OHIO LEGISLATIVE SERVICE COMMISSION

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To: Pat Tully, Senior Policy Advisor
House Majority Caucus

From: Russ Keller, Senior Economist RK

Date: May 22, 2020

Subject: Customer charges and associated compliance costs for electric utilities

You previously requested information about electric bill charges paid due to several different utility provisions required under the Ohio Revised Code. H.B. 6 of the 133rd General Assembly modified several provisions of law affecting electric distribution utilities (EDUs). Since all six of Ohio's EDUs operate under electric security plans (ESPs), the Public Utilities Commission of Ohio (PUCO) relies on the Revised Code to determine which costs EDUs may recover through electric bill riders paid by consumers. Table 1 estimates compliance costs for only those riders affected by H.B. 6. Please note that Table 1 assigns ratepayers and their associated charges to the applicable EDU territories.

Table 1. Total EDU Compliance Costs (in Millions) Attributable to H.B. 6		
Year	**Compliance Costs**	**Annual Difference, as Compared to 2019**
2019 (prior to H.B. 6)	$466.3	n/a
2020	$460.5	($5.8)
2021	$322.2	($144.1)
2022	$314.8	($151.5)
2023	$310.9	($155.4)
2024	$306.7	($159.6)
2025	$305.4	($160.9)
2026	$311.2	($155.2)
2027	$237.5	($228.8)
2028	$67.5	($398.8)
2029	$67.5	($398.8)
2030	$67.5	($398.8)
Total Reduction in Costs, 2020 through 2030	**n/a**	**($2,357.6)**

Note: The alternative energy rider is bypassable whereas all other applicable riders are nonbypassable. To maintain comparability, the alternative energy compliance costs for customers not supplied by an EDU are separately estimated but still allocated to their EDU territory. Estimates for 2020 through 2030 depend on various assumptions detailed in this memorandum and LBO cannot guarantee their accuracy.

Alternative energy

H.B. 6 reduced the alternative energy (AE) portfolio standards beginning with calendar year (CY) 2020. It eliminated the "solar carve-out" for the comparatively more expensive solar energy resources, while simultaneously lowering the annual benchmarks for renewable energy resource procurement. EDUs and competitive retail electric service (CRES) providers must now generate 8.5% of their energy supply from renewable energy sources by CY 2026, but no such requirement will exist for CY 2027 and successive years. Prior to these H.B. 6 changes, the renewable standard for CY 2026 and years thereafter was 12.5%.

Eliminating the solar carve-out and reducing the overall benchmark should lower compliance costs, as fewer megawatt hour (MWh) purchases will be reimbursed by ratepayers. For customers of EDUs, the lowered expense has a direct correlation with ratepayers' savings because the ESP for all but one utility currently levies an alternative energy rider (AER).[1] CRES providers do not rely on riders, so their ratepayers might not claim the full benefit of reduced compliance costs, especially if they purchase under a fixed-term contract. However, over the long run, economic theory suggests these consumers will save money if their energy supplier has lower expenses.

Beginning with compliance year 2020, PUCO must reduce the number of kilowatt-hours (kWh) required by the renewable portfolio standard for all EDUs and CRES providers. PUCO must determine each EDU's and each CRES provider's reduction by taking the total amount of kWh produced, if any, by all "qualifying renewable resources," as defined in R.C. 3706.40, during the preceding compliance year, and allocate that total among all EDUs and CRES providers in proportion to their baselines for the subject compliance year. The amount otherwise required for compliance with the renewable portfolio standard will be reduced by the allocated amount. Table 2 identifies the qualifying renewable resources and LBO's assumed date for when the resource will begin operations.

