State of Iowa
Iowa Energy Center Board
Meeting Minutes of October 29, 2020
Teams/Virtual/Telephonic Meeting Only

Call to order 1:02 p.m.

Board Members Present
Joel Schmidt, Board Chairperson
Dan Nickey, Board Vice Chair
Stuart Anderson
Jennifer Johnson
Gul Kremer-Okuden
Nathan Young
Jenae Jenison
Debi Durham
Geri Huser
Troy DeJoode

Board Members Absent
Timothy Whipple
Valerie Newhouse
Rick Olesen

Iowa Economic Development Authority Staff Present
Brian Selinger
Amber Buckingham
Stephanie Weisenbach
Terry Roberson
Lisa Connell
Kristin Hanks-Bents
Alaina Santizo
Maicie Pohlman
Ryan Young
Shelly Peterson
Betty Hessing
Vicky Clinkscales
Kanan Kappelman
Emily Hockins
Derek Folden
Staci Hupp-Ballard
MK Anderson

Others Present
Brenda Biddle, Iowa Utilities Board Staff
Steve Letendre, Synapse Energy Economics, Inc.
Julie Vande Hoef, Alliant Energy

Welcome & Introductions by Board Chairperson Joel Schmidt
Joel Schmidt welcomed everyone to the October IEC Board meeting.

Roll Call by Betty Hessing, Administrative Assistant
A quorum was established**.**

On behalf of the entire Board, Joel Schmidt welcomed Troy DeJoode as a new IEC Board member and thanked him for accepting this position.

Troy DeJoode stated he is the Executive Director of the Iowa Association of Municipal Utilities and he has been employed there for seven years. His previous positions were Associate General Counsel and Vice President of Human Resources for Jacobson Companies; Corporate Counsel & Vice President of Human Resources at Ruan Transportation Management Systems; and General Counsel for Cedar Falls Utilities. He has a degree in Electrical Engineering and a Law degree.

Public Comment Period – No comments.

Fiscal Update – Attachment A
Presentation provided by Terry Roberson. Terry Roberson stated the Financial Report for this meeting reflects the actual cash balance forwards from FY 20 into State fiscal year FY 21. Also includes expenses and loan repayments through September 30th. Also, on there are the awards made at the last meeting in July for the Grant Program; the one award we had for the Loan Program; and that recission we spoke of at the last meeting. We currently have about $14M in the Loan Program and just under $9M in the Grant Program. Terry Roberson stated he did not include the expected transfer from IUB on the assessment. According to legislation, it is supposed to be somewhere around $1,380,000 for FY 21, but we will see what the actual numbers turn out to be. The Board had no questions**.**

Consideration of September 17, 2020, Meeting Minutes

Motion by	Dan Nickey
Motion	I move approval of the September 17, 2020 minutes.
Second	Stuart Anderson
Voice Vote	All ayes in favor. Motion approved.

Alternate Energy Revolving Loan Program (AERLP)
Loan Program Update – Attachment B - Stephanie Weisenbach stated we provided the Board with results of a survey we conducted. She explained that a couple meetings ago, you had reviewed a high-level proposal for revising the Loan Program to create the Energy Infrastructure Revolving Loan Program. The proposal was a result of meetings with a subcommittee of Board members that you had appointed to exam the statutory framework for the program and suggest possible revisions. In late August, we provided the proposal and disseminated a survey to approximately twenty-five stakeholders that are active with energy and economic development initiatives. We wanted to be transparent about the proposal, solicit input and see what questions and details could be further explored as we move forward. The recipients span a variety of groups and individuals that have unique rolls or interest in these areas. Examples of types of recipients and interest area that they represent included Energy Consulting, Agriculture, Utility, Environmental, Academic, Renewable Energy Industry and vendors, banking and business growth and development. You are provided with results of the survey in Board Papers. The survey helped to clarify that a lot of support exists for revising the program. At the staff level, we will be working out

some of the details, research some scenarios of project types and discuss with the Board and Committee some key considerations for the different project types. This will help us answer questions if the proposal advances and prepare us for the future. The Board had no questions.

Lucky Properties LLC – 38 kW Solar Project – Attachment C – Stephanie Weisenbach stated this was a loan application we received in the recent cycle. Lucky Properties LLC is a single-member LLC that owns three rental residential properties and proposes installation of solar at each property. Their project size is 38 kW, and their loan request is for $49,000. See Attachment C for details. The recommendation from the Committee to this Board is to deny the application.

Motion by	Stuart Anderson
Motion	I move the Board deny this application.
Second	Jennifer Johnson
Roll Call	Yes: 9 Abstain: 1 (Joel Schmidt)
	Motion approved.

Energy Infrastructure Revolving Loan Program Proposal – Attachment D
Kristin Hanks-Bents explained she is filling in for IEDA's Legislative Liaison until Jennifer Klein's replacement is hired. The Committee met and has come up with a proposal for the Energy Infrastructure Revolving Loan Program. The Governor's Office had a due date of October 9th to turn in policy proposals, so this policy proposal has been turned into the Governor's Office for their review. We hope to hear back sometime in November, as bill requests are due November 30th. What staff is asking today is for your authorization to move forward with this proposal pending approval from the Governor's Office. If approval is received from both the Board and the Governor's Office, Kristin Hanks-Bents will proceed with writing a bill request which will then turn into a bill to be introduced next session. Kristin Hanks-Bents briefly reviewed the proposal. Chair Schmidt thanked all Board members who provided input and those who did the survey. He also thanked those Board members who put in extra time to be on the Committee to bring this forward. Chair Schmidt asked for a motion.

Motion by	Dan Nickey
Motion	I move to authorize IEDA staff to propose legislation to repurpose the Alternate Energy Revolving Loan Program to the Energy Infrastructure Revolving Loan Program, pending approval from the Governor's office.
Second	Stuart Anderson
Roll Call	Yes: 10 Abstain: 0
	Motion approved.

Grant Program
Grant Program Update – Amber Buckingham stated we did send out Notice of Intent Award Letters to all the grants that were approved at our September special meeting. We received all of those signed and back within the ten-day limit. We have sent out contract agreements to all our awardees and have received one back thus far. The other awardees have forty-five days to return their signed agreements unless they require or request negotiations. We do anticipate that some grantees will request negotiations so we will be working with those people to get those agreements signed and executed in the next forty-five to sixty days.

We will most likely be having a Grant Committee meeting before the end of the year. We will be updating Policies and Procedures and getting a timeline together for the next round of grants that will launch in February and deciding on the dollar amount that we will have up for awards. Those changes will be presented at the February Energy Center meeting. No questions from Board members.

Grant Modification Request 20-IEC-001 – Utility Workforce Development & Strategy Planning – Attachment E

Troy DeJoode left the meeting at 1:25 p.m. due to direct involvement with project.

Amber Buckingham stated The University of Northern Iowa sent in a Grant Modification Request for their grant which was awarded in the first round — 20-IEC-001 *Utility Workforce Development and Strategy Planning*. This a budget modification, a no cost extension and a change to their originally named project consultant.

Their budget modification was not substantial and therefore meets the requirements for staff approval. IEDA staff did approve the budget modification. The no-cost extension is their first request and does not exceed one year, so therefore meets the requirements for staff approval. IEDA staff has also approved this no-cost extension. Their request to change the named project consultant requires Iowa Energy Center Board approval. UNI would like to change the named project consultant to SmartChoice Consulting—it is actually SmartSource Consulting. This firm has the experience necessary to carry out the tasks required to complete the project. This consultant will also take on the responsibility of conducting interviews while a UNI staff member is out on maternity leave. This change will allow forward motion in the UNI staff member's absence and ensure the project is completed in the time allotted.

Staff recommends approving the amendment to 20-IEC-001, allowing UNI to change the consulting partner to SmartSource Consulting. No questions were asked.

Motion by	Geri Huser
Motion	I move to approve the Amendment to 20-IEC-001.
Second	Debi Durham
Roll Call	Yes: 9 Abstain: 0
	Motion approved.

Gul Kremer left meeting at 1:28 p.m. due to direct involvement with project.
Troy DeJoode returned to meeting at 1:29 p.m.

Grant Modification - 364821 – Predicting Battery Lifetime with Early-Life Data for Grid Applications – Attachment F

Amber Buckingham stated this was a grant we awarded at our September special meeting. Iowa State University has requested a budget modification for their project titled *Predicting Battery Lifetime with Early-Life Data for Grid Applications*. The budget modification would allow the Recipient, ISU, to create a subaward for their named project partner, Iowa Lakes Community College.

