

**RENEWABLE PORTFOLIO STANDARD REPORT**  
**TO THE GENERAL ASSEMBLY**  
**BY THE PUBLIC UTILITIES COMMISSION OF OHIO**  
**FOR THE 2019 COMPLIANCE YEAR**

**PUCO Case No. 21-0009-EL-ACP**

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## I. EXECUTIVE SUMMARY

Amended Substitute Senate Bill 221 created Ohio's Alternative Energy Portfolio Standard (AEPS). The AEPS originally contained specific compliance benchmarks for the total renewable energy resources and advanced energy requirements for electric distribution utilities (EDUs) and the competitive retail electric service (CRES) Providers.

Substitute Senate Bill 310 (SB 310), which became effective on September 10, 2014, revised Ohio's AEPS and, among other things, eliminated the advanced energy provision.<sup>1</sup> Since the advanced energy provision was eliminated, the AEPS will now be referred to as the Renewable Portfolio Standard (RPS).

The Ohio Revised Code (R.C.) section enacting this legislation requires the Public Utilities Commission of Ohio (PUCO) to submit a report detailing information regarding renewable energy compliance with the statutory standards to the General Assembly.<sup>2</sup> Specifically:

The commission annually shall submit to the general assembly in accordance with section 101.68 of the Revised Code a report describing all of the following:

- (1) The compliance of electric distribution utilities and electric services companies with division (B) of this section;
- (2) The average annual cost of renewable energy credits purchased by utilities and companies for the year covered in the report;
- (3) Any strategy for utility and company compliance or for encouraging the use of qualifying renewable energy resources in supplying this state's electricity needs in a manner that considers available technology, costs, job creation, and economic impacts.

PUCO rules<sup>3</sup> require EDUs and CRES Providers to file by April 15 of each year, a renewable energy portfolio status report that analyzes all activities undertaken in the previous calendar year.<sup>4</sup> The public may comment on the status report of each EDU and

<sup>1</sup> Additionally, SB 310 eliminated the requirement that 50% of renewable energy credits (RECs) come from in-state renewable facilities and froze the percentages of electric sales required to result from renewable sources at 2014 levels until 2017. Finally, in addition to the ability to use a compliance baseline based on a three-year average of sales, an EDU or CRES provider can now choose to use compliance year sales as the compliance baseline.

<sup>2</sup> See R.C. 4928.64.

<sup>3</sup> The PUCO's RPS Rule, Ohio Administrative Code (Ohio Adm.Code) 4901:1-40, was revised with an effective date of March 26, 2020. The rule citations in this report point to the current rule, rather than the rule version that was in effect during 2019.

<sup>4</sup> See Ohio Adm.Code 4901:1-40-05(A).

CRES provider within 30 days of its filing.<sup>5</sup> While the PUCO reviews status reports for individual company compliance with the renewable energy requirements, the status reports also provide a substantial portion of information necessary for the RPS reports to the General Assembly. The information contained in this report reflects the information as filed by the EDUs and CRES Providers, and not necessarily as modified and verified by PUCO review.<sup>6</sup>

The information required to be submitted by the PUCO to the General Assembly is contained herein as the PUCO’s eleventh annual General Assembly filing (2019 RPS Report). Section II summarizes the 2019 compliance efforts of the EDUs and CRES Providers. Section III details the average costs of renewable energy credits (RECs) and solar RECs (S-RECs) used for compliance in 2019. Section IV considers the resources and strategy for encouraging the use of renewable energy resources.

**II. 2019 COMPLIANCE ACTIVITIES**

The RPS requirements are addressed most specifically in R.C. 4928.64, with additional supporting language found throughout R.C. Chapter 4928. To implement the RPS, the statute includes specific annual benchmarks, including a requirement for solar resources. The requirements for 2019, as specified by R.C. 4928.64(B)(2), were as follows:

<b>Year</b>	<b>Renewable Energy Resources</b>	<b>Solar Energy Resources</b>	<b>Non-Solar Energy Resources<sup>7</sup></b>
2019	5.50%	0.22%	5.28%

Each EDU and CRES provider is subject to a compliance payment if it does not meet the annual benchmarks. EDUs and CRES Providers may purchase RECs and S-RECs to comply with this rule and therefore RECs and S-RECs represent the compliance currency for Ohio’s RPS.<sup>8</sup>

<sup>5</sup> See Ohio Adm.Code 4901:1-40-05(B).

