

Ted Robinson
Staff Attorney
Citizen Power
2121 Murray Avenue
Pittsburgh, PA 15217
robinson@citizenpower.com

Attorney for Citizen Power

Henry W. Eckhart, Counsel of Record
Sierra Club of Ohio
Natural Resources Defense Council
50 West Broad Street, #2117
Columbus, Ohio 43215
(614) 461-0984 – Telephone
(614) 221-7401 – Facsimile
henryeckhart@aol.com

The determination of market value is important in this case because Ohio Revised Code (“R.C.”) 4928.65 establishes an exception to the standard Ohio statutory definition of a REC:³

[F]or a generating facility of seventy-five megawatts or greater that is situated within this state and has committed by December 31, 2009, to modify or retrofit its generating unit or units to enable the facility to generate principally from biomass energy by June 30, 2013, each megawatt hour of electricity generated principally from that biomass energy shall equal, in units of credit, the product obtained by multiplying the actual percentage of biomass feedstock heat input used to generate such megawatt hour by the quotient obtained by dividing the then existing unit dollar amount used to determine a renewable energy compliance payment as provided under division (C)(2)(b) of section 4928.64 of the Revised Code by the then existing market value of one renewable energy credit, but such megawatt hour shall not equal less than one unit of credit.

Thus, each megawatt hour of electricity produced by a facility that qualifies for the above exception has the potential to create more than one REC for each megawatt hour produced. Depending on the market value of a REC, a megawatt hour produced by such a facility could produce multiple RECs. For example, if the market price of a REC was equal to half of the current value of the Alternative Compliance Payment (“ACP”) dollar amount, each megawatt would be worth two RECs.

The PUCO has determined that the Burger facility meets the criteria to qualify for the statutory REC multiplier exception (“weighted REC”) as outlined in the statute.⁴ Therefore, the PUCO must determine the “existing market value of one renewable energy credit” in order to complete the calculation. In this context, the undersigned members of OCEA respectfully submit to the Commission that there currently is no liquid or

³ 4928.65 states that “The public utilities commission shall adopt rules specifying that one unit of [renewable energy] credit shall equal one megawatt hour of electricity derived from renewable energy resources.”

⁴ See Finding and Order in Case No. 09-1940-EL-REN paragraphs 17 at pages 8-9.

transparent REC market in Ohio capable of supplying a value for the statutory REC multiplier. The following comments identify some of the prominent features of a liquid and transparent market and, until a suitable market develops, OCEA offers a proposal for acceptable alternatives.

OCEA continues to contend that the provisions placed in R.C. 4928.65, which allow for a multiplication of RECs produced by the Burger facility, are unconstitutional; however, the following comments are being made in an effort to respond to the Commission's request for comment in this proceeding.

II. R.C. 4928.65 IS UNCONSTITUTIONAL, ACCORDING TO ARTICLE I, SECTION 8 OF THE UNITED STATES CONSTITUTION.

As a threshold matter, it is clear that R.C. 4928.65 is an unconstitutional infringement of economic activity that runs afoul of the negative commerce clause. We offer comments on proposed REC calculation with the understanding that the constitutional validity of this provision must be fully resolved. R.C. 4928.65 sets forth a weighted REC calculation that only applies to certain biomass energy facilities and discriminates against others. The relevant portion of the REC calculation statute is excerpted below:

The public utilities commission shall adopt rules specifying that one unit of credit shall equal one megawatt hour of electricity derived from renewable energy resources, **except that, for a generating facility of seventy-five megawatts or greater that is situated within this state and has committed by December 31, 2009, to modify or retrofit its generating unit or units to enable the facility to generate principally from biomass energy by June 30, 2013, each megawatt hour of electricity generated principally from that biomass energy shall equal, in units of credit, the product obtained by multiplying the actual percentage of biomass feedstock heat input used to generate such megawatt hour by the quotient obtained by dividing the**

then existing unit dollar amount used to determine a renewable energy compliance payment as provided under division (C)(2)(b) of section 4928.64 of the Revised Code by the then existing market value of one renewable energy credit, but such megawatt hour shall not equal less than one unit of credit.
(Emphasis added.)

Therefore, R.C. 4928.65 establishes that one megawatt hour of electricity generated from renewable sources shall equal one REC. However, the statute also provides an exception for certain biomass generation that meets additional criteria: located in Ohio; 75 MW or greater; and has committed by December 31, 2009 to burn “principally” biomass by June 30, 2013. For the sources that satisfy these additional criteria, the statute assigns a special formula for calculating RECs. The special formula provides a “multiplier” to any facility that satisfies these criteria.

