Ohio's RPS: The Least Cost Method to Deliver New Renewable Energy Projects

HB 6 May Work for Existing Nuclear Assets

Photo Source: The Ohio Legislature

5/15/2019

Executive Summary

- While the HB 6 proposal to create an OAQDA grant program may effectively give support to Ohio's two existing nuclear plants, **for new renewable projects it would be too uncertain to attract investment capital and is not "least cost."**

- Through 2026, HB 6 clean energy incentives are projected to cost ratepayers at least **$250 million more than simply preserving the RPS and using HB 6 to support the two nuclear plants.**

- **The RPS is the least-cost approach to incenting new renewable additions.** It has created a well-functioning marketplace for renewable energy that is well understood by financiers and is attracting billions of dollars in capital to Ohio projects.

- **The average bill impact of the RPS has been <u>less than one-third of one percent (0.32%) for the life of the program</u>.** In 2018, it was a mere 0.35%. This *de minimis* cost is spurring billions of dollars of economic development.

- The HB 6 Fiscal Note has inadvertently **overstated the cost of the RPS by more than a factor of 2x** because it includes electric distribution utility ("EDU") costs <u>only</u>. It excludes the (lower) compliance costs for Competitive Retail Electric Service ("CRES") providers, which account for 75% of the market.

Customer Type	2018 RPS Actual	HB 6 Fiscal Note RPS Rate Impact	Multiple
Residential	**$0.36**	**$0.74**	**2.1x**
Commercial	$2.39	$5.78	2.4x
Industrial	$82.37	$198.21	2.4x

The RPS has Fostered a Well-Functioning Marketplace

- The renewable energy marketplace in Ohio is driven primarily by: (i) the demand for new renewable energy created by the RPS and (ii) the falling cost of new renewable additions. **Since RPS enactment, the cost of procuring renewable energy has declined by more than 80%.**

- In response, the market is growing rapidly and we are seeing more renewable energy in Ohio than ever before. According to PJM, **Ohio has 10,000 MW of solar and 4,500 MW of wind under development.** As a point of reference, these new projects would satisfy the 12.5% RPS obligation by a factor of 3x by 2026 if all of these projects were to come online. *Why is there such a high volume of development activity?* The RPS is a well functioning, proven, bankable approach to incent least-cost new renewable additions.

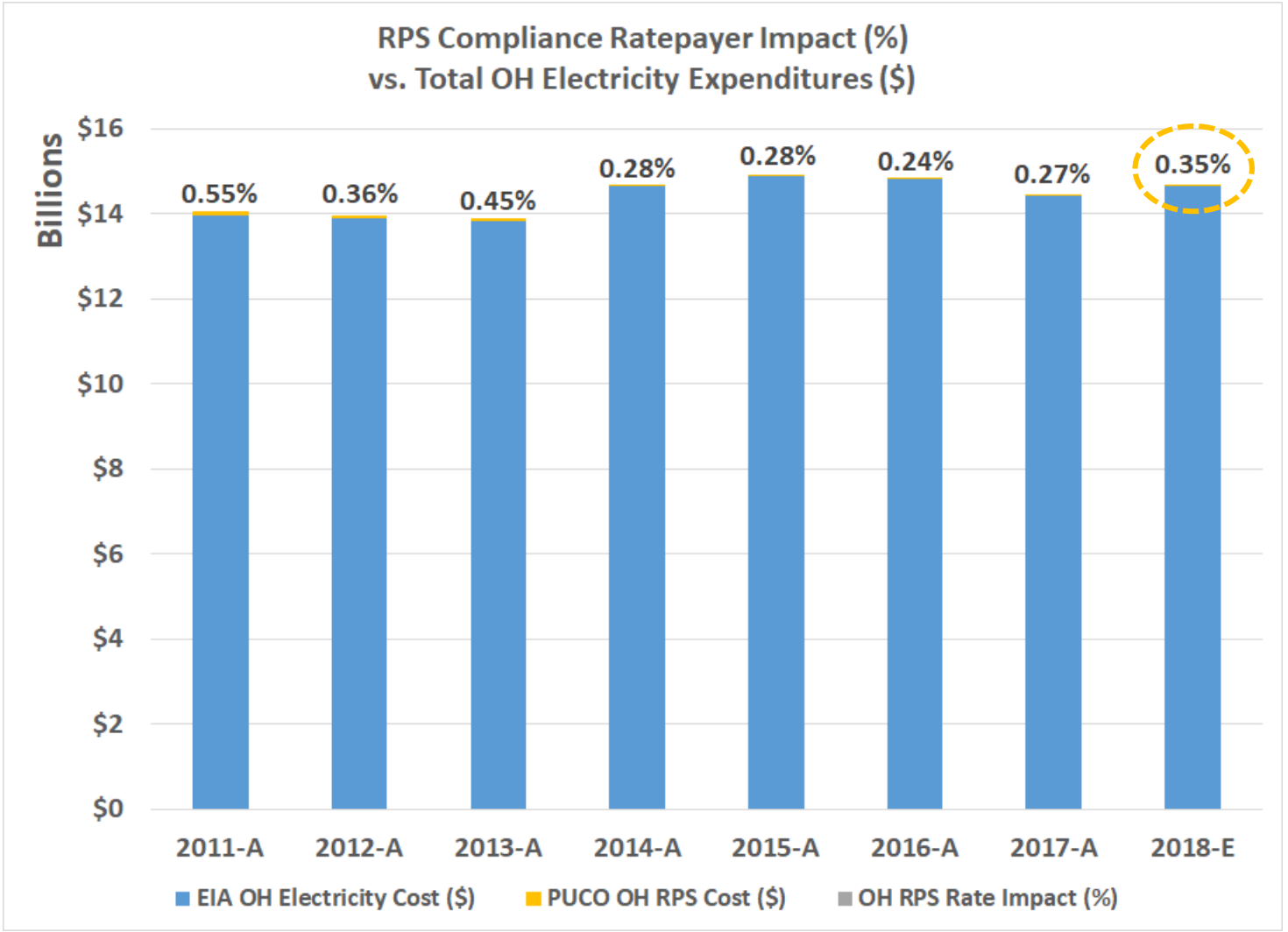
- *Why is the renewable industry opposed to the OAQDA funding mechanism proposed in HB 6?* Because it is **fraught with uncertainty about which projects actually receive funding.** Also, its implementation deadline fails to take advantage of expiring federal tax credits which lower renewable energy procurement costs to consumers.