<sup>6</sup> Staff reviews the information filed annually by each EDU and CRES provider in individual PUCO dockets.

<sup>7</sup> This report uses the term “non-solar energy resources” to represent the total renewable energy resource requirement net of the specific solar requirement. S-RECs can be applied to either the specific solar requirement or the total renewable energy resource requirement.

<sup>8</sup> Based on the compliance status reports, the companies obtained RECs and S-RECs through several different methods including, but not limited to, self-generation, bilateral transactions, brokers, residential REC programs and the use of requests for proposals.

Attribute tracking systems act as electronic bookkeepers for RECs and S-RECs and maintain an accounting system that facilitates several regulatory processes including compliance verification.<sup>9</sup> During the 2019 RPS compliance year, Ohio's EDUs and CRES Providers used the following tracking systems to monitor their compliance efforts: the PJM Environmental Information Services Generation Attribute Tracking System (GATS) and the Midwest Renewable Energy Tracking System (M-RETS).<sup>10</sup> The PUCO maintains a regulatory account with each tracking system that permits the PUCO to review the REC and S-REC data associated with each company's compliance efforts.<sup>11</sup>

Compliance obligations are a result of a company's retail electric sales in the state. As consumers continue to exercise their choice of electric providers, the RPS compliance obligations have been gradually shifting from EDUs to CRES Providers. According to the EDUs and CRES Providers' 2019 compliance filings, the EDUs were responsible for just over twenty percent (20.5%) of the overall compliance obligation in 2019 with just under eighty percent (79.5%) assignable to CRES Providers.

The information in Table 1 below summarizes the 2019 compliance performances, as presented by the EDUs and CRES Providers in their respective annual compliance status reports.<sup>12</sup> As noted above, each company's compliance with the RPS is reviewed by the PUCO, and therefore the information contained in the status reports may subsequently be verified or modified based on the PUCO's review. Thus, the data provided in Table 1 is as filed by the companies, and not as verified or modified by the PUCO.

<sup>9</sup> The tracking systems also provide an avenue for RECs and S-RECs to be retired, officially removing them from circulation and preventing any potential double-counting.

<sup>10</sup> In 2019, Ohio's EDUs and CRES Providers predominantly retired RECs and S-RECs through GATS, with only 2.2% of RECs and S-RECs retired through M-RETS.

<sup>11</sup> PUCO staff utilized GATS and M-RETS data as the source for many of the charts in this report, with the data having been aggregated in places so as to not disclose specifics that may be deemed confidential. The 2019 GATS retirement data was downloaded on September 29, 2020, while the 2019 M-RETS retirement data was downloaded on June 19, 2020.

<sup>12</sup> See R.C. 4928.64(C)(1); *see also*, Ohio Adm.Code 4901:1-40-05(A). Additionally, the individual compliance status reports can be accessed at the PUCO [Ohio Renewable Energy Portfolio Standard web page](#) by clicking on the link to [Renewable portfolio standard status reports – 2019](#).

**Table 1:**  
**EDU and CRES Providers' Reported 2019 Compliance Data in Summary Form**

Company	Non-Solar (MWhs)		Solar (MWhs)	
	Total Required	Total Retired	Total Required	Total Retired
Dayton Power and Light	206,369	206,369	8,599	8,599
Duke Energy	212,433	212,433	8,851	8,851
FirstEnergy Ohio EDUs <sup>13</sup>	421,224	418,231	17,551	20,544
Ohio Power	495,881	495,881	20,662	20,662
EDU Totals	1,335,907	1,332,914	55,663	58,656
CRES Providers	5,173,332	5,034,175	215,513	319,009
<b>TOTALS</b>	<b>6,509,239</b>	<b>6,367,089</b>	<b>271,176</b>	<b>377,665</b>

A. Non-solar compliance

The figures reported by EDUs and CRES Providers for all non-solar compliance show a total 2019 compliance obligation of 6,509,239 megawatt-hours (MWhs).

