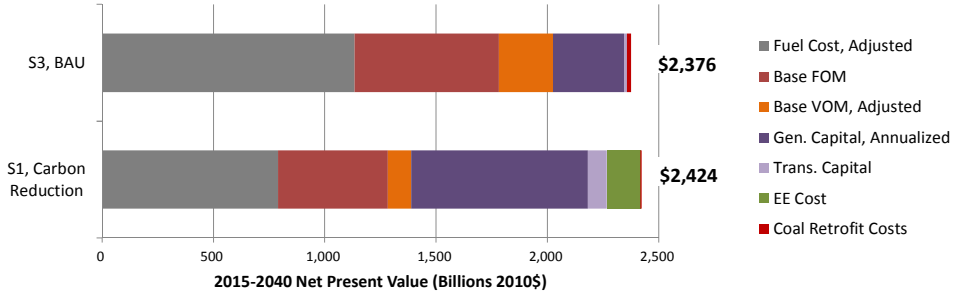
Comparative Costs and Emissions of the "Carbon Reduction" and "Business-as-Usual" Scenarios in EIPC

Over the last three years, the American Recovery and Reinvestment Act-funded Eastern Interconnection Planning Collaborative (EIPC) conducted an assessment of future power sector infrastructure needs (generation and transmission) for three different energy future scenarios, including "carbon reduction" and "business-as-usual" (BAU) scenarios.

While the EIPC produced two reports describing certain costs, emissions profiles, and electricity resource shares for each of the scenarios, it did not include a comparison of total study period costs across the scenarios (instead, it looked at a snapshot of production costs for one year, 2030, and "overnight" capital costs for generation and transmission). EIPC did not analyze year-after-year investment requirements and annual production costs for the 2015-2040 study period. So, using the EIPC modeling results, Synapse Energy Economics has conducted further cost analysis that accounts for the temporal profile of resource additions, annual production costs, and the time value of money[1].

Synapse's analysis shows essentially equal costs for the carbon reduction and business-as-usual scenarios, with 80% lower CO_2 emissions under the carbon reduction future than the business-as-usual future by 2030.

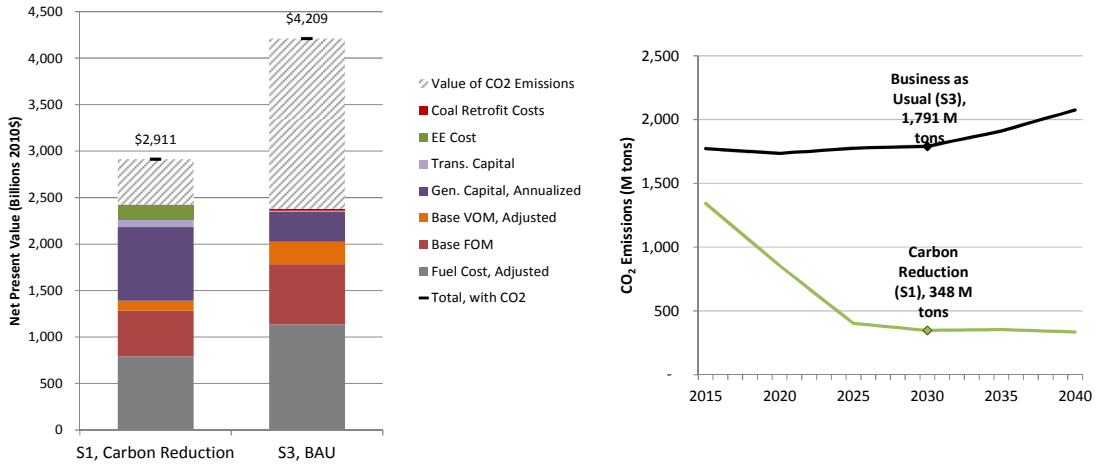
Figure 1. Present Value of Total Costs of EIPC Scenarios from 2015-2040



Carbon reduction future assumes revenues from carbon price or emission credits are recycled back to the economy.

The graphs below also show that when CO_2 emissions reductions and their costs are factored into the analysis, the carbon reduction future has much lower total costs than the business-as-usual future, while driving CO_2 emissions down 80% by 2030. SO_2 and NO_X emissions are also dramatically lower in the carbon reduction future. *This analysis underscores the need and ability to aggressively pursue a carbon reduction future.*

Figure 2. Present Value of Total Costs, 2015-2040, and CO2 Emissions Trajectory, Carbon Reduction (S1) and BAU (S3)



[1] *See* An Expanded Analysis of the Costs and Benefits of Base Case and Carbon Reduction Scenarios in the EIPC Process, Synapse Energy Economics, Inc., July 19, 2013. http://www.synapse-energy.com/Downloads/SynapseReport.2013-07.Sust-FERC.EIPC-Expanded-Analysis.13-047-Report.pdf.