In practice, however, this statute can only apply—and was only intended to apply—to one facility: FES’ R.E. Burger power plant. No other biomass energy facility could possibly meet these criteria, and thus no other facility could be eligible for the higher REC unit rate. Therefore, R.C. 4928.65— “the Burger Amendment”—gives an economic advantage to one renewable energy facility, and neglects to give that economic advantage to all other renewable generation, include out-of-state power producers. This is economic discrimination.

R.C. 4928.65 is unconstitutional under a negative commerce clause analysis because it discriminates against out-of-state generation. The U.S. Constitution’s “negative commerce clause,” a corollary to Article I, Section 8, clause 3, limits the power of states to discriminate against interstate commerce by enacting regulatory measures

designed to benefit in-state economic interests and burdening out-of-state competitors.⁵ For example, in *New Energy Co. of Indiana v. Limbach*, Ohio's regulations providing favorable tax regulations for in-state biofuel producers were challenged on commerce clause grounds.⁶ In a unanimous opinion drafted by Justice Scalia, the U.S. Supreme Court held that the disparate economic treatment was unconstitutional. According to the Court, the Ohio tax law deprived "certain products of generally available beneficial tax treatment because they are made in certain other States" and was thus unconstitutional.⁷ In other words, the biofuel law is unconstitutional because it conferred a financial benefit upon in-state biofuel production, which was not conferred upon out-of-state production.

Likewise, R.C. 4928.65 is unconstitutional on its face. By allowing one in-state biomass generator a favorable calculation of RECs not available to out-of-state generators, out-of-state competitors are put at an economic disadvantage. In-state generation receives an economic advantage that is unavailable to similar facilities located out of the state. Just as the Ohio statute in *Limbach* gave a favorable tax treatment for biofuels that were produced in Ohio, R.C. 4928.65 only gives favorable economic treatment for biomass generation located in Ohio.

There is no rational basis for this economic discrimination which demonstrates that it was designed solely for the economic benefit of one facility and one company at the expense of others. A simple hypothetical example illustrates this point; a facility with the exact same design specifications as the Burger project, the exact same fuel, and the

⁵ *New Energy Co. of Indiana v. Limbach*, 486 U.S. 269 (1998). A non-discriminatory law that nonetheless burdens interstate commerce may still be struck as unconstitutional. In such cases, the court must balance the benefits of the government against the burden on interstate commerce. *Loren J. Pike v. Bruce Church, Inc.*, 397 U.S. 137 (1970).

⁶ *Id.*

⁷ *Id.*

exact same operational schedule would not be eligible for the multiplier if it committed to retrofit on or after January 1, 2010 or if it was located a half a mile east of the Burger facility, in West Virginia. We note that in-state energy production requirements can have a rational basis. For instance, the transmission of power over long distances results in heavy losses; accordingly, laws and rules that encourage the development of in-state or adjacent state energy sources can be rationally justified.

But when such a restriction is coupled with arbitrary deadlines for “committed” retrofit, the rational basis mentioned above loses all force. This deadline was arbitrarily imposed, and was clearly designed to eliminate the possibility that any other facility, in-state or out, could qualify for the multiplier – even if it had exactly the same design, burned exactly the same fuel, and did so on exactly the same production schedule. When the legislation creating the restrictions of R.C. 4928.65 was promulgated, only one company argued for the change. Only one company, with one facility, was prepared to take advantage of the change and commit to retrofit before the fast approaching and arbitrary deadline.

It is clear that the restrictions of R.C. 4928.65 are arbitrary and serve no other purpose than to benefit of one company and project. Accordingly, the Commission should rule the multiplier an unconstitutional and arbitrary restriction on interstate commerce. Ultimately, if the Commission promulgates rules and restrictions according to R.C. 4928.65 it will validate a legislative and regulatory strategy that other companies may employ in the future. Namely, it will validate the practice of “custom-corporate” legislation, legislation designed not to benefit the state of Ohio, its citizens, and its future – but to benefit a single company, grasping for a unique marketplace advantage. The

PUCO has the opportunity to end, at least in the context of Ohio's landmark energy legislation, this destructive practice. The Commission should rule the multiplier an unconstitutional and arbitrary restriction on interstate commerce.

