Iowa Energy Center Board
Meeting Minutes January 9, 2019
1:00 p.m.

Iowa Energy Center Board Members:

Stuart Anderson	Debi Durham	Jennifer Johnson	Dan Nickey	Timothy Whipple
Robert Berntsen	Geri Huser	Valerie Newhouse	Joel Schmidt	Gul Kremer

Iowa Economic Development Authority Staff Present:

Brian Selinger	Amber Buckingham	MK Anderson	Terry Roberson	Rob Christensen	Tim Waddell	Kanan Kappleman
Adrienne Ricehill	Stephanie Weisenbach	Ryan Young	Kristin Hanks-Bents	Shelly Peterson	Jacque Matsen	Jeff Geerts

Others Present:

Brenda Biddle	Dave Lyons	Mark Ernst	Paul Cammack
Ron Robinson	Scott Hutchens	Jessica Flannery	

Welcome and Introductions

Roll Call
Board Chair called the meeting of the Iowa Energy Center Board to order at 1:08 p m.

A quorum of the Board was established with the following Board members present: Stuart Anderson, Robert Berntsen, Debi Durham, Geri Huser, Jennifer Johnson, Valerie Newhouse, Dan Nickey, Joel Schmidt, Timothy Whipple and Gul Kremer.

Approval of August 14, 2018 Meeting Minutes
Stuart Anderson: Moved that the Board approve the November 7, 2018 meeting minutes.
Jennifer Johnson: Seconded the motion

Yes: 10 **No: 0** **Present: 0**

Motion Passed

Public Comment Period

No comments.

Administrative Rules – Grant Program

Presentation provided (Attachment A & B)

The proposed new chapter will govern the administration grant program. These rules create definitions, establish funding and award terms, and define eligible applicants as well as eligible and ineligible costs. These rules also describe the application process and the administration of the grant program.

Adoption of Grant Program Rules

Geri Huser: Moved that the Board adopt administrative rules for the Energy Center Grants program.
Dan Nickey: Seconded the motion.

Yes: 10 **No: 0** **Present: 0**

Motion Passed

Administrative Rules – AERLP

Presentation provided (Attachment C & D)

The proposed new chapter will govern the administration of the AERLP. These rules create definitions, establish terms for loans, define eligible and ineligible borrowers as well as eligible and ineligible costs, and set forth the requirements for eligible projects. These rules also describe the application process and the administration of the loan program.

Summary of IEC Board Questions/Comments & IEDA Staff Response

- I agree with the $25,000 minimum, but what is the disadvantage of going down to the $10,000 as the commenter requested?
  - The disadvantage is that you change the minimum cost of the project from $50,000 to $20,000. You have more administration. It primarily affects residential solar installations but there are other resources available to them such as state solar tax credits.
  - There is not a threshold when deciding to change the rules due to comments One comment doesn't make the most compelling argument in favor of changing. It really depends on the nature and the volume of comments. IEDA reached out to

number of individuals who expressed an interest (primarily bankers and solar installers) to let them know that the rule making was available. We only heard from one individual.
- We were very proactive in notifying these individuals.

Adoption of AERLP Rules

Stuart Anderson: Adopt administrative rules for Alternate Energy Revolving Loan program (AERLP).
Joel Schmidt: Seconded the motion.

Yes: 10 **No: 0** **Present: 0**

Motion Passed

Fiscal Update

Presentation provided (Attachment E)

Items of note:

- Updated Fiscal Report to encapsulate information from both programs onto one page
- Budget: Received current year transfer of funds from the Utilities Board
- Payouts: $600,000 have gone to the inherited ISU obligations
- Administrative: $14,000
- Salaries: $102,000

Summary of IEC Board Questions/Comments & IEDA Staff Response

- We have a 9 million dollar balance for the AERLP Program. How much of back-up demand is there for the revolving loan fund?
  - We have had individuals inquiring when these funds will be available. But we are unable to quantify this. Within our first Annual Report detailed fiscal information has been provided.

Iowa Biogas Projects Presentations

Des Moines Wastewater Reclamation Authority (WRA)
Attachment provided (Attachment F)

Summary of IEC Board Questions/Comments & Presenter Response

- How did you finance the initial construction costs?
  - We financed this project through the FRS Program.

- Did you do any hedging on the RINs?
  - Since it is public money the Board does not want to play the market. They are looking to getting into a fixed price contract so that they can meet the 4-6 year payback. The remaining 25% -30% of the monies will be invested into RINs market. After the project has been paid in full the Board may change their approach

- Are you using animal waste within your digester?
  - No, we are using industrial waste and human waste. There are some companies that are building their digesters for animal waste.

- You mentioned that the RINs were a big part of the economics. What part of the revenue pie?
  - As much as 80% to 90%. The RINs should not be affected by current Administration who are more favorable to the oil companies. It would take an act of congress to eliminate the Renewable Fuel Standard.

Dubuque Biogas Conversion Project
Attachment provided (Attachment G)

Summary of IEC Board Questions/Comments & Presenter Response

- If we are to continue to feed the world and grow livestock it is imperative that we figure out how to deal with animal waste and how to monetize it. This year we will need to identify a project and we would welcome additional information.
  - We have been developing a "Living Lab," which includes innovation zones. Wastewater facilities do not like high fat solids. To combat this issue, we have created a process for agricultural manufacturers to economically truck their high fat solid wastes to this facility. This process cuts their handling costs by 60% while increasing the productivity of the biogas digesters by 13%. We are able to use this as a marketing mechanism for any agriculture industry and when designed appropriately, we can take one of their problematic costs (refuse) and turn it into a product. Custom manufacturing is provided by Unison Industries.

- Where does food waste fit into this project? 20% of the municipal waste is food waste which is going into Iowa landfills.
    - It's all about scale and logistics. The collection/storage process takes a lot of infrastructure cost. If you also have to build the energy development and distribution cost on top of the that it really doesn't work. We will be adding additional innovation zone lots to our landfill that will connect this area to the Black Hills pipeline. We would like to add a closed fast loop dry anerobic process to the new innovation zone lots which will allow us to eliminate added costs, collect organics, and connect to the existing infrastructure

- Would you be able to bring in food waste haulers as well?
    - Yes, they will be able to access the innovation zone lots. We are looking at Swedish and Dutch models which are quite effective in closed fast dry loop anerobic processes.

- What is the timeline for these projects?
    - The innovation zone additions will hopefully be completed by 2020. We will not start this project until the landfill project has been completed and successful

- We need to make sure that the policies for our funding opportunities are driving these types of projects.

Other Business

Volkswagen Settlement Update
Attachment provided (Attachment H)

Summary of IEC Board Questions/Comments & IEDA Staff Response
No comments.

Iowa Energy Office – Update
Attachment provided (Attachment I)

- IEDA will be providing the IEC Annual Report to the General Assembly on January 15, 2019. We will provide copies of this report to IEC Board members.
- IEDA is reviewing the Electric Vehicle Infrastructure Report internally. We will finish our review by February and will make it available for consideration by the General Assembly.
- IEDA will focus on the topic of energy storage for the April Board meeting. Presenters will provide information for projects on both sides of the meter. IEDA continues to work on the Energy Storage Action Plan and will provide this to the board once it has been completed.
- Next Board Meeting is April 3, 2019.

Summary of IEC Board Questions/Comments & IEDA Staff Response

- Are you planning new legislation for any of the Energy Office programs?
  - No, the EV Infrastructure Report will provide recommendations and action items for others to take the lead and craft legislation if needed.
  - Energy storage is emerging, but it is not in a place to act upon. This year we will focus on pilot projects.
  - Next year IEDA will develop a biogas incentive plan and identify a pilot project. When we are ready, we will build a strong coalition so that by the time it gets to the legislative process we will have the stakeholders on board to build a strong policy

Adjournment

Move to Adjourn

Stuart Anderson: Moved that the board adjourn the January 9, 2019 quarterly meeting.
Joel Schmidt: Seconded the motion.

Yes: 10 **No: 0** **Present: 0**

Motion Passed

There being no further business, the Iowa Energy Center Board adjourned the meeting at 2:21 p m.

Adrienne Ricehill
IEC Board Administrator

Attachment A

REPORT
IOWA ENERGY CENTER BOARD
JANUARY 2019

ACTION

From: Legal

Subject: Adopt administrative rules for the Energy Center Grants program

2017 Iowa Acts, chapter 169 amended Iowa Code section 476.46 and transferred the administration of the Alternate Energy Revolving Loan Program (AERLP) to the Iowa Energy Center created under section 15.120. Iowa Code section 15.120 requires the Energy Center board to adopt rules for the administration of the programs it administers.

The proposed new chapter will govern the administration grant program. These rules create definitions, establish funding and award terms, and define eligible applicants as well as eligible and ineligible costs. These rules also describe the application process and the administration of the grant program.

Public comments: The Board reviewed these proposed rules at its meeting on November 9, 2018 and approved the filing of a Notice of Intended Action. The rules were published on December 5, 2018. Staff did not receive any public comment on the proposed rules.

Changes from Noticed version of rules: Staff and the Administrative Code Editor's office made changes to the rule making to correct grammar and improve clarity. This includes moving subrules 404.4(6) and (9), which are now subrules 404.3(5) and (6), respectively. No substantive changes have been made.

Proposed Motion: **Adopt Energy Center Grant Program rules chapter**

Submitted By: Kristin Hanks-Bents, Assistant Legal Counsel

Attachments: Proposed rules

Attachment B

ARC 4149C

ECONOMIC DEVELOPMENT AUTHORITY[261]

Adopt the following **new** 261—Chapter 404:

CHAPTER 404
IOWA ENERGY CENTER GRANT PROGRAM

261—404.1(15) Definitions.

"Activity" means one or more specific activities, projects or programs associated with Iowa energy center grant funds.

"Annual allocation" means the annual dollar amount the board allocates to the Iowa energy center for energy center grant activities.

"Authority" means the economic development authority created in Iowa Code section 15.105.

"Board" means the governing board of the Iowa energy center established pursuant to Iowa Code section 15.120(2).

"Co-investigator" means a person who shares the responsibility of conducting grant activities with the principal investigator of a project.

"Funding announcement" means a publicly available document that contains the official information for a grant, including the application deadline, goals of the activity, eligibility requirements, reporting requirements, availability of funds and instructions on applying for the grant.

"Iowa energy center" or *"IEC"* means the Iowa energy center created within the economic development authority pursuant to Iowa Code section 15.120.

"Principal investigator" means a person with the primary responsibility for conducting research.

"Recipient" means an organization that was awarded an Iowa energy center grant.

"Subinvestigator" means a person who is carrying out grant activities at the direction of the principal investigator and is receiving funds from the award made to the recipient.

"Subrecipient" means an organization contracting with and receiving funds from a recipient to carry out IEC grant activities.

261—404.2(15) Policies and procedures handbook. The authority will prepare a policies and procedures handbook for approval by the board. The board will review the policies and procedures handbook on an annual basis. The policies and procedures will include the annual allocation to each grant activity.

261—404.3(15) Eligibility.

404.3(1) *Eligible applicants* Eligible applicants include Iowa businesses, colleges and universities, and private nonprofit agencies and foundations.

404.3(2) *Applications with subrecipients* Any eligible applicant may submit an application that includes one or more subrecipients. The amount of an award that a subrecipient can receive is set forth in the policies and procedures.

404.3(3) *Joint applications* Any eligible applicant may apply individually or jointly with another eligible applicant or other eligible

applicants.

404.3(4) *Restrictions on applicants.* A principal investigator will be allowed to submit one application per funding announcement. An applicant who has submitted an application as the principal investigator for a funding announcement may also be named as a co-investigator on additional applications submitted for the same funding announcement, provided the applicant is not the principal investigator on any additional applications.

404.3(5) *Eligible projects* Requirements for IEC grant awards include but are not limited to the following:

a Applicants shall demonstrate a benefit for ratepayers.

b Applicants shall demonstrate that they are eligible candidates.

c Applicants shall demonstrate the capacity for grants administration.

d Applicants who have previously received Iowa energy center awards shall have demonstrated acceptable past performance, including the timely expenditure of funds.

e Applications shall demonstrate the feasibility of completing the proposed activities with the funds requested.

f Applications shall identify and describe any other sources of funding for the proposed activities.

404.3(6) *Ineligible projects* The following types of projects are ineligible for an award.

a Relocation of a business.

b Expansion of a business.

c. Funding for existing training programs.

d Private asset development.

e Pipeline, transmission line, and distribution line construction.

f First generation ethanol.

g Cellulosic ethanol.

261—404.4(15) Funding and award terms.

404.4(1) For each fiscal year that funds are available, the board will determine the amount of funds available to be awarded as grants in that fiscal year.

404.4(2) If any funds are allocated to a specific grant activity but are not awarded after a funding cycle, the board may reallocate those funds to a different grant activity.

404.4(3) The board may reallocate any recaptured funds to a different grant activity.

404.4(4) The maximum grant award is $1 million per application. The minimum grant award is $10,000 per application.

404.4(5) The initial duration of a grant agreement will be no longer than three years. However, a recipient may apply for a no-cost extension of an agreement. If the approval of a no-cost extension would cause the duration of the grant agreement to exceed five years, the no-cost extension shall not be granted.

261—404.5(15) Project budget.

404.5(1) Eligible expenses. Only expenditures directly related to the implementation of the funded grant activity will be reimbursed. Examples of eligible expenses can be found in the policies and procedures handbook. Vehicle purchases are eligible only when the purchase of the vehicle is an integral part of the funded grant activity and must be approved by the board at the time the award is made.

404.5(2) Ineligible expenses include but are not limited to:

a. Purchase or rental of buildings.

b Office equipment.

c Furniture and fixtures.

d Intangible assets.

e International travel.

f Insurance.

g Phone expenses.

404.5(3) Other budget requirements include the following:

a Indirect costs shall not exceed more than 20 percent of a grant award.

b IEC grant funds shall not be used as cost share to a federal grant award.

c Vehicle purchases or other vehicle-related expenses are not eligible if the purchase or expense supports the proposed grant activity but is not an integral part of the proposed grant activity. If a vehicle purchase is an integral part of a grant activity but a recipient fails to obtain board approval prior to the purchase, then the vehicle purchase is ineligible.

261—404.6(15) Application process and review.

404.6(1) The board will issue funding announcements for grant applications at least once per fiscal year, provided funds are available.

404.6(2) Application forms will be available at iowagrants.gov.

404.6(3) Applications will only be accepted during the established application period, as identified by the Iowa energy center on its website at www.iowaeconomicdevelopment.com.

404.6(4) The Iowa energy center will review applications and make funding decisions after each funding announcement. Review criteria typically include but are not limited to:

a The proposed project demonstrates a need for further research, development, training or pilots.

b The proposed project provides a benefit to ratepayers.

c The application has a well-developed budget that is relevant to the project and that provides documentation of planned project expenses.

d The application describes a dissemination plan for postgrant activities.

404.6(5) Applicants must first submit a preapplication. The authority will review the preapplication for eligibility and recommend preapplications to the grant committee. The grant committee will review the preapplications and determine which preapplications warrant submission of full applications.

404.6(6) An application may not be submitted to the Iowa energy center until a preapplication has been submitted to the Iowa energy center and the grant committee has approved submission of the application. The authority will review applications for completeness, eligibility, and technical and financial merit. The authority may engage an outside technical review panel to complete technical review of applications. The authority will prepare recommendations for the grant committee. The grant committee will review the applications and staff recommendations and make recommendations to the board. Upon review of the recommendations of the grant committee, the board shall approve, defer, or deny each application.

261—404.7(15) Administration.

404.7(1) *Notice of approval* The authority will notify successful applicants in writing of an approved request for funding. Notification will include the terms or conditions under which approval is granted.

404.7(2) *Agreement* After notifying the recipient of an award, the authority will issue an agreement. The agreement shall be between the recipient and the authority.

404.7(3) *Transmittal.* The recipient must execute and return the agreement to the authority within 45 days of the transmittal of the final agreement from the authority. Failure to do so may be cause for the board to terminate the award.

404.7(4) *Disbursement of funds* Recipients shall submit requests for grant funds in the manner prescribed by the authority. Disbursements shall be made on a reimbursement basis. No advance disbursements shall be allowed. Disbursements may be withheld if applicable performance reports have not been received and approved. Individual requests for funds shall be made in an amount equal to or greater than $500 per request, except for the final draw of funds.

404.7(5) *Record keeping and retention.* Recipients shall retain all financial records, supporting documents and all other records pertinent to the grant for five years after agreement closeout.

404.7(6) *Performance reports and reviews* Recipients shall submit performance reports to the authority as described in the policies and procedures handbook. The authority may perform annual project reviews and site inspections as necessary to ensure program compliance.

404.7(7) *Agreement amendments*

a Any substantive change to a funded IEC project, including time extensions, budget revisions, and alterations to proposed activities, will be considered an agreement amendment. The recipient shall request an amendment in writing. No amendment shall be valid until approved by the board, except as provided in paragraph 404.7(7)*"b"* and confirmed in writing by the authority.

b Staff approvals.

(1) Staff may approve one no-cost extension provided that the extension complies with subrule 404.4(5). Additional no-cost extensions shall be presented to the board for approval.

(2) Budget modifications. Any substantial modification of a project budget shall require board approval. Staff may approve budget modifications that are not substantial. For purposes of this subparagraph, "substantial modification" means a budget modification of either $10,000 or 10 percent of the total grant award, whichever is less.

404.7(8) *Agreement closeout* Upon agreement expiration or project completion, the authority shall initiate project closeout procedures.

404.7(9) *Compliance with state and local laws and rules* Recipients shall comply with these rules, with any provisions of the Iowa Code governing activities performed under this program, and with any applicable local rules.

404.7(10) *Noncompliance* At any time during a project, the IEC may, for cause, find that a recipient is not in compliance with the requirements of this program. At the board's discretion, remedies may include penalties up to and including the return of grant funds to the IEC. Findings of noncompliance may include the use of Iowa energy center funds for activities not described in the application; failure to complete approved activities in a timely manner; failure to comply with any applicable state or federal rules, regulations, or laws; or the lack of a continuing capacity of the recipient to carry out the approved project in a timely manner.

These rules are intended to implement Iowa Code section 15.120.

Attachment C

IOWA ENERGY CENTER BOARD
JANUARY 2019

ACTION

From: Legal

Subject: Adopt administrative rules for Alternate Energy Revolving Loan program (AERLP)

2017 Iowa Acts, chapter 169 amended Iowa Code section 476.46 and transferred the administration of the Alternate Energy Revolving Loan Program (AERLP) to the Iowa Energy Center created under section 15.120. Iowa Code section 15.120 requires the Energy Center board to adopt rules for the administration of the programs it administers.

The proposed new chapter will govern the administration of the AERLP. These rules create definitions, establish terms for loans, define eligible and ineligible borrowers as well as eligible and ineligible costs, and set forth the requirements for eligible projects. These rules also describe the application process and the administration of the loan program.

Public comments: The Board reviewed these proposed rules at its meeting on November 9, 2018 and approved the filing of a Notice of Intended Action. The rules were published on December 5, 2018. Staff has received one public comment on the rules, on subrule 402.2(1). The commenter suggested that the minimum loan amount of $25,000 was too high and recommended that the minimum loan amount should be $10,000 to $15,000. At this time, staff recommends that the minimum loan amount remain at $25,000.

Changes from Noticed version of rules: Staff and the Administrative Code Editor's office made changes to the rule making to correct grammar and improve clarity. No substantive changes have been made.

Proposed Motion: Adopt AERLP rules chapter

Submitted By: Kristin Hanks-Bents, Assistant Legal Counsel

Attachments: Proposed rules

Attachment D

ARC 4148C

ECONOMIC DEVELOPMENT AUTHORITY[261]

Adopt the following **new** 261—Chapter 405:

CHAPTER 405
ALTERNATE ENERGY REVOLVING LOAN PROGRAM

261—405.1(15) Definitions.