- **The RPS already provides tangible economic benefits to Ohio**, including ten thousand renewable energy jobs. Since enactment, the RPS has incentivized the development of 1,000 MW of new in-state generating capacity representing 2,500 renewable energy projects. For wind alone, the RPS has delivered more than $1.5 billion in private investment, more than $7.1 million in annual lease payments to Ohio landowners, and more than $7.6 million annually in local tax revenue. Investments in Ohio solar energy projects and manufacturing facilities add to these figures.

Average RPS Costs: $0.31/month for Residential Ratepayers

RPS Official PUCO and U.S. Energy Information Administration Data

- Since inception, lifetime costs to comply with the RPS have been miniscule with an average statewide **residential ratepayer impact of $0.31 cents per month per customer.**
- Annual RPS ratepayer impacts are limited ($50 million or **0.35% in 2018**) when compared to total Ohio electricity expenditures ($14.6 billion in 2018).
- **RPS compliance costs have never come close to hitting the 3% statutory cost cap**, nor are they projected to.

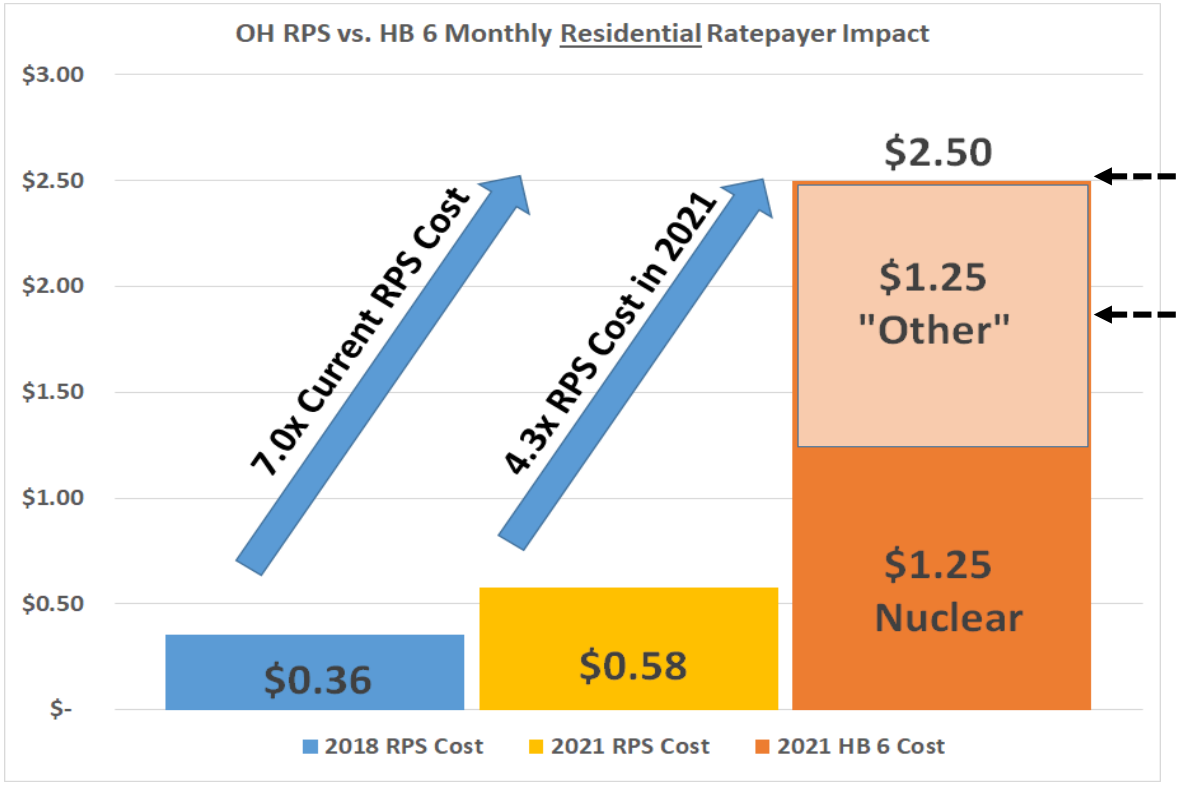


Sources: PUCO, U.S. EIA

RPS Preservation Delivers a Cheaper Solution to Ohioans

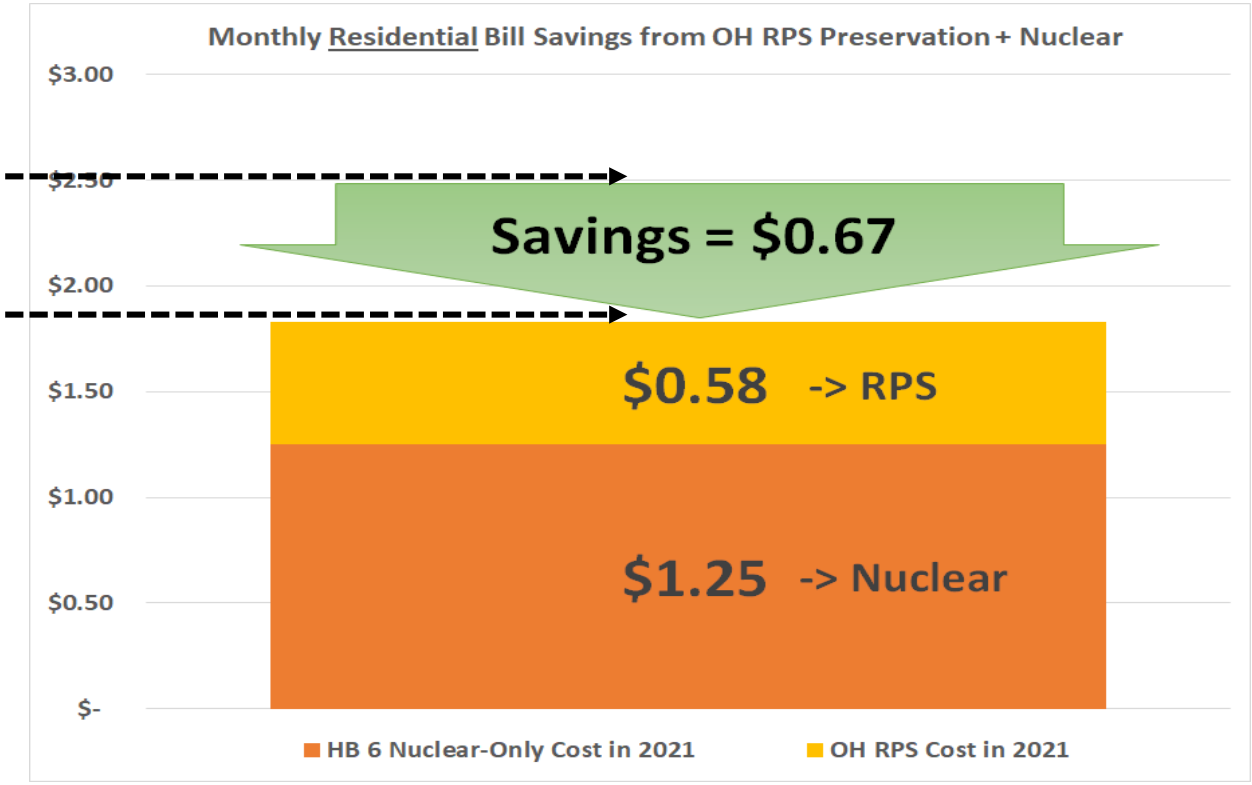
HB 6 Residential Ratepayer Impact

- HB 6 will charge residential customers $2.50/month in 2021, estimating $1.25/month for the nuclear plants alone. This is **4.3x times the expected cost of the RPS in 2021 and 7.0x the current RPS compliance cost**.



