
IOWA UTILITIES BOARD
Energy Section

Docket No.: AEP-2016-0134
Applicant: Amana Society Service
Company
File Dates: December 22, 2016;
January 31, 2017;
March 10, 2017
Memo Date: March 31, 2017

TO: The Board

FROM: Ellen Shaw

SUBJECT: Iowa Code Chapter 476C Non-wind Energy Eligibility Application

I. Summary

Amana Society Service Company (ASSC) has applied for a 476C eligibility determination for an anaerobic digester system. The system includes three biogas-fueled engine/generator sets with a total nameplate electrical generating capacity of 2.13 MW. Staff recommends that the Utilities Board (Board) grant eligibility.

II. Background

Iowa Code chapter 476C establishes a production tax credit program for energy produced by smaller wind and non-wind renewable energy facilities.

On December 22, 2016, the Board received an application for certification of an anaerobic digester system as an eligible facility from ASSC. The application indicated, among other items, that the applicant intended to seek renewable energy tax credits for heat for a commercial purpose (HCP) produced by the facility and used on-site or sold. The applicant also indicated that it was in negotiations with potential purchasers of the energy produced by the facility and that once a power purchase agreement had been executed, a copy would be filed with the Board. The facility has been in-service and fully operational since 2008.

On January 11, 2017, staff sent ASSC a letter requesting additional information. On January 31, 2017, ASSC filed an amended application and exhibits. Among other things, ASSC commented that it intended to seek renewable energy tax credits for electricity generated by the facility and sold to its retail customers and that ASSC was not seeking tax credits for HCP.

On March 2, 2017, staff sent ASSC a letter requesting clarification of some information in ASSC's amended application. On March 10, 2017, ASSC filed its response.

ASSC provides a description of the process for producing the methane and electricity, and for capturing HCP:

- The Digester Vessel is fed beef cattle manure through a combination of manure scraped from floors of feedlots and manure pumped from a covered cattle building located adjacent to the facility. The manure is supplemented with various on- and off-farm substrates from many sources.
- The methane gas generated by digestion is harvested and piped into the Generator Building that contains biogas-fueled engine/generator sets that produce electricity. Waste heat is captured from the engines' cooling systems.
- A portion of the electricity is used in the digester process to run pumps, etc. The balance of the electricity goes into a switchgear and dedicated transformer immediately north of the Generator Building. An electronic meter within the electronic control system of the digester gives both the total generation and the amount of that generation which is sent through the dedicated transformer.
- From the transformer, the electricity is carried via transmission line for about a mile to where it interconnects to ASSC's distribution system.
- Waste heat captured from the engines' cooling systems goes through a heat exchanger, and is then piped to various locations. Most of the heat is used to facilitate the process of feeding and digesting the substrates or to heat the buildings containing digester-affiliated structures. A portion of the heat is used to heat farm structures, most of which are owned by entities affiliated with ASSC.

ASSC commented that its understanding is that electricity or waste heat used either in the digester process or used by a related person (or by affiliated entities) does not qualify for chapter 476C tax credits and, therefore, is not seeking tax credit for that portion.

III. Legal Standards

Iowa Code § 476C.1(1) and (2) state:

1. "*Anaerobic digester system*" means a system of components that processes plant or animal materials based on the absence of oxygen and produces methane or other biogas used to generate electricity, hydrogen fuel, or heat for a commercial purpose.
2. "*Biogas recovery facility*" means an anaerobic digester system that is located in this state.

Iowa Code § 476C.1(6) states:

6. “*Eligible renewable energy facility*” means a wind energy conversion facility, a biogas recovery facility, a biomass conversion facility, a methane gas recovery facility, a solar energy conversion facility, or a refuse conversion facility that meets all of the following requirements:

- a. Is located in this state.
- b. Is at least fifty-one percent owned by one or more of any combination of the following:
 - (1) A resident of this state.
 - (2) Any of the following as defined in section 9H.1:
 - (a) An authorized farm corporation.
 - (b) An authorized limited liability company.
 - (c) An authorized trust.
 - (d) A family farm corporation.
 - (e) A family farm limited liability company.
 - (f) A family trust.
 - (g) A revocable trust.
 - (h) A testamentary trust.
 - (3) A small business as defined in section 15.102.
 - (4) An electric cooperative association organized pursuant to chapter 499 that sells electricity to end users located in this state, a municipally owned city utility as defined in section 362.2, or a public utility subject to rate regulation pursuant to chapter 476.
 - (5) An electric cooperative association that has one or more members organized pursuant to chapter 499.
 - (6) A cooperative corporation organized pursuant to chapter 497 or a limited liability company organized pursuant to chapter 489 whose shares and membership are held by an entity that is not prohibited from owning agricultural land under chapter 9H.
 - (7) A school district located in this state.
- c. Has at least one owner that meets the requirements of paragraph “b” for each two and one-half megawatts of nameplate generating capacity or the energy production capacity equivalent for hydrogen fuel or heat for a commercial purpose of the otherwise eligible renewable energy facility.
- d. Was initially placed into service on or after July 1, 2005, and before January 1, 2018.
- e. For applications filed on or after July 1, 2011, is a facility of not less than three-fourths megawatts of nameplate generating capacity or the energy production capacity equivalent if all or a portion of the renewable energy produced is for on-site consumption by the producer.
- f. For applications filed on or after July 1, 2011, except for wind energy conversion facilities, is a facility of no greater than sixty

megawatts of nameplate generating capacity or the energy production capacity equivalent.

Iowa Code § 476C.2(1) and (2) states:

476C.2 Tax credit amount — limitations.

1. A producer or purchaser of renewable energy may receive renewable energy tax credits under this chapter in an amount equal to one and one-half cents per kilowatt-hour of electricity, or four dollars and fifty cents per million British thermal units of heat for a commercial purpose, or four dollars and fifty cents per million British thermal units of methane gas or other biogas used to generate electricity, or one dollar and forty-four cents per one thousand standard cubic feet of hydrogen fuel generated by and purchased from an eligible renewable energy facility or used for on-site consumption by the producer.

2. The renewable energy tax credit shall not be allowed for any kilowatt-hour of electricity, British thermal unit of heat for a commercial purpose, British thermal unit of methane gas or other biogas used to generate electricity, or standard cubic foot of hydrogen fuel that is purchased from an eligible renewable energy facility by a related person. For purposes of this subsection, persons shall be treated as related to each other if either person owns an eighty percent or more equity interest in the other person.

Iowa Code § 476C.3(4)(b)(1) states:

(1) Of the maximum amount of energy production capacity equivalent of all other facilities eligible under this chapter, no more than ten megawatts of nameplate generating capacity or energy production capacity equivalent shall be allocated to any one facility.

Iowa Code § 476C.3(7)(a) states:

7. a. An owner meeting the requirements of section 476C.1, subsection 6, paragraph “b”, shall not be an owner of more than two eligible renewable energy facilities. A person that has an equity interest equal to or greater than fifty-one percent in an eligible renewable energy facility shall not have an equity interest greater than ten percent in any other eligible renewable energy facility. This paragraph “a” shall not apply to facilities described in section 476C.3, subsection 4, paragraph “b”, subparagraph (3).

Board subrule 199 IAC 15.19(3) states, in part:

Also, the board and its staff may request additional information at any time for purposes of determining initial or continuing eligibility for tax credits.

Tax Credit Certificate Procedure:

Iowa Code § 476C.5 states:

476C.5 Certificate issuance period.

A producer or purchaser of renewable energy shall receive renewable energy tax credit certificates for a ten-year period for each eligible renewable energy facility under this chapter. The ten-year period for issuance of the tax credit certificates begins with the date the purchaser of renewable energy first purchases electricity, hydrogen fuel, methane gas or other biogas used to generate electricity, or heat for commercial purposes from the eligible renewable energy facility for which a tax credit is issued under this chapter, or the date the producer of the renewable energy first uses the energy produced by the eligible renewable energy facility for on-site consumption. Renewable energy tax credit certificates shall not be issued for renewable energy purchased or produced for on-site consumption after December 31, 2027.