The Principal Investigator has requested the creation of this subaward in order to transfer a portion of the responsibility for battery purchase, testing and data collection from ISU to ILCC.

This will allow ILCC students to gain more hands-on experience in testing and data-collection, which will strengthen the project's ties to workforce development. This modification will require moving
project funds from salaries and wages, fringe benefits, supplies and materials and tuition to the subrecipient category. This modification does not change the overall scope of work, or the overall project budget. This request is considered substantive (over $10,000) and therefore requires Board approval.

Staff recommends approving the amendment to Predicting Battery Lifetime with Early-Life Data for Grid Applications; moving the requested funds from salaries and wages, fringe benefits, supplies/materials, and tuition to the subrecipient category.

No questions were asked.

Motion by	Dan Nickey
Motion	Motion to approve the amendment to Predicting Battery Lifetime with Early-Life Data for Grid Applications.
Second	Troy DeJoode
Roll Call	Yes: 9 Abstain: 0 Motion approved.

Gul Kremer returned to meeting at 1:43 p.m.

Appointment to Loan Committee – Attachment G

Lisa Connell stated we have an action update from our meeting in September when we appointed Committee members. In September Troy DeJoode was not a member of the IEC Board, but now officially is a member. Lisa Connell stated she is recommending we increase the size of the Loan Committee from three to four and appoint Troy DeJoode to the Committee through June 30, 2021.

Motion by	Stuart Anderson
Motion	I move we increase the size of the Loan Committee from three to four and appoint Troy DeJoode to the Committee through June 30, 2021.
Second	Debi Durham Geri Huser asked what the option would be if there were a tie since there would be four members. Lisa Connell replied in most of those circumstances, we would bring the item to the full Board. We are having a lot of abstentions so that is one reason for wanting an additional member.
Roll Call	Yes: 10 Abstain: 0 Motion approved.

Iowa Energy Storage Study – Attachment H

Brian Selinger introduced Steve Letendre with Synapse Energy Economics, Inc. Brian Selinger explained Steve's presentation and work effort ties back to the Iowa Energy Storage Committee, which had about seventeen members, including Dan Nickey and Brenda Biddle from IUB. We got together to try to

develop an Action Plan for how Iowa can start to embrace energy storage and benefit from that technology in many ways. One of the big things from the Storage Committee to IEDA is that there is very much a belief that Energy Storage holds a multitude of positive potential for Iowa, but we needed a more in-depth analysis on the economic and resiliency benefits and otherwise. We issued an RFP and ultimately ended up selecting Steve and Synapse Energy Economics, Inc. and they have a subcontractor as well that Steve will explain. They have produced their assessment and we thought this would be a good time for Steve to give you high level take-away's from his great work.

Steve Letendre gave his Iowa Energy Storage Study presentation.

Brian Selinger thanked Steve for the work product and effort and also for providing this update. Brian Selinger stated we are currently working with IEDA Communications in taking the larger report and condensing it down into an Executive Summary. Our goal is to get the Board the full report and the IEDA Executive Summary. We also would like the Iowa Energy Storage Committee to reconvene virtually in a couple weeks and see what other things we can do.

Geri Huser stated she would like to have some additional conversations with Brian Selinger and Debi Durham as it relates to action steps or administrative decisions on how we can proceed forward with possible action steps once we receive the final report. Brian Selinger replied we will get together and have a more in-depth discussion. Debi Durham stated she liked the idea of getting together with Storage Committee first and get their thoughts on the report and then we can follow-up with an in-depth conversation with Geri Huser and her team.

Energy Office Updates

Brian Selinger reported you would have received the four 2021 Quarterly Iowa Energy Center meeting requests. We will be in touch as those dates draw near. Like we did in 2020, if there is ever a reason to call a special Board meeting, we will do so.

Brian Selinger stated that the 2020 IEC Annual Reports are due to the General Assembly on January 15, 2021. We will get the IEC Board a copy. Thank you for a productive 2020. We had to navigate a lot of things and you guys were right there with us. We produced a lot of solid work from our grant and loan sides.

Next Quarterly Board Meeting	February 11, 2021, at 1:00 p.m.

Chairperson Schmidt asked for a motion to adjourn.

Motion by	Geri Huser
Motion	I move to adjourn.
Second	Joel Schmidt
Adjournment	2:08 p.m.

Respectfully Submitted,
Betty Hessing, Administrative Assistant

ATTACHMENT A

IEDA										
Financial Report										
Iowa Energy Center										
Fiscal Year 2021										
September 30, 2020										
		IEC MAIN ACCT				IEC/AEL LOAN ACCT				
				Total				Total		
		Admin	Projects	Fund		Admin	Projects	Fund		OCT 1 2017
										NOTES REC
Revenue										
Cash Balance Forward		350,000	14,732,026	15,082,026		0	14,014,255	14,014,255	Notes Rec	3,483,264
FY20 IUB Transfer		0	0	0		0	0	0	Bal 7-1-19	0
Principal Repayments YTD		0	0	0		0	421,268	421,268		(411,268)
Interest Revenue		0	9,998	9,998		4,289	4,289	8,578		0
Other Revenue YTD		0	0	0		0	0	0		0
Deappropriations		0	0	0		0		0		0
Transfers		0	0	0		0	0	0	Notes Rec	0
Total Revenue YTD		350,000	14,742,024	15,092,024		4,289	14,439,812	14,444,101	Balance	3,071,996
Expenses										
Administration YTD		(48,264)	0	(48,264)		(50)	0	(50)		
Project Payouts YTD		0	(85,251)	(85,251)		0	0	0		
Leg Auth Transfers				0				0		
(18 Acts Ch 1172 Sec 91)										
Total Expense YTD		(48,264)	(85,251)	(133,515)		(50)	0	(50)		
Obligations										
Obligations C/F		0	3,076,832	3,076,832		0	1,600,091	1,600,091		
Current Year Obligations		0	2,721,102	2,721,102		0	77,158	77,158		
Current Year Rescissions				0			(64,375)	(64,375)		
Current Year Payouts		0	(85,251)	(85,251)		0	(1,374,816)	(1,374,816)		
Balance of Current Year Admin		301,736	0	301,736		4,239	0	4,239		
Net Obligations YTD		301,736	5,712,683	6,014,419		4,239	238,058	242,297		
Balance Available		0	8,944,090	8,944,090		0	14,201,754	14,201,754		

Iowa Energy Center Grant Program
Obligation Log
FY2020

	Project Name	Amount Awarded	Amount Recaptured		Balance
Jul-19	Iowa State University	263,070			263,070
Jul-19	Baldrige Environmental Services LLC	140,000			140,000
Jul-19	Iowa State University	244,367			244,367
Jul-19	Iowa State University	280,000			280,000
Jul-19	Iowa State University	303,587			303,587
Jul-19	Iowa State University	480,656			480,656
Jul-19	University of Northern Iowa	129,293			129,293
Jul-19	Iowa State University	287,354			287,354
Jul-19	Iowa State University	243,036			243,036
Jul-19	Iowa State University	290,400			290,400
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Iowa Energy Center Grant Program
Obligation Log
FY2021

	Project Name	Amount Awarded	Amount Recaptured		Balance
Jul-20	UNI	395,680			395,680
Jul-20	ISU	156,000			156,000
Jul-20	UNI	418,696			418,696
Jul-20	ISU	450,436			450,436
Jul-20	ISU	266,720			266,720
Jul-20	The Energy Group	69,000			69,000
Jul-20	Energy Assoc of Iowa Schools	190,000			190,000
Jul-20	ISU	239,227			239,227
Jul-20	ISU	280,070			280,070
Jul-20	ISU	244,698			244,698
Jul-20	Building Enc Council of Iow	10,575			10,575
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Iowa Energy Center Loan Program
Obligation Log
FY2020

	Project Name	Amount Awarded	Amount Recaptured		Balance
Nov-19	Brent Johnson	25,512	25,512		0
Nov-19	KP Pork LLC	25,000			25,000
Nov-19	Marathon Power Partners	160,900			160,900
Feb-20	KSB Solar LLC	173,601			173,601
Feb-20	Nova Properties LLC	950,000			950,000
Feb-20	RNR Solar LLC	172,215			172,215
Apr-20	Hickman Storage	54,000			54,000
Apr-20	Loree & David Mills	64,375	64,375		0
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		1,625,603	**0**		**1,535,716**

