

Table 5-15: Long-Term Resource Plans

Generating Unit Life	Load Scenario	Gas Price	Zero CO ₂ Price	High CO ₂ Price
55-Year	Base	Base	5 1x1 NGCCs, 300 MW Solar	5 1x1 NGCCs, 400 MW Solar
		High	5 1x1 NGCCs, 300 MW Solar	5 1x1 NGCCs, 500 MW Solar
		Low	5 1x1 NGCCs, 300 MW Solar	5 1x1 NGCCs, 300 MW Solar
	High	Base	7 1x1 NGCCs, 100 MW Solar	7 1x1 NGCCs, 100 MW Solar
		High	7 1x1 NGCCs, 100 MW Solar	7 1x1 NGCCs, 500 MW Solar
		Low	7 1x1 NGCCs, 100 MW Solar	7 1x1 NGCCs, 200 MW Solar
	Low	Base	4 1x1 NGCCs	4 1x1 NGCCs, 300 MW Solar
		High	4 1x1 NGCCs	4 1x1 NGCCs, 500 MW Solar
		Low	4 1x1 NGCCs	4 1x1 NGCCs
65-Year	Base	Base	No additional changes	No additional changes
		High	No additional changes	No additional changes
		Low	No additional changes	No additional changes
	High	Base	1 1x1 NGCC, 100 MW Batteries	2 1x1 NGCC, 400 MW Solar
		High	1 1x1 NGCC, 100 MW Batteries	1 1x1 NGCC, 300 MW Solar, 300 MW Wind
		Low	1 1x1 NGCC, 100 MW Batteries	2 1x1 NGCC, 400 MW Solar
	Low	Base	Retire Small-Frame SCCTs, DCP, Brown 3 or Brown 11N2 SCCTs	Retire Small-Frame SCCTs, DCP, Brown 3 or Brown 11N2 SCCTs
		High	Retire Small-Frame SCCTs, DCP, Brown 3 or Brown 11N2 SCCTs	Retire Small-Frame SCCTs, DCP, Brown 3 or Brown 11N2 SCCTs
		Low	Retire Small-Frame SCCTs, DCP, Brown 3 or Brown 11N2 SCCTs	Retire Small-Frame SCCTs, DCP, Brown 3 or Brown 11N2 SCCTs

In both operating life scenarios, NGCC capacity consistently appears as the least-cost source of replacement capacity in the longer-term, even in the high gas price and high CO₂ price scenarios. An NGCC resource provides better availability year-round than renewable resources, and is a cheaper source of energy than an SCCT resource. The Companies’ small-frame SCCTs, Demand Conservation Program, and Brown 3 are assumed to be retired in the 65-year operating life scenario with low load because the Companies’ reserve margin would otherwise be well above 25 percent.

The optimal expansion plans in the 55-year generating unit life scenario contain up to 500 MW of solar generation, as excess winter capacity from modeled NGCC units provides an opportunity for incremental volumes of solar generation to shore up summer reserve margin needs without compromising winter reliability. Wind generation is optimal only in the 65-year generating unit life scenario with high energy requirements, high gas prices, and high CO₂ prices. However, depending on actual energy requirements at the end of the planning period and the relative costs of renewables and battery storage versus NGCC or SCCT capacity, optimal expansion plans could include small amounts of solar generation, wind generation, or battery storage as a means to fill gaps where an incremental NGCC or SCCT unit may exceed the Companies’ needs. For example, the optimal expansion plans in the 65-year operating life scenario with high energy requirements and no CO₂ prices contain 100 MW of battery storage because battery storage can be deployed in smaller capacity increments relative to the alternative of SCCT capacity.