RPS Residential Ratepayer Savings

- 2021 **residential ratepayer savings of $0.67 per month** can be achieved through RPS preservation with nuclear-only incentives.
- Through 2026, **HB 6 "Other" incentives alone are projected to cost OH ratepayers at least $250 million** more than the RPS**.**



Conclusion: RPS is a Cheaper, More Effective Mechanism to Incent Renewables

RPS

- ✓ Cheaper solution.
- ✓ Proven and successful policy with a track record.
- ✓ Known and understood by financial institutions, making projects “bankable”.
- ✓ Promotes competitive, market-based pricing.
- ✓ Consistently demonstrated REC procurement cost declines each year, even as the standards have grown.
- ✓ Efficiently internalizes program administrative costs.
- ✓ Flexible, transparent, and accountable market-based mechanism that facilitates private investment (at private risk) to cost-effectively achieve legally established and enforceable renewable energy targets.

HB 6

- × Increases ratepayer costs.
- × Unproven renewable energy financing mechanism.
- × Non-market based “command-and control” government agency decision-making. These types of air regulation policies have proven repeatedly to be more expensive than market-based solutions such as the RPS.
- × May require six (6) new full-time regulatory hires and expanded office space. Allows EDUs to “rate base” administrative costs associated with program implementation.

Appendix

Supporting OH RPS and HB 6 Analysis

Photo Source: The Ohio Legislature

The RPS is a Proven, Least-Cost Clean Energy Policy

