

Appendix B: Estimating Price Impacts of the BCES12 Small Retailer Exemption

The CES policy proposal analyzed in this paper, as outlined in the letter and draft legislation provided in Appendix D, exempts small electricity retailers. Small electricity retailers are defined as those with sales less than 2,000,000 megawatthours (MWh) in 2015, with the exemption level decreasing linearly to 1,000,000 MWh in 2025 and beyond. EIA is not able to disaggregate the price impacts of exempt small retailers from those of larger covered retailers within the National Energy Modeling System (NEMS). Given the exemption, there is likely to be a considerable divergence in the price impacts for customers of exempt and non-exempt electricity providers. Using historical data and assuming that small retailer sales grow at the same rate as total sales in a region, we can approximate the extent of the regional differences in the proportions of exempt and non-exempt retail electricity sales (Table B1).

Table B1. Exempt Retailer Share of Total Sales by Electricity Market Module (EMM) Region⁴

Region	2015	2020	2025	2030	2035
Texas Regional Entity (ERCT)	0.15	0.11	0.08	0.08	0.08
Florida Reliability Coordinating Council (FRCC)	0.07	0.06	0.04	0.04	0.04
Midwest Reliability Organization / East (MROE)	0.32	0.26	0.25	0.25	0.25
Midwest Reliability Organization / West (MROW)	0.34	0.32	0.28	0.28	0.28
NPCC / Northeast (NEWE)	0.15	0.13	0.12	0.12	0.12
NPCC / NYC-Westchester (NYCW)	0.07	0.05	0.02	0.02	0.02
NPCC / Long Island (NYLI)	0.03	0.03	0.03	0.03	0.03
NPCC / Upstate New York (NYUP)	0.15	0.14	0.14	0.14	0.14
Reliability First Corporation / East (RFCE)	0.05	0.04	0.03	0.03	0.03
Reliability First Corporation / Michigan (RFCM)	0.09	0.09	0.06	0.05	0.05
Reliability First Corporation / West (RFCW)	0.1	0.1	0.09	0.09	0.09
SERC / Delta (SRDA)	0.14	0.13	0.08	0.08	0.08
SERC / Gateway (SRGW)	0.3	0.28	0.24	0.24	0.23
SERC / Southeastern (SRSE)	0.22	0.18	0.13	0.12	0.12
SERC / Central (SRCE)	0.39	0.34	0.23	0.22	0.21
SERC / Virginia-Carolina (SRVC)	0.18	0.16	0.1	0.09	0.08
Southwest Power Pool / North (SPNO)	0.19	0.19	0.15	0.15	0.15
Southwest Power Pool / South (SPSO)	0.28	0.25	0.2	0.19	0.19
WECC / Southwest (AZNM)	0.11	0.09	0.07	0.07	0.07
WECC / California (CAMX)	0.06	0.05	0.02	0.02	0.02
WECC / Northwest Power Pool Area (NWPP)	0.21	0.19	0.15	0.14	0.13
WECC / Rockies (RMPA)	0.3	0.27	0.17	0.16	0.15

Note: Darker shades indicate a higher share of exempt retail sales. Source: U.S. Energy Information Administration, based on National Energy Modeling System, run ref2012.d121011b, and Form EIA-861

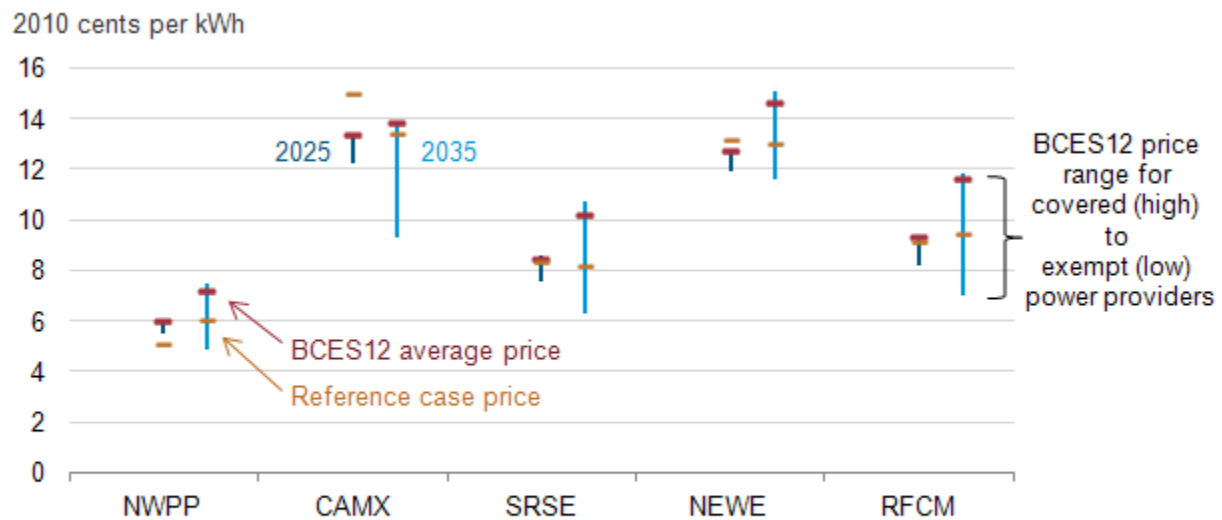
As shown, these regional differences are pronounced and persistent throughout the projections. It should also be noted that these estimates assume that larger retail utilities do not take steps that might increase the number of exempt small retailers when faced with the CES requirement. The price paid by a