"Authority" means the economic development authority created in Iowa Code section 15.105.

"Board" means the governing board of the Iowa energy center established pursuant to Iowa Code section 15.120(2).

"Iowa energy center" or *"IEC"* means the Iowa energy center created within the economic development authority pursuant to Iowa Code section 15.120.

"Project" means an alternate energy production facility as defined in Iowa Code section 476.42 or a small hydro facility as defined in Iowa Code section 476.42.

261—405.2(15) Loan amounts and terms.

405.2(1) The minimum loan amount is $25,000 per project.

405.2(2) The board shall not lend more than 50 percent of eligible project costs as defined in rule 261—405.5(15).

405.2(3) A project shall be eligible for not more than $1 million in loans outstanding at any time under this program.

405.2(4) A borrower shall be eligible for not more than $1 million in loans outstanding at any time under this program.

405.2(5) The board shall not issue a loan that exceeds the value of the collateral provided.

405.2(6) Security for loans. The board will accept security for a loan. The following forms of collateral will be accepted:

a Real property;

b Dedicated certificate of deposit;

c Irrevocable letter of credit;

d Corporate guarantee;

e Other forms of collateral if approved by the board, and only if the forms of collateral listed in paragraphs 405.2(6)*"a"* to *"d"* are inadequate.

405.2(7) Term. The duration of the loan shall be for 20 years, the estimated useful life of the project that is financed by the loan, the terms of any other loans used to finance the project, or the estimated return on investment for the project, whichever is shortest.

261—405.3(15) Borrowers.

405.3(1) *Eligible borrowers* The project shall be wholly owned by the borrower. Eligible borrowers include:

a Persons whose primary residence is in Iowa.

b Businesses registered and domiciled in Iowa. For businesses organized as limited liability companies, each member of the limited liability company must be domiciled in Iowa and be an eligible borrower.

c Water and wastewater utilities subject to Iowa Code chapter 388, rural water districts subject to Iowa Code chapters 357A and 504, and sanitary districts subject to Iowa Code chapter 358.

405.3(2) *Ineligible borrowers.* Ineligible borrowers include:

a An organization that is lending to a project and also owns the project or is a member of an organization that owns the project.

b. An individual or an organization with a history of defaulted loans or compliance violations with other state programs or rules.

c Regents institutions.

d Community colleges.

e State agencies.

f Cities, but not water or wastewater utilities subject to Iowa Code chapter 388.

g Counties.

h School districts.

i Nonprofit organizations.

j Gas and electric utilities subject to Iowa Code chapter 388 or rural electric cooperatives subject to Iowa Code chapter 476.

261—405.4(15) Eligible projects. A proposed project must meet the following criteria to be eligible for a loan under this program:

405.4(1) The project shall be located in Iowa.

405.4(2) The project shall be an alternate energy production facility as defined in Iowa Code section 476.42 or a small hydro facility as defined in Iowa Code section 476.42.

405.4(3) The project shall be wholly owned by the borrower.

405.4(4) The borrower shall be the owner, contract purchaser or lessee of the real property where the project is located.

261—405.5(15) Eligible and ineligible costs.

405.5(1) *Eligible costs* Examples of eligible costs include:

a Real and personal property comprising a project;

b Materials and equipment required for necessary site preparation, construction and installation of a project;

c Labor for site preparation, construction and installation of a project. Only labor that is performed by a third party such as an independent contractor will be considered an eligible cost.

405.5(2) *Ineligible costs* Examples of ineligible costs include:

a Feasibility studies;

b Permits;

c Administrative costs not associated with site preparation, construction and installation of a project;

d Costs incurred prior to the board's approval of a loan;

e Interconnection costs;

f Costs associated with maintenance, operation or repair of a project; and

g Other costs that the board determines to be ineligible.

261—405.6(15) Application process.

405.6(1) Application forms shall be available at iowagrants.gov.

405.6(2) Applications will be accepted during an established application period, as determined by the board from time to time and as funds are available.

405.6(3) If an applicant intends to finance more than one project, the applicant shall include all proposed projects in a single loan application.

405.6(4) Authority staff will review applications for completeness, eligibility, and whether the proposed project meets the financial and technical requirements of the Iowa energy center. The board may engage an outside technical review panel to complete technical reviews of applications.

405.6(5) Authority staff will recommend applications to the loan committee. The Iowa energy center may request additional information from applicants to process the loan application. The loan committee will review the applications and staff recommendations and then make recommendations to the board. The board will approve, defer, or deny applications for loans. Authority staff may negotiate the amount, term, and other conditions of the loan prior to award.

405.6(6) The board will accept loan applications on a rolling basis. The board will make funding decisions at least once each quarter.

405.6(7) If, during any application period determined by the board, the demand for loans exceeds the funding available, the following competitive scoring criteria will be used:

a Applications for projects that employ novel, emerging or underutilized technology will be scored favorably.

b Applications for projects that increase geographic diversity for the loan program portfolio will be scored favorably.

c Applications for projects that provide a quicker return on investment and a shorter loan term will be scored favorably.

d Applications for projects that produce more renewable energy relative to the amount of the loan will be scored favorably.

261—405.7(15) Administration.

405.7(1) *Notice of approval* The authority will notify successful applicants in writing of an approved request for funding. Such a notification may include the terms or conditions under which approval is granted.

405.7(2) *Contract* After notifying the borrower of an award, the authority will offer a contract to the borrower. The contract shall be between the Iowa energy center and the borrower. An award shall not constitute a binding contract.

405.7(3) *Transmittal* The borrower must execute and return the contract to the authority within 45 days of the transmittal of the final contract from the authority. Failure to do so may be cause for the board to terminate the award.

405.7(4) *Disbursement of funds* Borrowers shall submit requests for disbursement of funds on the forms provided by the authority.

405.7(5) *Amendment.* Any substantive change to a project shall require an amendment to the contract. A substantive change to a project includes but is not limited to a change in the loan amount, loan term, or scope of work. The borrower shall request the amendment in writing. No amendment shall be valid until approved by the board. The authority may execute nonsubstantive or corrective changes to the contract without board approval.

405.7(6) *Closeout* Upon contract expiration or project completion, the authority shall initiate project closeout procedures.

405.7(7) *Record keeping and retention* Borrowers shall retain all financial records, supporting documents and all other records

pertinent to the loan for three years after the contract is closed or the loan is put in default and is not cured.

405.7(8) *Reporting and compliance* A start-up report is due to the authority within 30 days of the date that the project is placed in service. The report shall include but is not limited to documentation of installed costs of the project, one or more photographs, a sample invoice, and a description of any unexpected problems encountered during construction or installation of the project. The authority reserves the right to conduct a site visit of all awarded projects to ensure the projects were built as proposed and to provide verification of ongoing operation. The authority will monitor all loans to ensure that loan proceeds have been spent as identified in the contract and that all other sources of financing have been committed to the project. Borrowers shall be required to notify the authority of any change in ownership. Any loan made pursuant to this program shall become due for payment upon sale of the project for which the loan was made.

405.7(9) *Default*

a At any time during the construction of a project or the repayment of the loan, the authority may find that a borrower is in default under the terms of the loan contract. The authority will take prompt, appropriate, and aggressive debt collection action to recover any funds misspent by borrowers.

b If the authority determines that a borrower is in default, the authority may seek recovery of the loan plus interest or other penalties as authorized pursuant to Iowa Code section 476.46, negotiate alternative payment schedules, suspend or discontinue collection efforts and take action as the authority deems necessary.

c The authority shall attempt to collect the amount owed. Any negotiated settlement, write-off, or discontinuance of collection efforts is subject to final review by and approval of the board.

d If the authority refers a defaulted contract to outside counsel for collection, then the terms of the contract between the authority and the outside counsel regarding the scope of counsel's authorization to accept settlements shall apply.

These rules are intended to implement Iowa Code sections 15.120 and 476.46.

Attachment E

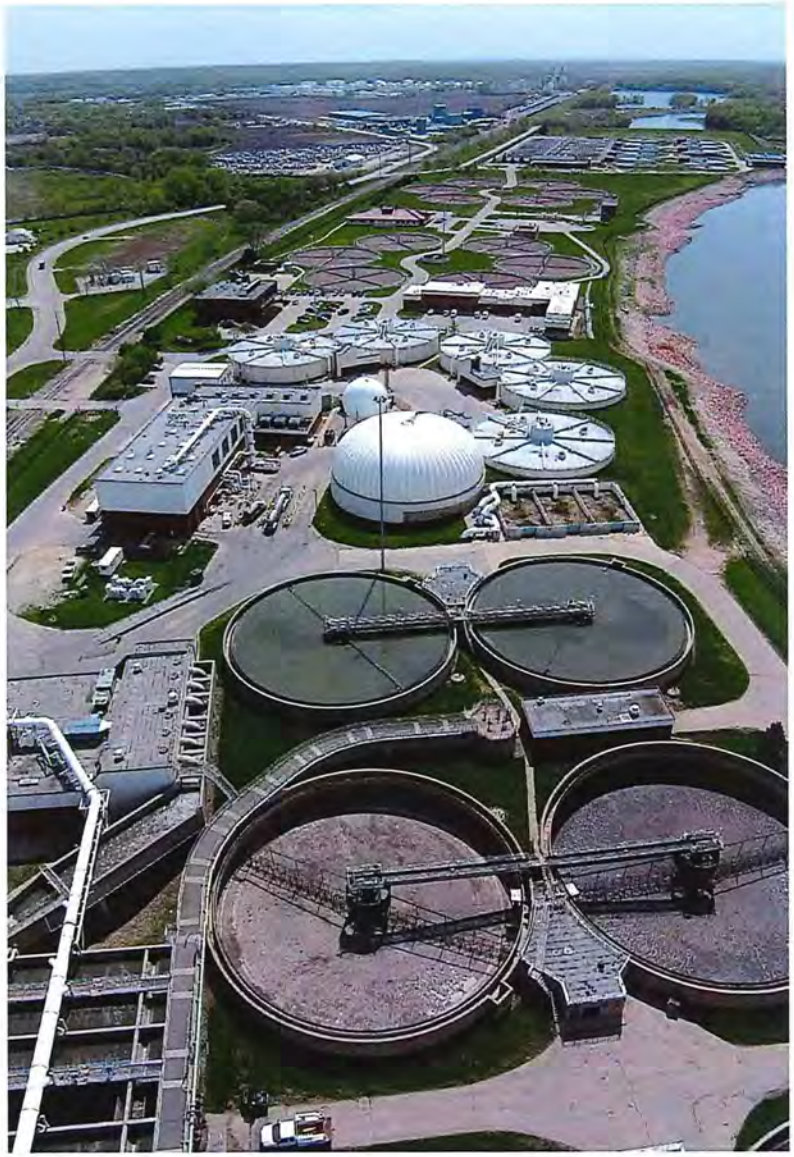
Financial Report
IEDA - Energy Center
Fiscal Year 2019

December 31,2018

	Energy Center Main Account			Revolving Loan Account		
Revenue	ISU Projects	IEDA Projects	Admin	Loans Rec ISU	Loans Rec IEDA	Admin
Cash Balance Forward	2,511,745	5,891,587	0	0	7,098,665	0
Current Year IUB Transfer	0	3,922,078	500,000	0	0	0
Principal Repayments YTD	0	0	0	(1,922,046)	1,922,046	0
Interest Revenue	0	52,982	0	0	0	45568
Other Revenue YTD	0	0	0	0	0	0
Deappropriations						
Other Transfers	0	0	0	0	0	0
TOTAL Revenue YTD	**2,511,745**	**9,866,647**	**500,000**	**(1,922,046)**	**9,020,711**	**45,568**
EXPENSES	ISU Projects	New Projects	Admin	ISU Projects	New Projects	Admin
Administration YTD	0	0	(119,697)	0	0	(306)
Project Payouts YTD	(635,231)	0	0	0	0	0
Leg Auth Transfers						
TOTAL EXPENSES YTD	**(635,231)**	**0**	**(119,697)**	**0**	**0**	**(306)**
OBLIGATIONS	ISU Projects	New Projects	Admin	ISU Projects	New Projects	Admin
Obligations/Receivables C/F	2,511,745	0	0	10,032,850	0	0
Current Year Obligations	0	0	0	0	0	0
Current Year Rescissions		0				
Current Year Payouts/Rcpts	(635,231)	0	0	(1,922,046)	0	0
Balance of Current Year Admin	0	0	380,303	0	0	45,262
Net Obligations & Receivables YTD	**1,876,514**	**0**	**380,303**	**8,110,804**	**0**	**45,262**
EST. BALANCE AVAILABLE	**0**	**9,866,647**	**0**	**0**	**9,020,711**	**0**

IEDA - Energy Center
Obligation Log
FY2019

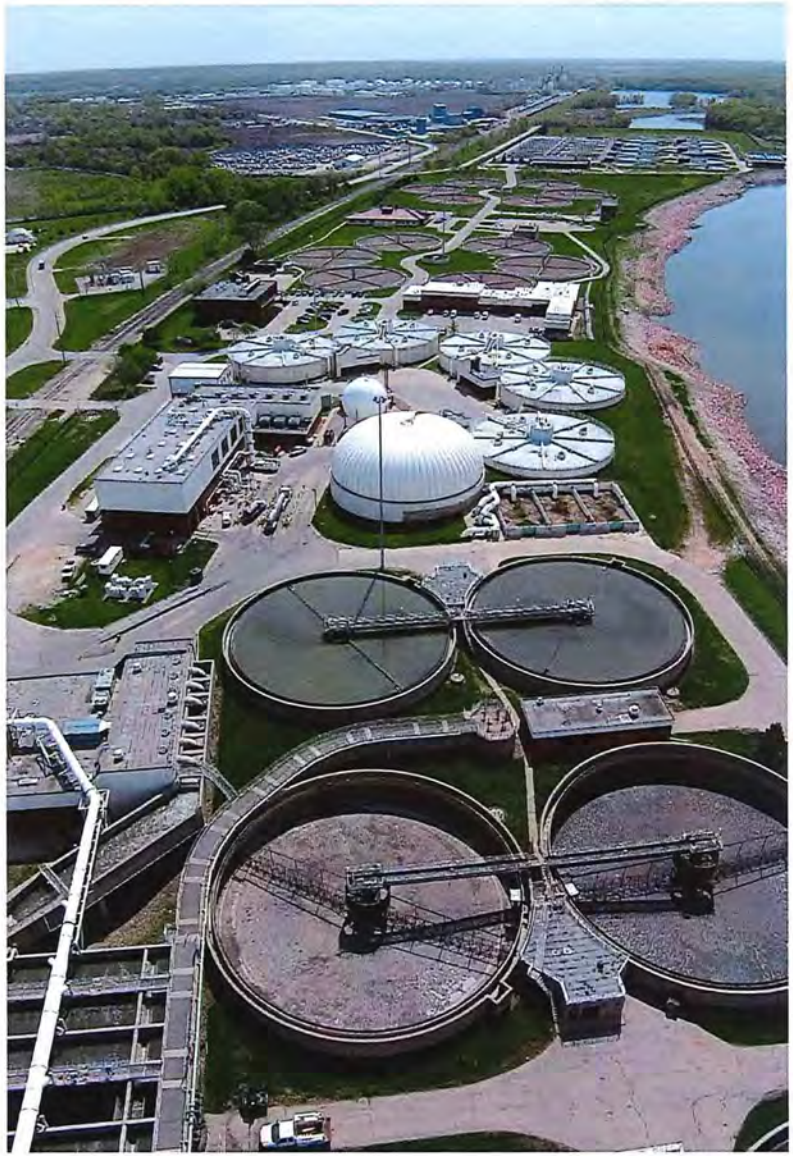
Project Name	Projects Awarded	loans Awarded	Recaptures	Balance
				0



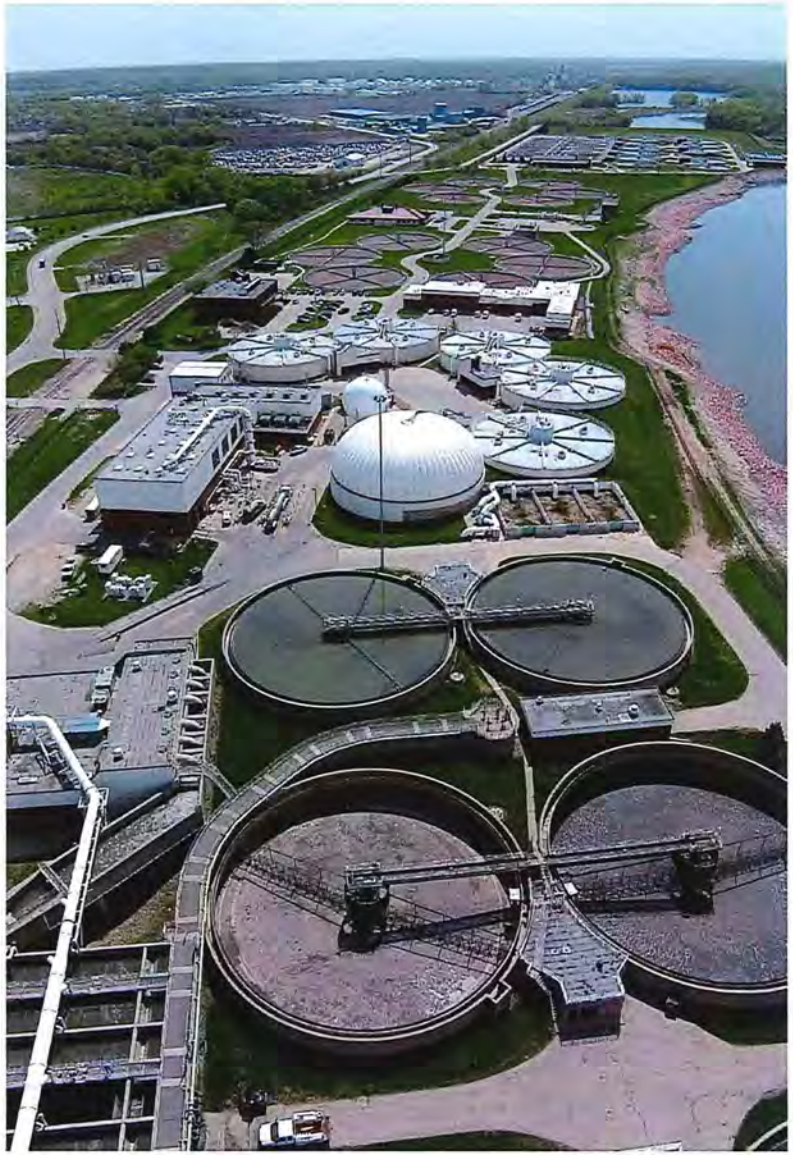
Attachment F

WRA Biogas Injection Project Presentation to Iowa Energy Center Board January 9, 2019