Iowa Energy Center Loan Program
Obligation Log
FY2021

	Project Name	Amount Awarded	Amount Recaptured		Balance
Jul-20	Keaton Martin	77,158			77,158
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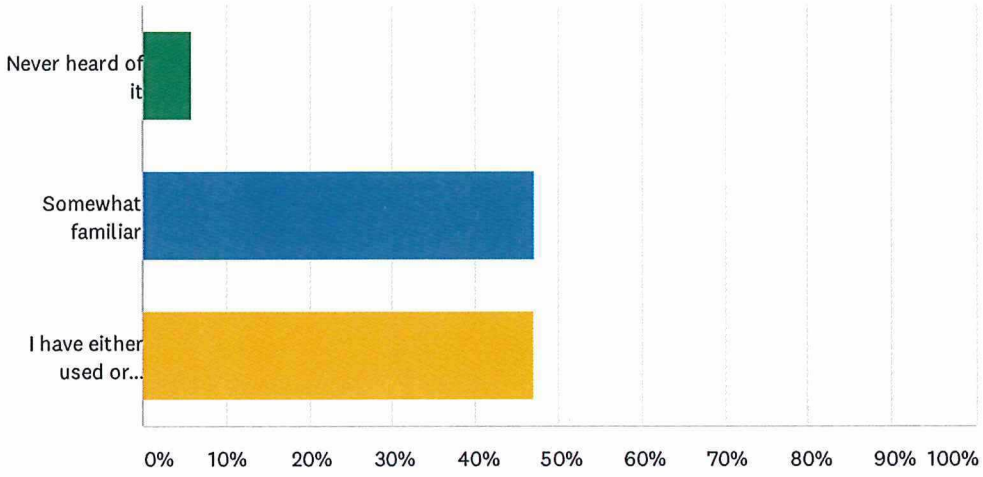
		77,158	**0**		**77,158**

Q2 How familiar are you with the Alternate Energy Revolving Loan Program?

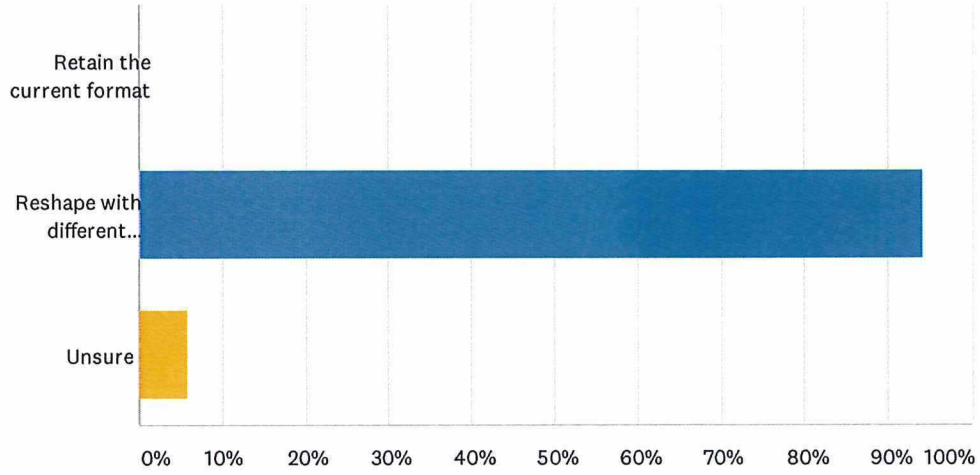
Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
Never heard of it	5.88%	1
Somewhat familiar	47.06%	8
I have either used or promoted the program	47.06%	8
TOTAL		17

Q3 Do you prefer to retain the program in its current format or to reshape its framework and eligible project types?

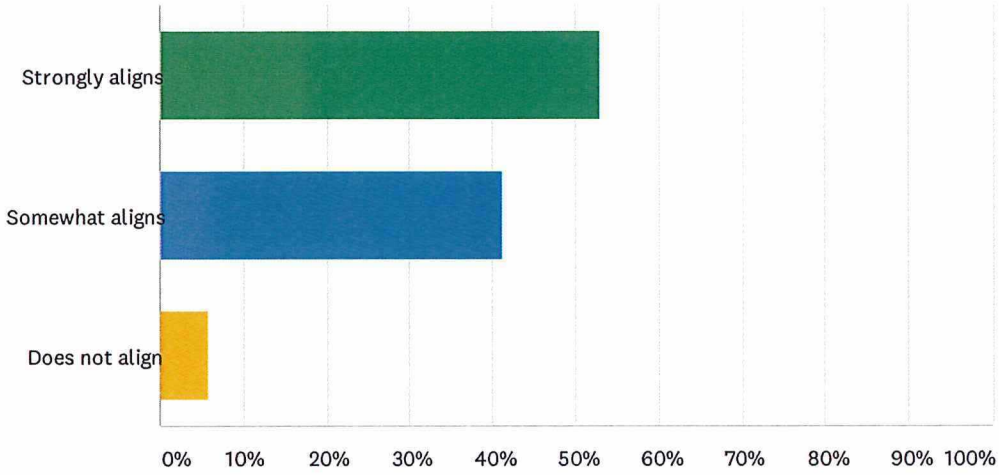
Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
Retain the current format	0.00%	0
Reshape with different eligible project types	94.12%	16
Unsure	5.88%	1
TOTAL		17

Q4 Does the proposed purpose align with current needs and opportunities for energy and economic development advancement?

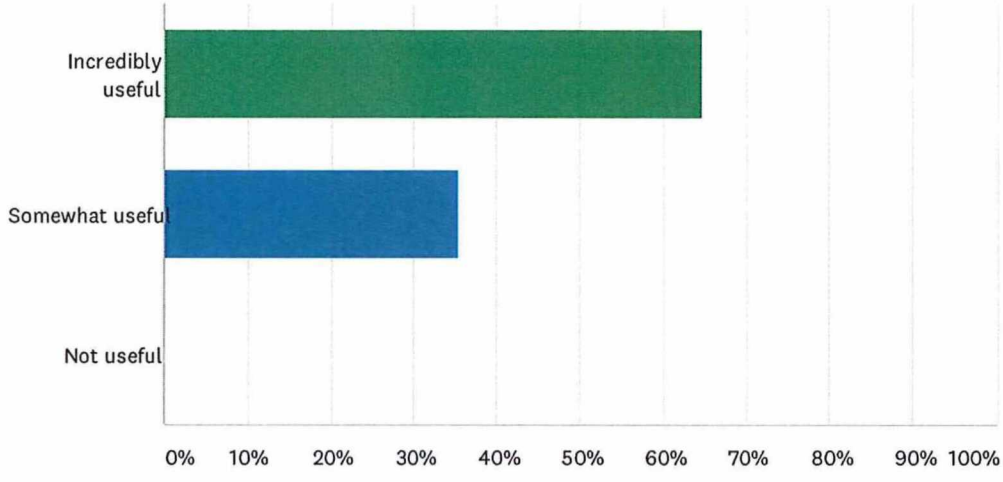
Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly aligns	52.94%	9
Somewhat aligns	41.18%	7
Does not align	5.88%	1
TOTAL		17

Q5 Would it be useful to enable a partially forgivable loan for some projects?

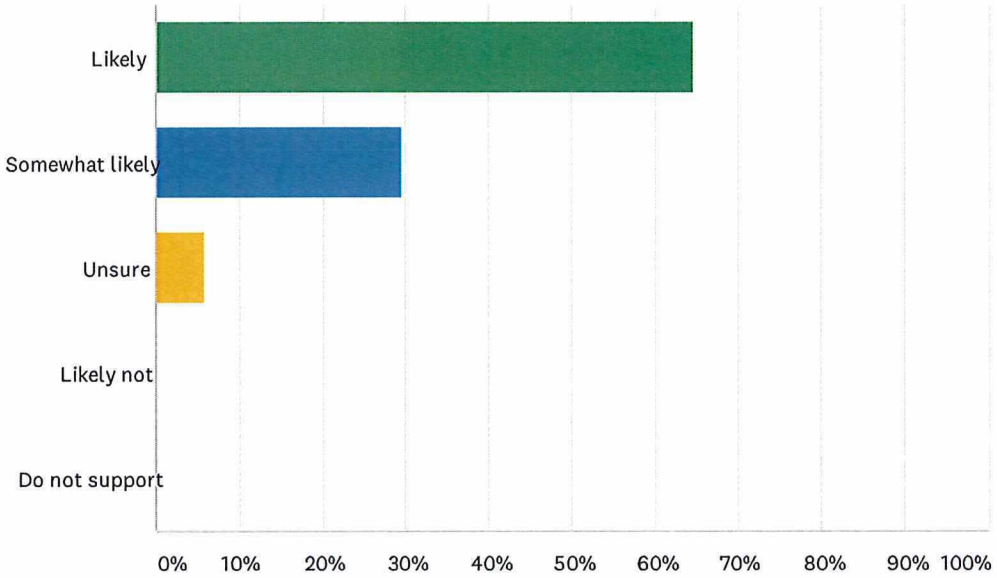
Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
Incredibly useful	64.71%	11
Somewhat useful	35.29%	6
Not useful	0.00%	0
TOTAL		17

Q6 Based on information included in the proposal, would you support revising the program to align with the framework provided?