III. THERE IS CURRENTLY NO LIQUID OR TRANSPARENT REC MARKET IN OHIO THAT WOULD SUPPLY A VALUE FOR THE STATUTORY REC MULTIPLIER EXCEPTION.

The REC market in Ohio is still in its infancy, as 2009 was the first compliance year. The nascent Ohio Renewable Portfolio Standard ("RPS")⁸ created a renewable energy requirement that is comprised of four products, Ohio In-State Solar, Out of State Solar, In-State Non-Solar Renewable, and Out of State Non-Solar Renewable. The "weighted REC" produced by Burger will not affect the market for Solar RECs, as solar energy has a specific carve-out in R.C. 4928. The weighted RECs will likely only be valid in Ohio because Ohio is the only state that provides a bonus for certain biomass electricity. Thus, Ohio – and more specifically, probably FirstEnergy – will be purchasing these overpriced RECs to the detriment of Ohio consumers who may pay above market prices for their RECs. The weighted RECs will likely impact the market for out-of-state Non-Solar renewables as well because FirstEnergy will have to buy fewer, if any, of the out of state RECs. At this time, the Ohio REC market lacks the liquidity and transparency that characterize mature and efficient markets. Information on REC pricing in compliance states with more mature markets can be obtained from the website of brokers who engage in that market. For example, one can determine that the price of a "Class One" REC in Massachusetts in February 2010 was \$60.93 or that New Jersey

⁸ The impact of an RPS is a function of supply (eligible resources) and demand (percentage requirements), enforced by penalties.

Solar RECs in January 2010 were trading between \$665 and \$680.⁹ The same cannot be said of the Ohio market.¹⁰

Markets, when they operate efficiently, can provide a great deal of information on the beliefs of the agents who participate in that market. Prices, and changes in prices, convey a lot of information on what traders think is currently happening and what they believe will happen in the future. In other words, the conduct of market participants is directly correlated to the determination of commodities bought and sold in a particular market. The newness of the Ohio REC market coupled with the weighted REC exception creates additional uncertainty in an already uncertain market. It carries the danger of creating a “death spiral” where REC prices drop precipitously, killing the infant renewable industry in Ohio along with the Ohio jobs created by that market. Therefore, OCEA recommends that the Commission take the following factors into account when determining how to develop the prices to be used when calculating the value of a weighted REC.

1. Any calculation of the existing market value of one renewable energy credit should not include the impact of the Burger Plant weighted REC supply because:
 - a. No weighted RECs will be created unless at least 80 percent of the fuel burned is biomass. The supply chain to meet the large Burger plant biomass fuel requirement does not currently exist and will take many years to develop.
 - b. The weighted REC is an arbitrary construct that has no cost basis in comparison to other RECs that are bought and sold in existing REC markets. A price system should reflect real project costs. Because the weighted REC is not cost-based

⁹ http://new.evomarkets.com/pdf_documents/February%20REC%20Market%20Update.pdf
http://new.evomarkets.com/pdf_documents/January%20REC%20Market%20Update.pdf

¹⁰ Platt’s Megawatt Daily Article from Monday, August 16, 2010 attached as Exhibit 1.

when compared to other RECs, it will only serve to distort the market.

- c. As stated earlier, it is likely that the weighted REC will not be recognized in other compliance and voluntary REC markets.
 - d. One of the assumptions of a purely competitive market is a homogeneous product. The integration of the weighted REC into an existing REC market violates this aspect of a competitive market.
 - e. The process for determining the quotient which creates the weighted REC should not already include the effects of the weighted REC; including the effects of the weighted REC in calculating the weighted REC would be circular and nonsensical.
2. Any auction or RFP process that is undertaken to purchase RECs in the market and to ascertain a market price for Ohio Non-Solar In-State RECs should, at a minimum, meet the following standards:
- a. The REC must be a homogeneous product (therefore, only normal Ohio Non-Solar In-State RECs should get bid in).
 - b. There are four or more bidders.
 - c. Over 50 percent of the load is bid upon by one or more persons other than the electric distribution utility.
 - d. The Commission or its agent must serve as the market monitor to take actions to identify and mitigate market power.
 - e. The Commission or its agent must review and approve of the RFP instrument or the auction process before it is undertaken.
 - e. The auction/RFP must be conducted annually for the next five years or until a mature and transparent REC market develops in Ohio.
 - f. The least cost bids meeting the auction/RFP specifications must be selected.
 - g. If tranches are used, each portion of the bid must be oversubscribed.