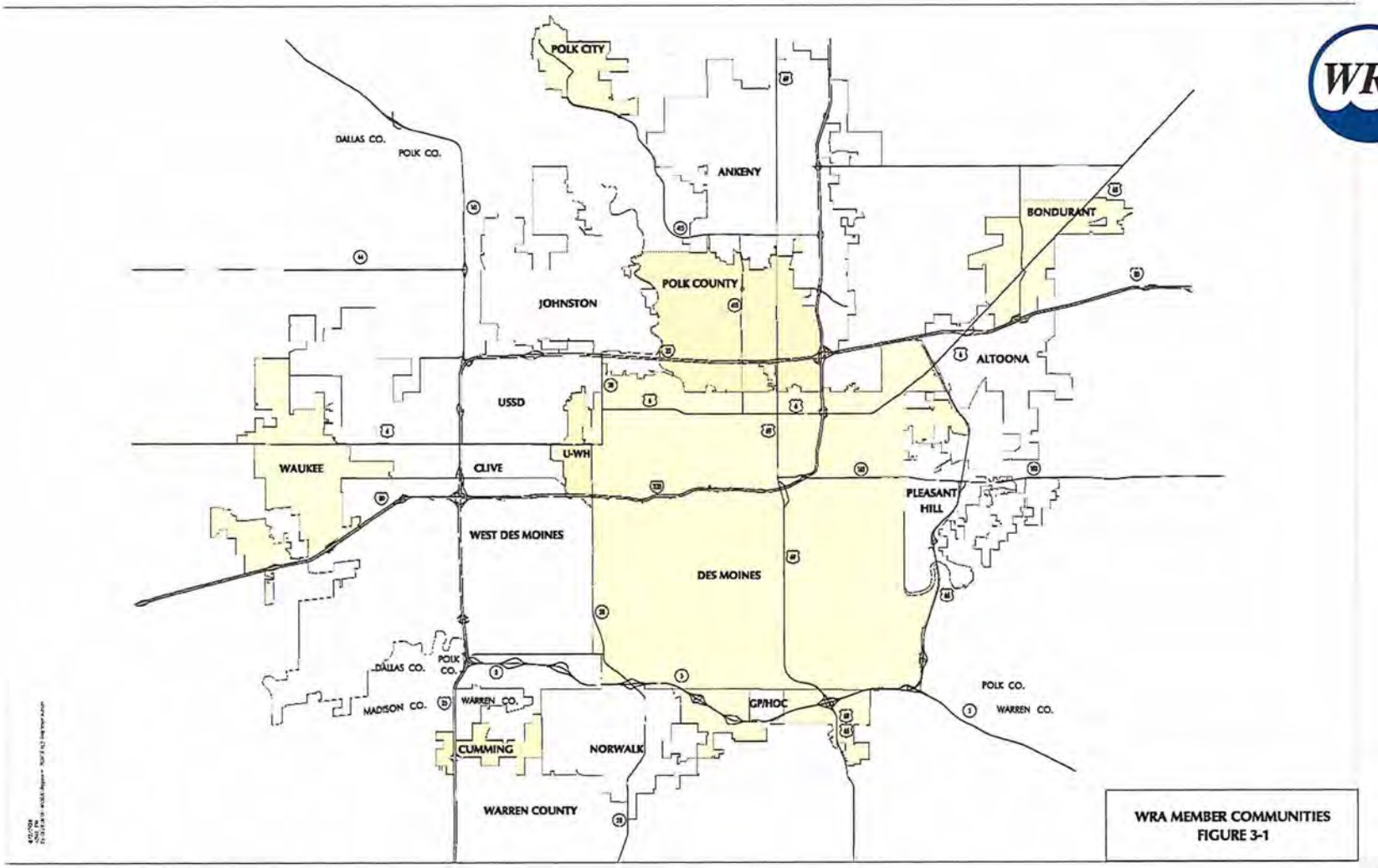
Scott Hutchens, P. E.
WRA Director



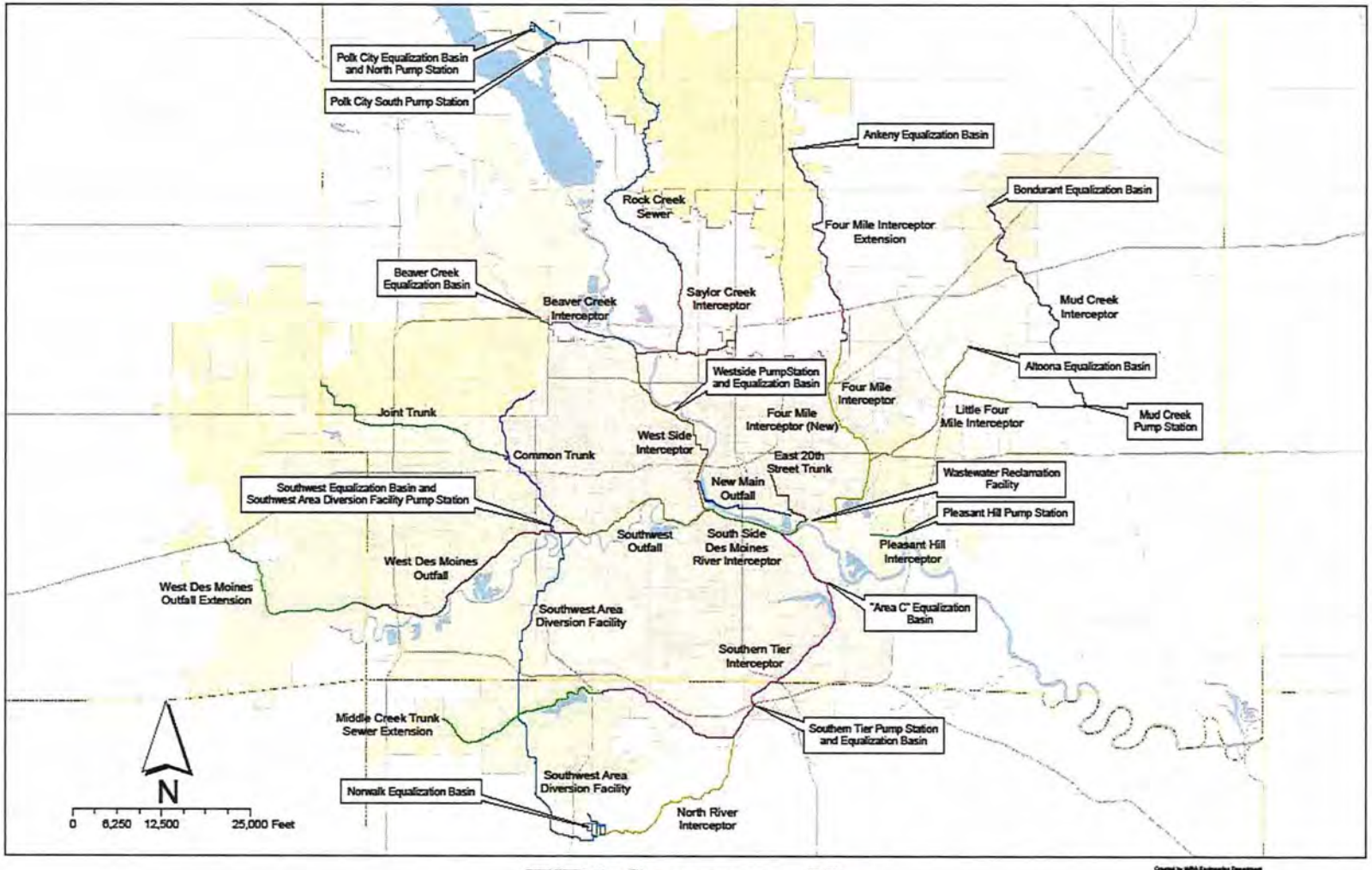
What is the WRA?



- The Des Moines Metropolitan Wastewater Reclamation Authority (WRA) is a regional wastewater conveyance and treatment utility made up of 17 member communities
- Governed by a 22 Member Board made up of representatives from the member communities
- The City of Des Moines serves as the operating contractor for the WRA.
- In addition to the Wastewater Reclamation Facility (WRF), the WRA operates and maintains approximately 150 miles of regional sewers as well as 15 pump stations and equalization facilities

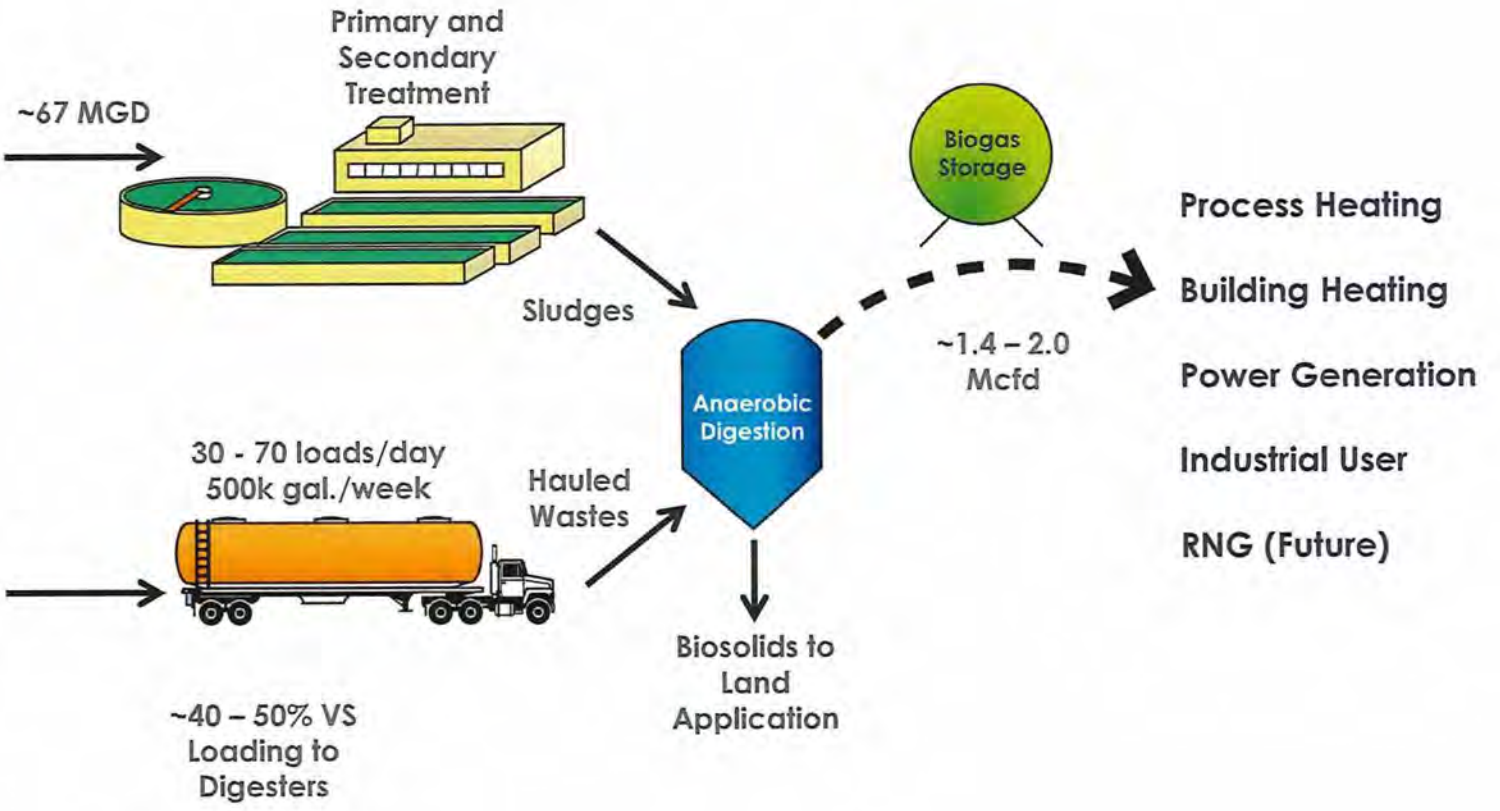


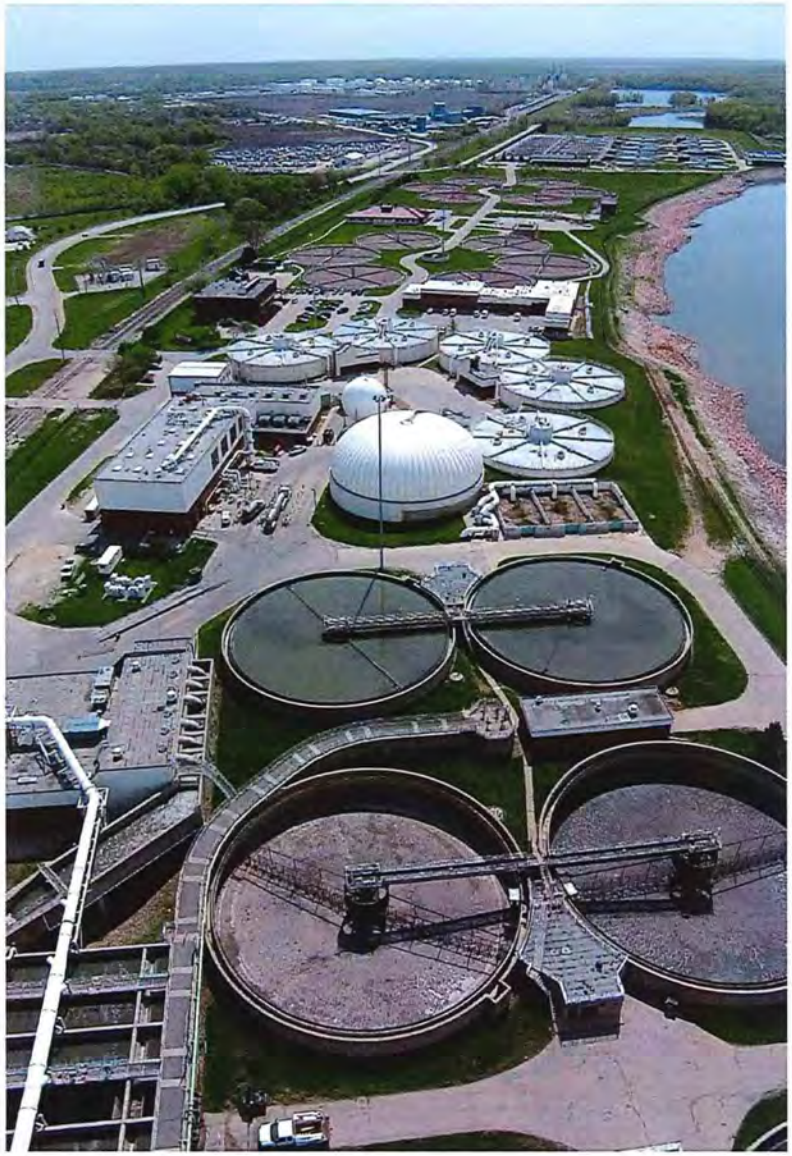
WRA MEMBER COMMUNITIES
FIGURE 3-1



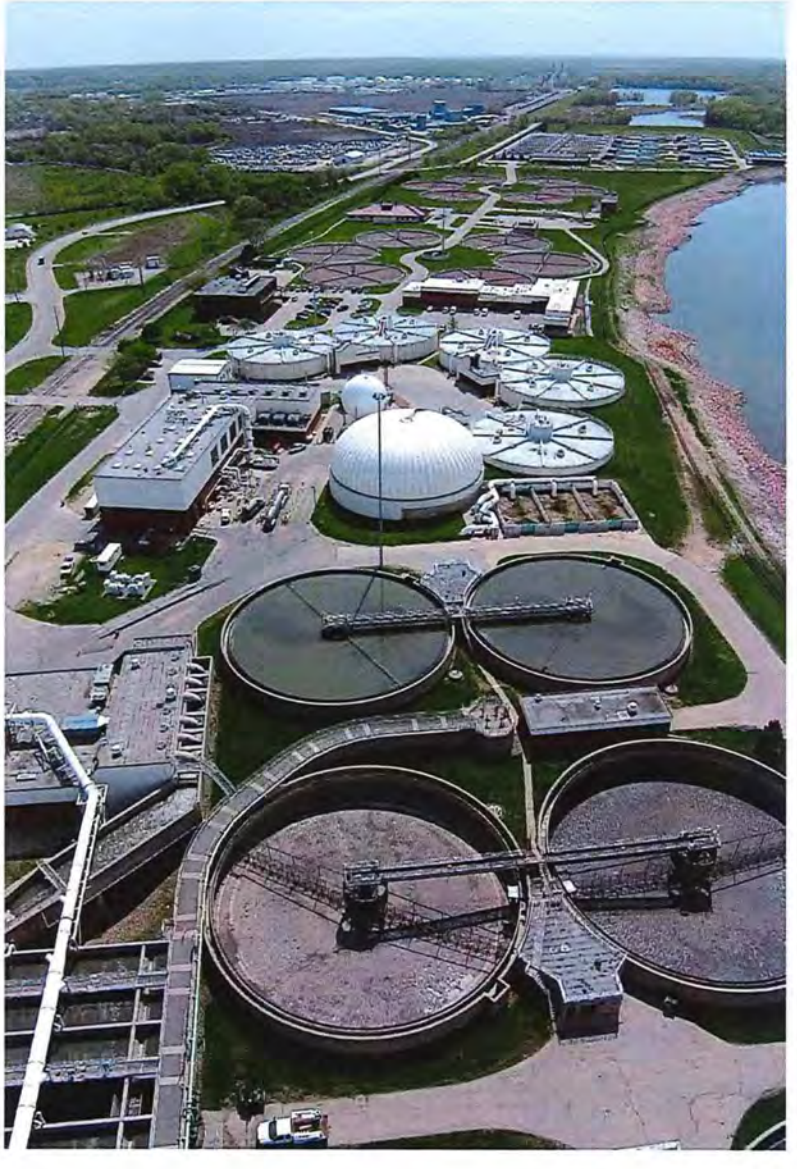
WRA Conveyance Map

Des Moines WRF Flow Schematic





Biogas Project Background

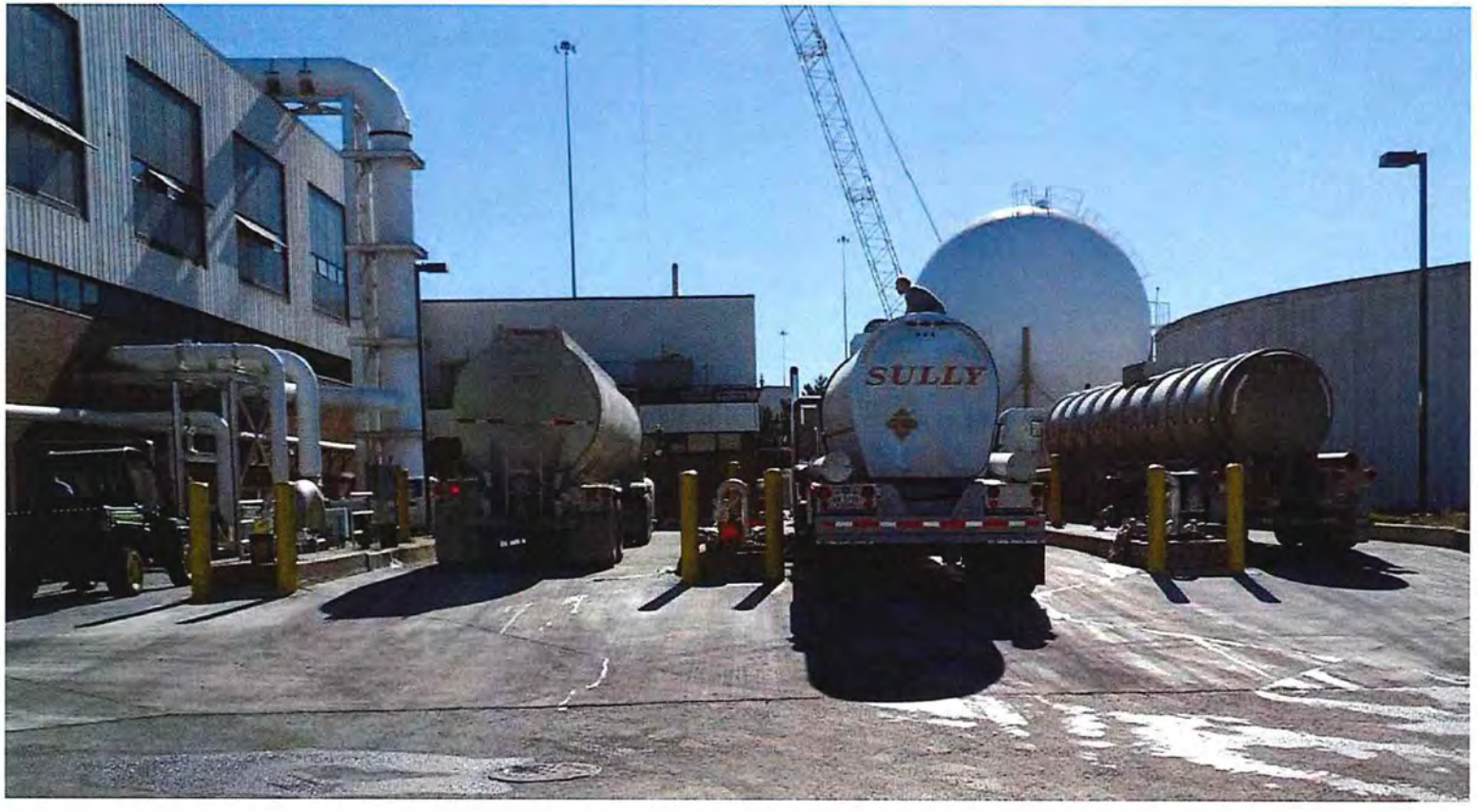


How is Biogas Produced?

