ILLINOIS COMMERCE COMMISSION
Public Notice of Successful Bidders and Average Prices

Illinois Power Agency
January 2018 Procurement of Zero Emission Credits from Facilities Fueled by Nuclear Power

January 25, 2018

On January 10, 2018, the Illinois Power Agency's ("IPA's") procurement administrator, NERA Economic Consulting, held a procurement event for the sale of zero emission credits ("ZECs") to Ameren Illinois Company ("Ameren"), Commonwealth Edison Company ("ComEd"), and MidAmerican Energy Company ("MEC"). A ZEC is a tradable credit representing the environmental attributes of one megawatt hour of energy produced by a zero emission facility (which is defined as a facility that (1) is fueled by nuclear power; and (2) is interconnected to either PJM Interconnection, LLC ("PJM") or the Midcontinent Independent System Operator, Inc. ("MISO")). Delivery of the ZECs is for the period beginning June 1, 2017 through the delivery year ending in May 31, 2027. The procurement process was monitored for the Commission by Bates White. On January 25, 2018, voting in open session, the Commission approved the procurement administrator's selection of winning zero emission facilities.

This procurement event undertaken by the IPA is a result of Public Act 99-0906 ("Act"), also known as the Future Energy Jobs Act, which was signed into law in December 2016 and became effective June 1, 2017. As directed by the Act, the IPA filed a Zero Emission Standard Procurement Plan, which set out detailed evaluation criteria designed to assess the ability of zero emission facilities to meet the public interest requirements identified in the Act. The IPA's plan was approved by the Commission in Docket No. 17-0333 and the IPA's evaluation criteria are fully described in the IPA's Final Approved Zero Emission Standard Procurement Plan (ZES Plan).[1] The overall annual target quantity of ZECs of 20,118,672 ZECs was determined in the ZES Plan on the basis of the amount equal to approximately 16% of the actual amount of electricity delivered by Ameren and ComEd during the calendar year 2014 and an amount equal to approximately 16% of the portion of power and energy procured by the IPA for MEC.

The Act specifies that zero emission facilities shall be selected based on public interest criteria that include, but are not limited to, minimizing carbon dioxide emissions that result from electricity consumed in Illinois and minimizing sulfur dioxide, nitrogen oxide, and particulate matter emissions that adversely affect the citizens of the State of Illinois. The Act further specifies that the selection of winning zero emission facilities is to take into account the incremental environmental benefits resulting from the procurement, such as any existing environmental benefits that are preserved by this procurement that would cease to exist if the procurement was not held, including the preservation of zero emission facilities.

In order to evaluate the impact of zero emission facilities on the amount of carbon dioxide emissions resulting from electricity consumed in Illinois, facility reviews examined the fraction of the zero

[1] See https://www2.illinois.gov/sites/ipa/Pages/Current_Approved_Plan.aspx.

emission facility's replacement generation expected to be consumed in Illinois and the expected carbon content of that replacement generation consumed in Illinois. Using proxy information, the IPA assumed 33% of replacement generation for a zero emission facility would come from the state in which it is located and 67% would be produced in other states on a generation-weighted (coal and gas-fired generation) basis within the same regional transmission organization as the zero emission facility. Using additional proxy information, the IPA assumed 7.79% of replacement generation produced outside of Illinois, but in MISO, would be consumed in Illinois and that 22.2% of replacement generation produced outside of Illinois, but in PJM, would be consumed in Illinois. The IPA further assessed the impact of replacement generation from each state by comparing the states' output of CO_2 per megawatt hour with the comparable regional figures.

To evaluate the impact of zero emission facilities on the amount of non-carbon dioxide emissions impacting Illinois citizens, facility reviews examined the degree to which emissions from a zero emission facility's replacement generation would increase the amount of sulfur dioxide ("SO_2"), nitrogen oxide ("NOx") and particulate matters ("PM") in Illinois and thus have adverse impacts on Illinois citizens. Again, the IPA assumed 33% of replacement generation for a zero emission facility would come from the state in which it is located and 67% would be produced in other states on a generation-weighted (coal and gas-fired generation) basis within the same regional transmission organization as the zero emission facility. The IPA then estimated how much of the air pollution from this replacement generation would reach Illinois by examining the facilities' distance from Illinois and the average amount of time the wind blows from the location into Illinois. The IPA assessed the impact of replacement generation from each state by comparing that state's output of SO_2, NO_x, and PM per megawatt hour with the comparable regional figures.

