

Table 3-1: Least-Cost Resource Expansion Plans for the Studied Scenarios

Year	Base	Base w/ New DSM Package	Low Gas (\$1 down)	High Gas (\$3 up)	\$30 Carbon Tax	\$50 Carbon Tax	\$30 Carbon, High Gas, additional Environmental	High Capital Cost for Combustion Turbines	High Cost for Big Stone AQCS	Low Growth	High Growth
2011											
2012											2-Purchase
2013	1-Purchase	1-Purchase	1-Purchase	1-Purchase	1-Purchase	1-Purchase	1-Purchase	1-Purchase	1-Purchase		3-Purchase
2014	2-Purchase	1-Purchase, New DSM	2-Purchase	2-Purchase	2-Purchase	2-Purchase	2-Purchase	2-Purchase	2-Purchase		5-Purchase
2015	2-CT43, 2-DSM, CT88, BGS AQCS	2-CT88, 2-DSM, BGS AQCS	2-CT43, 2-DSM, CT88, BGS AQCS	2-CT43, 2-DSM, CT88, BGS AQCS, 1-Wind	2-DSM, 2-CT88, BGS AQCS, 5-Wind	2-DSM, 2-CT88, 5-Wind, BGS AQCS, 2-Wind built	2-CT43, 2-DSM, CT88, BGS AQCS, 5-Wind	2-CT43, 2-DSM, CT88, BGS AQCS	2-CT43, 2-DSM, CT88, BGS AQCS	2-CT43, 2-DSM, BGS AQCS	2-CT43, 2-DSM, BGS AQCS, 2-Wind
2016											CT43
2017											CT43
2018	CT43		CT43	CT43			CT43	CT43	CT43	CT43	CT43
2019											CT43
2020	4-Wind	4-Wind	2-Wind	5-Wind	5-Wind, CT43	5-Wind	5-Wind	4-Wind	4-Wind		5-Wind, CT43
2021		CT43				CT43					CT43
2022	CT43		CT43	CT43			1-Base Load	CT43	CT43		CT43
2023					CT43						CT43
2024		CT43					1-Base Load				CT43
2025	CT43		CT43	1-Base Load		CT43		1-Base Load	CT43		CT43
2026											CT43
2027		CT43				CT43	1-Wind Built				CC
2028	CT43		CT43	CT43		CT43	CT43	CT43	1-Base Load		CT43
2029											CT43, Base Load
2030						2-Wind built					CT43
NPV ¹	\$3,723.72	\$3,615.71	\$3,624.26	\$3,759.12	\$5,014.11	\$5,875.53	\$5,317.21	\$3,809.08	\$3,856.56	\$2,529.11	\$5,990.34

1 - NPV in millions of dollars

- *CT43 - 33.4 PRC (43 MW) Combustion Turbine
- *CT88 - 82.3 PRC (88 MW) Combustion Turbine
- *CC - 132.5 PRC (140 MW) Combined Cycle
- *Base Load - 27.7 PRC (30 MW) Coal-fired Generation
- *DSM - 12.5 PRC (12.5 MW) Demand Side Management
- *BGS AQCS - Big Stone Air Quality Control System
- *Wind - 25 MW Wind (Purchased Energy)
- *Purchase - 10 PRC (10 MW) Capacity Purchases
- *Wind built - 30 MW Wind (Self-built)
- *New DSM - New DSM Package