Co-Digestion Waste Sources

- Restaurant Grease Trap / Interceptor Waste
- Dairy Waste
- Biodiesel Waste
- Slaughterhouse / Meat Processing Waste
- Lutein / Protein Waste
- Waste Soy Oil
- Sewage Sludge
- Sugar Waste
- Rendering / Gelatin Waste
- Corn Syrup / Mash

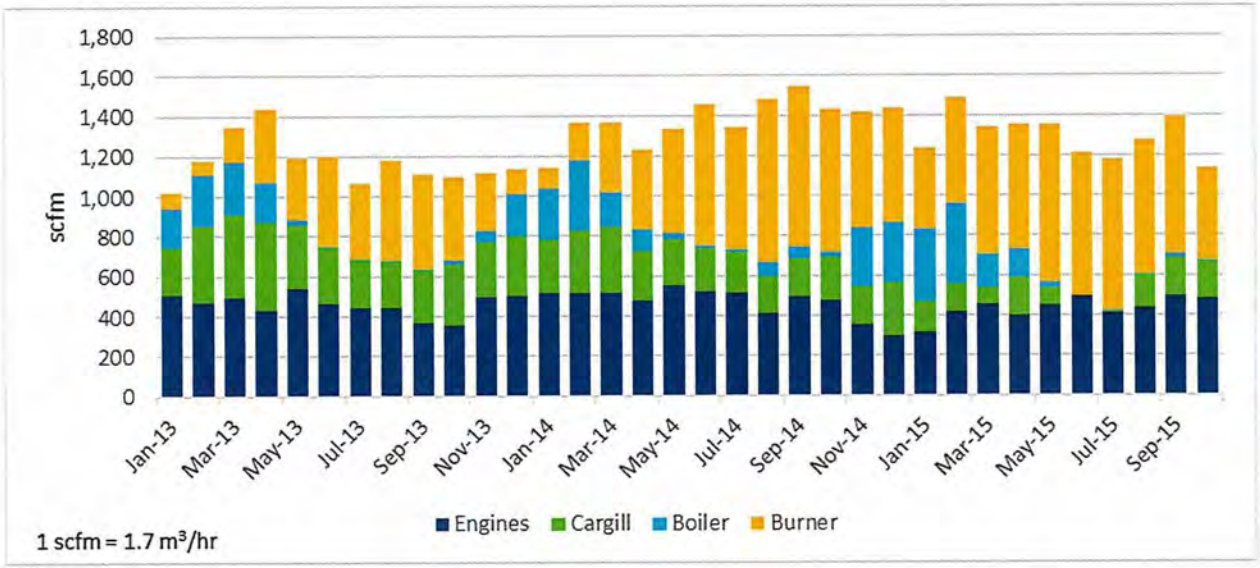
A Wastewater and Hauled Organic Waste Treatment Center



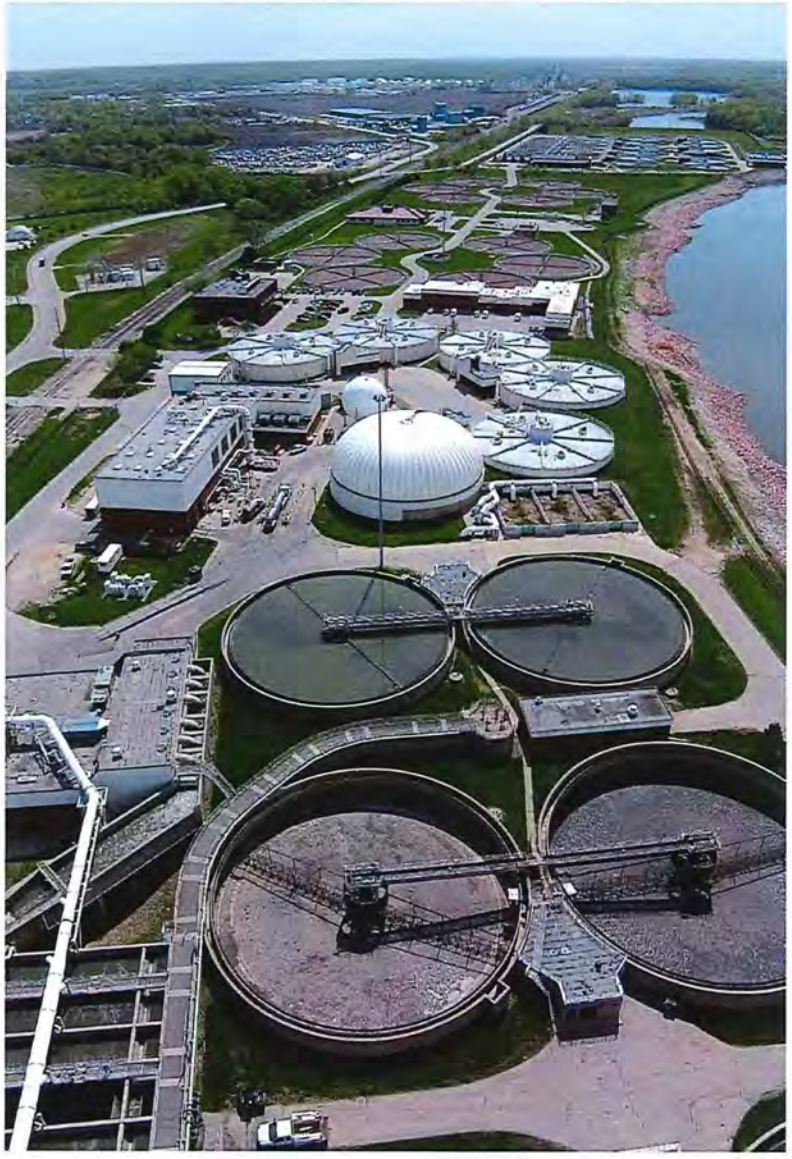
Biogas Production at Des Moines

- WRA is producing a significant amount of renewable fuel in digesters
- Capacity to increase biogas production with more hauled waste
- Changes in federal legislation are establishing renewable fuel standards, particularly for use in transportation fuels
- Environmental impacts of biogas
  - Biomethane production is carbon-neutral (does not add to greenhouse gas emissions)
  - Reduces consumption of natural gas, thus lowering CO_2 emissions
- Supports sustainability initiatives and goals of City of Des Moines and WRA

Average Digester Gas Utilization



Process Overview
&
Project Design



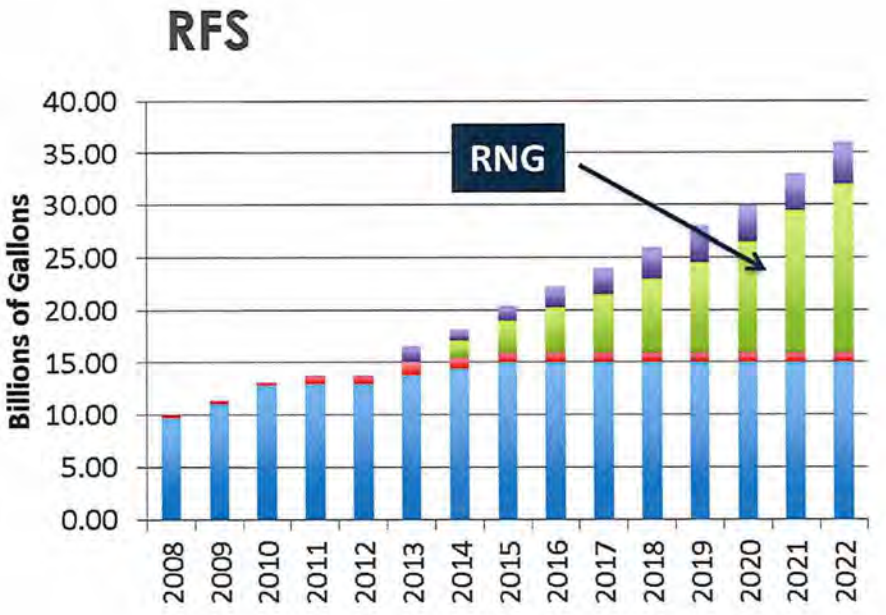
WRA Hired CDM Smith a Consultant to evaluate the Biogas Injection Project

That Evaluation resulted in the following conclusions:

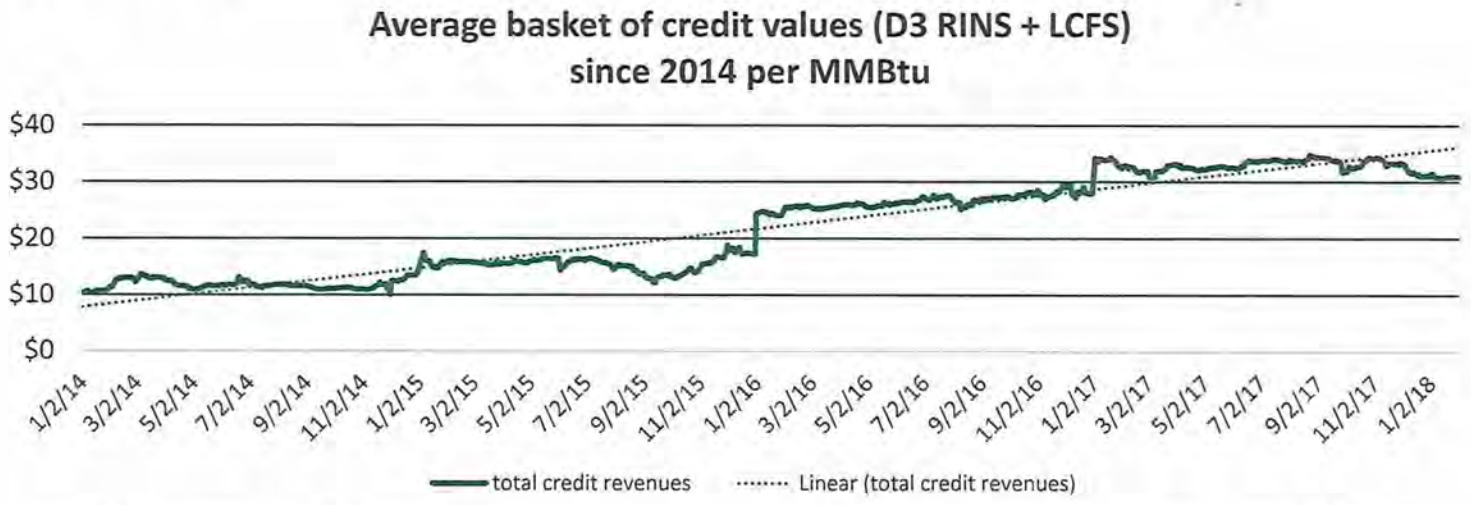
- Assisted the WRA in the development of a framework and roadmap for the sale of biogas produced by the WRA to third parties
- Determined that the biogas injection project would be economically feasible for the WRA
- Identified project economic drivers and key assumptions

RFS Program Opportunities

- Renewable Fuel Standards (RFS) program
- Renewable transportation fuels
- Renewable Identification Numbers (RINs)
- Low Carbon Fuel Standard (LCFS) credits



Renewable Identification Number (RINs)



- **RINs and renewable fuel credits**
- **RIN classifications by fuel type ("D"-codes)**
- **D3 RINs (municipal wastewater)= High Value**
- **D5 RINs (organic waste) = Low Value**

Development of Bioenergy Model

Financial Inputs

Electricity Cost, $/kwh	$0.0616
Natural Gas Purchased, $/MMBtu	$6.86
Labor, $/hr	$60
Water, $/100 gal	$0.40
Lube Oil, $/gal	$15
Polymer, $/5 gal	$700
Air Emissions Fee, $/ton	$56
Discount Factor	5%
RIN Inflation, %/yr	5%
Utilities Inflation, %/yr	5%
Labor Inflation, %/yr	5%
Maintenance Inflation, %/yr	5%
MidAmerican Tariff Inflation, %/yr	5%
Air Emissions Fee Inflation, %/yr	5%

Raw Gas Data

Raw Gas, %CH_4	65%
Raw Gas, H2S ppmv	4000
Raw Gas Flow Growth, %	0%

Sales Gas Economics

Renewable Gas Sold, $/MMBtu	$5.00
Monthly Customer Charge, $/month	$1,315
Commodity Charge, $/therm transported	$0.00495
Demand Charge, $/MDR therm/month	$0.52886

Environmental Attributes

RIN Value, $/RIN	$0.65
RIN Conversion, RIN/MMBtu	11.727
RIN Value, $/MMBtu	$7.62

Percent of Gas Accepted

1500 SCFM System	99.1%
2250 SCFM System	100.0%

Process Information

	PSA 1500	PSA 2250	WS 1500	WS 2250
% Recovery	95%	95%	98%	98%
Sales Gas %CH_4	97%	97%	96.2%	96.2%
Sales Gas HHV, BTU/cf	980	980	970	970
Water, gpm	0	0	7.7	4.4
Connected Load, hp	948	1294	842.9	1216.3
Natural Gas, MMBtu/day	48	72	0	0
Polymer, gal/yr	0	0	5	7.5
Compressor Heat Recovery, MMBtu/hr	0	0	0.0	0.0
Tail Gas Heat Recovery, MMBtu/hr	3.4	5.1	0.0	0
Lube Oil, gpd	Included below		4	6.5
Preventative Maintenance, $/yr	$72,000	$91,260	$50,500	$50,500
Labor, hr/yr	0	0	0.0	0.0
Downtime, hr/yr	0	0	0	0

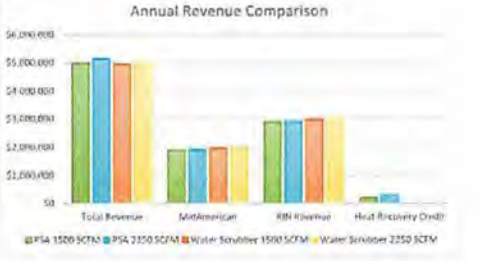
Initial Investment

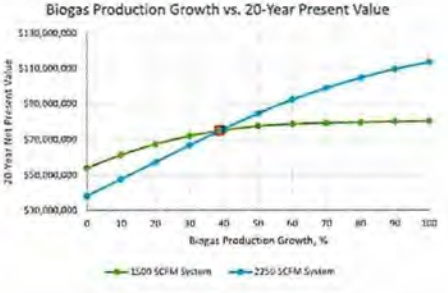
	PSA 1500	PSA 2250	WS 1500	WS 2250
Equipment Capital, $	$2,350,000	$3,042,000	$2,556,000	#########
Thermal Oxidizer, $	$497,000	$643,351	$350,055	$477,696

See "Capital" tab for more details

20-Year Economics, Present Value

	PSA 1500	PSA 2250	WS 1500	WS 2250
Capital	$9,855,000	$11,921,000	$9,475,000	$12,086,000
Total Annual Costs	$36,304,000	$52,772,000	$33,288,000	$36,665,000
Total Annual Revenue	$100,162,000	$103,050,000	$98,914,000	$99,784,000
20 Year Overall Revenue	$54,003,000	$38,357,000	$56,151,000	$51,033,000
Payback Period, months	37	57	35	46





Design Criteria

- Inlet Biogas Flow: 2250 SCFM

Component	Digester Gas	Pipeline Specification
BTU Content	~660 BTU/scf	> 950 BTU/scf
Carbon dioxide	35%	< 3% by volume
Nitrogen	0.7%	< 4% by volume
Total Inerts (N_2 + CO_2)	~36%	< 5% by volume
Oxygen	<0.2%	< 0.3% by volume
Water	Saturated	< 5 lb/mmscf
Hydrogen sulfide	Actual: 50-600 ppm Design: 6,000 ppm	< 0.25 grain/Ccf
Total Sulfur	N/A	< 20 grain/Ccf
Volatile Organic Compounds	10-30 ppm	0 ppm

WRA

WRA

- CDM Smith evaluated various biogas treatment technologies and provided recommendations to the WRA for equipment selection

Water Scrubber

Membranes

PSA

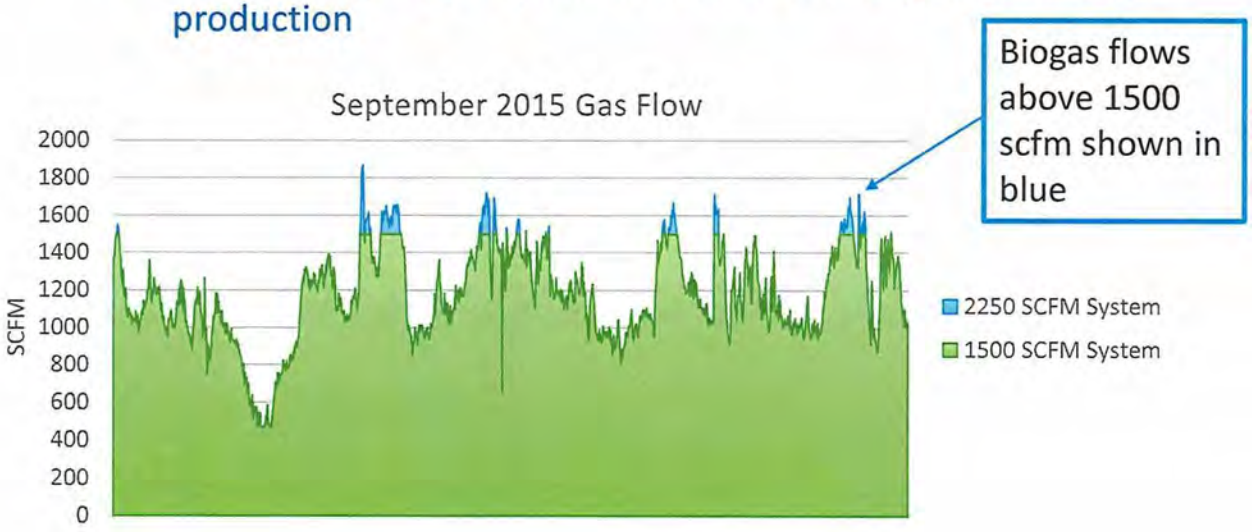
Pressure Swing Adsorption (PSA)

After comparison of the three technologies, PSA was selected due to:

- *High number of installations in the U.S.*
- *Low performance risk factor*
- *Ease of operation and maintenance*
- *Simplicity of equipment*
- *Proven and reliable system*