Table 2. Solar Projects 50 Megawatt (MW) or Greater Approved by Ohio Power Siting Board (OPSB) Prior to June 1, 2019

Solar Project Applicant	County	Nameplate Capacity	Assumed In-service Date
Hardin Solar Energy, LLC	Hardin	150	12/01/2020
Vinton Solar Energy, LLC	Vinton	125	9/01/2021
Willowbrook Solar I, LLC	Brown, Highland	150	9/01/2021
Hardin Solar Energy II, LLC	Hardin	170	6/01/2021
Hillcrest Solar I, LLC	Brown	200	12/01/2020
Hecate Energy Highland, LLC	Highland	300	9/01/2021
Total	**n/a**	**1,095**	**n/a**

Note: LBO estimated the date each solar farm begins operations by reviewing progress reported by project applicant in OPSB application and the company's website. Actual dates may vary from those assumed by LBO in this memorandum. The 150 MW Hardin Solar Energy LLC project subsequently transferred and merged its OPSB certificate with Hardin Solar Energy II LLC's 170 MW project.

[1] The lone exception is for DP&L, which does not levy a rider, but instead quantifies the impact of R.C. 4928.64 on their Standard Service Offer.

Another prominent change made by H.B. 6 excludes certain large customers from the renewable portfolio standard. Recent statistics suggest this provision excludes 23.7 million MWh from the statewide baseline of 115.4 million MWh, which is a reduction of nearly 21%. These 150 (approximately) customers are so large that the Revised Code permits them to "self-assess" the kWh excise tax applicable to electricity consumption.[2] H.B. 6 required EDUs and CRES providers to exclude consumption of self-assessing purchasers (or "self-assessors") from the baseline against which compliance is measured. Accordingly, CRES providers will purchase a smaller quantity of renewable energy to meet the standard for these unique customers.

This analysis assumes every self-assessor is a nonresidential customer that obtains their electric supply from a CRES provider. Since Table 1 reflects all customers in a delivery territory, the self-assessors were sorted into EDU service areas based on imputed statistics. The Ohio Department of Taxation only delineates kWh excise tax payments by two general sources: (1) a self-assessor or (2) an EDU. Consequently, this memorandum's allocation method relies on EDUs' annual reporting to the Federal Energy Regulatory Commission (FERC), which entails disclosure of their Ohio kWh excise tax liability.

Variation in compliance strategy and marketplace volatility

Duke Energy currently levies the lowest AER, as measured on a per kWh basis. Duke's kWh charge is even lower than the equivalent kWh amount implied by the aggregate costs of CRES providers. This latter supplier group does not recover expenses through a PUCO-authorized electric bill rider, so marketplace competition incentivizes them to keep compliance costs low.

Exhibit 3-16 in the Appendix of this memorandum graphically displays AER amounts over ten previous quarters. The illustration demonstrates how different procurement strategies yield divergent results. The EDUs' variation makes LBO's projections of future compliance costs unavoidably rough. In the absence of a reliable basis for predicting future energy prices through CY 2026, this analysis estimates subsequent compliance costs using current prices paid for a single MWh of nonsolar renewable energy.

Such an approach is likely to yield mixed results. AEP Ohio relies on long-term contracts, which are inherently predictable. On the other hand, the FirstEnergy companies recently shed their renewable power purchase agreements in bankruptcy court. Therefore, future AE costs incurred by their three EDUs could decrease. Nevertheless, purchasing renewable energy credits (RECs) in lieu of long-term agreements incurs more volatility, as seen in Exhibit 3-7 within the Appendix. For this memorandum, LBO held current prices constant and adjusted for future MWh quantities, as specified by the Revised Code. The simplistic approach is necessary, given the lack of reliable information about future energy markets.

[2] This direct payment option contrasts with the convention used by other electric customers. EDUs levy a rider for the kWh tax on electric bills of ordinary consumers and subsequently remit their collections to the state.