IV. Analysis

Staff has reviewed the application to see if it complies with the statutory requirements. The analysis of each requirement is provided below.

Facility Type

The applicant proposes an anaerobic digester system which produces methane fuel that is then used to generate electricity. This meets the definition of a “biogas recovery facility” in Iowa Code § 476C.1(2) and meets the requirements of § 476C.1(6).

Facility Size

The applicant indicates the nameplate generating capacity of the facility is 2.485 MW based on a simple average of the biogas-fueled engine/generator sets. The applicant explained that when the digester was originally built, it had four engine/generator sets each with a nameplate generating capacity of 0.710 MW, for a total of 2.84 MW. Following the catastrophic failure of one of the engine/generator sets on May 22, 2016, ASSC elected not to repair or replace it

since the damage was extensive and expensive, and since the digester rarely produced enough gas to run more than two engine/generator sets at one time.¹

The three available engine/generator sets have a total nameplate generating capacity of 2.13 MW. The applicant indicated that it does not intend to operate four engine/generator sets and that if it ever decides to repair or replace the fourth engine/generator set, it would be used as a spare if another engine/generator set is out of service or being repaired.

Staff recommends that the nameplate generating capacity be based on the three available engine/generator sets, which total 2.13 MW. The inoperable engine/generator set should be excluded from the total nameplate generating capacity. The 2.13 MW meets the size restrictions of Iowa Code §§ 476C.1(6)(f) and 476C.3(4)(b)(1). In addition, there is capacity available in the 63 MW non-wind tax credit allocation specified in Iowa Code § 476C.3(4)(b).

Staff notes that the applicant indicated the anaerobic digester produces methane fuel with a total energy content of approximately 92,508 MMBTU per year.² Staff comments that since the applicant intends to claim tax credits on the electricity generated and sold (not on the methane used to generate electricity), the nameplate generating capacity should be based on the component of the system that generates the electricity, which consists of the three engine/generator sets.

Facility Location

The facility is located in Amana, Iowa, which meets the location requirement of Iowa Code § 476C.1(6)(a).

Facility In-Service Date

The applicants stated the facility has been in service since 2008. The facility meets the in-service requirements of Iowa Code § 476C.1(6)(d): that is, the facility is placed in service on or after July 1, 2005, and before January 1, 2018.

Facility Ownership – Type of Owner

The facility is owned by ASSC. The applicant listed two entity types for ASSC:

- An Iowa corporation and, therefore, an Iowa resident within the meaning of Iowa Code § 476C.1(6)(b)(1).

¹ Board staff notes that it appears the applicant's calculation consists of averaging four biogas-fueled engine/generator sets in service for half of 2016 and three biogas-fueled engine/generator sets in service for the other half of 2016: $((6 \text{ mos.} * 2.84 \text{ MW}) + (6 \text{ mos.} * 2.13 \text{ MW})) / 12 \text{ mos.} = 2.485 \text{ MW}$.

² Board staff notes that the "engine production capacity equivalent" of 92,508 MMBTU is 3.168 MW $(92,508 \text{ MMBTU per yr.} / 8760 \text{ hrs.} * 1 \text{ million} / 3,333 = 3,168.40 \text{ KW} = 3.168 \text{ MW})$.

- A small business as defined by Iowa Code §§ 15.102 and 476C.1(6)(b)(3) because ASSC has fewer than 20 employees.

Staff agrees that the ASSC's ownership of the facility complies with the requirements of Iowa Code §§ 15.102 and 476C.1(6)(b)(3). Because ASSC is a small business, it is not necessary to determine whether ASSC is a "resident" within the meaning of Iowa Code § 476C.1(6)(b)(1).

Facility Ownership – Limitation on Number of Facilities

Iowa Code § 476C.3(7)(a) provides that the applicant shall not have an ownership interest in more than two eligible facilities and imposes percentage limits on equity holders of multiple eligible facilities. ASSC does not have an ownership interest in any other eligible facility under Iowa Code chapter 476C.