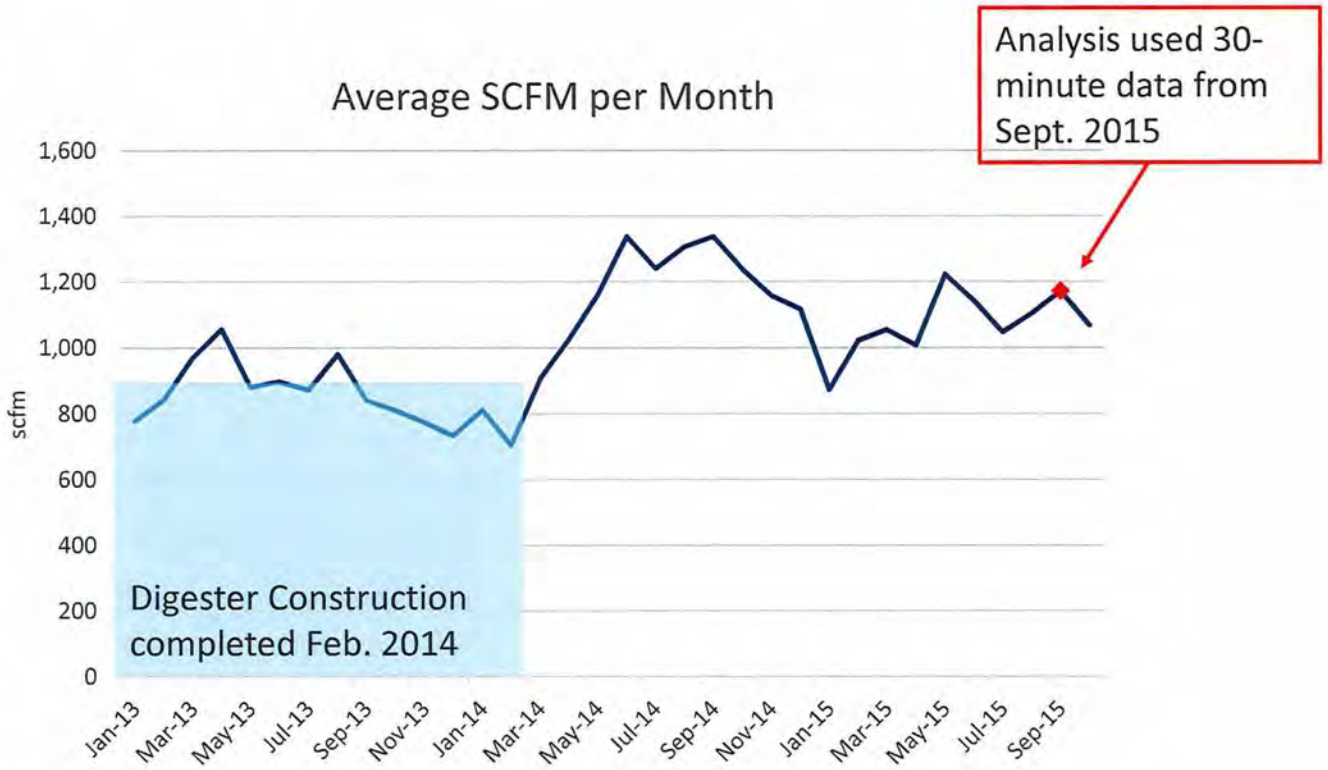
Evaluating System Capacity

- Original approach was to size system for 1,500 scfm of digester gas production
- Digester gas production is highly variable due to hauled waste acceptance
- Economic benefits to size system to capture peak biogas production
- Additionally, larger system allows for future growth in biogas production

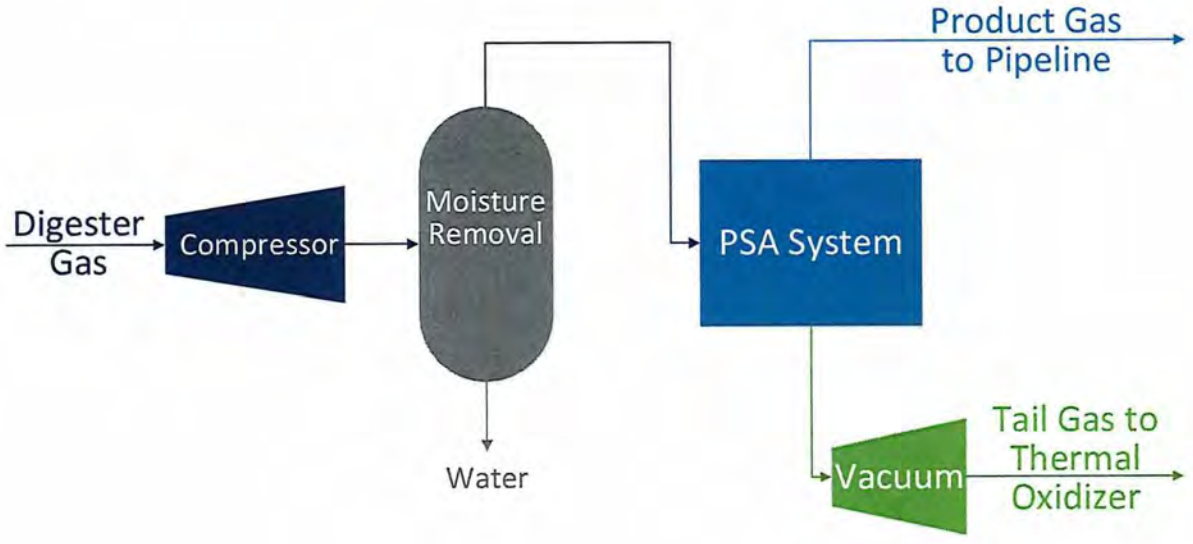



Existing Biogas Production + 15%
Existing Biogas Production + 30%
Existing Biogas Production + 50%
Existing Biogas Production + 70%
SCFM
3000
2500
2000
1500
1000
500
Unused Gas
2250 SCFM System
1500 SCFM System

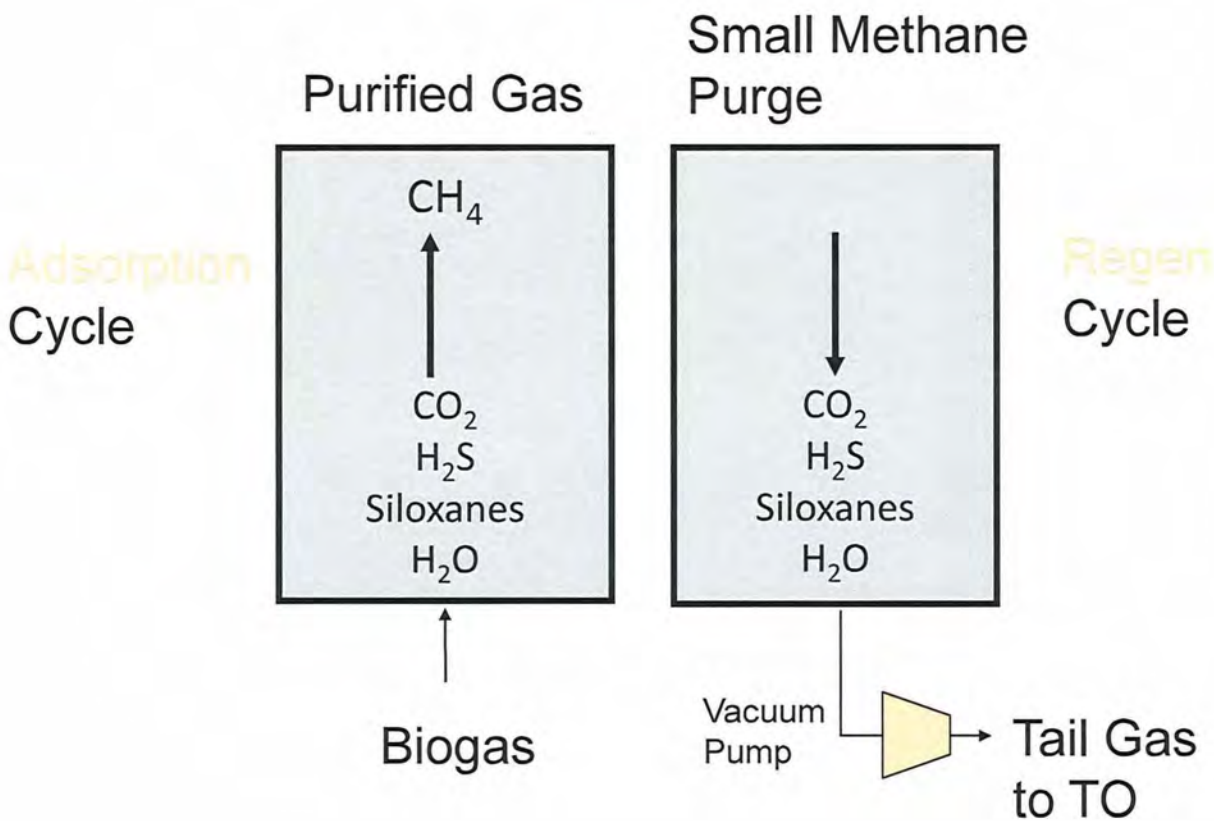
Average Monthly Biogas Production



Pressure Swing Adsorption (PSA)



PSA Flow Schematic



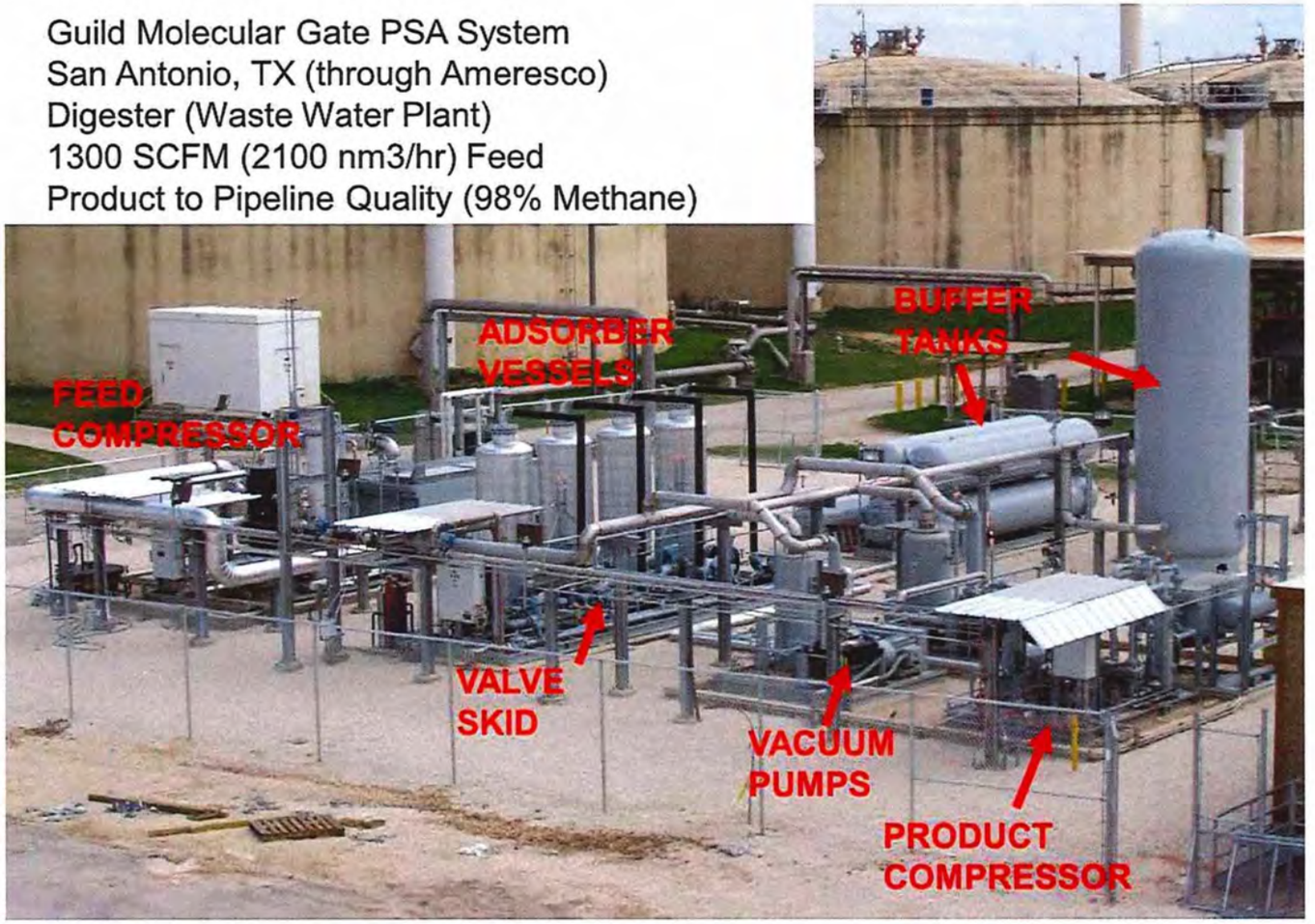
Pressure Swing Adsorption (PSA)

- System Description
  - *Biogas is pressurized to flow up through the adsorption vessels*
  - *Contaminants are trapped by media designed to not capture CH_4*
  - *Vacuum is applied to depressurize (i.e.; pressure swing) after adsorption to purge contaminants from vessel in tail gas stream*
  - *Process is batch but use of multiple vessels and rotary valve allow continuous flow*
- Typical Components
  - *Compressor*
  - *Water Separator*
  - *Air Fan Cooler*
  - *Adsorber Vessels and Valve Skid*
  - *Vacuum Pumps*
  - *Buffer Tanks*

Zeolite Media

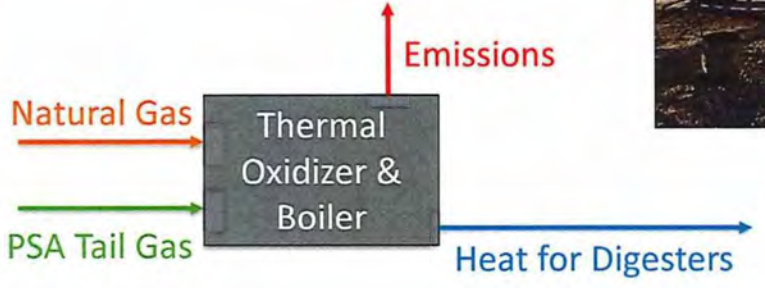
Adsorber Vessels and Valve Skid

Guild Molecular Gate PSA System
San Antonio, TX (through Ameresco)
Digester (Waste Water Plant)
1300 SCFM (2100 nm3/hr) Feed
Product to Pipeline Quality (98% Methane)



Thermal Oxidizer (TO)

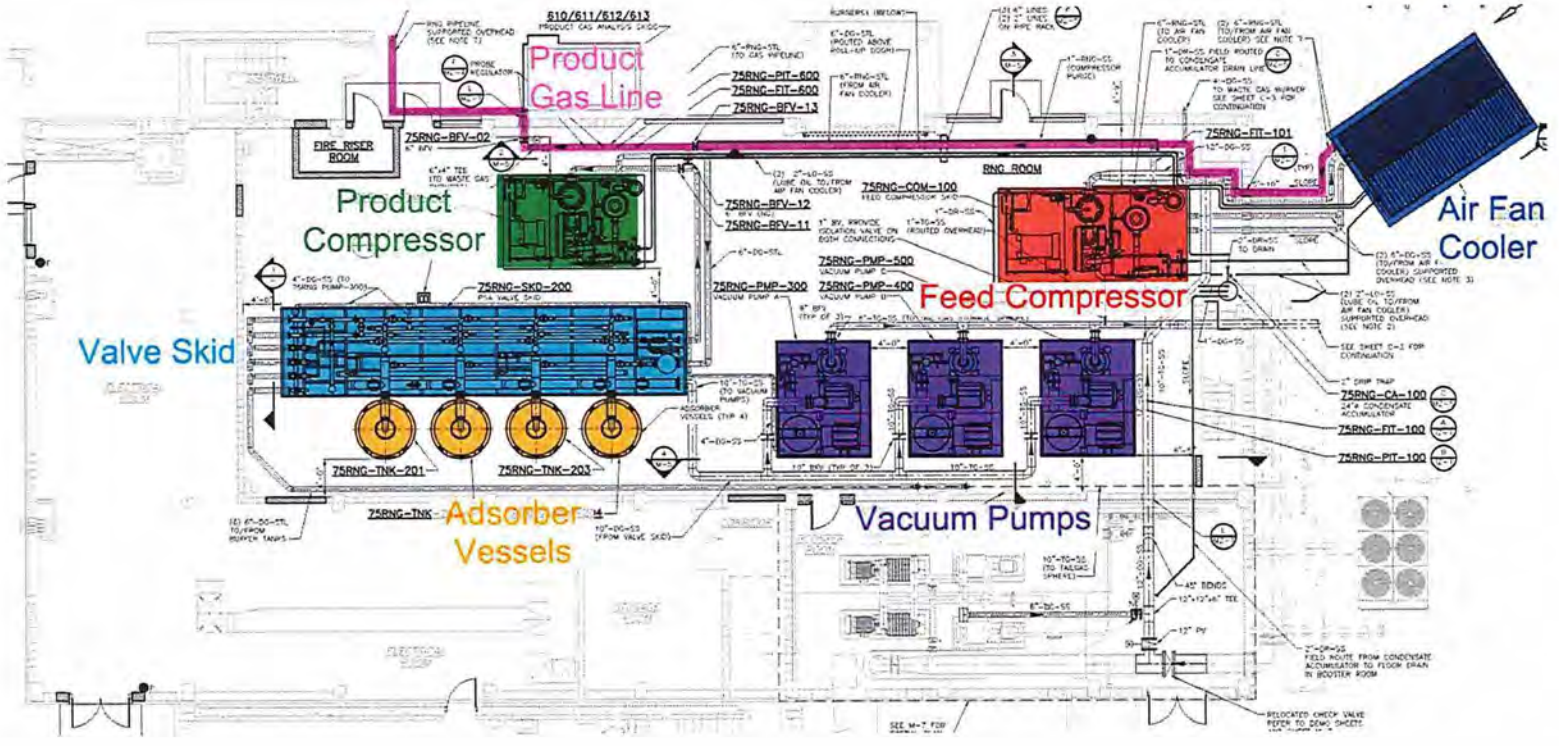
- Purpose: combust remaining methane in tail gas from PSA & recover heat
- Major Components
  - *Burner*
  - *Stack*
  - *Boiler (Required for heat recovery)*
- Sold by third party