Duke Energy's experience

Larkin & Associates, PLLC's conducted a management and financial audit of Duke Energy's AER for the period January 1, 2017, through December 31, 2018.[3] Several observations and two exhibits from their analysis are reprinted in the appendix because they illustrate how Duke Energy's decisions and other marketplace factors can affect compliance costs. The report states the following:

> Duke Energy (or "DEO") "met the compliance in 2017 and 2018 with the alternative energy standards with purchased RECs . . . DEO's REC purchases are limited to short-term purchases. There are no long-term contracts in place . . . DEO's strategy of purchasing RECs to meet AER compliance requirements has consistently resulted in DEO having lower AER rates than Ohio Power Company [refer to Exhibit 3-16], which has used a different strategy for compliance that has included renewable purchase power agreements."

Energy efficiency and peak demand reduction

The energy efficiency and peak demand reduction (EE/PDR) savings requirements terminate on December 31, 2020. The annual benchmarks were replaced by a statewide collective measure of "at least 17.5%" in H.B. 6. PUCO staff estimated the EDUs' compliance at 17.35% by the end of CY 2019, so the threshold will almost certainly be reached before the EE/PDR portfolio plans' expiration date.

PUCO recently issued an order directing EDUs to wind-down the statutorily required EE programs on September 30, 2020.[4] The Commission expects EDUs "to plan and implement an orderly wind-down of the energy efficiency programs, with the ability to ramp down and minimize post-2020 cost reconciliation." Since LBO cannot reliably forecast the reconciliation costs charged (or credited) to ratepayers in CY 2021, the estimated rider amounts are assumed to be zero next year.

Table 1 reflects each EDU's approved EE/PDR budget for CY 2020, as authorized by PUCO and H.B. 6. An EDU's overall compliance cost is the sum of the program budget and its shared savings incentive. The three FirstEnergy EDUs are assumed to collect $25 million in shared savings, on an after-tax basis. Whereas the cap was formerly $10 million, PUCO predicated this lower cap on FirstEnergy collecting revenue from its distribution modernization rider (or "Rider DMR"). The Ohio Supreme Court issued a ruling (Case No. 2019-Ohio-2401) in June 2019 that immediately removed Rider DMR from FirstEnergy's three ESPs.

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[3] Management/Performance Audit Prepared by Larkin & Associates (August 28, 2019), PUCO Case No. 19-0051-EL-RDR, http://dis.puc.state.oh.us/TiffToPDf/A1001001A19H28B13155B04336.pdf.

[4] PUCO's order was filed February 26 under the EDUs' applicable EE/PDR dockets; Case Nos. 16-0574-EL-POR (AEP Ohio), 16-0576-EL-POR (Duke), 16-0743-EL-POR (FirstEnergy), and 17-1398-EL-POR (DP&L).

H.B. 6 enables mercantile customers to opt-out of the EE/PDR programs beginning January 1, 2020. Continuing law defines a mercantile customer as a commercial or industrial customer that consumes more than 700,000 kWh per year. Information compiled by the Development Services Agency (DSA) for the Universal Service Fund rider indicates that mercantile customers comprise more than 30% of all kWh sales to statewide customers. Although these customers will avoid paying the EE/PDR rider when they opt out, EDUs are not required to reduce their approved budgets for these excluded mercantile customers. It remains to be seen whether they will elect to do so; LBO did not reduce EDU compliance costs in this memorandum on behalf of the mercantile opt-out.

Legacy generation

The legacy generation rider (LGR) is a nonbypassable charge enabling EDUs to recover prudently incurred costs related to the Ohio Valley Electric Corporation (OVEC). H.B. 6 mandated that each EDU replace their existing riders with the LGR on January 1, 2020. Prior to this date, half of the EDUs (with FirstEnergy companies as the exception) levied a nonbypassable rider for the same purpose. To accommodate this dichotomy, PUCO split the LGR into a pair of provisions that provide for a statewide rate ("Part A Rate") and a specific EDU true-up rate ("Part B Rate") that reconciles earlier collections. PUCO implemented a single, flat Part A Rate of $0.50 per month for all residential customers, which is below the $1.50 cap in codified law. Predictably, the Part B Rate varies among EDUs based on their pre-H.B. 6 circumstances. Since the three FirstEnergy EDUs were not previously recovering OVEC-related costs, their Part B Rate is zero. For the sake of simplicity, this analysis assumes no further true-up will be necessary after CY 2020. Consequently, LGR collections for CY 2021 and years thereafter only include Part A Rate receipts of residential and nonresidential customers. The latter group pays a kWh charge based on their monthly energy usage.