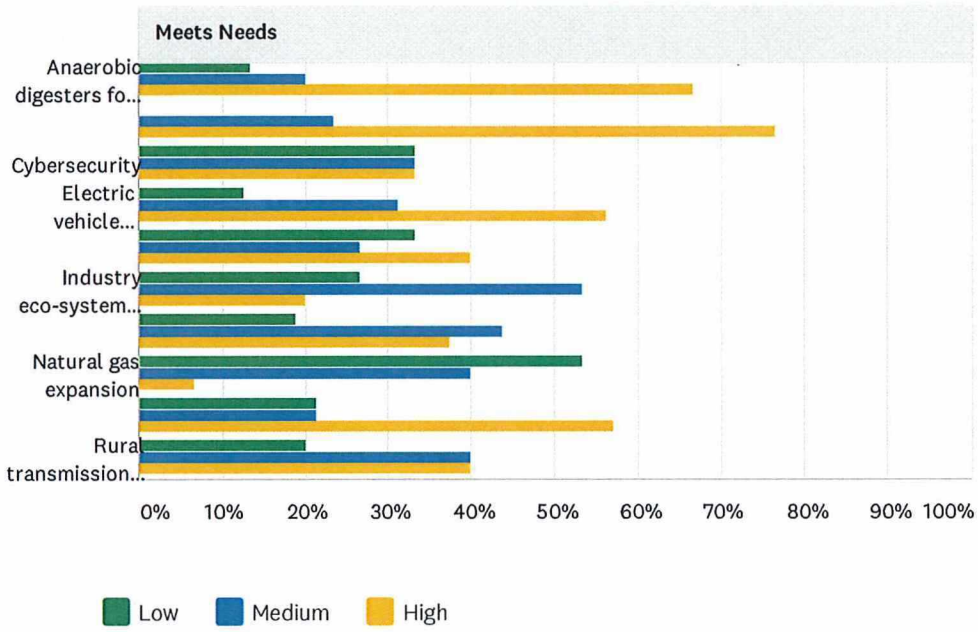
Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	
Likely	64.71%	11
Somewhat likely	29.41%	5
Unsure	5.88%	1
Likely not	0.00%	0
Do not support	0.00%	0
TOTAL		17

Q7 Please rate the proposed eligible project types on a scale regarding whether it meets a need for financing assistance not adequately served by other sources.

Answered: 17 Skipped: 0

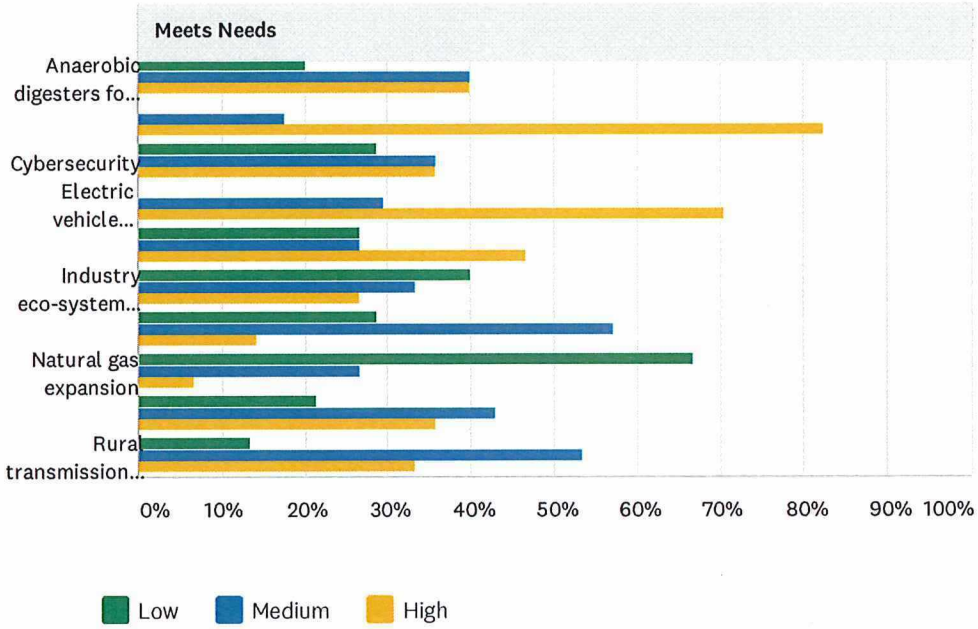


Meets Needs

	LOW	MEDIUM	HIGH	TOTAL
Anaerobic digesters for biogas production	13.33% 2	20.00% 3	66.67% 10	15
Battery energy storage	0.00% 0	23.53% 4	76.47% 13	17
Cybersecurity	33.33% 5	33.33% 5	33.33% 5	15
Electric vehicle charging stations	12.50% 2	31.25% 5	56.25% 9	16
Grid modernization	33.33% 5	26.67% 4	40.00% 6	15
Industry eco-system development (including supply chain businesses, entrepreneurs)	26.67% 4	53.33% 8	20.00% 3	15
Innovative technologies, such as renewable hydrogen	18.75% 3	43.75% 7	37.50% 6	16
Natural gas expansion	53.33% 8	40.00% 6	6.67% 1	15
Resilience of critical facilities: hospitals, water, wastewater treatment plants	21.43% 3	21.43% 3	57.14% 8	14
Rural transmission/small utility infrastructure	20.00% 3	40.00% 6	40.00% 6	15

Q8 Please rate the proposed eligible project types regarding the foreseeable demand for the proposed program.

Answered: 17 Skipped: 0



Meets Needs

	LOW	MEDIUM	HIGH	TOTAL
Anaerobic digesters for biogas production	20.00% 3	40.00% 6	40.00% 6	15
Battery energy storage	0.00% 0	17.65% 3	82.35% 14	17
Cybersecurity	28.57% 4	35.71% 5	35.71% 5	14
Electric vehicle charging stations	0.00% 0	29.41% 5	70.59% 12	17
Grid modernization	26.67% 4	26.67% 4	46.67% 7	15
Industry eco-system development (including supply chain businesses, entrepreneurs)	40.00% 6	33.33% 5	26.67% 4	15
Innovative technologies, such as renewable hydrogen	28.57% 4	57.14% 8	14.29% 2	14
Natural gas expansion	66.67% 10	26.67% 4	6.67% 1	15
Resilience of critical facilities: hospitals, water, wastewater treatment plants	21.43% 3	42.86% 6	35.71% 5	14
Rural transmission/small utility infrastructure	13.33% 2	53.33% 8	33.33% 5	15

Q9 Do you have further comments or questions to consider?