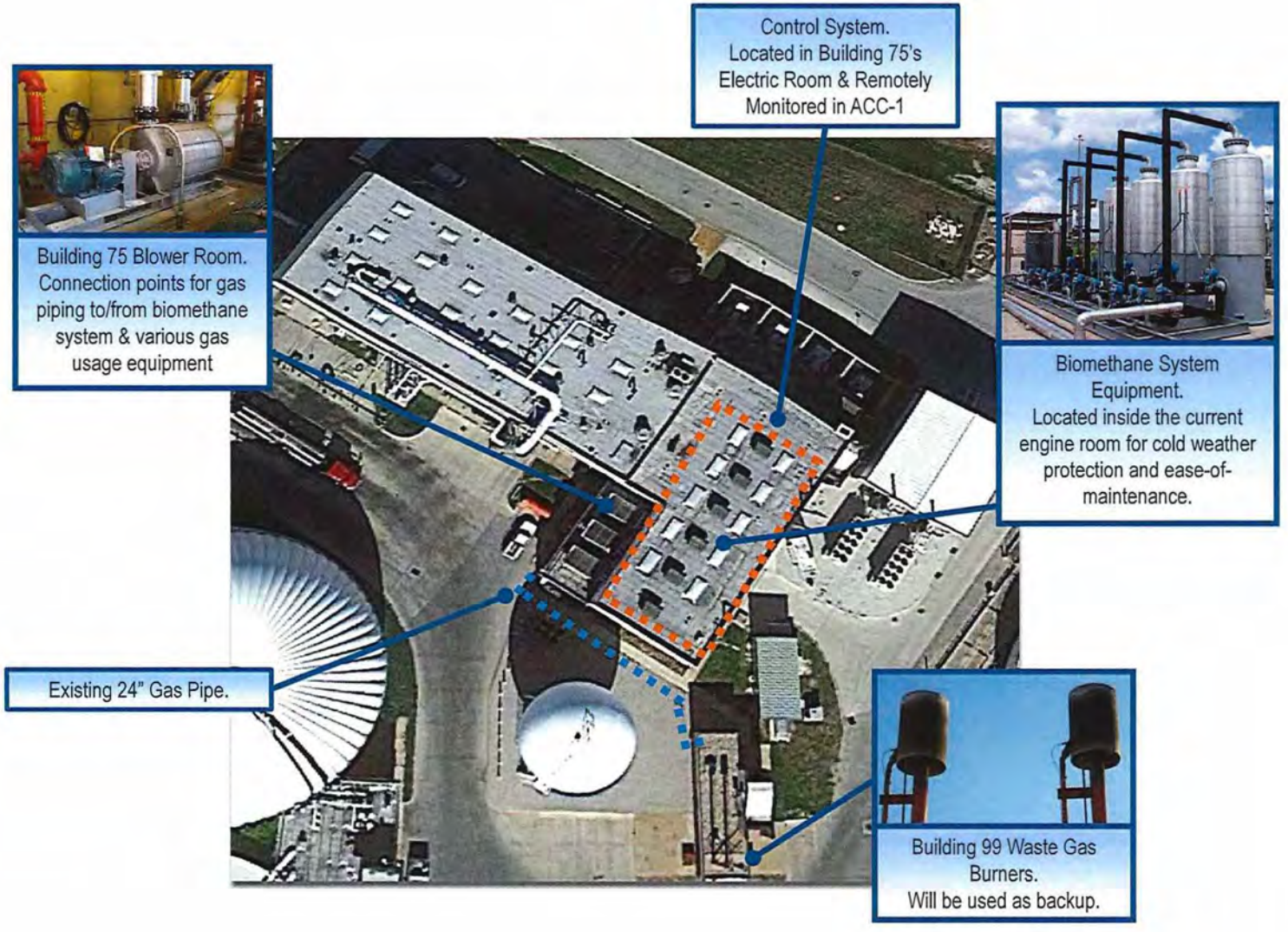


System Location

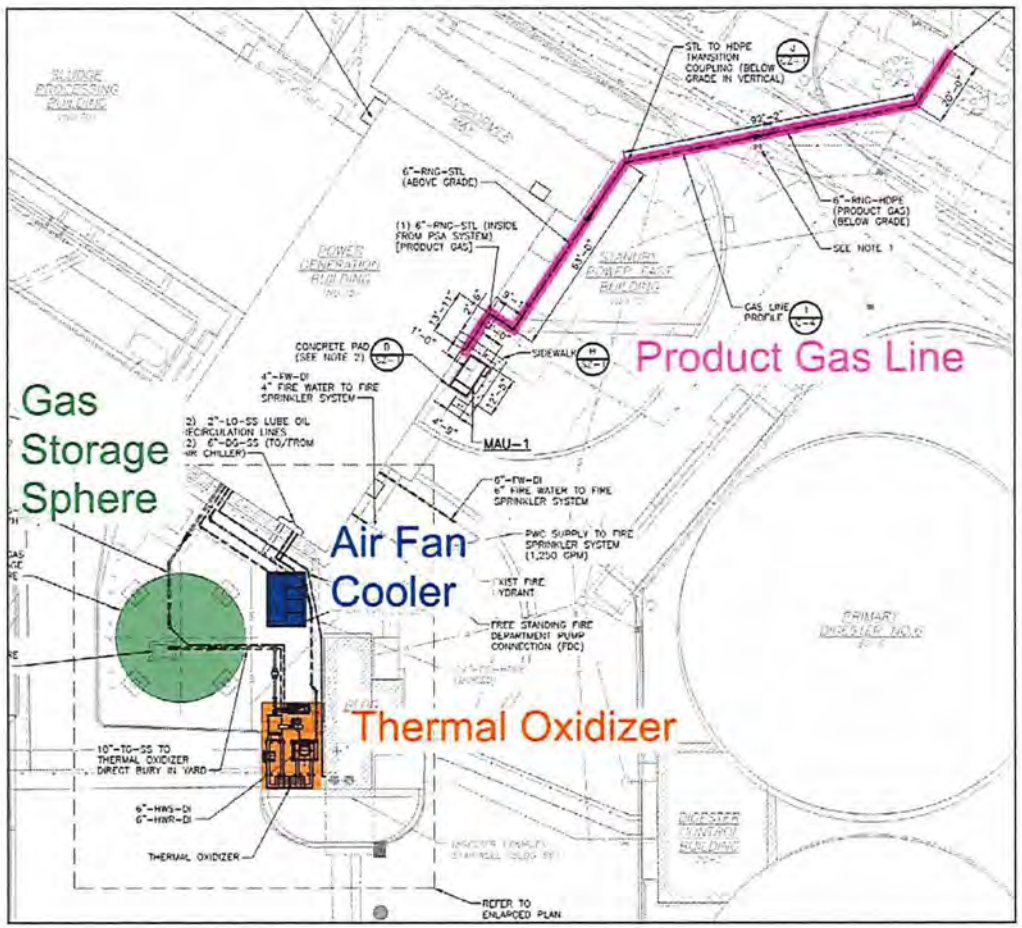
- PSA System will be located both indoors and outdoors
  - *Increased installation cost due to difficulty of retrofitting Building 75*
- Demolition of engines and gas sphere required
- Insufficient space in Building 75 for all equipment
- System components will require interconnection piping
- Protection from the elements

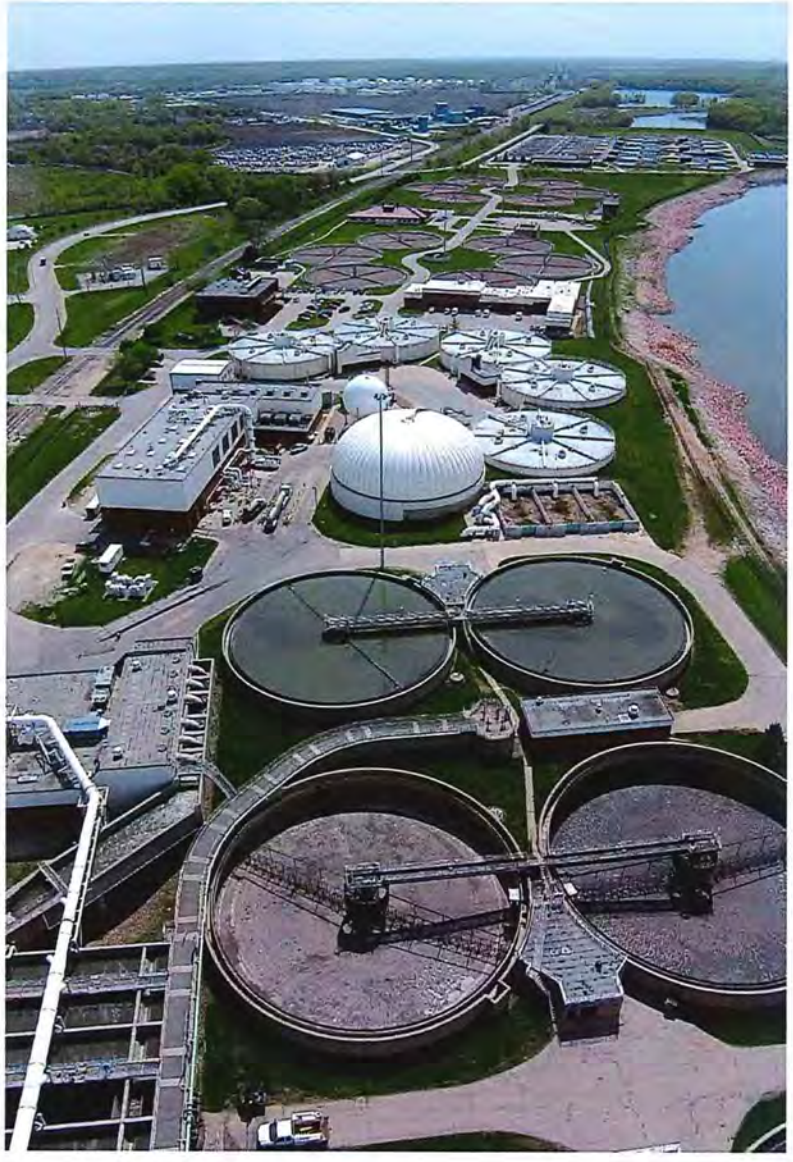
System Layout




Control System.
Located in Building 75's Electric Room & Remotely Monitored in ACC-1
Building 75 Blower Room.
Connection points for gas piping to/from biomethane system & various gas usage equipment
Biomethane System Equipment.
Located inside the current engine room for cold weather protection and ease-of-maintenance.
Existing 24" Gas Pipe.
Building 99 Waste Gas Burners.
Will be used as backup.

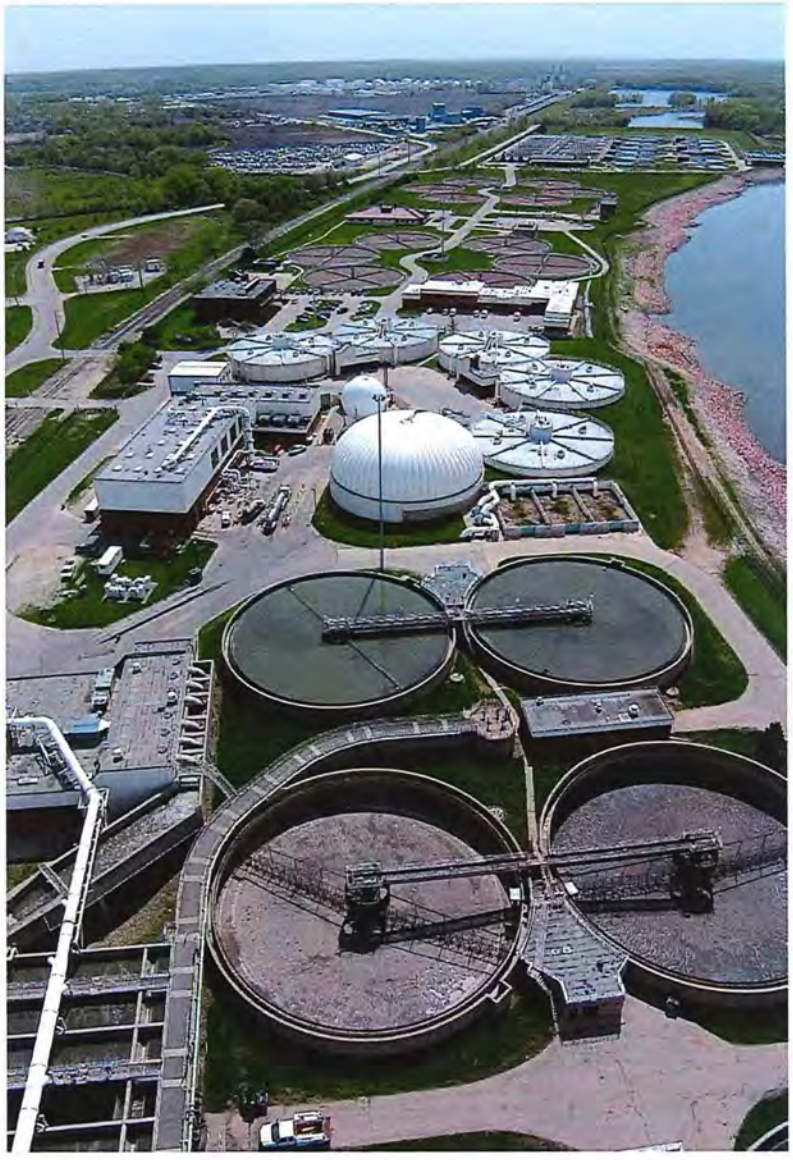
Site Plan


Gas Storage Sphere
Air Fan Cooler
Thermal Oxidizer
Product Gas Line
STL TO HDPE TRANSITION COUPLING (BELOW GRADE IN VERTICAL)
6"-RNG-STL (ABOVE GRADE)
(1) 6"-RNG-STL (INSIDE FROM PSA SYSTEM) (PRODUCT GAS)
6"-RNG-HDPE (PRODUCT GAS) (BELOW GRADE)
SEE NOTE 1
GAS LINE PROFILE
CONCRETE PAD (SEE NOTE 2)
SIDEWALK
4"-FW-DI 4" FIRE WATER TO FIRE SPRINKLER SYSTEM
MAU-1
6"-FW-DI 6" FIRE WATER TO FIRE SPRINKLER SYSTEM
PWC SUPPLY TO FIRE SPRINKLER SYSTEM (1,250 GPM)
WET FIRE HYDRANT
FREE STANDING FIRE DEPARTMENT PUMP CONNECTION (FDC)
10"-TO-SS TO THERMAL OXIDIZER DIRECT BURY IN YARD
6"-HWS-DI 6"-HWR-DI
THERMAL OXIDIZER
REFER TO ENLARGED PLAN



Current Project Status:

- Project Bid Opening: May 1, 2018
- Construction Substantial Completion: January 17, 2020
- Design Cost: ~$2.5M
- Construction Costs: ~$15.5M
- Anticipated Project Payback: ~4 to 6yrs



Questions?

Scott Hutchens, P.E.
Assistant Public Works Director - WRA
WRA Director
Wastewater Reclamation Facility
3000 Vandalia Road, Des Moines, IA 50317
515-323-8031 work | 515-208-2975 cell
sthutchens@dmgov.org|www.dmgov.org|www.dmmwra.org

Attachment G

GREATER DUBUQUE
DEVELOPMENT

Iowa Economic Development Authority

January 9, 2019

Black Hills Energy
Improving life with energy

Renewable Natural Gas:

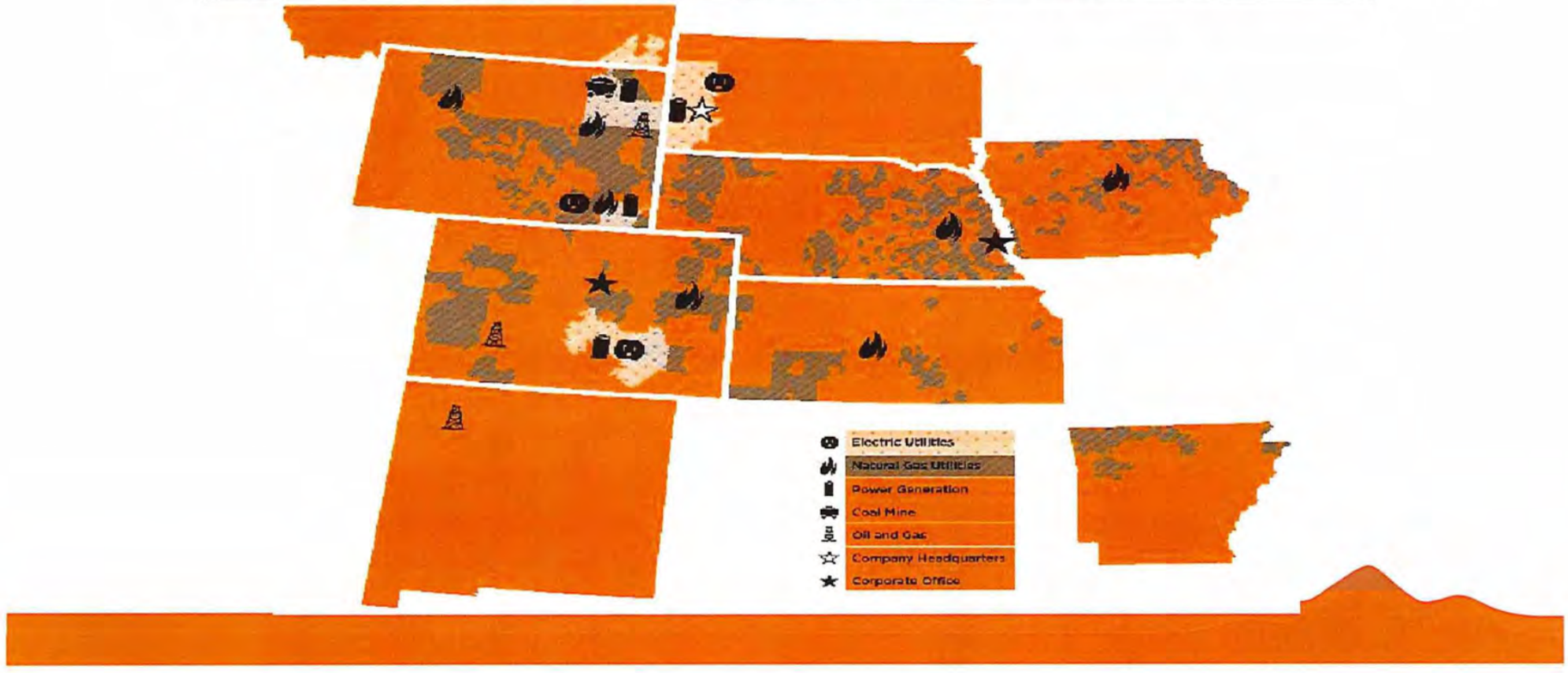
Waste-to-Energy Opportunities

Black Hills Energy

Improving life with energy

Black Hills Corporation

Based in Rapid City, SD, we serve more than 1.2 million electric and natural gas utility customers in Arkansas, Colorado, Iowa, Kansas, Montana, Nebraska, South Dakota and Wyoming. The company also generates wholesale electricity and produces natural gas, crude oil and coal. Our employees partner to produce results that are *"improving life with energy"*.



What is Biogas/Landfill Gas?

Mixture of different gases produced by an **anaerobic process** (breakdown of organic matter in the absence of oxygen)

Organic materials are the "feedstock" and include animal manure, food scraps, agricultural residues, sewage, or solid (landfill) waste

Produced by either:

1. Anaerobic **digestion** with anaerobic bacteria in a closed system, or
2. Breakdown of wet, biodegradable waste inside a **landfill** due to chemical reactions and/or microbes (cover mechanically compresses waste and prevents exposure to oxygen)

Primarily **methane** (40-60%) and **carbon dioxide** (40-50%), with small amounts of oxygen, nitrogen, hydrogen sulfide, and non-methane organic compounds

Renewable energy source for direct use, generating electricity, alternative vehicle fuel or injection into natural gas pipelines

Renewable Natural Gas (RNG)

Raw biogas or landfill gas is processed or purified to **remove contaminants** (primarily carbon dioxide and hydrogen sulfide)

Following purification, RNG contains > **90% methane** and **~950 Btu**

RNG is **comparable** to traditional natural gas

- Stringent specifications and testing insure **quality**

Why is RNG important?