Looking specifically at the EDU data, the numbers suggest a small compliance deficiency for the “non-solar” component. However, for a complete picture one must also look at the S-REC retirements, as FirstEnergy retired an excess of S-RECs (2,993) for 2019. That excess was applied to FirstEnergy’s overall renewable requirement, thus bringing it into compliance. Therefore, when viewed in totality, the EDUs reported full compliance with both the overall renewable requirements and the specific solar requirement.

Historically S-RECs included a price premium relative to RECs in the Ohio compliance market. As a result, companies typically retired the minimum S-RECs needed to satisfy their respective solar requirements. However, with the elimination of the solar requirement following the 2019 RPS compliance year, the price of S-RECs dropped to the point that they are generally comparable in price to RECs in the Ohio market. As a result, for 2019 companies relied on S-RECs to satisfy a larger percentage of their overall renewable requirement.

Like with the EDUs, this trend can be observed when reviewing the compliance numbers for the CRES Providers. Looking at just the non-solar numbers would suggest a CRES

<sup>13</sup> Includes Ohio Edison Company, the Cleveland Electric Illuminating Company, and the Toledo Edison Company.

compliance deficiency of approximately 139,000 MWhs. However, the solar numbers reflect excess retirements of over 103,000 S-RECs by CRES Providers. The result for CRES Providers is a net compliance deficiency of approximately 36,000 MWhs which can be explained largely by two CRES Providers who proposed to pay alternative compliance payments rather than retire the required RECs and S-RECs.

B. Solar compliance

Based on information reported by EDUs and CRES Providers, the total solar obligation for 2019 was 271,176 MWhs. The numbers above show that both the EDUs and CRES Providers retired more S-RECs than was necessary for the specific solar requirement, with much of that excess retirement applied to the overall renewable obligations as discussed above.

C. Additional details on 2019 compliance resources

The table and charts below provide further details on the state of origin and renewable resource categories used for compliance during the 2019 compliance year. Once a REC or S-REC is used for compliance, it is deemed “retired” in the GATS and M-RETS tracking systems. The below usage data of renewable resources during the compliance year is based on REC and S-REC retirement data gathered from GATS and M-RETS.

**Table 2:**  
**2019 Ohio REC Retirements by State of Origin**

Source: PJM GATS and M-RETS Databases

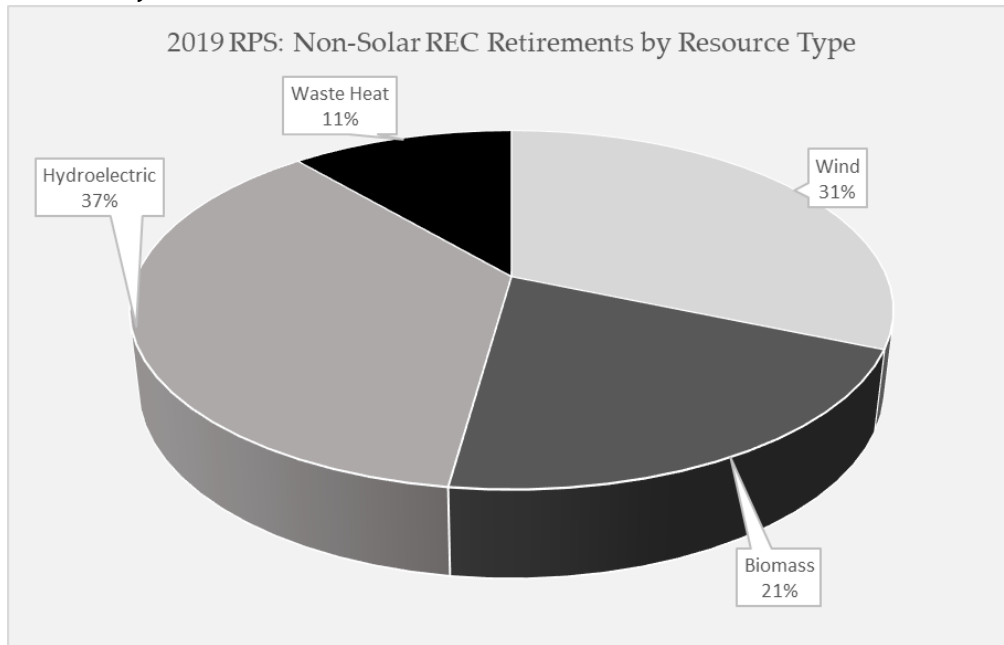
	OH	IN	KY	MI	WV	PA	IL	Total
Total S-REC Retirements	31.66%	56.30%	6.47%	0.90%	0.27%	4.40%	0.00%	100%
Total Non-solar REC Retirements	21.87%	28.05%	25.88%	3.80%	13.84%	6.01%	0.55%	100%
Wind-Specific	22.51%	46.19%	0.00%	4.36%	6.91%	18.28%	1.75%	100%
Biomass-Specific	16.56%	29.36%	41.29%	11.45%	0.00%	1.34%	0.00%	100%
Hydro-Specific	20.72%	0.00%	47.33%	0.00%	31.95%	0.00%	0.00%	100%