Answered 13 Skipped 4

#	RESPONSES	DATE
1	We appreciate the opportunity to provide input on the Alternate Energy Revolving Loan Program (AERLP) as the Iowa Economic Development Authority (IEDA) looks to re-think and modernize its approach to financing energy projects We have responded to the survey, but we also wanted to put our comments in a separate letter. The AERLP has provided zero-interest loans for clean energy technologies such as solar, wind, combined heat and power, and biomass. The program helped encourage and facilitate the adoption of emerging clean energy technologies and has been an important tool for clean energy innovation in Iowa IEDA has developed a draft framework for the new Energy Infrastructure Revolving Loan Program. We think that any successor revolving loan program should continue to emphasize adoption of emerging clean energy technologies and facilitation of innovation. Further development of these types of technologies will foster greater economic growth and maintain Iowa's clean energy leadership by accelerating the transition of successful innovations to market-financed adoption. With these themes in mind, the Environmental Law and Policy Center (ELPC) provides the following specific feedback on the program. Project Eligibility Should Be Tied to Clean Energy and Innovation. The proposed framework alters the eligible projects. AERLP focused on emerging clean energy technologies. Today, those technologies like wind and solar are more established, and emerging technologies in energy and infrastructure focus on better integrating distributed clean energy technology, maximizing the use of energy assets, and supporting the resilience of the electric grid. ELPC supports the revision of project eligibility, but there should be a specific and explicit connection to energy innovation and emerging technologies. IEDA can accomplish that goal through this program with the right eligibility categories and requirements. It is important to direct limited program dollars to innovation and emerging technologies rather than broad categories of funding. Grid Enhancing Technologies Should be an Eligible Project Category There are opportunities in Iowa to dramatically improve existing transmission infrastructure by utilizing grid enhancing technologies. Today, the transmission system is significantly underutilized, which means that the power lines that crisscross the state are often not used to their full potential despite gridlock on other parts of the system. Grid enhancing technologies can increase the efficiency of the grid on both the distribution and transmission side of the grid. This can be done through technologies such as dynamic line rating, power flow control, battery storage, and other technologies/operations improvements. These are relatively minor upgrades to existing systems that can be used to free up space on transmission lines to deliver cheaper, cleaner power that is currently bottlenecked by implementing them where more capacity is needed on the grid, especially when the lines are congested Yet grid enhancing technologies currently face a funding challenge because they are not adequately valued in the energy markets. ELPC encourages IEDA to include grid enhancing technology projects in its portfolio of projects These projects could allow Iowans greater access to existing low-cost generation at fraction of the cost of building new transmission lines. Cybersecurity, Critical Facilities, and Rural Infrastructure Would Be Better as Targeted Aspects of the Grid Modernization, Battery Storage and EV Charging Categories ELPC supports cost-effective investments in technologies that make the electric distribution grid more flexible, and prepare the grid for increasing penetrations of distributed clean energy technologies (such as solar PV, wind, and batteries). ELPC in particular supports grid investments that are targeted at improving performance (reliability, resilience and hosting capacity, for example). ELPC also supports grid modernization projects such as battery storage and electric vehicle charging infrastructure, which under the draft framework are separate categories. These particular grid modernization investments could be targeted to rural infrastructure, critical facilities, and areas of the grid that serve low-income or vulnerable communities. ELPC recommends that IEDA limit the cybersecurity, critical facilities, rural/small utility infrastructure to grid modernization projects that specifically include battery storage, EV charging infrastructure or demonstrably improve the hosting capacity, reliability or resilience of the grid. Additionally, ELPC recommends that grid modernization projects also be targeted to low-income or vulnerable communities. These requirements would encourage innovation and emerging technologies and have the additional benefit of providing a way to narrow what would otherwise be very broad categories of funding eligibility This targeted approach will more successfully foster greater economic growth in Iowa by focusing limited resources on supporting successful innovations and bringing emerging technologies to market. Categories that Do Not Promote Clean Energy or Innovation Should Not Be Eligible for the Program We do not see any justification for the inclusion of natural gas expansion projects. It does not represent innovation, emerging technology, or clean energy. This program should spur market innovation and new technologies, and natural gas expansion does not accomplish that. The industry eco-system development projects connection to innovation and emerging clean energy technologies are unclear. We think the program would be stronger if it is focused	9/11/2020 1 48 PM

	on innovative and emerging technologies, and this category seems too broad and attenuated from innovation and emerging technologies to justify its inclusion without significantly more detail. Solar Projects Should Not Be Removed from the Program Unless Changes to the Solar Tax Credit Are Passed. The program revisions eliminate solar projects from the list of eligible projects. We have heard that this change is because of the possibility for financing these projects through other means. A critical part of successful solar financing has been state tax credit policy, which has helped the economic viability of thousands of projects in Iowa We have identified several important changes to the existing state solar tax policy framework that would be critical to continued solar development in Iowa. Specifically, we recommend • Decouple Iowa's Solar Tax Credit from the Federal ITC – This would provide continuity and certainty to Iowa's solar tax credit and remove the unpredictability of having the credit tied to policy that is reliant on Congressional action • Increase the State Solar Tax Credit Program Cap – Iowa's tax credit has been successful in helping projects get built. However, the tax credit has frequently been obligated at the beginning of the year to clear projects on the wait list. Increasing the state's tax credit program to $10 million will help alleviate the waitlist issue and get projects funded on a more efficient timeline • Clear the Waitlist A one-time appropriation to clear the waitlist of the state tax credit could ensure projects that are already up and running receive their promised funding, while providing a clear signal to those considering a project that resources are available as part of the ongoing program. Without the recommended changes to tax credit policy, we think solar projects should still be eligible under the revolving loan program Again, we appreciate the opportunity to provide feedback on IEDA's framework for the Energy Infrastructure Revolving Loan Program as a successor to the Alternate Energy Revolving Loan Program. If the program emphasizes adoption of emerging clean energy technologies and facilitation of innovation, it will foster greater economic growth and maintain Iowa's clean energy leadership by accelerating the transition of successful innovations and emerging technologies to market adoption. We welcome the opportunity to discuss these issues further and provide any assistance that we can to help create a program that continues our innovation and leadership in clean energy.	
2	The Iowa Alternate Energy Revolving Loan Program program has similarities to the USDA Rural Economic Development Loan & Grant Program (REDL&G) There may be some features in there that would be good to explore and make them work in unison where possible On the consumer side, it would be good to have a discussion around a "Green Bank" concept. It may not be 0%, but they can be designed to be market friendly and have a public-private partnership that expands economic benefits across the state. In CT every $1 of investment results in a $6 economic impact. You can see the links for green banks in CT, NY, and Australia. - https //ctgreenbank.com/about-us/ - https //greenbank.ny.gov/About/Approach - https //www.cefc.com.au/case-studies/ Another proposal the Conservative Energy Network has been discussing comes from Rod Richardson and Wayne Winegarden regarding tax exempt bonds and loans for Corona virus recovery, but some of the principles may also work for Iowa long-term. A good write up on that is here. https //reason.org/commentary/a-better-alternative-to-more-coronavirus-stimulus-spending-and-loan-programs/	9/11/2020 12 48 PM
3	We hope the purpose of a revised program remains consistent with the original in terms of a focus on clean energy that brings prosperity and resilience to all Iowa communities and counties This would suggest certain principles, for example, - a focus on clean energy projects over fossil fuels (natural gas infrastructure is indeed a challenge in parts of Iowa, but the solutions can be found in innovative clean energy approaches, which is exactly what a program like this could stimulate, rather than building stranded asset fossil fuel infrastructure with very high potential opportunity cost) - a focus on local ownership and projects that bring jobs and returns over extended time to small businesses, institutions, and communities throughout Iowa (Investor-owned utilities and larger corporations have plenty of access to capital and economic advantage and should not be eligible for this program, while nonprofits, local governments and schools should be eligible along with small business, especially if the loans are partially forgivable) - locally owned and managed distribution grids (generally managed by consumer-owned utilities such as co-ops and municipals) with the ability to island from the transmission grid and self-serve the customer base with clean energy generation and storage are the foundation of resilience for Iowa communities in a future when both natural and cyber disasters are of growing concern And finally, a critical issue facing Iowa is the growing energy burden on lower-income households. Energy burden as growing before the pandemic, and has reached crisis proportions now and into the foreseeable future, as indicated by accounts in arrears, the accelerating shutoff crisis, and stories from every corner of the state. Some may say a program such as this is not designed to address a problem such as energy burden, or, one could ask what aspects of energy innovation, of infrastructure, of local ownership a local clean energy development hold potential to positively impact the energy	9/11/2020 9 18 AM