- "**Greens**" the natural gas grid (decarbonization)
- Furthers environmental initiatives and mandates – methane is **21x** more powerful as **greenhouse gas** than carbon dioxide
- Enables continued natural gas usage (and petroleum displacement) in **transportation**

Sources of organics to produce RNG

Agricultural Waste

8,000
large farms and dairies

Food Waste

66.5 million
tons per year

Landfill Gas

1,750
landfills

Waste Water

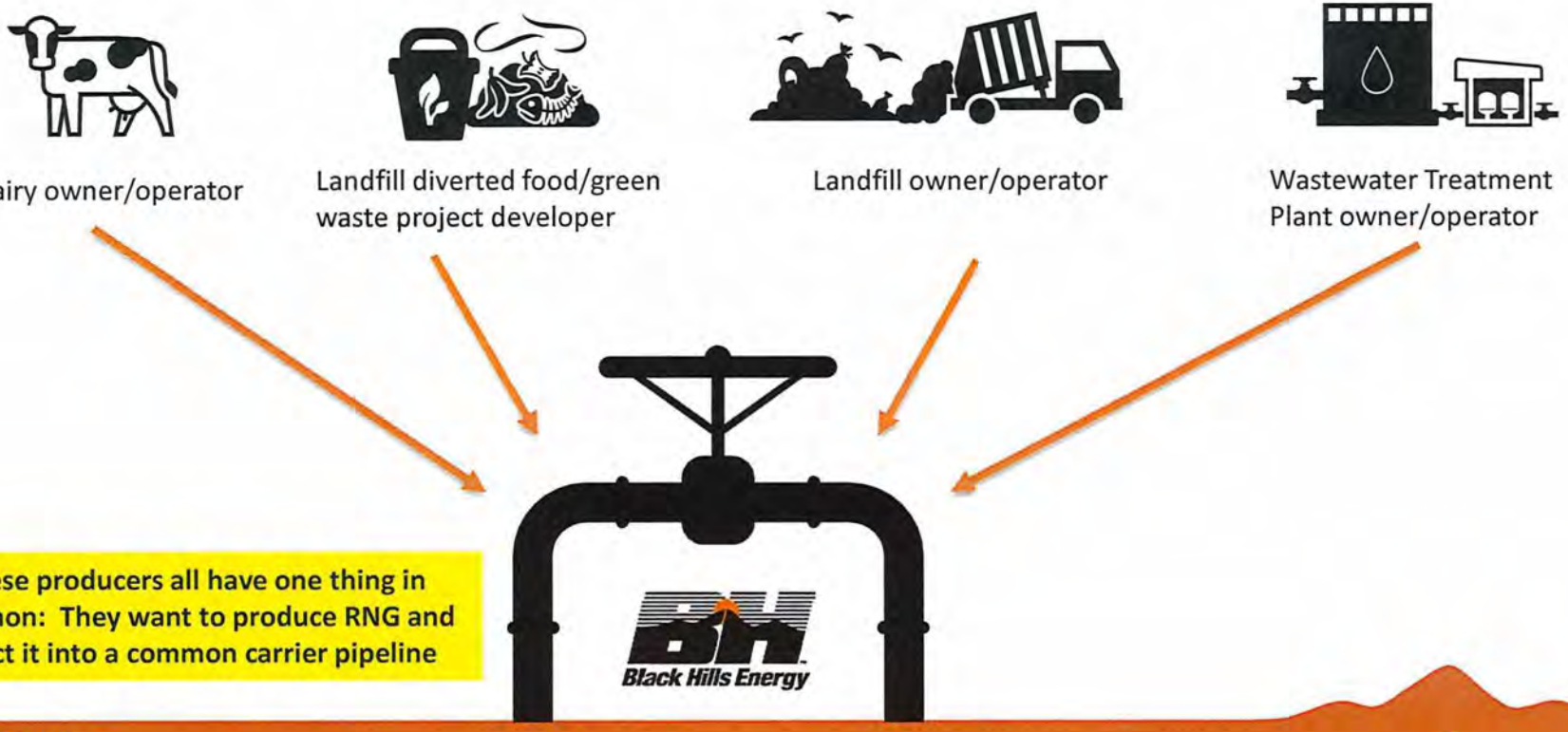
17,000
facilities

Why is RNG valuable?

- **Renewable Fuel Standard (RFS)** requires blending of renewable fuels with nation's motor vehicle fuel supply
  - **Renewable Identification Numbers (RINs)** are "proof of compliance" for Obligated Parties
  - RINs are the **economic driver** of most biogas projects
  - RINs can be **much more valuable** than the gas commodity itself
- EPA views all North American gas pipelines as **"one" big pipeline** (mass balance)
- California Low Carbon Fuel Standards (LCFS) have created an **additional market**

Imagine....

For the next 15 minutes you are all producers of biogas



These producers all have one thing in common: They want to produce RNG and inject it into a common carrier pipeline

Opportunities

There are 645 landfills nationally with operational waste to energy projects but < 40 currently produce RNG

Increasing amount of organic waste:

- Americans dump 450 million tons of municipal solid waste into landfills every year
- ~50% U.S. food production is uneaten each year

Potential state & local bans of organic waste from landfills

Potential state renewable gas standards

RINs & LCFS

- Value to refiners and importers on secondary market

Environmental initiatives and mandates

Good community partner

- Utilizing a "waste" sourced energy

Challenges / Lessons Learned

Displaces natural gas load

Connecting to existing gas distribution systems
- Costs
- LP or HP
- Line pack

Gas quality concerns & responsibilities – LDC and customers

Credit security – RIN & LCFS markets dependent upon:
- Renewable Fuel Standards (RFS)
- CNG/LNG being dispensed into the transportation sector

Allowing for future growth

Will happen whether you're involved or not
- Utility often the "missing link"

Slow to develop

Public concern
- Odors

Dubuque's Environmental Strategy

- Eliminate fugitive emissions via capturing and flaring.
- Create early beneficial use opportunities through reuse of "brown gas" for electricity/heat.
- Convert excess biogas to value-added environmental and economic products.
- Maximize those values through local utilization as renewal energy and fuels.

Black Hills Energy
Improving life with energy

Dubuque's Economic Strategy

- Must create additional positive environmental outcome.
- Must generate revenue or demonstrable cost reductions.
- Must creative opportunity for additional economic development and growth in the region.
- Must not require additional direct investment or risk from local taxpayers.

Black Hills Energy
Improving life with energy

Dubuque's WRRC Project

City of Dubuque's Water Resource Recovery Center (WRRC)

Partnership between:

- **City of Dubuque**
  owns WRRC and receives revenue from sale of biogas
- **BioResources Development**
  processes raw biogas and creates ~200 Mcf/day of pipeline quality RNG
- **Black Hills Energy**
  quality tests, then injects the RNG into our distribution system
- **N1 Energy**
  market RINs

In-service as of February 28, 2018

Dubuque's WRRC Project

City of Dubuque's Water Resource Recovery Center (WRRC)

Benefits to City:

- **Annual lease revenue of $10,000**
- **5% of all gross revenues from sale of biogas environmental values**
- **Return of "brown gas" for heat and electricity**
- **Reimbursement for any additional operational costs at WRRC**
- **All capital costs covered by private sector**

Dubuque Iowa WRRC Project

Dubuque, IA WRRC Project

Dubuque's DMASWA Project

Dubuque Metropolitan Area Solid Waste Agency (DMASWA)

Partnership between:

- **DMASWA (City and County of Dubuque)**
- **Trillium led team including TetraTech, Unison Solutions, and Natural Gas Fueling Solutions** will process raw biogas and produce @ 1.5 million gallons of RNG annually
- **Black Hills Energy** will quality test, then inject the RNG into its distribution system

Benefits to DMASWA:

- **Annual operating cost reduction of $68,000**
- **Annual lease revenue of $20,000**
- **6% of all gross revenues from sale of biogas environmental or BTU values (estimated at $300,000 annually**
- **One time capital cost avoidance of $110,000**
- **All capital costs covered by private sector**


RCC
CENTER
Dubuque Metropolitan Area
DMASWA
Solid Waste Agency

Key RNG questions for BHE

Location:

- Is the project within our service territory or a state where we operate a gas utility?
- How far from our gas distribution system?
- Any interstate pipelines in the area?
- Is there three phase power available at your site?

Production:

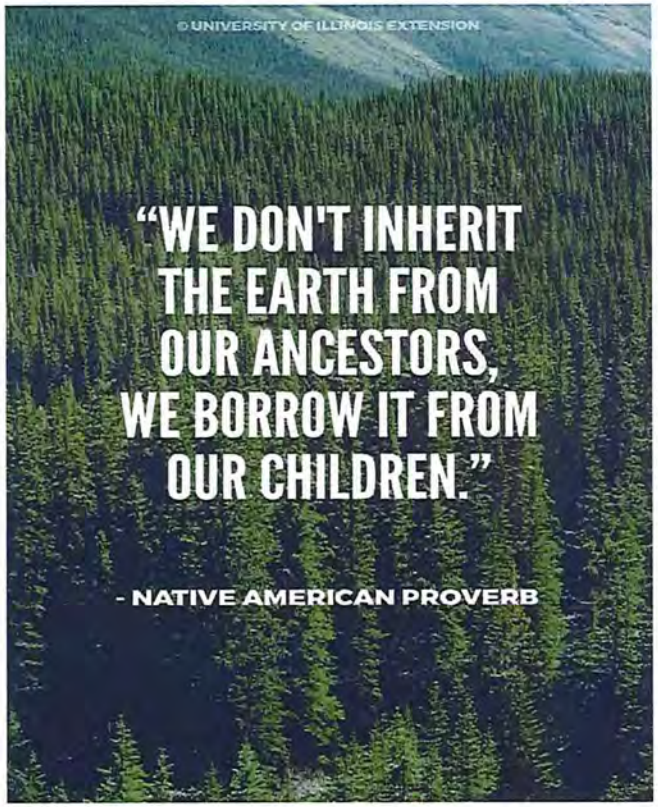
- What is your estimated volume of RNG today? In the future?
    - Does BHE have capacity to handle this volume?
- Do you want BHE to purchase the entire "green gas" package, just the "brown gas" molecules, or will it all be handled by your marketer/third party?

Timeframe:

- Where are you in your process?
- What is your in-service target date?

Financial:

- Who are your partners?
- Will you be able to provide credit security (i.e. Letter of Credit, etc.)?



Thanks to Marianne Mintz of the Argonne National Laboratory, Shashi Menon of EcoEngineers, Jim Lucas of SoCalGas and the American Biogas Council for the use of related materials

Thank you!

Paul M Cammack, PE

Program Manager

Black Hills Energy

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Volkswagen Settlement Overview

Attachment H

- Volkswagen violated the federal Clean Air Act by equipping vehicles with "defeat devices"
- Settlement created a trust to provide a new funding opportunity to reduce nitrogen oxides (NOx) through a specific set of mitigation actions
- Volkswagen must pay $2.9 billion into an Environmental Mitigation Trust (Trust)
- Iowa's allocation is approximately $21 million, 15% planned to be used for EV charging stations

Purpose of Iowa's Volkswagen Settlement Environmental Mitigation Trust funding program:

- Positively impact air quality by reducing NOx emissions and implementing eligible mitigation projects that best align with the state's funding priorities

Iowa's Funding Total for Eligible Mitigation Categories

Mitigation Category	Funding Percentage	Estimated Application Cycle Total	Estimated Trust Fund Total
Class 4-8 Buses	45%	$3,150,000	$9,450,000
Freight & Port Drayage Trucks	15%	$1,050,000	$3,150,000
Non-Road Transport & Equipment	10%	$700,000	$2,100,000
ZEV	15%	$1,050,000	$3,150,000
DERA	15%	N/A	$3,150,000
Total	100%		$21,000,000

First Funding Cycle

Category 1: Class 4-8 School Bus, Shuttle Bus or Transit Bus

Replacement	Diesel	Alt Fuel / Hybrid	All-Electric	Electric Charging Infrastructure w/ Replacement
School or Shuttle Bus (Class 4-7)	$25,000	$45,000	$180,000	$10,000
	25%	25%	45%	45%
Transit Bus (Class 8)	$100,000.00	$175,000	$300,000	$10,000
	25%	25%	45%	45%
Repower	Diesel	Alt Fuel / Hybrid	All-Electric	Electric Charging Infrastructure w/ Repower
All Class 4-8 Buses	30%	40%	50%	50%

Category 2: Freight Trucks and Port Drayage Trucks

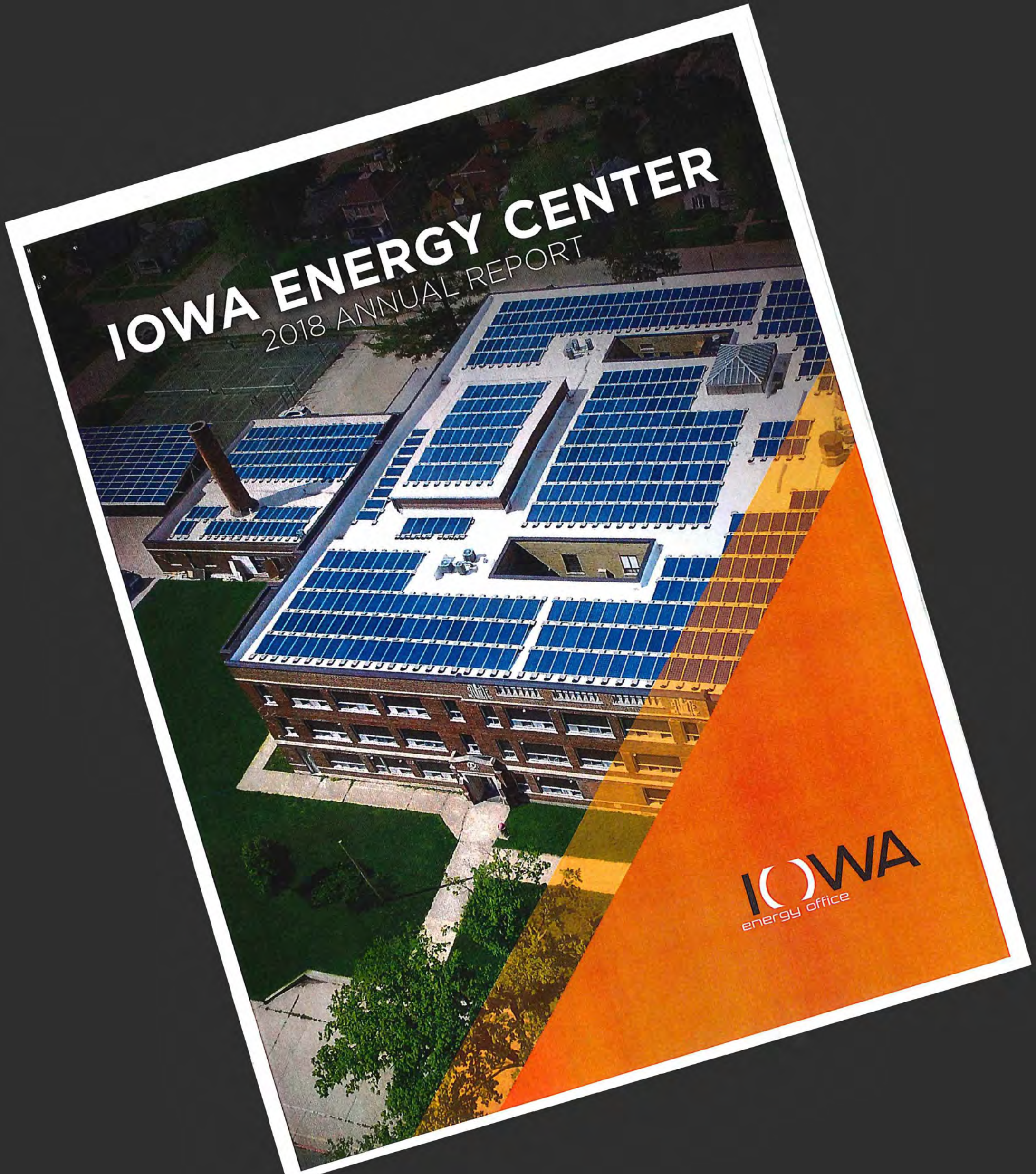
Replacement	Diesel	Alt Fuel / Hybrid	All-Electric	Electric Charging Infrastructure w/ Replacement
Class 4-7 Local Freight Trucks	$20,000	$30,000	$40,000	$10,000
	25%	25%	45%	45%
Class 8 Local Freight & Drayage Trucks	$30,000.00	$40,000	$50,000	$10,000
	25%	25%	45%	45%
Repower	Diesel	Alt Fuel / Hybrid	All-Electric	Electric Charging Infrastructure w/ Repower
All Class 4-8 Trucks	30%	40%	50%	50%

Category 3: Non-Road Transport & Equipment

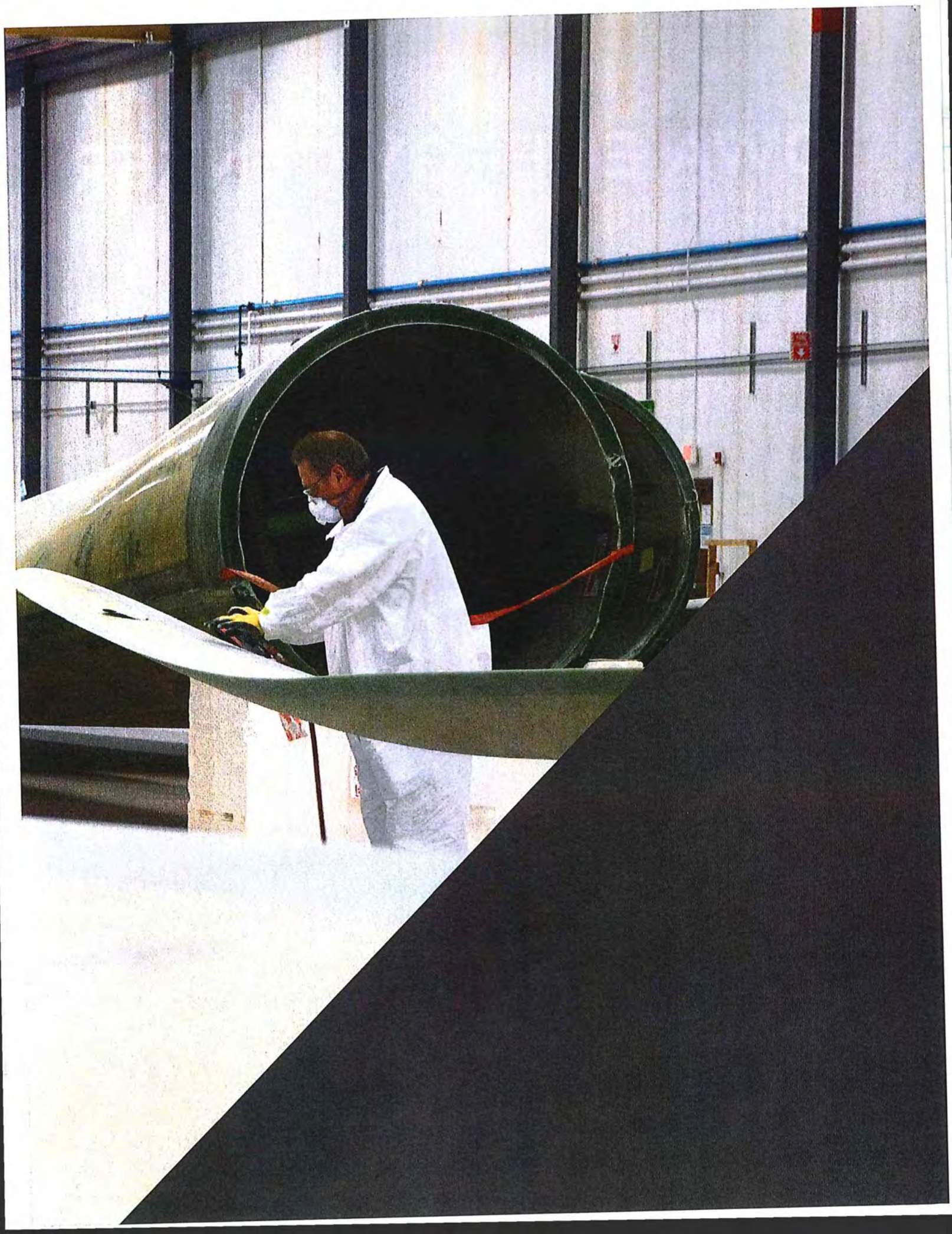
Replacement	Diesel	Alt Fuel / Hybrid	All-Electric	Electric Charging Infrastructure w/ Replacement
Freight Switcher	20%	25%	50%	50%
Airport Ground Support Equipment	N/A	N/A	50%	50%
Forklifts & Port Cargo Handling Equipment	N/A	N/A	50%	50%
Repower	Diesel	Alt Fuel / Hybrid	All-Electric	Electric Charging Infrastructure w/ Repower
Freight Switcher	35%	40%	50%	50%
Ferries / Tugs	35%	40%	50%	50%
Airport Ground Support Equipment	N/A	N/A	50%	50%
Forklifts & Port Cargo Handling Equipment	N/A	N/A	50%	50%
Installation of Shorepower				
Marine Vessels	25%			

IOWA ENERGY CENTER

2018 ANNUAL REPORT



IOWA
energy office



A LETTER FROM THE DIRECTOR

The Iowa Economic Development Authority (IEDA) is home to both the Iowa Energy Office and the Iowa Energy Center (IEC). As the lead agency tasked with the responsibility to develop the state's strategic and comprehensive energy road map, the Iowa Energy Plan, IEDA is committed to ensuring the IEC's activities and financial resources build upon Iowa's energy leadership and support the Plan's vision and goals.

