



**Senate Energy & Public Utilities Committee Testimony  
June 18, 2019 – Opponent Testimony Substitute House Bill 6  
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Chair Wilson, Vice Chair McColley, Ranking Member Williams, and Members of the Energy & Public Utilities Committee, my name is Rory Gopaul, I am a Director at Carbon Solutions Group, I appreciate the opportunity to provide testimony today in Constructive opposition to Ohio Substitute House Bill 6.

By way of summary in advance I'd like to make just three points today:

- 1) **Renewable standards must be market based mechanisms. This is the only way to ensure completion and henceforth cost effectiveness. For this reason we oppose the bill.**

The RPS is pro market

The PJM is a regional market and isolation generally is not effective

- 2) **Renewables standards must have some component that incentivizes distributed generation. For this reason we oppose the bill.**
- 3) **Nuclear power is a legitimate reduction of baseload CO2 emissions. This has been debated, but as a renewables advocate for nearly 20 years – it's the conclusion I've come to. For this reason; we constructively oppose the bill in its current form.**

As I mentioned, I'm with Carbon Solutions Group and have been in the business of finding least cost CO2 reductions since we were founded in 2006.

Carbon Solutions Group is a project developer, but also works with small and medium solar installers and system owners to monetize their Renewable Energy Certificates.

We represent more than 45 Midwestern installers with nearly 2000 operating projects. Totaling more than 50MW of operating capacity. Half of that in Ohio.

In representing this diverse group we've learned the importance of the renewable portfolio standards in driving investment and we learned the importance of market based programs in driving costs to ratepayers down.

I wanted to answer an important critique of the RPS which is that some point to the fact that Ohio imports RECs from other states in PJM when making their argument against the market based mechanism.

However, up until now this has been a flawed conversation because it has only considered imports. Because Ohio is part of the regional market for power and RECs we must consider the trade balance and as such a discussion about REC exports.

Any state withdrawing from the regional market would reduce demand and as such reduce price. So, then we should consider that according to PJM GATS Ohio is a net exporter of RECs.

These tables attached here were produced from public data published by PJM. As you can see in the % Exported column an average of 61% of all RECs generated in Ohio are actually exported to other state markets.

When you look at the imports you see that there is a fairly balanced trade. Now one important consideration that is often lost – which I corrected for is that Ohio utilities own renewable energy assets in adjacent states. So, what might appear as RPS money being sent to other states is really not.

It is also important to consider another flaw in the argument and that is that just because a renewable facility is out of state doesn't mean that the money flows out of state. This is because approximately ONE THIRD of the out of state RECs used for Ohio's RPS program come from facilities owned by Ohio utilities that are located in adjacent states. As such these "imports" aren't really imports at all.



1) Table 1 shows that more than 60% of Ohio's RECs are actually exported to the higher value PJM states. This equates to approximately \$12M per year.

This is an important export market because the majority of this benefit actually accrues to AEP and as such as passed to the ratepayers.

If this export market were lost it would actually mean less revenues for these assets and a higher price of power to ratepayers.

- 2) Table 2 shows that a declining portion of the Ohio RPS is being met by out of state resources and that since 2013 there have actually been more exports of RECs than imports. This means that even with the unique challenges to renewables in Ohio – the industry is actually strong enough to be a net exporter. It's been a long time since I've taken economics – but I think that qualifies the RPS as a success; not a failure.
- 3) Table 3 shows the decidedly weak export market for Ohio solar RECs where only about 15% of Ohio's SRECs found an export market. This is due to increasing a number of PJM states closing their borders to their solar carve outs. This figure is likely to worsen as Pennsylvania last year finalized its rules for closing its border. Pennsylvania has traditionally been Ohio's largest export market for Solar RECs.
- 4) Table 4 shows the import market for Ohio solar RECs. This shows us that solar RECs are imported at a rate of 2:1 for every SREC exported. This again is a function of other states closing their borders for their solar markets.

The recommended course of action is to keep the existing RPS at current levels because the overall standard is working.

However, the solar carve out is broken, but can be fixed by making Ohio siting a requirement. Furthermore, it would make sense to re-evaluate the standard. Ohio is well on its way to meeting the standards with ease and it is likely time to increase the percentages to stay in competitive in the region.

Illinois is what I would advise as a cautionary tale as you study the incentivization of the nuclear plants via the currently proposed method.