	burden problem, and focus resources there. We are a creative and thoughtful state, we can find solutions.	
4	Although IEC agrees with the overall purpose, we believe the purpose and the efforts supported by the EIRLP need to be consistent and supportive of efforts to address climate change. The derecho has shown a clear need to address infrastructure improvements through a *resiliency lens*.	9/9/2020 7 33 AM
5	I would recommend focusing on new financing and partially forgivable loans/grants that will assist in the development of infrastructure in the areas of renewable natural gas production from biogas produced with anaerobic digesters. I would especially recommend focusing on virtual pipeline and pipeline interconnections for renewable natural gas for use as a transportation fuel. Additionally, prioritizing financing options and forgivable loans/grants for biogas from anaerobic digesters that can be used by the ethanol and bio-diesel industries in Iowa to improve their CO2 emissions which will improve their carbon intensity score under California's (as well as other states) Low Carbon Fuel Standard. Finally, in the area of eco-system development I would suggest focusing on loans and partially forgivable loans/grants which help improve the value of biogas and renewable natural gas produced from on-farm anaerobic digesters that use biomass produced by our farmers and agricultural producers (ie cover crops, crop residue, and other sources of biomass as defined by the EPA) These types of investments by the state of Iowa and the Iowa Energy Center through the Energy Infrastructure Loan Program will significantly enhance the value proposition of biogas and renewable natural gas produced by farms, municipalities, and private industry while creating new job opportunities and career paths. Especially as it relates to the anaerobic digester industry, and biogas/renewable natural gas production, the Energy Infrastructure Loan Program can be an excellent resource to bring together many different industries in Iowa to create jobs, develop new industries, improve water and air quality, improve soil health and the resiliency of the land for the production of energy, food, feed, fuel, and fiber.	9/8/2020 5.09 PM
6	Who will be eligible for the revised program? Regarding utility infrastructure improvements (grid modernization, rural infrastructure), there could be a good fit for Advanced Metering Infrastructure (smart meter) investments because these would have resiliency benefits as well as future utility resource planning and rate-making benefits However, utilities have alternative sources of funds for making such improvements, through muni bonds, NRECA, USDA programs, and customer rates. For natural gas expansion, transmission expansion, these investments regulated by FERC, and the process for approval could be lengthy process so that the changes in costs over the project period might make them less desirable for revolving loan funds. To me, applying loan funds for short-medium duration projects (1 year to 5 years?) focusing on distributed storage and generation solutions and municipal water/wastewater infrastructure, especially focusing on resiliency, makes a lot of sense, both to invest in rural distributed infrastructure (community infrastructure) and to invest in local Iowa entrepreneurs to develop these solutions.	9/1/2020 11 52 AM
7	It is my belief that an easy to access loan fund would garner attention from public sector facilities throughout Iowa. As utility incentives have dried up, financing alternatives are in demand where the energy/maintenance savings would cash flow the re-payment to the state of Iowa. In the past Iowa code authorized borrowing if a qualifying energy study was completed that showed that energy savings would make the payments but there was no loan fund so access to money was not easy enough even with the authorization to borrow that was similar to a bond referendum. We/I would fully support the development of access to a financing tool from IEDA.	9/1/2020 7 15 AM
8	None	8/31/2020 8 31 AM
9	Applaud the Authority for reviewing and updating programs. I Like the idea of helping finance projects that demonstrate emerging technologies and processes rather than just serving as alternative financing for existing technology that is difficult to finance in private sector markets.	8/28/2020 11 15 AM
10	The biggest problem with the existing loan program is that it is only available on a quarterly basis. If it was available when applied we would use it with every project that we have. We can not encourage a customer to wait until a later date. We would like a simpler process to check eligibility and verification that the customer is accepted even if the funds won't be released until a later date. I could use more information on the aforementioned industry areas and how they would be considered for this program. Some of these sections like grid modernization could absorb all the funds. What type of modernization is being considered? Natural Gas Expansion? More explanation could be useful.	8/26/2020 7 03 PM

11	I support revolving loan funds that return loan re-payments back to the fund principle, similar to Iowa's rail revolving loan fund In addition, I believe creating a modern energy infrastructure in Iowa is so important to future economic growth, the legislature should consider increasing funding to this program in absolute dollars, but also support increased forgivable loans and grants (similar to the CAT program) that would leverage significant private investment in Iowa. Iowa is in competition with surrounding states to maintain it's leadership in clean energy and this type of program would be a great edition the policy toolbox working towards clean energy leader nationally. Powering up Iowa for the 21st Century would be a great, forward thinking success for the Reynolds administration.	8/24/2020 10 31 AM
12	Public / Private collaborations on renewable energy development and infrastructure will be an important early opportunity for the new fund The program should look for opportunities for high leverage of other private and public funds.	8/22/2020 3 56 PM
13	The max loan amount currently listed for larger industrial plants would need to be significantly increased to move the needle. In addition to the max amount--the current language also indicates that is the max amount per company. This should be a facility level dollar amount as large companies have many operations throughout the state. The bigger projects like CHP for many facilities is 20M+ so borrowing 1M with what could be fairly time consuming process isn't appealing. If the dollar amount is much higher, then it would make it worthwhile.	8/20/2020 3 29 PM

IOWA ENERGY CENTER LOANS
PROJECT REPORT

IOWA economic development

Applicant: **Lucky Properties LLC**
Project Type: Solar
Project Size: 38 kW
Loan Request: $49,000
Recommendation: Deny
Board Decision: October 29, 2020

ATTACHMENT C

Summary

Lucky Properties LLC is a single-member LLC that owns three rental residential properties and proposes installation of solar at each property.

Funding Sources

Financing

Source	Status	% of Eligible Project Cost	Amount
Iowa Energy Center AERLP	Loan request	38%	$49,000
Home equity line of credit	Secured	31%	$39,647
Loan	Secured	31%	$40,000
		Total	$128,647

Incentives

Name	Source	Estimate
Investment Tax Credit (ITC)	Federal	$28,302
Solar Energy System Tax Credit	State	$14,151
	Total	$42,453

Loan Term

The applicant requested a loan term of 9.5 years. Staff analysis of the cash flow factors in the project installation cost, incentives, estimated cost savings and other financing. With these figures and plans for this project, it cannot break even within a 20-year period. This project presents a higher risk for repayment.

Collateral

An irrevocable letter of credit has been pledged as collateral. An irrevocable letter of credit is an official correspondence from a bank, requested by the applicant. It assures that the bank will pay the loan if the borrower fails to pay.

ATTACHMENT D

ACTION

REPORT
IOWA ENERGY CENTER BOARD
OCTOBER 2020

From: Kristin Hanks-Bents

Subject: Energy Infrastructure Revolving Loan Program Proposal

The Alternate Energy Revolving Loan Program (AERLP) provides zero interest loans for the development of alternate energy production projects, including solar, wind, biomass, and combined heat and power. The AERLP's statutory language remains largely unchanged since the beginning of the program in the late 1990s. An exploratory committee of the Iowa Energy Center board reviewed the current program and surveyed energy stakeholders.
The committee's recommendation was to repurpose the loan program to adapt to the current marketplace. A proposal has been submitted for review by the Governor's office to advance the goal of encouraging development of energy infrastructure projects that advance the key focus areas of the Iowa Energy Plan and incentivize innovative projects and approaches to improve resiliency, reduce costs for Iowa ratepayers and help grow Iowa businesses.

Proposed Motion: **Authorize IEDA staff to propose legislation to repurpose the Alternate Energy Revolving Loan Program to the Energy Infrastructure Revolving Loan Program, pending approval from the Governor's office**

Submitted By: Kristin Hanks-Bents

Attachments: Proposal Summary

Background (e.g. current law or status): In 2017, the Iowa Legislature transferred the Iowa Energy Center ("Energy Center") to IEDA, along with the Alternate Energy Revolving Loan Program (AERLP). The program provides zero interest loans for the development of alternate energy production projects, including solar, wind, biomass, and combined heat and power. The maximum loan amount is $1 million and the maximum loan term is 20 years (Iowa Code sec 476.46) The AERLP's statutory language remains largely unchanged since the beginning of the program in the late 1990s. The current statutory framework is not responsive to the current energy market and does not leverage funds in a way that maximizes the investment of ratepayer dollars. Many of the loans in the AERLP portfolio have been issued for projects that use established technology and can readily find other financing sources. A variety of energy infrastructure projects and technologies are currently unable to utilize assistance from the AERLP unless coupled with energy generation, such as battery energy storage, anaerobic digesters, and grid modernization. An exploratory committee of the Iowa Energy Center board, which includes energy industry stakeholders, was convened and reviewed the current program and surveyed energy stakeholders The committee's recommendation was to repurpose the loan program to adapt to the current marketplace.

Solution: IEDA proposes repurposing the AERLP to the Energy Infrastructure Revolving Loan Program (EIRLP) and amending Iowa Code sec 476 46 as follows.

1. Eliminate energy production requirement by removing references to alternate energy production facilities and small hydro facilities and create a new definition for eligible projects
2. Allow IEDA and the Energy Center to charge interest on loans to assist with funding new loans and to fund promotion and administration of the fund. IEDA proposes that no more than 50% of the total interest accrued in the fund could be used for promotion and administration.
3. Allow IEDA and the Energy Center to determine the amount and terms of loans.
4. Allow partially forgivable loans.
5. Prohibit certain project types including personal owner-occupied residences and water and wastewater treatment projects.
6. Remove statutory language requiring that interest rate shall be accelerated for delinquent payments – Iowa Code sec. 476.46(2)(e)"1"
7. Allow administrative fees to be charged and used for administration of the Program

Goal. Encourage development of energy infrastructure projects that advance the key focus areas of the Iowa Energy Plan and incentivize innovative projects and approaches to improve resiliency, reduce costs for Iowa ratepayers and help grow Iowa businesses.

Fiscal and Jobs Impact: IEDA anticipates this would have a neutral or positive fiscal impact This proposal would repurpose the existing loan balances and loan payments to AERLP to provide funding Additionally, by allowing interest and administrative fees to be charged and used for promotion and administration, it could reduce some of IEDA's costs in administering the loan program. IEDA anticipates this proposal may have a positive impact on jobs because new loans will finance construction projects.