The overall commitment, focus and goals of the IEC follow:

- To ensure the projects and financial resources undertaken or appropriated have the potential to provide energy economic benefits for Iowa citizens, businesses and organizations in the near term.
- To embrace energy projects supporting all Iowans – both rural and urban.
- To ensure IEC operational costs are kept within budget and used as efficiently as possible – therefore, providing more financial means for impactful energy projects throughout Iowa.
- To be as transparent as possible in terms of processes, budgets, awards and activities.

The process followed in developing the Iowa Energy Plan was a robust and collaborative effort identifying numerous strategies, objectives and focus areas for positively impacting Iowa's energy economy. Consequently, it was a thoughtful and strategic decision by the Iowa legislature to establish a mission for the IEC in 2017 to support activities that align with the key focus areas of the Iowa Energy Plan. With the addition of the IEC, its dedicated financial resources, collaborative board and supportive mission, the state has an unparalleled opportunity to further spark near-term energy economic development opportunities for Iowa.

To borrow from the tagline of the Iowa Energy Plan, the IEC will build on Iowa's energy successes by continuing to collaborate locally, grow sustainably and lead nationally.

Sincerely,

Debi Durham
Director
Iowa Economic Development Authority

ABOUT THE IOWA ENERGY CENTER

The Iowa Energy Center (IEC) was created by the Iowa Energy Efficiency Act of 1990 and was managed by Iowa State University (ISU). Annual funding for the IEC is received from an assessment on the intrastate revenues of Iowa's gas and electric utilities.

On May 12, 2017, Senate File 513 was signed into law, transferring the management and responsibility of the IEC from ISU to IEDA. The transfer became effective October 1, 2017, and the IEC's utility-based funding source will sunset on July 1, 2022. IEDA is required to provide an annual IEC report to the General Assembly annually by January 15.

The new mission of the IEDA-led IEC is to support projects and programs that align with the seven key focus areas of the Iowa Energy Plan:

1. Energy Workforce Development – To expand workforce and career opportunities for workers in the energy sector to ensure the state can attract and train professionals to meet the state's future energy needs.
2. Technology-based energy Research and Development – To support technology based-development by encouraging public-private partnerships and innovative manufacturers to develop and bring to market new energy technologies.
3. Support for Rural and Underserved Areas – To support rural and underserved areas and vulnerable populations by creating opportunities for greater access to energy efficiency expertise, training, programs and cyber security preparedness for small utilities.
4. Natural Gas Expansion in Underserved Areas – To support the expansion of natural gas infrastructure to rural and underserved areas of the state where the absence is a limiting factor to economic development.
5. Biomass Conversion – To promote and fund research, development and commercialization of biomass technology to benefit the state economically and environmentally by further realizing the value-added attributes of biomass in the development of bioenergy, biofuels and biochemicals.
6. Alternative Fuel Vehicles – To encourage growth of the alternative fuel vehicle market, particularly for electric vehicles, and the infrastructure necessary to support the market.
7. Electric Grid Modernization – To support efforts to modernize the electric grid infrastructure of the state to support increased capacity and new technologies.

Senate File 513 also established the formation of a governor-appointed board of directors (see Board Roster below). The 13-seat board has diverse representation from the following organizations: ISU; University of Iowa; University of Northern Iowa; an Iowa private college/university; an Iowa community college; IEDA; Iowa Department of Transportation; Office of Consumer Advocate; Iowa Utilities Board; rural electric cooperatives; municipal utilities; two representatives from investor-owned utilities.

IOWA ENERGY CENTER BOARD ROSTER

Sector	Board Member	Org./Institution/Company	Term Ends
Academia	Dan Nickey (G)	University of Northern Iowa	6/30/2019
	Gul Kremer (G)	Iowa State University	6/30/2020
	Nathan Young	University of Iowa	6/30/2022
	Valerie Newhouse (L)	Iowa Lakes Community College	6/30/2020
	Vacant	Private College/University	N/A
Government	Debi Durham (G)	Iowa Economic Development Authority	6/30/2021
	Geri Huser	Iowa Utilities Board	6/30/2019
	Jennifer Johnson** (G)	Office of Consumer Advocate	6/30/2019
	Stuart Anderson (L)	Department of Transportation	6/30/2020
Utilities	Joel Schmidt (L)	Alliant Energy	6/30/2021
	Rick Olesen (G)	Iowa Lakes Electric Cooperative	6/30/2022
	Robert Berntsen (L)	MidAmerican Energy	6/30/2021
	Timothy Whipple* (L)	Iowa Association of Municipal Utilities	6/30/2021

*Elected Board Chair in 2018
**Elected Board Co-Chair in 2018
(G) Serves on the Grant Committee
(L) Serves on the Loan Committee

The board's main responsibilities include:

- Providing direction regarding policies, procedures and programs.
- Reviewing and approving loan and grant applications. In May 2018, board members volunteered and were selected by peers to serve on grant and loan committees (denoted in chart above). The committee members were instrumental in the development of program administrative rules. Once the grant and loan programs open in 2019, committee members will assist IEDA staff with reviewing applications and making award recommendations to the full board.
- Assisting IEDA in the development and approval of the IEC's budget.

IEDA-LED IEC ACTIVITIES

On September 28, 2017, Governor Kim Reynolds announced the board appointments. The first IEDA-led IEC Board meeting was held October 31, 2017; subsequently, eight board meetings have been held during the timeframe covered by this annual report. Board meetings are typically held quarterly, are open to the public and all agendas and minutes are located on IEDA's website.

To manage the inherited grants and loans, as well as to have the necessary staffing resources to administer new grant and loan awards, IEDA added two positions in 2017, a grant project manager and loan project manager. Existing IEDA staff fulfill additional needs such as legal, fiscal, marketing and energy expertise.

In addition, upon completion of the transfer of the IEC, IEDA Director Durham requested a financial review to be performed by the Auditor of State to gain affirmation of the transferred IEC financial accounts. The final financial report is expected to be complete in early 2019.

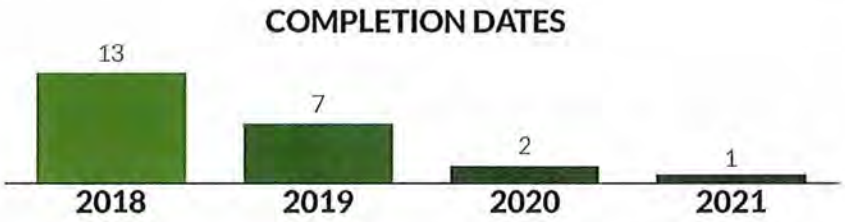
GRANT AND LOAN PROGRAM OVERVIEW

The IEC's financial resources provide support via two pathways:

1. Grant funds that may be issued for eligible projects and programs, which are submitted on a competitive basis by Iowa businesses, colleges and universities and private nonprofit agencies and foundations. Eligible grant-funded projects must align with one of the seven key focus areas of the Iowa Energy Plan. Projects must also provide a benefit for Iowa ratepayers.
2. Alternate Energy Revolving Loan Program (AERLP), a zero-interest loan fund to support the development of renewable energy production projects (i.e., wind, solar, hydro, biomass or a combination of technologies).

GRANT PROGRAM

IEDA inherited 23 active grants. These grants were divided into four categories: matching grants; opportunity grants; special program grants; and education grants. Of the total, 20 are set to end by December 31, 2019, while three have completion dates between 2020 and 2021.



The total balance of these grants is $2,641,000. In addition to IEC funding, many of the grants also leveraged outside funds, with sources ranging from the U.S. Department of Energy to the National Science Foundation.

All contracts for the inherited grants were transferred to IEDA contracts. After the contracts were executed, IEDA began accepting and making payments on claims from grant recipients. As part of the claims process, grant recipients were required to provide any outstanding progress reports to IEDA, as well as a status update.

The IEC Board was charged with making decisions regarding grant modification requests. To date, the IEC Board has reviewed and approved 17 no-cost modification requests from principal investigators.

The largest task for the board has been the creation of the grant program's administrative rules. In order to create a well-built program, the board felt it was important to get feedback from both past and future potential participants in the grant program. To that end, the IEC released a pre-application in February 2018. The goal was to identify the types of projects eligible applicants were interested in pursuing. In response, 39 pre-applications were received for topics ranging from energy workforce collaboration to battery energy storage.

Since the grant committee formed at the May 2018 board meeting, members have been working diligently to create grant program rules that will form a robust, competitive grant program with clear benefits to Iowa ratepayers. Pre-applications were reviewed at the first committee meeting in June. This review provided the grant committee insight on potential award amounts, likely project durations and focus areas of interest. The information collected from the pre-applications was vital in helping the committee develop many of the rules, including those regarding the maximum award size and project duration. Subsequent committee meetings have focused on policies and procedures, scoring criteria and program timelines.

Grant program rules were approved by the IEC board at the November 7, 2018, meeting, and a Notice of Intended Action was filed November 8. The grant committee is also working on the program's policies and procedures handbook, as well as applications and submission information.

ALTERNATE ENERGY REVOLVING LOAN PROGRAM (AERLP)

IEDA inherited 323 open AERLP loans on transition of the IEC. These loans supported construction of facilities producing renewable energy from wind, solar and biomass resources. The beginning dates for these loans spanned from May 2004 to June 2017. More than a dozen loans have been paid off since IEDA started managing them in October 2017. Iowa code allows loan terms of a maximum of 20 years, which had been provided by the IEC for a few loans. IEDA fiscal staff work to ensure monthly payments are received by IEDA instead of ISU from participating program lenders.

TYPE OF LOCATION

FARM - 60.4%

RESIDENCE - 20.1%

BUSINESS - 15.5%

MULTI-UNIT - 1.5%

SCHOOL - 0.9%

GOVERNMENT - 0.9%

INDUSTRIAL - 0.3%

HEALTH CARE - 0.3%

The IEC utilized a participation agreement with lenders to underwrite and service loans. The lender share was required to be the same amount or higher than the IEC share. The lenders are servicing the entire loan packages throughout the terms and forwarding the repayments to IEC. Most loans financed the entire project cost through a 50/50 split between IEC and the participating lender. This results in a leverage from participating lenders and other sources of funding at an average of 56.7 percent. The loans inherited by IEDA represented a total of $26.7 million in AERLP funds and $84 million in leveraged funds. The projects with the most leverage were wind energy projects that had a much higher cost than the maximum allowable loan amount.

The AERLP has a clearly defined purpose and certain parameters already defined in Iowa Code; therefore, the task of the IEDA and IEC board has been to build from that foundation. The loan committee and IEDA staff met multiple times in 2018, reviewed information from the inherited portfolio, and began establishing future program parameters and priorities. Administrative rules were drafted to reflect direction from the committee and board. Loan program rules were approved by the board November 7, 2018, and a Notice of Intended Action filed November 8, 2018. IEDA staff and the loan committee are developing the application along with associated program policies and procedures.

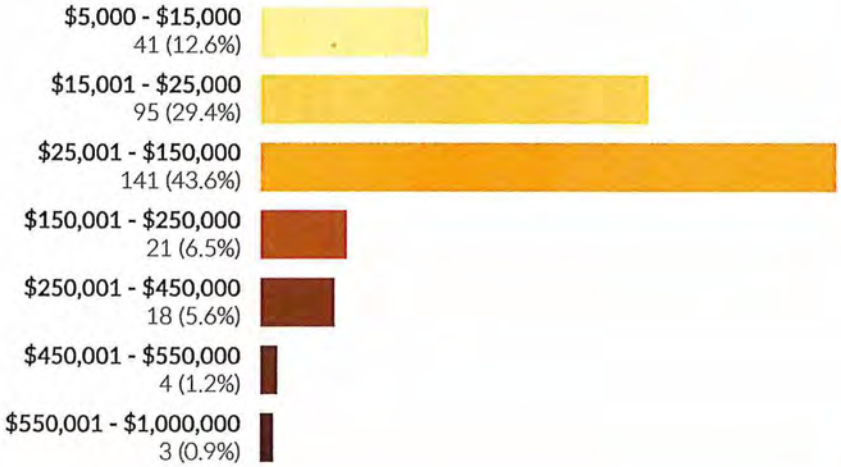
AERLP FINANCIAL REPORT

FUNDING	Projects (Loans)	Loans Receivable
Transfer from ISU (Oct 1, 2017)	$3,911,135	$13,168,765
Repayments received (Oct 1, 2017 thru June 30, 2018)	$3,135,915	($3,135,915)
Loans receivable balance (June 30, 2018)		**$10,032,850**
Funding Available	**$7,047,050**	

NOTES:
1) Administrative Rules will be finalized in the Spring of 2019 at which time IEDA will begin process of screening applications and awarding new loans.

2) $3,581,440 in expected loan repayments in FY2019.

AERLP LOAN AMOUNTS



IOWA ENERGY CENTER FINANCIAL REPORT

FUNDING	Adminstration	Projects	Total
Transfer from ISU (Oct 1, 2017)		$4,322,126	$4,322,126
Transfer from Iowa Utilities Board (IUB)	$500,000	$3,776,717	$4,276,717
			$8,598,843

OBLIGATIONS/PAYMENTS	Total
Obligated project funds transferred from ISU	$2,641,000
Less payments made on obligated funds (as of June 30, 2018)	($129,255)
Remaining obligated funds balance	($2,511,745)
Administrative expenses	($126,224)
	$8,472,619

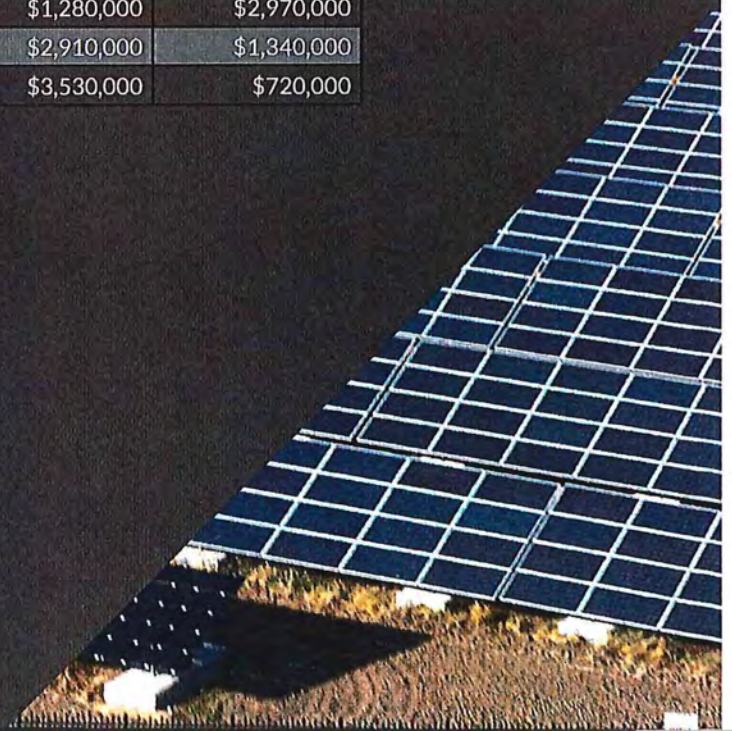
NOTES:
1) Adminstrative Rules will be finalized in the Spring of 2019 at which time IEDA will begin process of screening applications and awarding projects.

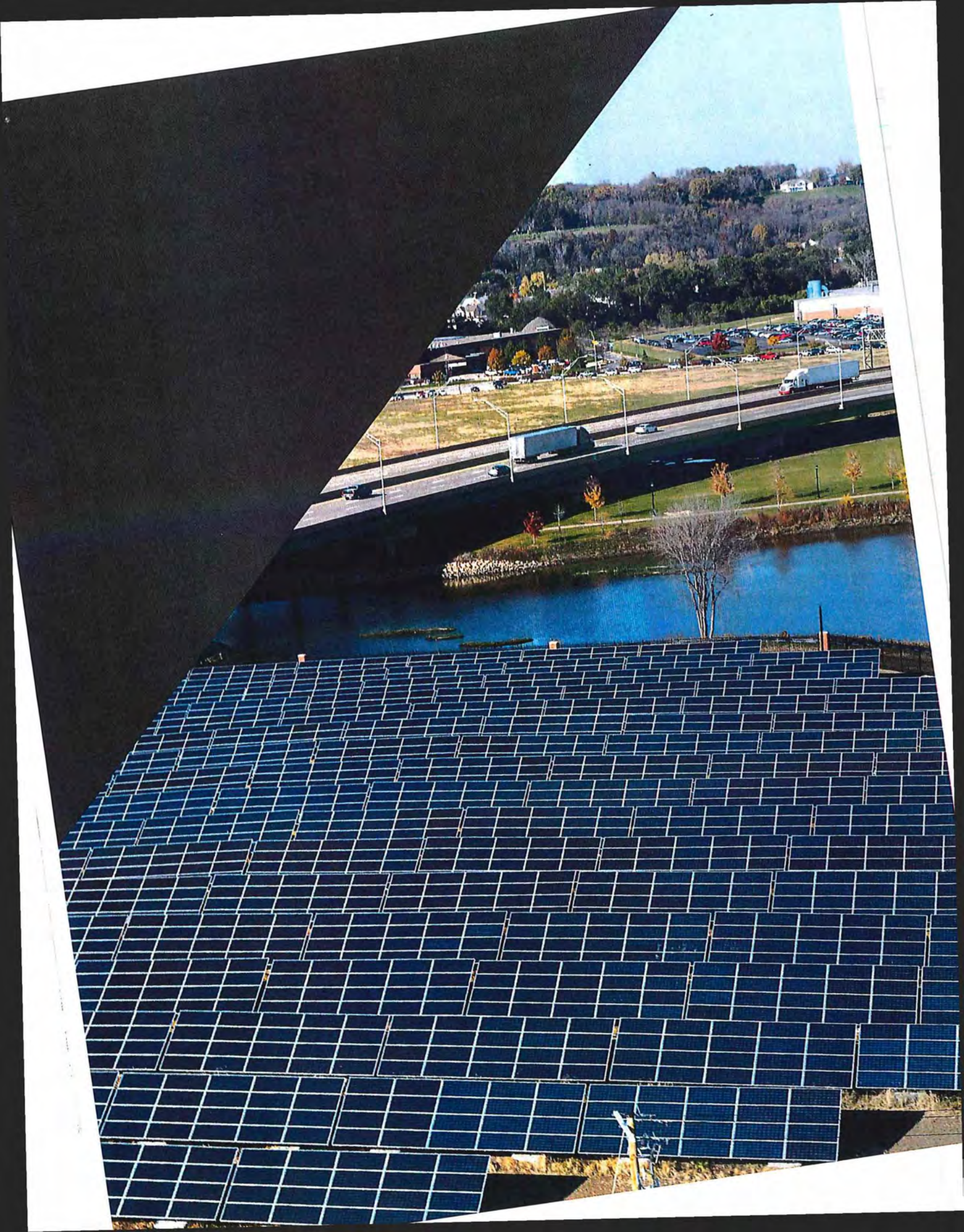
2) Funding for IEDA programs under the Iowa Energy Center sunsets as of June 30, 2022 per 2017 Acts, Chapter 169 Section 37.

3) Per 2018 Acts Chapter 1172 Section 91, some of the funding available for Iowa Energy Center programs is transferred to the General Fund of the State as outlined below (assumes a IUB transfer of $4.25 million each year).

PROGRAM FUNDING SCHEDULE

	IUB Transfer	To General Fund	To IEDA
FY2020	$4,250,000	$1,280,000	$2,970,000
FY2021	$4,250,000	$2,910,000	$1,340,000
FY2022	$4,250,000	$3,530,000	$720,000





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