- h. The Commission or its agent must review the complete auction/RFP process results and approve or disapprove of the results the next day.

However, at this time, OCEA believes that an auction or RFP process is risky given the uncertain state of bidder perceptions, where the mere potential for the Burger weighted REC has depressed REC prices and because of the potential for gaming. For example, any entity that needs to purchase RECs will be unlikely to offer a significant amount per REC in an auction, knowing that after the auction pegs the market value of a REC then the supply of RECs will be significantly increased by the addition of weighted RECs. The likely result is a low REC price, which would increase the future supply of weighted RECs.

IV. AS A SHORT-TERM SOLUTION TO THE LACK OF A MATURE AND EFFICIENT REC MARKET IN OHIO, THE PUCO SHOULD ADOPT 75% OF THE ALTERNATIVE COMPLIANCE PAYMENT AS THE MARKET PRICE OF AN “EXISTING RENEWABLE ENERGY CREDIT,” WHICH HAS BEEN RECENTLY EMPLOYED IN OTHER COMMISSION DECISIONS, AS THE DEFAULT MARKET PRICE OF A REC AND REVISIT THIS AFTER TWO YEARS.

In the absence of a mature and efficient market for renewable energy credits in Ohio, the Commission should adopt a percentage of the annual Alternative Compliance Payment (“ACP”) prescribed in Senate Bill 221 (“SB 221”) as the best proxy for the current market price. This value has been employed by the PUCO in several other cases as part of a market substitute.

For example, in case number 09-551-EL-UNC, a case establishing REC purchase prices to be paid to FirstEnergy Ohio distributed generation customers for RECs, the Commission approved this value to be employed when no market price could be

established through an RFP.¹¹ The Utilities' Application noted that the default purchase price would be "an established alternative payment."¹² This alternative payment value, presented in the Application, was 80% of the ACP.¹³ The Commission approved the Application, including the alternative payment schedule, noting that the schedule, coupled with the utilization of a market-based price when available, and "should generally be reflective of existing market conditions."¹⁴ In addition, the Commission stated that the program as a whole, which included the default REC schedule, is "reasonable and consistent with Sections 4928.64 and 4928.65, Revised Code."¹⁵

In a similar case, a utility proposed, and the Commission Staff recommended the use of 75% of the ACP value for solar REC purchases.¹⁶ In the Finding and Order, the PUCO noted that the Utility agreed to purchase customer-generated RECs "at a price equal to 75 percent of the penalty set forth in Section 4928.64(C)(1)(a), Revised Code...."¹⁷ Thus, using 75% of the ACP as a default for a market price is a practice which has been employed by the Commission in recent cases, and should be employed here.

¹¹ *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and the Toledo Edison Company for Approval of Residential Renewable Energy Credit Purchase Program Agreement*, Case No. 09-551-EL-REN, Second Amended Application at 3 (Sept. 14, 2009).

¹² *Id.*

¹³ *Id.* at Attachment B. Using the price stated in the attachment for 2009 (\$36) and dividing by the 2009 value of the ACP (\$45), the value of the RECs is 80% of the current ACP.

¹⁴ *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and the Toledo Edison Company for Approval of Residential Renewable Energy Credit Purchase Program Agreement*, Case No. 09-551-EL-UNC, Finding and Order at 4 (Sept. 23, 2009).

¹⁵ *Id.*, Finding and Order at 4.

¹⁶ *In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of a Residential Solar Renewable Energy Credit Purchase Program Agreement and Tariff*, Case No. 09-934-EL-ACP, Finding and Order at 3 (July 29, 2010).

¹⁷ *Id.*, Finding and Order at 1.

The members of OCEA recommend the Commission adopt 75% of the ACP value, as presented in Ohio law, to substitute for a market price until the Ohio market is mature and efficient. OCEA also recommends locking in this price for two years. At the conclusion of two years, the Ohio market would be re-evaluated using the criteria presented above.

V. ANY OHIO RENEWABLE ENERGY CREDIT MARKET PRICE DETERMINATION SHOULD EXCLUDE ANY "WEIGHTED" RECS GENERATED BY THE BURGER FACILITY BECAUSE TO INCLUDE SUCH WEIGHTED RECS WOULD HAVE A DAMAGING EFFECT ON ALL OTHER REC CONTRACT PRICES AND LEAD TO AN ABSURD RESULT.