ASSC explained that it is wholly-owned by Amana Society, Inc., an Iowa corporation organized pursuant to Iowa Code chapter 490. Amana Society, Inc., has approximately 700 individual shareholders, none of whom own 10 percent or more of its outstanding shares. Neither Amana Society, Inc., nor to the best of the applicant's knowledge any of its individual shareholders have an ownership in any other renewable energy facility.

It appears that the applicant complies with the ownership limits of Iowa Code § 476C.3(7)(a).

Disposition of Generation

The electricity produced by the engine/generator is placed into ASSC's distribution system as part of the generation mix that supplies the retail customers of ASSC. This use of the renewable energy meets the requirements of Iowa Code § 476C.1(6)(e).

Application in Aggregate

The application complies with the requirements of Iowa Code chapter 476C.

Other Considerations

The facility owned by ASSC became operational in 2008 and the applicant intends that the ten-year tax credit certificate period for the facility shall commence on January 1, 2017. Staff notes that the Board has not previously received an eligibility application for a facility that became operational nine years prior to filing the application. Since the facility became operational within the time period specified in Iowa Code § 476C.1(6)(d), that is, was initially placed in service on or after July 1, 2005 and before January 1, 2018, and the facility complies with the

other eligibility requirements, staff recommends the Board grant a determination of eligibility.

Iowa Code § 476C.5 provides for a ten-year period for the issuance of tax credits certificates for an eligible renewable energy facility and describes when the ten-year period begins. Iowa Code § 476C.5 states, in part:

The ten-year period for issuance of the tax credit certificates begins with the date the purchaser of renewable energy first purchases electricity, hydrogen fuel, methane gas or other biogas used to generate electricity, or heat for commercial purposes from the eligible renewable energy facility for which tax a tax credit is issued under this chapter, or the date the producer of the renewable energy first uses the energy produced by the eligible renewable energy facility for on-site consumption.

The Iowa Department of Revenue (IDR) has authority of certification of tax credits pursuant to Iowa Code § 476C.4. The Board's role in the tax credit certification process is to gather the information required by Iowa Code § 476C.4(1) and notify IDR of the amount of kilowatt-hours, British thermal units of heat for a commercial purpose, British thermal units of methane gas or other biogas used to generate electricity, or standard cubic feet of hydrogen fuel generated and purchased from an eligible renewable energy facility or generated and used by the producer for on-site consumption. Iowa Code § 476C.4(2). IDR is to determine whether to certify tax credits for an eligible renewable energy facility, which includes an interpretation of Iowa Code § 476C.5 regarding the tax credit certificate issuance period.

Staff recommends that the Board approve the eligibility application. The issue regarding the ten-year period can be addressed by IDR when ASSC makes its first tax credit application. Staff also recommends that the Board make IDR aware of this issue if eligibility is granted.

V. Program Capacity Allocation

476C – Non-wind

<u>Owner</u>	<u>Facility</u>
TOTAL ELIGIBLE CAPACITY ³ :	43.000 MW
PREVIOUSLY APPROVED TOTAL:	27.143 MW
Amana Society Service Company:	2.130 MW
PROPOSED NEW APPROVED TOTAL:	29.273 MW
Available Capacity if Approved:	13.727 MW
One Pending Application Total:	7.500 MW

VI. Recommendation

Staff recommends that the Board direct General Counsel to prepare an order for the Board's consideration that deems Amana Society Service Company's eligibility application complete and grants eligibility to the biogas recovery facility under Iowa Code chapter 476C.

RECOMMENDATION APPROVED

IOWA UTILITIES BOARD

/es

/s/ Geri D. Huser 3-31-17
Date

/s/ Elizabeth S. Jacobs 3-31-17
Date

/s/ Nick Wagner 4-3-17
Date

³ Of the 63 MW allotted to the 476C non-wind program: Iowa Code § 476C.3(5)(a) reserves 10 MW to natural gas, methane and landfill gas, or biogas cogeneration facilities incorporated within or associated with an ethanol plant. Iowa Code § 476C.3(4)(b)(3) reserves 10 MW to solar facilities with a generating capacity of 1.5 MW or less owned or contracted for by a municipal utility, a rural electric cooperative, or an investor-owned utility.