The LGR works as either a charge or a credit to an EDU's retail customers, depending on how OVEC's costs compare to the market rate. PJM Interconnection, LLC. (PJM) operates a competitive wholesale electricity market where rates are set. If the revenue generated from sales to the PJM market is lower than the costs of the power, customers would pay a surcharge to make up the difference. But if the PJM market rates are higher than the power costs, customers would receive a credit on their monthly bills due to this rider. Although PJM wholesale markets will surely experience fluctuations over the coming decade, LBO assumes the LGR will remain constant until its statutory expiration date of December 31, 2030.

Capacity auction certainty provided by FERC

The Part A Rate collects the forecasted net costs of OVEC. PUCO calculated the statewide rate based on forecasted data provided by EDUs, and it will update the LGR semiannually.[5] OVEC's operating margins will not be negatively impacted by a recent order of the FERC.[6] In December 2019, FERC issued an order extending its existing "minimum offer price

[5] PUCO staff's comments (September 25, 2019) filed for Case No. 19-1808-EL-UNC.

[6] https://www.ferc.gov/media/news-releases/ OV2019/2019-4/12-19-19-E-1.asp.

rule" (MOPR) to include both new and existing electric generation resources that receive, or are entitled to receive, certain "out-of-market payments." Previously, FERC defined these payments as "out-of-market revenue that a state either provides, or requires to be provided, to a supplier that participates in the PJM wholesale capacity market." However, FERC ruled in April 2020 that OVEC riders are exempt from the application of the MOPR because "such a retail rider is appropriately treated in a manner similar to existing self-supply arrangements."[7] As of this writing, the overall cost for the Part A Rate is about $68 million in CY 2020. The projected amount is nearly identical to LBO's assumptions last July.

Decoupling mechanism

H.B. 6 codified authority for a decoupling mechanism pertaining to base distribution rates and the associated impact of EE/PDR programs. In doing so, the kWh sales are separated (or "decoupled") from revenues so an EDU can recover a predetermined level of distribution revenue regardless of its actual volume of energy sold. PUCO previously approved a target amount for each EDU's base distribution revenue, but actual amounts collected may be greater or less than the revenue target due to energy conservation, weather, and business-cycle fluctuations.

H.B. 6 requires PUCO to use CY 2018 receipts as the baseline and that year had abnormally hot weather. PUCO staff researched National Weather Service data going back more than 130 years and determined the 2018 summer to be one of the two warmest on record.[8] Prospectively, an EDU will be made whole for revenues received in CY 2018, so the rider will likely yield a charge rather than a credit in most years. The three FirstEnergy EDUs are on pace to collect a combined $17.1 million in CY 2020, which will only be recovered from residential and commercial customers, as industrial customers are statutorily excluded.[9]

As of this writing, LBO only found evidence of the FirstEnergy EDUs levying this rider. The bill effectively prohibits Duke Energy from submitting an application to PUCO. A separate H.B. 6 provision prohibiting "double recovery" limits the appeal to AEP Ohio given that it already has a related, albeit not identical, Pilot Throughput Balancing Adjustment Rider (PTBAR). DP&L previously had a decoupling rider, but that was removed on December 19, 2019, when it withdrew its ESP III in favor of its ESP I. Potentially, they could apply for this H.B. 6 decoupling rider, but LBO is unaware of any pending applications or financial incentive for DP&L to submit one. Their current base distribution rates became effective October 1, 2018. PUCO's approval reflected a $29.8 million annual increase to distribution revenues.[10] The 13.7% increase in rates was only effective for three months of CY 2018, so a decoupling rider makes little sense for DP&L over the next few years. LBO does not have access to company financials for CY 2019, but those receipts were almost assuredly higher than DP&L's comparable revenues in the baseline year.