ATTACHMENT E

ACTION

REPORT
IOWA ENERGY CENTER BOARD
OCTOBER 2020

From: Iowa Energy Center

Subject: Grant Modification Request 20-IEC-001

Background: The University of Northern Iowa (UNI) has requested a budget modification, no-cost extension and change to their originally named project consultant for award 20-IEC-001 *Utility Workforce Development and Strategy Planning*.

The budget modification is not considered substantial and therefore meets the requirements for staff approval. IEDA staff has approved this budget modification. The no-cost extension is the first request, and does not exceed one year, and therefore meets the requirements for staff approval. IEDA staff has also approved this no-cost extension.

The request to change the named project consultant requires Iowa Energy Center Board approval. UNI would like to change the named project consultant to SmartChoice Consulting. This firm has the experience necessary to carry out the tasks required to complete the project. The consultant will also take on the responsibility of conducting interviews while a UNI staff member is out on maternity leave. This change will allow forward motion in UNI staff member's absence and ensure that the project in completed in the time allotted.

Recommendation: Staff recommends approving the amendment to 20-IEC-001, allowing UNI to change the consulting partner to SmartChoice Consulting.

Proposed Motion: **Approve the Amendment to 20-IEC-001**

Submitted By: Amber Buckingham

Attachments: University of Northern Iowa Amendment Request

October 19, 2020

Ms. Amber Buckingham
Iowa Economic Development Authority 1963
Bell Avenue, Suite 200
Des Moines, Iowa 50315

RE: No Cost Extension Request for Grant #20-IEC-001, *Utility Workforce Assessment & Strategy Planning Grant*

Greetings,

Please accept this letter as a formal request to extend the period of performance for the above referenced grant project from the current expiration date of 02/15/2021 to 06/30/2021. The project timeline needs to be extended due to some implementation delays caused by the COVID-19 pandemic. Below is a revised project timeline for your consideration:

Project Task	Year	Dates	Deliverables	Verification Model
Phase I: Quantitative Research – Online Survey	2020	March - Nov 2020	A final report including an exec summary and aggregated findings.	Receipt/acceptance of final report.
Phase II: Qualitative Research – In-depth interviews	2020 - 2021	Dec 2020 – Feb 2021	A final report including an exec summary and aggregated findings.	Receipt/acceptance of final report.
Workforce Strategy Plan Development	2020	March – June 2021	Final Workforce Strategy Plan, Implementation plan & Governance plan	Receipt/acceptance of Workforce Strategy Plan

In addition, UNI is also requesting to remove the Iowa Association of Municipal Utilities (IAMU) as a collaborating consultant and replace IAMU with Curtis Dean from SmartChoice Consulting. As the project progressed it became evident that IAMU was going to experience difficulty in completing their project elements thus necessitating a change in consultant to maintain forward progress on the project. In addition to performing the original IAMU tasks, SmartChoice will also conduct some of the interviews that were originally going to be carried out by UNI's IDM staff. This added assignment to the consultant's workload is necessary because the IDM staff originally tasked with the interviews will be temporarily out for maternity leave. This change in project assignment will require the reallocation of some funds from the salary and fringe benefit line into to consulting services. A revised budget sheet is attached for your review and approval.

This no cost extension request and consultant change will not change the original project objectives.

If you have any technical/project content questions please reach out to Project Director Christy Ryken at Christy.ryken@uni.edu (319-273-7314). If you have any contractual or financial questions please contact Tolif Hunt, Director Research & Sponsored Programs at tolif.hunt@uni.edu (319-273-3025).

Sincerely,

Tolif Hunt
Director Research & Sponsored Programs

CC: Ms. Christy Ryken

UNI Project Number: 6558 **Sponsor ID #:** 20-IEC-001

PI/PD Christy Ryken

Title Utility Workforce Assessment & Strategy Planning

Sponsor Iowa Economic Development Authority

Date of Request 10/19/2020

IEDA Budget

Description	Original Budget	Budget Adjustment	Revised Budget	Notes
Salaries & Wages	$ 70,332 00	$ (1,500.00)	$ 68,832 00	Move funds to consulting line
Fringe Benefits	$ 30,162.00	$ (645 00)	$ 29,517 00	Move funds to consulting line
Travel (Domestic)	$ 2,250 00		$ 2,250 00	
Materials & Supplies			$ -	
Other Direct Costs				
Consulting Fee, IAMU	$ 5,000 00	$ 2,145.00	$ 7,145 00	Replace IAMU with SmartChoice Consulting
Subtotal Direct Costs	**$ 107,744.00**	**$ -**	**$ 107,744.00**	
Indirect Costs, 20%	$ 21,549 00	$ -	$ 21,549.00	
Total Project Budget	**$ 129,293.00**	**$ -**	**$ 129,293.00**	

UNI/Cost Share Budget

Description	Original Budget	Budget Adjustment	Revised Budget	Notes
Salaries & Wages	$ 7,759 00		$ 7,759.00	
Fringe Benefits	$ 3,515.00		$ 3,515 00	
Travel (Domestic)	$ -		$ -	
Materials & Supplies				
Other Direct Costs				
Consulting Fee, IAMU				
Subtotal Direct Costs	**$ 11,274.00**	**$ -**	**$ 11,274.00**	
Indirect Costs, 20%	$ 2,255.00	$ -	$ 2,255.00	
Total Project Budget	**$ 13,529.00**	**$ -**	**$ 13,529.00**	

Total Project Budget

Description	Original Budget	Budget Adjustment	Revised Budget	Notes
Salaries & Wages	$ 78,091.00	$ (1,500 00)	$ 76,591 00	
Fringe Benefits	$ 33,677 00	$ (645.00)	$ 33,032.00	
Travel (Domestic)	$ 2,250 00	$ -	$ 2,250 00	
Materials & Supplies	$ -	$ -	$ -	
Other Direct Costs	$ -	$ -		
Consulting Fee, IAMU	$ 5,000.00	$ 2,145 00	$ 7,145.00	
Subtotal Direct Costs	**$ 119,018.00**	**$ -**	**$ 119,018.00**	
Indirect Costs, 20%	$ 23,804.00	$ -	$ 23,804.00	
Total Project Budget	**$ 142,822.00**	**$ -**	**$ 142,822.00**	

ATTACHMENT F

ACTION

REPORT
IOWA ENERGY CENTER BOARD
OCTOBER 2020

From: Iowa Energy Center

Subject: Predicting Battery Lifetime with Early-Life Data for Grid Applications

Background: Iowa State University (ISU) has requested a budget modification for their project titled *Predicting Battery Lifetime with Early-Life Data for Grid Applications.* The budget modification would allow the Recipient to create a subaward for their named project partner, Iowa Lakes Community College (ILCC).

The Principal Investigator (PI) has requested the creation of this subaward in order to transfer a portion of the responsibility for battery purchase, testing and data collection from ISU to ILCC. This will allow ILCC students to gain more hands-on experience in testing and data-collection, which will strengthen the project's ties to workforce development. This modification will require moving project funds from salaries and wages, fringe benefits, supplies and materials and tuition to the subrecipient category. This modification does not change the overall scope of work, or the overall project budget. This request is considered substantive (over $10,000) and therefore requires Board approval.

Recommendation: Staff recommends approving the amendment to Predicting Battery Lifetime with Early-Life Data for Grid Applications; moving the requested funds from salaries and wages, fringe benefits, supplies/materials, and tuition to the subrecipient category.

Proposed Motion: **Approve the Amendment to Predicting Battery Lifetime with Early-Life Data for Grid Applications**

Submitted By: Amber Buckingham

Attachments: Iowa State University Budget Modification Request
Iowa Lakes Community College Letter of Commitment

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Office of Sponsored
Programs Administration
1138 Pearson Hall
505 Morrill Road
Ames, Iowa 50011-2103
Phone: 515 294-5225
Fax: 515 294-8000

10/22/2020

IOWA ECONOMIC DEVELOPMENT AUTHORITY
1963 Bell Avenue, Suite 200
Des Moines, IA 50315
Office: 515.348.6222
Amber.Buckingham@IowaEDA.com

Proposal Title: Predicting Battery Lifetime with Early-Life Data for Grid Applications

Rebudget Request

Dear Ms. Amber Buckingham:

On behalf of Iowa State University and Dr. Chao Hu, please find attached a rebudget request for Iowa Energy Center Competitive Grant Program Grant 364821. We request this rebudget to add a subaward to Iowa Lakes Community College.