RPS Official PUCO and U.S. Energy Information Administration Data

- **Total cumulative RPS compliance cost since enactment has been less than 0.33%** of the total cumulative amount of money Ohioans spent on their electricity bills from 2009-2018.

CY	2014-A	2015-A	2016-A	2017-A	*2018-E*	2009-2018 (10 YR)
EIA OH Electricity Cost ($)	$14,661,000,000	$14,886,000,000	$14,825,000,000	$14,433,000,000	$14,646,000,000	$142,445,000,000
PUCO OH AEPS Cost ($)	$ 41,317,776	$ 41,117,998	$ 36,242,178	$ 38,520,380	$ 50,691,902	$ 457,517,704
OH RPS Rate Impact (%)	0.28%	0.28%	0.24%	0.27%	0.35%	0.32%
OH Total AEPS Requirement (%)	2.50%	2.50%	2.50%	3.50%	4.50%	
OH Total AEPS Requirement (MWh)	2,737,880	2,512,101	2,675,926	3,912,562	5,325,217	
OH Non-Solar RPS Cost ($)	$ 23,655,100	$ 26,294,784	$ 24,701,730	$ 29,111,499	$ 39,916,951	
Non-Solar Requirement (%)	2.38%	2.38%	2.38%	3.35%	4.32%	
Non-Solar Requirement (MWh)	2,600,101	2,384,827	2,541,098	3,737,377	5,124,597	
OH Solar RPS Cost ($)	$ 17,662,676	$ 14,823,214	$ 11,540,448	$ 9,408,882	$ 10,774,951	
Solar Requirement (%)	0.12%	0.12%	0.12%	0.15%	0.18%	
Solar Requirement (MWh)	137,779	127,274	134,828	175,185	200,620	

Sources: PUCO, U.S. EIA

HB 6 Overestimates Monthly RPS Ratepayer Bill Impacts

PUCO RPS + U.S. Energy Information Administration Data

- ✓ Monthly avg. **residential ratepayer impact of $0.31** since RPS inception.
- ✓ **Analysis accurately accounts for all RPS compliance costs** by including procurement costs for both EDUs and CRESs. Appropriate adjustments are made to exclude Muni and Coop customers not subject to the RPS.