A. If The Supply Effect Of Burger Weighted RECs Are Included In The Methodology To Determine The Market Value Of A REC Once Markets Have Developed, RECs Will Be Rendered Worthless If All The Burger Weighted RECs Are Placed On The Open Market.

Under the operation of Ohio Revised Code 4928.65, the owner of a qualifying biomass facility obtains weighted RECs based upon a formula that multiplies the number of RECs that the facility would normally generate by a ratio of the ACP set under R.C. 4928.64(C)(2)(b) to the current market price of a REC. Currently, the Burger facility is the only facility that will meet the statutory prerequisites under R.C. 4928.65. As long as Burger meets the statutory requirements, FirstEnergy would be allowed to apply these weighted RECs toward their renewable benchmarks.

However, any weighted RECs produced by Burger should not be allowed to influence the price for determining the “market value of existing renewable energy credits” in the overall Ohio REC marketplace. If the determination of the “market value” of weighted RECs includes these weighted RECs, the market price of a REC could be

driven down to zero, the result of the Burger “death spiral” effect as pointed out by AWEA in their comments and by the OEC and the OCC in their Application for Rehearing.¹⁸ Any excess weighted RECs placed on the open market will lower the market price of RECs. This in turn will allow for the creation of more weighted RECs the next month,¹⁹ which in turn will lower the price even further, creating a feedback loop or “death spiral.” An illustration of this effect is shown in Figure 1 below (a more rigorous approach is found in Example 1).

Figure 1

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
REC Price	\$45	\$39	\$30	\$17	\$5.53	\$.59	\$.006
Burger RECs Produced	115	115	115	115	115	115	115
Burger RECs Credited	115	132	175	306	936	8757	766,764
REC Demand	100	100	100	100	100	100	100
Surplus REC %	15%	32%	75%	206%	836%	8657%	766664%

Figure 1 and Example 1 (attached) are simply illustrative, since it is difficult to determine the precise effect of surplus RECs on the market price of RECs. For these examples, it was assumed that a supply surplus for a given month would have an

¹⁸ American Wind Energy Association, Comments at 7; Ohio Environmental Council and Ohio Consumer Council Application for Rehearing at 12.

¹⁹ A monthly calculation is used per *In the Matter of the Application of R.E. Burger Units 4 & 5 for Certification as an Eligible Ohio Renewable Energy Resource Generating Facility*, Case No. 09-1940-EL-REN, Finding and Order at 10 (August 11, 2010).

inversely proportional impact on the market price, e.g. a 15% surplus in supply would lower the market price by 15%. Other methodologies could be used and the actual impact on prices by the increased supply may be greater or smaller than this amount. However, the principle illustrated by these examples is that if weighted RECs are placed in REC markets, and the market price of RECs used in the R.C. 4928.65 calculation is based on those same markets, then the price of RECs will inevitably be driven down. The probable result is that REC markets will cease to function even before REC prices actually begin to reach prices near zero. The unavoidability of REC prices falling to near zero will also significantly hamper the use of bilateral REC contracts. However, the Burger plant will have the opportunity to create substantial amounts of weighted RECs before the REC market collapses. In Example 1, the Burger plant alone will produce almost enough RECs to satisfy all of the in-state REC requirements through 2024 for all of the utilities in Ohio in June 2012 alone. At that point in time, each REC produced by Burger would also produce approximately 264 weighted RECs. In summary, if weighted RECs are allowed to be sold into the REC marketplace and the market value of a REC is based on those same markets, the number of RECs produced by Burger will be astronomical and eventually lead to the collapse of all markets for Ohio RECs. The intent of the Legislature in amending R.C. 4928.65 was clearly not to render R.C. 4928.64 moot. R.C. 4928.65 must be interpreted as to not allow the weighted RECs to influence the market price of RECs for purposes of the weighted REC calculation being discussed presently.

B. The Most Elegant Way To Remove Weighted RECs From Having An Influence On REC Market Price Is To Simply Only Allow Non-Weighted RECs In The Marketplace Price-Setting Mechanism.