Chart 1, below, details the REC retirements by resource category for 2019. Hydroelectric (37%) was the largest single source of RECs used for 2019 compliance, followed by wind (31%), biomass (21%), and waste heat (11%).

As noted above, biomass energy was a significant contributor to the 2019 REC retirements. By PUCO rule, biomass energy includes several different subcategories of energy produced from organic material derived from plants or animals and available on a renewable basis, including but not limited to biologically derived methane gas, wood/wood waste solids, and sludge waste.<sup>14</sup> Chart 2 details the different categories of biomass RECs retired for 2019. As shown by Chart 2, landfill gas was the single largest subcategory, while black liquor also contributed meaningfully to the volume of biomass RECs retired for 2019.

**Chart 1:**

Source: PJM GATS and M-RETS Databases

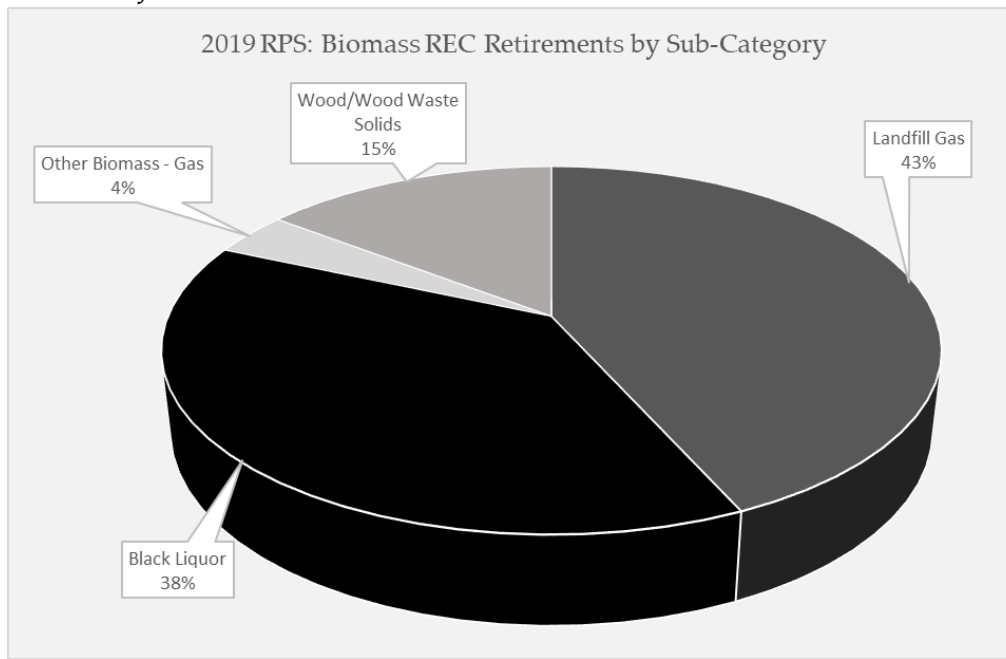


<sup>14</sup> See Ohio Adm.Code 4901:1-40-01(C).



**Chart 2:**

Source: PJM GATS Database<sup>15</sup>



III. 2019 AVERAGE REC COSTS

Ohio law requires that the RPS report describe, "... [t]he average annual cost of renewable energy credits purchased by utilities and companies for the year covered in the report."<sup>16</sup> PUCO staff used the average cost information reported by the EDUs and CRES Providers, along with their respective compliance volumes reported in GATS, to calculate weighted average costs for RECs used for 2019 compliance.<sup>17</sup> This weighted average REC cost information is summarized in Table 3 below and divided into categories in recognition of the market differences between the REC and S-REC categories.

