes initial overbuild to account for stystem losses, minimum state of charge, auxiliaries, and first year of assumed degradation.

[3] Estimated Costs exclude decommisioning costs and salvage values.

BESS 8h Battery, O&M Costs						
	ZONE C - Central	**ZONE F - Capital**	**ZONE G - Dutchess**	**ZONE G - Rockland**	**ZONE J - NYC**	**ZONE K - Long Island**
FIXED O&M COSTS, 2020$/Yr						
Fixed O&M Cost - Assumes LTSA with Integrator/OEM	$1,490,000	$1,490,000	$1,490,000	$1,490,000	$1,490,000	$1,490,000
Augmentation (via LTSA)	$2,280,000	$2,280,000	$2,280,000	$2,280,000	$2,280,000	$2,280,000
Property Insurance Allowance	$2,800,860	$2,828,520	$2,853,540	$2,965,140	$3,141,060	$3,123,060
Site Leasing Allowance	$400,000	$400,000	$400,000	$400,000	$4,050,000	$470,000
Total Fixed O&M Cost 2020$/Yr	**$6,970,860**	**$6,998,520**	**$7,023,540**	**$7,135,140**	**$10,961,060**	**$7,363,060**
Total Fixed O&M Cost 2020$/kW - Yr	**$34.85**	**$34.99**	**$35.12**	**$35.68**	**$54.81**	**$36.82**
NON-FUEL VARIABLE O&M COSTS (EXCLUDES MAJOR MAINTENANCE) - BATTERY OPERATION, 2020$/MWh						
Capacity Augmentation (via LTSA) Levelized	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Total Variable Variable O&M - Battery Operation, 2020$/MWh	**$8.12**	**$8.12**	**$8.12**	**$8.12**	**$8.12**	**$8.12**

Notes:

[1] Battery FOM accounts for routine system maintenance and assumes the site is remotely controlled.

[2] Variable O&M is modeled to account for augmentation for assumed capacity requirement (costs are levelized).