As demonstrated in Section V.A. of these comments, allowing weighted RECs to enter the market will lead to an absurd result where the price of RECs falls to zero. This resulting market price would not reflect the true market price of “normal” RECs based on supply and demand, but instead would be an artificial price based upon an arbitrary formula that was designed to provide bonus RECs to certain large biomass facilities instead of determining the price of RECs in the market. The most elegant solution to avoid creating an artificial REC price is to simply not allow weighted RECs into the REC marketplace price determination. Owners of weighted RECs would be allowed to use those RECs towards their compliance benchmarks, but would not be able to trade those RECs in the market. This would prevent weighted RECs from overwhelming any REC markets and therefore reflect a more accurate value of a REC. However, the ultimate market price of a REC under this methodology may still be below the true market price of a REC, since the weighted RECs will artificially reduce the amount of demand for RECs in the marketplace.

C. If Weighted RECs Are Allowed In The Marketplace, The Market Value Of RECs Will Not Reflect The True Market Value Of RECs Because Of The Weighted RECs Supply Effect; Therefore, A Methodology To Determine The Actual Market Value Of A REC Would Have To Be Used.

In order to mitigate the impact of the weighted RECs, an alternative method of creating a market value of RECs needs to be developed. If weighted RECs are allowed in the marketplace, the market price of RECs will be driven down to zero unless the R.C. 4928.65 calculation uses a proxy for “market value.” The proper market value of a REC

conceptually should be whatever the market price of a REC would have been without the influence of weighted RECs. In other words, the supply impact resulting from weighted RECs needs to be mitigated to determine the true value of a REC. One method would be determining the supply and demand curves annually for RECs and then determining the REC price absent the weighted REC supply. However, as a simpler alternative, OCEA proposes that REC market values should be set using 75% of the Alternative Compliance Payment as recommended in Section IV of these comments as the short-term solution. This pegging of the value of a REC to a stable number would encourage the growth of the REC market by providing price certainty.

VI. CONCLUSION

The undersigned members of OCEA note that a mature and efficient REC market does not currently exist in Ohio. Until market conditions satisfy the criteria presented above, the PUCO should adopt the 75% of the ACP value in place of a market value for two years. After that time, the proposed criteria may again be revisited and the condition of the Ohio REC market determined. In addition, the market value of RECs should exclude any weighted RECs produced by the Burger facility.

Respectfully submitted,

JANINE L. MIGDEN-OSTRANDER
CONSUMERS' COUNSEL

/s/ Christopher J. Allwein

Joseph P. Serio, Counsel of Record
Christopher J. Allwein
Assistant Consumers' Counsel
Office of The Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485
(614) 466-8574 – Telephone
(614) 466-9475 – Facsimile
serio@occ.state.oh.us
allwein@occ.state.oh.us

/s/ William T. Reisinger - CJA

William T. Reisinger, Counsel of Record
Nolan Moser
Trent A. Dougherty
Megan De Lisi
Ohio Environmental Council
1207 Grandview Avenue, Suite 201
Columbus, Ohio 43212-3449
(614) 487-7506 – Telephone
(614) 487-7510 – Facsimile
will@theoec.org
nolan@theoec.org
trent@theoec.org
megan@theoec.org

/s/ Ted Robinson - CJA

Ted Robinson
Staff Attorney
Citizen Power
2121 Murray Avenue
Pittsburgh, PA 15217
Robinson@citizenpower.com

Attorney for Citizen Power

/s/ Henry W. Eckhart

Henry W. Eckhart, Counsel of Record

Sierra Club of Ohio

Natural Resources Defense Council

50 West Broad Street, #2117

Columbus, Ohio 43215

(614) 461-0984 – Telephone

(614) 221-7401 – Facsimile

henryeckhart@aol.com

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Comments by the Ohio Consumer and Environmental Advocates* has been served upon the following parties by first class or electronic mail this 12th day of October, 2010.

/s/ Christopher J. Allwein
Christopher J. Allwein
Assistant Consumers' Counsel

David Plusquellic
Manager of Renewable Energy Portfolio
FirstEnergy Solutions
341 White Pond Drive
Akron, OH 44320

Daniel R. Conway
Porter Wright, Morris & Arthur, LLP
41 South High Street
Columbus, OH 43215

Jim Lang
Kevin P. Shannon
Trevor Alexander
Calfee, Halter & Griswold LLP
1400 KeyBank Center 800 Superior Ave.
Cleveland OH 44114-2688

Mark Hayden
FirstEnergy Corp.
76 South Main Street
Akron, OH 44308

Megawatt Daily

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Ohio biomass decision to impact REC market

Renewable energy developers in Ohio are reaping huge gains selling the environmental attributes associated with the electricity they will create. In a short time span, the Ohio market for renewable energy certificates has grown into the most expensive in the country, driven by a limited supply of in-state renewable projects, brokers and renewable energy developers say.