<sup>15</sup> Biomass retirements were only reported in the PJM GATS database for the 2019 compliance year; no biomass retirements were reported in M-RETS for Ohio for that time.

<sup>16</sup> See R.C. 4928.64(D)(2).

<sup>17</sup> For those RECs and S-RECs for which the cost data were not available (i.e., reported on M-RETS), the REC and S-REC volumes were excluded from the average cost calculations.

**Table 3:**<sup>18</sup>

**EDU and CRES Providers' Reported 2019 REC and S-REC Cost Information**

<b>Category</b>	<b>Ohio EDUs Avg. \$/REC</b>	<b>Ohio CRES Providers Avg. \$/REC</b>
Solar	\$85.90	\$14.23
Non-Solar	\$21.98	\$5.77

IV. STRATEGY AND POLICY CONSIDERATION

Ohio law requires that the RPS report describe any strategy for utility and company compliance, or encouraging the use of renewable energy resources to satisfy the state's electricity demand, with consideration of such factors as technology, costs, job creation, and economic impacts.<sup>19</sup>

A. Purchasing of RECs and S-RECs

With respect to EDU and CRES Provider compliance, some entities have self-generated a portion of their needed compliance resources, but the predominant compliance strategy has been the purchase of RECs and S-RECs. The sellers in such instances include independent power producers, aggregators or brokers.

The procurement strategies for the purchase of RECs and S-RECs have varied from longer-term solicitations to spot purchases.<sup>20</sup> The longer-term solicitations, often using an instrument such as a request for proposal, may offer greater assurance for a supply into the future. With such supply certainty, however, comes pre-determined pricing that may preclude a buyer from recognizing any cost reductions in the REC or S-REC spot markets. Long-term renewable contracts have taken different forms including fully-bundled power purchase agreements as well as REC-only unbundled products.

Other companies have exhibited a preference for shorter-term transactions, in part due to uncertainty about their future sales and thus their future compliance obligations. Long-term cost recovery questions may also be a factor supporting a greater use of short-

<sup>18</sup> The costs in Table 3 are an average of the costs for RECs and S-RECs retired for 2019 compliance. As these RECs and S-RECs may have been purchased several years prior, the costs in the table should not be interpreted as indicative of current market costs.

<sup>19</sup> See R.C. 4928.64(D)(3).

<sup>20</sup> A longer-term solicitation typically seeks delivery of a renewable resource over a multi-year period, such as five to 20 years. A spot purchase, on the other hand, typically covers a much shorter period and may entail immediate delivery of the resource.

term transactions. Shorter-term transactions may offer greater flexibility, but can also expose a buyer to potential market price volatilities. A balanced approach may be used to address potential concerns of future supply that result from shorter commitments.

#### B. Excusing non-compliance

Ohio law permits EDUs and CRES Providers to make a *force majeure* filing to the PUCO to excuse compliance with minimum benchmarks during times when sufficient quantities of renewable energy resources are not reasonably available in the market.<sup>21</sup> No *force majeure* requests were filed with the PUCO for 2019.

#### C. Perceived impediments to compliance

As part of their annual compliance reports, companies may also address perceived impediments to achieving compliance with the RPS requirements and suggest means for addressing such impediments.<sup>22</sup>

Most of the companies either did not mention any perceived impediments or mentioned that they believe there is a lack of perceived impediments in the near-term. However, a few companies did cite potential impediments to achieving compliance, including potential future supply and pricing constraints.

The companies offered no suggestions about how to address any potential impediments.

<sup>21</sup> See R.C. 4928.64(C)(4)(a).

<sup>22</sup> See Ohio Adm.Code 4901:1-40-05(A)(3).

**The Public Utilities Commission of Ohio**  
**Mike DeWine, Governor**  
**Jenifer French, Chair**

**180 E. Broad Street, Columbus, Ohio 43215-3793**  
**800 | 686-PUCO (7826)**

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Summary: Report Renewable Portfolio Standard Report to the General Assembly by the Public Utilities Commission of Ohio for the 2019 Compliance Year electronically filed by Mr. Stuart M Siegfried on behalf of PUCO Staff