Customer Type	2018 RPS Actual Monthly Ratepayer Impact	2009-2018 (Lifetime) Actual RPS Monthly Ratepayer Impact
Residential	**$0.36**	**$0.31**
Commercial	**$2.39**	**$2.16**
Industrial	**$82.37**	**$76.36**

Sources: PUCO, U.S. EIA

VS.

HB 6 Fiscal Note Data

- × Monthly avg. **residential ratepayer impact of $0.74** is overestimated by more than a factor of 2x.
- × **Analysis is incomplete and misleading because it looks at EDU compliance costs only.** EDUs represent less than 25% of all RPS compliance (CRESs represent 75% and have verifiably cheaper procurement costs according to PUCO).

Table 2. Monthly Billing Amounts of Typical Customers for Alternative Energy Resource Requirements Authorized by R.C. 4928.64, as of April 2019

Electric Distribution Utility	Residential 833 kWh	Commercial 6,133 kWh	Industrial 226,151 kWh
AEP Ohio	$1.30	$9.57	$340.52
Cleveland Electric Illuminating Company	$0.52	$3.81	$140.44
Dayton Power and Light (embedded SSO charge)	$0.11	$0.83	$30.62
Duke Energy	$0.62	$4.56	$168.03
Ohio Edison	$0.52	$3.85	$141.80
Toledo Edison	$0.40	$2.96	$109.23
Statewide average	**$0.74**	**$5.78**	**$198.21**

RPS rate impact overestimated by factor of >2x

Sources: HB6 Fiscal Note

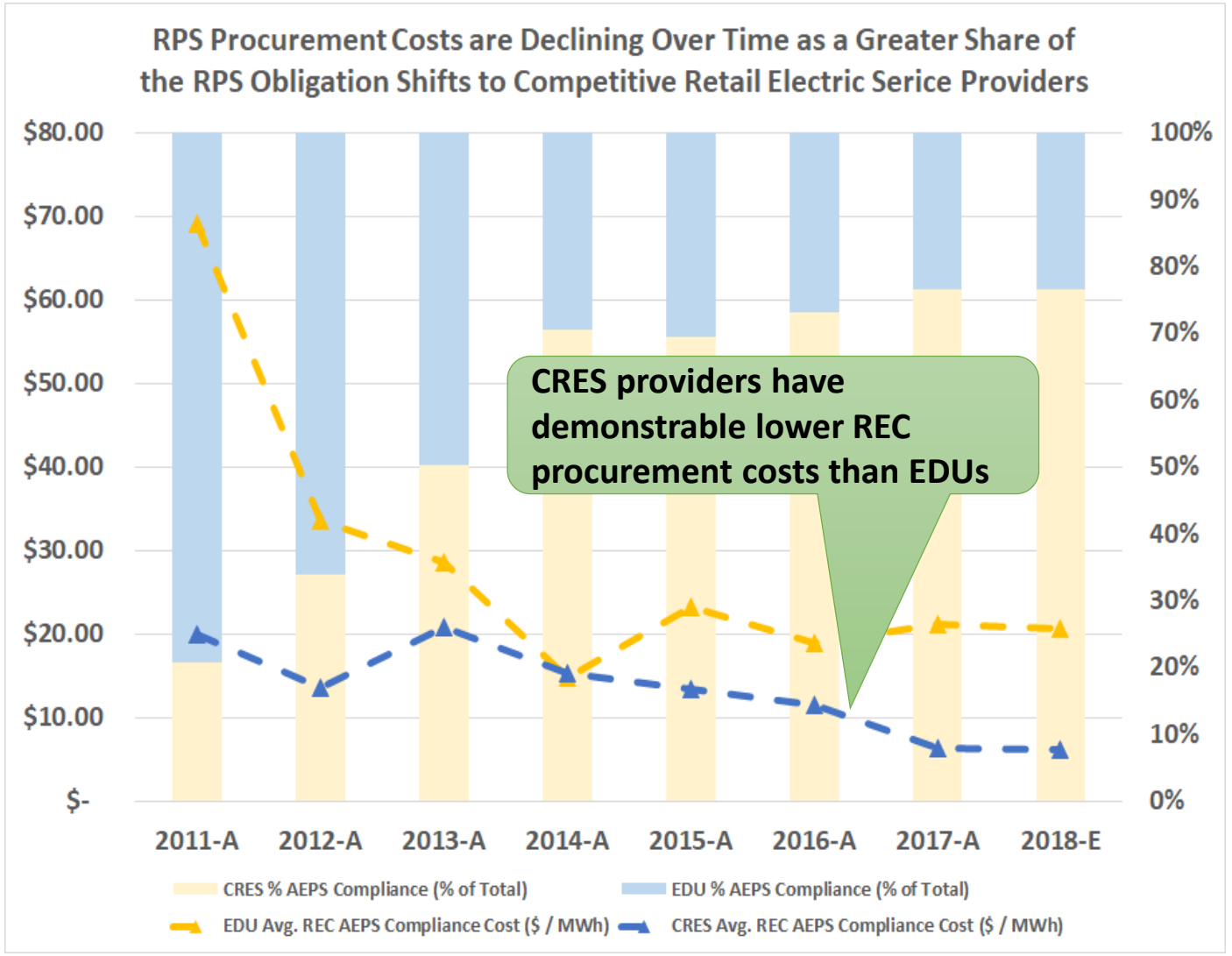
RPS REC Compliance is Increasingly Cost-Effective