⁴ See Appendix C for a map of EMM regions

customer of a covered (non-exempt or large) provider will include a certain amount of compliance cost. The price paid by a customer of an exempt provider will not.

While EIA cannot determine an actual projection for differences in electricity price impacts between exempt and covered retailers, we can get a general sense of the potential magnitude of these differences attributable to the CES by apportioning the national CES credit expenditures in any given year to each region based on that region’s share of the national covered load, excluding exempt retailers and excluded nuclear and conventional hydropower sales. By dividing this allocation by the sales from the covered retailers in the region, EIA can estimate how much (per kWh) CES compliance is costing covered retailers, which, under some circumstances, would represent the compliance component of the average retail price for those retailers. To figure out the price to the exempt retailers, shown for selected regions in Figure B1, subtract the regional share of CES expenditures from the total regional electricity expenditures, then divide by total sales. This calculation yields a value for the underlying cost of electricity excluding the purchase of any CES credits, which, under some circumstances, would represent the price paid by the exempt retailers. The price paid by the covered retailers is the underlying electricity price plus the compliance component estimated previously.

Figure B1. Regional Delivered Electricity Price Comparison for Selected Regions



Source: U.S. Energy Information Administration, based on National Energy Modeling System, runs ref2012.d121011b and bing12ichp.d042312b and Form EIA-861.

This approach implicitly assumes that electricity retailers purchase the CES credits. Generation is implicitly assumed to come from pure-play generators (that is, independent power producers, deregulated utility subsidiaries, or other generators that don’t directly serve retail load). The retail price estimated in the model already accounts for any price reductions that result from the sale of credits, and this approach assumes it to be retained by the generators. In a region that relies primarily on market-based pricing mechanisms, this assumption seems reasonable. In a region that relies primarily on cost-of-service regulation as a pricing mechanism, this approach would be consistent with a regulator that allowed or required retail utilities to obtain generation, especially CES-compliant generation, from