A decision last week by Ohio regulators, giving the nod to FirstEnergy to earn RECs at its R.E. Burger power plant in Sunnyside, Ohio, from burning wood pellets instead of coal, would therefore seem to represent a potential windfall for the Akron-based company.

Current capacity stands at 312 MW. The plant's size will decrease once the conversion is finished by late 2012, due to the lower heat content of wood versus coal, said Ellen Raines, a spokeswoman for First Energy. The exact capacity will not be known until test runs are conducted, but present forecasts are for around 200MW, she said.

That is still a big facility, but therein lies the catch, brokers say. The Burger plant is so large that, in fact, it will likely flood the Ohio REC market, eventually causing prices to sink.

"The Burger plant is a game changer," said Ryan Cook, a senior broker at Clear Energy Brokerage and Consulting.

Ohio REC prices for in-state generation have steadily increased since early 2009, when Ohio implemented a mandatory renewable electricity standard. REC prices rose from about \$9 to as high as about \$35 at present, Cook said. That is higher than current REC prices in New England, which had been considered the country's steepest, he added.

"It's safe to say the Ohio REC prices are the highest in the country," said Jack Velasquez, vice president for environmental products at Spectron Energy.

In turn, Ohio RECs have encouraged local development in renewable energy projects, he said.

Chris Eastgate, a vice president at Energy Developments, an Australian company that develops and manages power generation facilities using fuel from landfill gas, agrees.

His company, which has facilities in five US states, has invested heavily in Ohio, where it earns RECs, and is expanding operations. Ohio REC prices were "by far the strongest" in the country due to a shortage of renewable projects and increasing demand.

But the outlook for Ohio RECs now appears quite different following the commission's decision on Wednesday. When the Burger biomass plant is online, Ohio REC prices should fall, possibly crashing to as low as \$1 each, experts say.

It is too early to know the number of RECs that the Burger plant will ultimately generate, according to Raines.

But Velasquez said a back-of-the-envelope calculation showed that the Burger plant could yield about 1.5 million RECs a year, assuming a 200-MW capacity.

That is a big amount relative to the market's needs, he noted. In 2013, the total number of RECs required by utilities will be about 3 million, Velasquez said.

The Ohio alternative energy portfolio standard sets a target for utilities to get 25% of the electricity they sell from traditional renewable sources, as well as from "advanced" energy such as clean coal and nuclear, by 2025 and beyond. At least one-half must come from renewable generation located within Ohio, while the remainder must be deliverable into Ohio.

A separate solar carve-out is included within these totals, with the goal of reaching 0.5% solar.

Interim benchmarks, which began in 2009, gave rise to an Ohio REC market. That market consists of four separate products, due to the state's regulations. There are: an Ohio-generated

solar-REC, an adjacent-state solar-REC, an Ohio-generated REC, and an adjacent-state REC.

Prices for the Ohio-generated RECs have climbed steadily, due to a scarcity of supply, said Velasquez. Notably, Ohio lacks wind energy capacity, with only about 4 MW of installed capacity as of June 2010, according to Platts data.

Plans for new wind projects are proceeding, including freshwater wind farms in Lake Erie, which, if completed, will give a significant boost to Ohio's supply of renewable energy.

Focus from outset on biomass

But from the outset, politicians and energy experts focused on Ohio's biomass industry as a sector that they believed had the potential to grow quickly and would be useful insofar as meeting the state's renewable requirements.

An Ohio State University study published last year concluded that Northwest Ohio has a large amount of harvest available for biomass.

In April 2009, when FirstEnergy announced its plans to retrofit the coal-fired Burger plant to biomass, Ohio Governor Ted Strickland said: "This project will help jump-start the biomass renewable energy industry here in Ohio and also serve as a model for projects throughout the US."

"The Burger project advances Ohio's advanced energy portfolio standard, which requires that 25% of Ohio's energy come from advanced and renewable energy sources by 2025," he said.

As an extra incentive, Ohio law created a provision for power plants to earn extra RECs if they convert generation to "principally biomass energy" by June 30, 2013. In order to qualify, the capacity must also be at least 75 MW, and the owners had to commit to the retrofit by December 31, 2009.

Whereas other renewable facilities would earn a single REC per MW of electricity produced, retrofitted biomass facilities would potentially get even more.