Each facility could receive a maximum score of 25 points for each of the CO_2, SO_2, NOx, and PM criteria and a maximum overall score from these environmental criteria of 100 points. To get final scores, the emission scores for each facility were multiplied by an Economic Stress Multiplier ("ESM"). The Economic Stress Multiplier estimates the degree to which each facility is at risk of closure due to economic and market conditions. The ESM was calculated as the ratio of a zero emission facility's operating cost per megawatt hour divided by an estimate of the market revenues such a facility might expect to receive ($31.40 per megawatt hour adjusted for locational pricing differences).

The successful Zero Emission Facilities in the ZEC RFP were those facilities that achieved the highest scores as determined through the evaluation process. The evaluation process selected zero emission facilities until the annual target quantity of 20,118,672 ZECs was reached.

Winning Suppliers
Quad Cities Nuclear Power Station, Unit 1
Quad Cities Nuclear Power Station, Unit 2
Clinton Power Station, Unit 1

For the first delivery year June 1, 2017 through May 31, 2018, the ZEC price paid to each facility will equal $16.50, the Social Cost of Carbon, as specified in Public Act 99-0906. As a result of cost caps included in Public Act 99-0906, some contractual volumes may not be paid for during the delivery year and may be paid for in a subsequent delivery year in which unpaid contractual volumes can be paid without exceeding the cost caps.

The public notice required under Section 1-75(d-5)(1)(C-5) also mandates the disclosure of the following information:

(a) the value of avoided greenhouse gas emissions measured as the product of the zero emission facilities' output over the contract term multiplied by the U.S. Environmental Protection Agency eGrid subregion carbon dioxide emission rate and the U.S. Interagency Working Group on Social Cost of Carbon's price in the August 2016 Technical Update using a 3% discount rate, adjusted for inflation for each delivery year;

(b) and the costs of replacement with other zero carbon dioxide resources, including wind and photovoltaic, based upon the simple average of the following:

a. the price, or if there is more than one price, the average of the prices, paid for renewable energy credits from new utility-scale wind projects in the procurement events specified in item (i) of subparagraph (G) of paragraph (1) of subsection (c) of Section 1-75 of the Act;

b. the price, or if there is more than one price, the average of the prices, paid for renewable energy credits from new utility-scale solar projects and brownfield site photovoltaic projects in the procurement events specified in item (ii) of subparagraph (G) of paragraph (1) of subsection (c) of Section 1-75 of the Act and, after January 1, 2015, renewable energy credits from photovoltaic distributed generation projects in procurement events held under subsection (c) of Section 1-75 of the Act.

The value of avoided greenhouse gas emissions is calculated as the sum of the product of the Social Cost of Carbon specified in Public Act 99-0906 for each delivery year, multiplied by the projected annual output, summed across the contract term. This cumulative value over the expected life of the ZEC contracts, without any adjustments, is $3,583,277,212.

The cost of replacement with other zero carbon dioxide resources, including wind and photovoltaic, is estimated as the simple average of the renewable energy credit ("REC") prices paid for new utility-scale wind projects (procured through the recent Initial Forward Procurement) and the REC prices paid for solar projects (including new utility-scale solar projects procured through the recent Initial Forward Procurement and photovoltaic distributed generation projects procured after January 1, 2015) multiplied by the projected annual output over the life of the contract.

The cost of replacement can be estimated two different ways. The first approach uses the simple average of (1) the winning bid prices for Wind RECs; and (2) the average of the winning bid prices for RECs from the photovoltaic projects described above, weighted by the annual quantity of RECs procured from the photovoltaic projects. This approach yields a value of $13.14 per REC and an estimated cost of replacement of $2,689,634,019. The second approach uses the simple average of (1) the winning bid prices for Wind RECs; and (2) the simple average of the average winning bid prices for RECs from the photovoltaic projects described above. This approach yields a value of $50.05 per REC and an estimated cost of replacement of $10,243,987,739.