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[7] FERC Order on Rehearing and Clarification (April 16, 2020), Docket Nos. EL16-49-002 and EL18-178-002.

[8] PUCO staff's comments (January 8, 2020) filed for Case No. 19-2080-EL-ATA.

[9] Exhibit A in FirstEnergy's Application (November 21, 2019), PUCO Case No. 19-2080-EL-ATA.

[10] FERC Form 1, 2018 Annual Report of Major Utilities, filed by DP&L.

Any decoupling mechanism relying on the H.B. 6 legal authority "shall remain in effect until the next time that the electric distribution utility applies for and the commission approves base distribution rates for the utility."[11] The three FirstEnergy EDUs are currently operating under a base distribution rate freeze through May 31, 2024.

H.B. 6 charge for Nuclear and Renewable Generation funds

A new nonbypassable charge authorized by H.B. 6 will begin January 1, 2021, and end on December 31, 2027. The bill created the Nuclear Generation Fund and the Renewable Generation Fund to support electric generation facilities with designated characteristics. PUCO retains discretion for establishing the structure and design of this monthly charge, but it must implement a rate design sufficient to raise $170 million in revenue.

H.B. 6 enacted R.C. 3706.46(B), which directs PUCO to design a nonresidential rate (for customers that do not self-assess their kWh tax) "that avoids abrupt or excessive total net electric bill impacts for typical customers." In the absence of specific guidance, LBO simply estimated a uniform kWh charge applicable to all nonresidential customers. The assumed charge raises enough money from this customer class to equal $170 million per year, when added to the anticipated receipts from residential ratepayers. PUCO retains discretion to use a different rate design or perhaps suggest a revenue target less than $170 million, so the CY 2021 compliance costs estimated for Table 1 will need to be updated once PUCO offers guidance.

I hope you find this information helpful. If you have any questions, please contact me at (614) 644-1751 or russ.keller@lsc.ohio.gov.

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[11] R.C. 4928.471(C).