But the only facility to qualify for extra RECs was the Burger power plant, according to Will Reisinger, a staff attorney at the Ohio Environmental Council.

In its ruling on Wednesday, the Ohio PUC said that FirstEnergy would be eligible for the extra RECs only when it is operating with no more than 20% coal and fuel oil, with the remainder co-fired with biomass fuels.

Back in December, FirstEnergy filed its original application with the Ohio PUC seeking certification as a renewable energy facility. But that plan quickly ran into opposition.

Environmentalists objected on the grounds that FirstEnergy had not provided an adequate description of the source of its biomass fuel, while wind energy lobbyists charged that the impact of the Burger plant on the renewable energy business would be "catastrophic."

The American Wind Energy Association zeroed in on the fact that the Burger plant would be allowed to generate extra credits. The size of the multiplier is calculated by dividing the penalty fee utilities pay for non-compliance with the RES by the market value of RECs. FirstEnergy estimated that its REC multiplier could be worth 4.5 times a normal REC, if the market value of a REC is \$10.

Last Wednesday, the commission opened a 90-day comment and reply period for parties to discuss a methodology for determining the market value of RECs, for the purpose of calculating the extra RECs.

In any case, a strong possibility exists that these extra RECs will lead to depressed REC prices, resulting in even more RECs from the Burger plant, according to AWEA. "It is this self-perpetuating cycle of ever-more RECs and ever-lower REC prices which AWEA fears is a 'death spiral' for the Ohio [RES] and could be catastrophic for the renewable energy marketplace," AWEA wrote. — Geoffrey Craig

Example 1

In-State Requirement Mwh (a)

	2009	2010	2011	2012	2013	2014	2015	2016
	187124	379487	769599	1170560	1582597	2005942	2847636	3712503
	2021	2022	2023	2024	Total			
	8401710	9416106	10457258	11525717	36634749			

	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12
(1) Potential Burger RECS before Adjustment (b)	116,800	116,800	116,800	116,800	116,800	116,800	116,800	116,800
(2) Market Price of RECs (c)	\$45.00	\$37.58	\$26.21	\$12.75	\$3.02	\$0.17	5.31E-04	5.22E-09
(3) RECs After Burger Adjustment (d)	116,800	139,853	200,509	412,150	1,741,402	31,087,481	9,907E+09	1.01E+15
(4) Last Month's Excess RECs	0	19,253	61,560	164,523	479,126	2,122,981	33,112,916	9.94E+09
(5) Total Available RECs (e)	116,800	159,107	262,069	576,673	2,220,528	33,210,462	9.94E+09	1.01E+15
(6) Total REC Requirement (f)	97,547	97,547	97,547	97,547	97,547	97,547	97,547	97,547
(7) Excess RECs (g)	19,253	61,560	164,523	479,126	2,122,981	33,112,916	9.94E+09	1.01E+15
(8) Ratio of RECs produced over RECs required (h)	1.20	1.43	2.06	4.23	17.85	318.69	101,565.50	1.03E+10

(a) Based on calculation from AWEA Exhibit 2

(b) Based upon calculation from AWEA Exhibit 2 assuming 64% capacity factor (200MWh)/80% Biomass and 20% Coal and divided by 12 months

(c) Based upon last month's market price adjusted inverse proportionally to the ratio of supply produced last month versus demand (line 8)

(d) Line 1 * (\$45/Line 2)

(e) Line 3 + Line 4

(f) In-State Requirement/12

(g) Line 5 - Line 6

(h) Line 3/Line 6; The ratio of supply produced in a month over demand

Quick Example

2017	2018	2019	2020
4601029	5513706	6451036	7413530

Sep-12	Oct-12	Nov-12	Dec-12
116,800	116,800	116,800	116,800
5.06E-19	4.76E-39	4.2E-79	3.28E-159
1.04E+25	1.1E+45	1.25E+85	1.6E+165
1.01E+15	1.04E+25	1.1E+45	1.251E+85
1.04E+25	1.1E+45	1.25E+85	1.6E+165
97,547	97,547	97,547	97,547
1.04E+25	1.1E+45	1.25E+85	1.6E+165
1.06E+20	1.13E+40	1.28E+80	1.64E+160

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Summary: Comments Comments by the Office of the Ohio Consumer and Environmental Advocates electronically filed by Mrs. Mary V. Edwards on behalf of Allwein, Christopher J. and Office of the Ohio Consumers' Counsel