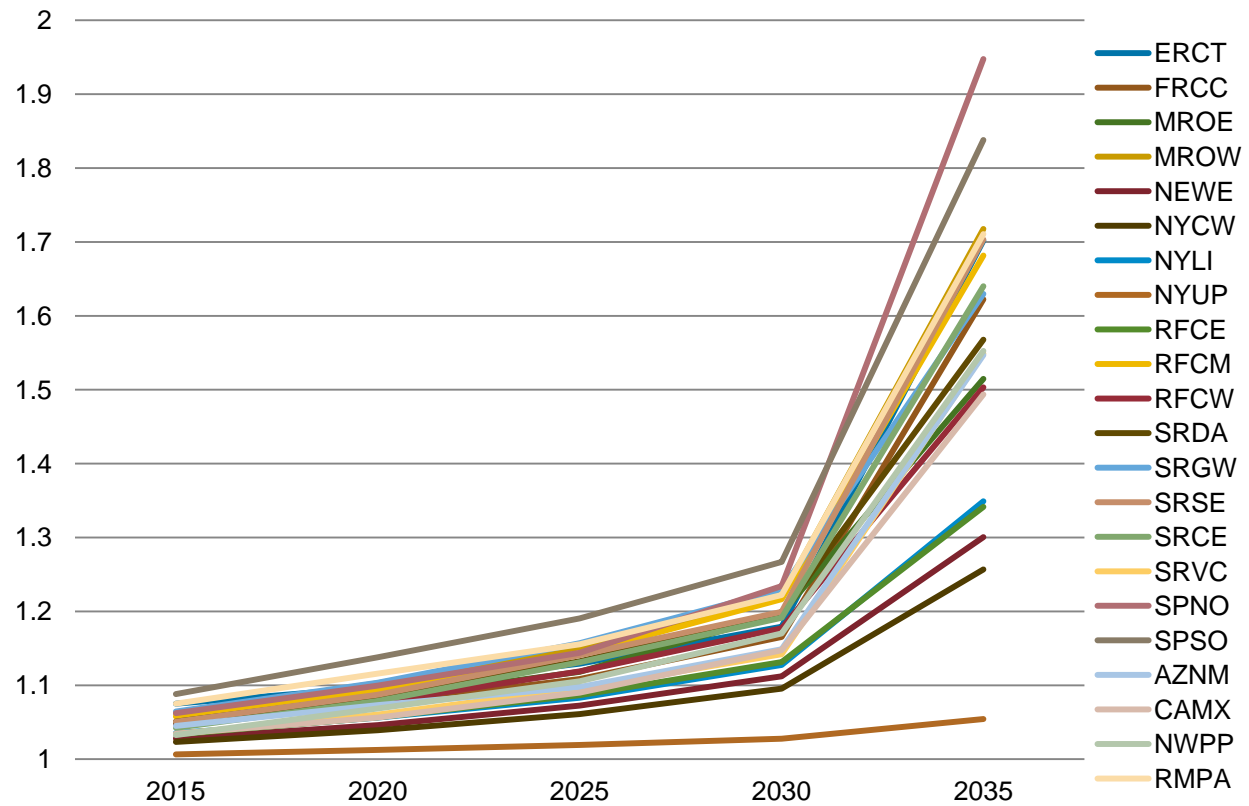
non-retail generators. For vertically integrated electricity utilities that are generating substantial amounts of compliant generation “in house”, this approach would not accurately account for the price offsets that came from selling CES credits. Currently, somewhat more than half of the CES-compliant capacity is owned by non-utility generators, and EIA assumes that all new generation comes from these sources, rather than from capacity owned by the retail electricity sellers. However, it is important to note that regulatory practice may change in unexpected ways in the face of a significant new Federal policy, such as the one examined here. This approach does not account for any underlying price differences between exempt and covered retailers in any given region.

When applying this approach, EIA finds that regions with a lower average electricity price would tend to see a greater disparity in price between the exempt and covered retailers. This reflects a situation in which total compliance cost will tend to be a larger portion of total electricity costs for the covered retailers.

In addition, EIA finds that the excluded nuclear/hydropower generation in a region is a significant factor affecting intra-regional price disparity. Excluded generation tends to depress overall regional compliance costs, so regions with more excluded generation tend to have lower costs. This may be somewhat offset if the exempt retailer share of sales is particularly large in a region, as compliance costs will be spread over fewer units of sales. However, it is difficult to disentangle the relationship here, as some of the regions with the highest shares of excluded generation also have some of the largest shares of small retailers (NWPP⁵, SRCE, SRGW) and vice versa (ERCT, MROE, RFCM).

⁵ See Appendix C for a map of EMM regions

Figure B2. Ratio of Estimated Price at Covered Retailers to Estimated Price at Exempt Retailers, by Year and Region



Source: U.S. Energy Information Administration, based on National Energy Modeling System, runs ref2012.d121011b and bing12ichp.d042312b and Form EIA-861.

In the early years, when the CES target is low, there is little covered/exempt disparity in any of the regions; generally we'd expect the costs of covered retailers to be 1 percent to 15 percent above the cost of exempt small retailers in the same region in 2020 (Figure B2). As the target increases, the exempt retail load decreases, and the electricity price increases, the spread in the credit-inclusive cost of generation between the covered and exempt retailers becomes quite pronounced. By 2030, we'd expect the credit-inclusive cost of generation for covered retailers to be about 3 percent to 30 percent above the costs of exempt small retailers in the same region. After the price cap is reached, in regions with the largest disparity, covered retailers are paying almost twice as much for wholesale electricity as exempt retailers in the same region. Upstate New York (NYUP) is still a low-disparity outlier at this point, with only a 5 percent difference, and in the next lowest disparity regions (NYCW and NEWY), covered retailers are paying about 25 percent to 30 percent more than the exempt retailers.