RPS Official PUCO Data

- RECs (Renewable Energy Certificates) used for RPS compliance **have declined in price by >80%** since inception, in line with solar and wind cost reductions.
- Electric Distribution Utilities (EDUs) and Competitive Retail Electricity Suppliers (CRESs) comply with the RPS through the procurement of RECs. **Compliance costs have declined as the majority of total RPS obligations have shifted towards CRES providers (~75% in 2018).**

HB 6 Fiscal Note Data

- **EDU RPS procurement costs are twice as high as CRES REC procurement costs** (@ ~$20 per REC vs. ~$10 per REC from 2014-2018).
- **Fiscal Note ratepayer impacts are overestimated due to the exclusion of CRES data.** EDUs currently represent less than 25% of all RPS compliance (CRESs represent 75% and have verifiably cheaper procurement costs).



Sources: PUCO, U.S. EIA

HB 6 Increases Residential Costs Compared to the RPS

HB6 vs. OH RPS Monthly Ratepayer Impact	Residential
	2021-E
Annual Incentive Payment to OH-Based Nuclear Plants (50%)	$ 63,487,992
Annual Incentive Payment for "Other" Eligible Resources (50%)	$ 63,487,992
HB6 Annual Revenue Projections Raised From Fixed Monthly Charge	$ 126,975,983
Annual Incentive Payment for OH RPS in 2021	$ 29,980,122
HB6 Annual Ratepayer Impact Premium Over RPS in 2021	$ 96,995,861
OH Number of Customer Accounts (#)	2021-E
Ohio : residential (Less Munis and Coops)	4,316,391
Ohio : commercial (Less Munis and Coops)	558,611
Ohio : industrial (Less Munis and Coops)	16,412
Total Number of Ohio Customer Accounts:	4,891,414
HB6 Monthly Ratepayer Impact - Nuclear	$ 1.25
HB6 Monthly Ratepayer Impact - Other Eligible Resources	$ 1.25
HB6 Monthly Ratepayer Impact - Total	$2.50
(Less) 2021 RPS Monthly Ratepayer Impact - Total	$ 0.58
(Equals) HB6 Monthly Ratepayer Impact Premium Over 2021 RPS	$ 1.92
2021 Monthly Ratepayer Impact of HB6	**$2.50**
2021 Monthly Ratepayer Impact of HB6 Nuclear-Only Incentive and RPS Preservation	**$ 1.83**
2021 Monthly Ratepayer Savings of HB6 Nuclear-Only Incentive with RPS Preservation	**$0.67**
2021 Annual Ratepayer Savings of HB6 Nuclear-Only Incentive with RPS Preservation	**$34,765,743**

HB 6 Residential Ratepayer Impact

× HB 6 increases residential bills by $1.92 per month over the RPS in 2021 (more than $96 million in total).

× HB 6 residential ratepayer impact is projected to cost **$2.50 per month per customer, of which $1.25 per month is estimated to go to nuclear.**

RPS Preservation Residential Savings

✓ Monthly **residential savings of $0.67 per month** can be achieved by preserving the RPS and using HB 6 to incentivize nuclear only.

✓ In 2021, **aggregate annual savings for residential ratepayers of more than $34 million can be secured.**