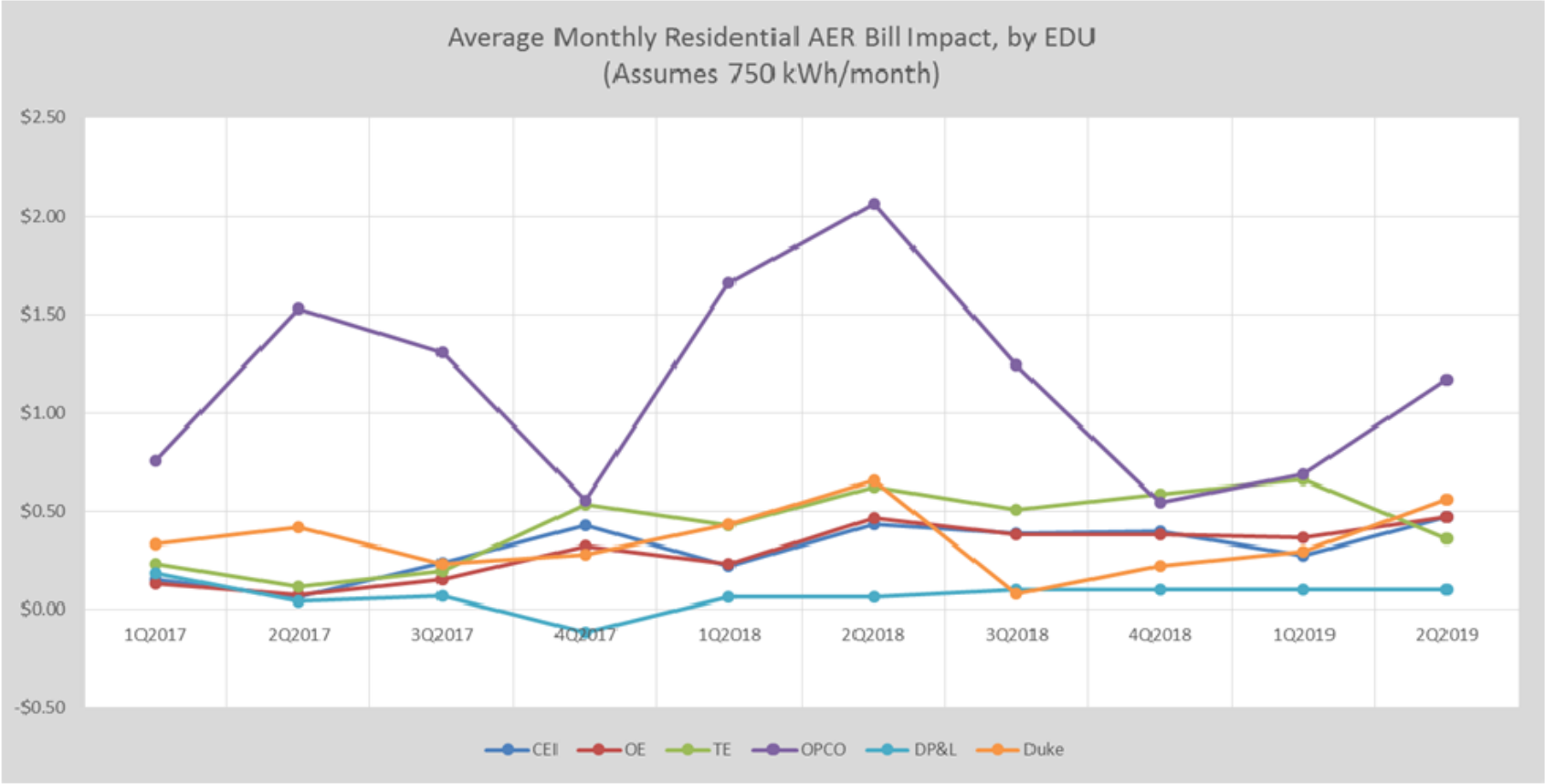
Appendix

Exhibit 3-7. Ohio Solar REC Prices July 2017 - May 2019

Month	Range of Market Prices	
	Bid	Offer
March 2017	None Stated	None Stated
April 2017	None Stated	None Stated
May 2017	None Stated	None Stated
June 2017	None Stated	None Stated
July 2017	$ 3.75	$ 3.75
August 2017	$ 4.25	$ 4.25
September 2017	$ 4.50	$ 4.50
October 2017	$ 4.50	$ 4.50
November 2017	$ 3.50	$ 4.25
December 2017	$ 5.00	$ 5.00
January 2018	$ 3.50	$ 4.50
Februrary 2018	$ 5.00	$ 5.25
March 2018	$ 5.00	$ 5.00
April 2018	$ 5.00	$ 5.25
May 2018	$ 5.50	$ 5.50
June 2018	$ 6.00	$ 6.00
July 2018	$ 8.00	$ 8.00
August 2018	$ 7.00	$ 7.00
September 2018	$ 8.00	$ 8.00
October 2018	$ 6.50	$ 6.50
November 2018	$ 6.50	$ 6.50
December 2018	$ 10.00	$ 13.00
January 2019	$ 10.00	$ 10.50
Februrary 2019	$ 10.50	$ 20.00
March 2019	$ 22.00	$ 28.00
April 2019	$ 22.75	$ 29.25
May 2019	$ 27.50	$ 32.50

Source: LARKIN-DR-02-007, Attachments 01 - 27

Exhibit 3-16. Rate Impact for 2017 through 2Q2019



The above exhibit from Duke Energy's management and financial audit graphically displays AERs for Cleveland Electric Illuminating Company (CEI), Ohio Edison (OE), Toledo Edison (TE), AEP's Ohio Power Company (OPCO), The Dayton Power and Light Company (DP&L), and Duke Energy.