In 2015 a bill was proposed to provide \$250m/yr in incentives to Exelon's aging plants  
This bill failed.

In 2016 a bill was proposed to provide \$220m/yr incentives to Exelon's plants but also \$220m/yr to renewables. The Clean Energy Jobs Act passed December 2, 2016.  
It called for ZEC's worth ~\$16/mwh to be issued to nuclear plants and a pool of money to be directed by the Illinois Power Agency and Illinois Commerce Commission to be devoted to wind and solar facilities of various sizes ranging from household to utility scale.

The regulatory proceedings and program design began in January 2017 and 2017 came and went, then 2018 came and went. Now, nearly half way through 2019 we're getting closer to our customers see real dollars for their projects. We expect that this will happen by the end of the year. 3Years.

Now we talk a lot about market based mechanisms versus government administered programs. I think we can all agree the market based is the preferred route. In the Illinois case after 3 years of regulatory proceedings and design we've arrived at the approximate cost per MWh of the first wave of projects to be funded via this mechanism. The final tally will be approximately \$45/MWh or nearly \$10 times the current cost of renewables in PJM and Ohio. They've purchased much less renewable power than their standard calls for and therefore have reduced substantially less CO2 than the law intended. But this is what can happen when market forces are impeded.

**In conclusion:**

- **We do not oppose** the incentivization of baseload low-emission facilities such as nuclear.
- **We support the continued** development of distributed generation and the creation of local jobs.
- **And finally We vehemently support** the continued market based mechanisms and the maintenance (or expansion) of the renewables standard.

I appreciate your time and energy on this subject today and I'd be pleased to answer any questions.



## Appendix A – OHIO RPS Import / Export Tables

**Table 1:** Ohio All Renewable Technology Export

Source: PJM GATS

Ohio All Renewables - Export			
	Total Ohio Generation	Ohio RECs Exported	% Exported
2013	2,061,596	1,265,532	61.39%
2014	2,024,847	1,360,813	67.21%
2015	2,404,072	1,392,033	57.90%
2016	2,533,429	1,628,060	64.26%
2017	2,863,138	1,812,785	63.31%
2018	2,848,376	1,943,516	68.23%
<b>Average Export / Year</b>	<b>2,342,883</b>	<b>1,567,123</b>	<b>60.07%</b>

**Table 2:** Ohio All Renewable Technology Import

Source: PJM GATS

Ohio All Renewables - Import			
	Total Ohio RPS Requirement	Out of State RECs Imported	
2013	2,659,095	1,165,477	43.83%
2014	2,692,857	1,573,187	58.42%
2015	2,499,440	1,006,901	40.29%
2016	2,779,437	1,551,402	55.82%
2017	4,068,784	1,955,596	48.06%
2018	5,325,444	2,032,642	38.17%
<b>Average Import / Year</b>	<b>3,141,822</b>	<b>1,547,534</b>	<b>48.84%</b>
<b>Average Imbalance</b>		<b>19,589</b>	<b>Net Export</b>



**Table 3:** Ohio Solar Export  
**Source:** PJM GATS

<b>Ohio Solar Carve Out - Export</b>			
	<b>Total Ohio Solar Generation</b>	<b>Ohio Solar RECs Exported</b>	
2013	104,196	9,317	8.94%
2014	117,811	19,329	16.41%
2015	132,265	26,869	20.31%
2016	149,998	25,405	16.94%
2017	188,911	27,677	14.65%
2018	194,168	34,959	18.00%
<b>Average Export / Year</b>	<b>136,426</b>	<b>20,838</b>	<b>14.10%</b>

**Table 4:** Ohio Solar Import  
**Source:** PJM GATS

<b>Ohio Solar Carve Out - Import</b>			
	<b>Total Ohio Solar RPS Requirement</b>	<b>Out of State SRECs Imported</b>	
2013	119,640	58,491	48.89%
2014	126,664	40,492	31.97%
2015	120,114	30,803	25.64%
2016	128,109	34,188	26.69%
2017	169,418	52,565	31.03%
2018	200,630	80,827	40.29%
<b>Average Import / Year</b>	<b>134,756</b>	<b>48,045</b>	<b>36.28%</b>
<b>Average Imbalance</b>		<b>-27,207</b>	<b>Net Import</b>