The funds subcontracted to Iowa Lakes will be used to purchase the battery testing equipment (i.e., a 124-channel battery tester and accessories). The equipment will be used to set up a fully functional 128-channel battery testbed at Iowa Lakes. The benefit is two-fold. *First*, the long-term cycling tests using the battery testbed will ensure the Iowa State University (ISU) team has the cycling data needed for building machine learning models for early life prediction. *Second*, the battery testbed will allow the Iowa Lakes and ISU teams to create a storage training pilot program that consists of 1) a training hub on battery testing at Iowa Lakes and 2) a short course on battery modeling. This training pilot program will contribute to the focus area of Energy Workforce Development in the Iowa Energy Plan, as described in the full application.

	Original Request	Rebudget Request
Personnel	$135,043	$119,755
Fringe Benefits	$15,435	$13,919
Materials and Supplies	$5,000	$4,351
Sub Contract	$0	$25,000
Tuition	$68,578	$61,031
Indirect Costs	$56,014	$56,014
Total	$280,070	$280,070

A letter of commitment from Iowa Lakes Community College, including a detailed budget, budget justification and scope of work, is attached. Please let us know if you have any questions. Thanks for your time and consideration.

Sincerely,

Digitally signed by Nichole Richter
Date: 2020.10.22 08:07:50 -05'00'

Nichole Richter, MS, CRA
Pre-Award Administrator
grants@iastate.edu

IOWA LAKES
COMMUNITY COLLEGE

19 S. 7TH STREET • ESTHERVILLE, IA 51334 • 712-362 0494 • FAX 712 362-0476

Letter of Commitment **21 October 2020**

Project Title: GS148528 Predicting Battery Lifetime with Early-Life Data for Grid Applications

Prime Sponsor: Iowa State University

Subrecipient Institution: Iowa Lakes Community College

EIN: 42-0929936 **DUNS:** 879330702

Subrecipient Investigator: Chad Tischer

Proposed Project Dates: The project is 2 years in duration and is forecast to start in January 2021.

Statement of Work: In collaboration with Iowa State University, Iowa Lakes Community College will participate in battery life testing at its Sustainable Energy Resources and Technologies center, operating and maintaining a battery testing platform to collect battery life cycle data. The test set will be run and monitored by the Engineering Technology program instructor and students as a learning platform. The collected cycling data will be used by the ISU team to build machine learning models for early battery cell life prediction.

Total Costs: $25,000

Budget Justification: The funds subcontracted to Iowa Lakes will be used to purchase the battery testing equipment (i.e., a 124-channel battery tester and associated equipment/accessories). The battery tester will be used to perform long-term cycling tests at Iowa Lakes Community College.

Budget: See Attachment 1.

The appropriate programmatic and administrative personnel of subrecipient institution involved in this grant application are aware of the prime sponsor's consortium policy and are prepared to establish the necessary inter-institutional agreements consistent with that policy.

Subrecipient also certifies, to the best of subrecipient institution's knowledge, that (1) financial disclosures have been made related to the activities for all investigators who may be funded by or through a resulting agreement; and, (2) all identified conflicts of interest have or will have been satisfactorily managed, reduced or eliminated in accordance with subrecipient's or prime recipient's conflict of interest policy prior to the expenditure of any funds under a resulting agreement.

10/21/2020

Robert A. Leifeld, Executive Vice President (Date)

Attachment 1.

Budget for GS148528 Predicting Battery Lifetime with Early-Life Data for Grid Applications

Line Item No.	Model	Description	Unit Price	Quantity	Amount
1	CT-4008T-5V6A	Battery Testing Equipment 4000 series 5V6A model. Data acquisition frequency 10Hz, accuracy 0.05%, 3 current output ranges: 100mA, 3A and 6A. AC 110V input.	$1,150	16	$18,400
2	CT-ZWJ-4'S-T	Controller for BTS4000		2	$0
3	19'-LMJ	19 inch shelf/rack		2	$0
4	Accessories	128 pcs of 3-m cables with polymer cell clamps. 128 pcs of 3-m cables with alligators. 128 pcs of 3-m cables with coin cell clamps. Network switch, power cords, Ethernet cables, etc.			$0
5	Shipping	By Sea, Door to Door (460 Kg)			$2,000
6	Shop equipment and consumables	Wire, terminations, print filament and accessories, termination kit			$4,800
				Total Budget	$25,000

新威 NEWARE **Neware Technology Limited** www.newarebattery.com
22C, YHC Tower, No 1 Sheung Yuet Road, Kowloon Bay, HongKong

Quotation

Buyer: IOWA LAKES COMMUNITY COLLEGE **Add:** 2421 7th Avenue South, Estherville, Iowa, 51334, USA **Attn:** Dan Lutat **Tel:** 712.362.8374	**No.:** **Date:**	2020101002r October 10, 2020

Currency: USD

No.	Model	Description	Unit Price	Quantity	Amount
1	CT-4008T-5V6A	Battery Testing Equipment 4000 series 5V6A model. Data acquisition frequency 10Hz, accuracy 0.05%, 3 current output ranges: 100mA, 3A and 6A. AC 110V input	~~1,300~~ 1,150	16	18,400
2	CT-ZWJ-4'S-T	Middle machine(controller) for BTS4000	300	2	0(free)
3	19'-LMJ	19 inches shelf/rack	300	2	0(free)
4	Accessories	128 pcs of 3-m cables with polymer cell clamps. 128 pcs of 3-m cables with alligators. 128 pcs of 3-m cables with coin cell clamps Network switch, power cords, Ethernet cables, etc.			0(free)
5	Shipping	By sea, door to door(about 460kg with package)			2,000
				Total	20,400

Payment Terms: 100% payment by T/T in advance

Shipment Date: 45 working days after down payment

Banking Information:

BENEFICIARY: Neware Technology Limited
Bank: Bank of China (Hong Kong) Limited
Add: 1 Garden Road, Hong Kong.
USD Account No.: 012-695-0-800787-2
SWIFT Code: BKCHHKHH

Buyer: Dan Lutat
Authorized signer

Seller: Chris Chen (chris@newarebattery.com, +86 18565887116)
Authorized signer

ATTACHMENT G

ACTION

REPORT
IOWA ENERGY CENTER BOARD
OCTOBER 2020

From: IEDA Legal

Subject: Loan Committee Size and Appointment to Committee

Each year, the Board determines the size of the Loan Committee and appoints members to the committee. At its September 2020 meeting, the Board appointed members to a three-person loan committee through June 30, 2021. Since that meeting, Troy DeJoode has been formally appointed to the Board and is willing to serve as an additional member of the loan committee.

Proposed Motion: Increase the size of the loan committee from three to four and appoint Troy DeJoode to the committee through June 30, 2021.

Submitted By: Lisa Connell

ATTACHMENT H

Synapse
Energy Economics, Inc.

Iowa Energy Storage Study:
Market Analysis and Potential Economic Impact

Iowa Energy Center Board Meeting

October 29, 2020

Steve Letendre, PhD

 |

Agenda

- Project team
- Project overview
- Storage technologies
- Market analysis and deployment scenarios
- Economic development assessment
- Barriers, opportunities, and solutions
- Questions

Project Team

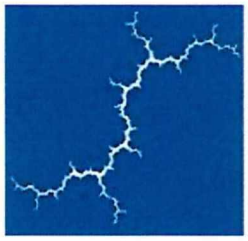
Project Team

Synapse Energy Economics, Inc.

- Steve Letendre, PhD
- Caitlin Odom
- Ben Havumaki
- Erin Camp, PhD
- Asa Hopkins, PhD

Slipstream

- Scott Hackel
- Maddie Koolbeck
- Melanie Lord
- Lee Shaver
- Xiaohui (Joe) Zhou



Synapse
Energy Economics, Inc.

slipstream

Project Overview

Project Overview

1: Iowa-specific technology overview

- Provide an overview of the state of energy storage technologies and prioritize which are most appropriate to Iowa, and why.

2: Market analysis and deployment scenarios

- Identify the key storage market segments and develop two (high and low) plausible energy storage deployment scenarios in the state.

3: Economic development assessment

- Use scenarios from Task 2 to assess the economic development potential of storage in Iowa using an industry-leading economic input-output model to measure the direct and indirect economic development impacts of an expanding storage industry in the state.

4: Identification of barriers, opportunities, and solutions

- Identify barriers and opportunities for growth. This includes evaluating regulatory barriers to the deployment of storage resources and electric vehicle infrastructure within the state, or that could slow future growth. Identify policy solutions and incentives to overcome those barriers, along with best practices that will enable increased deployment.

Storage Technologies

Energy Storage Technologies

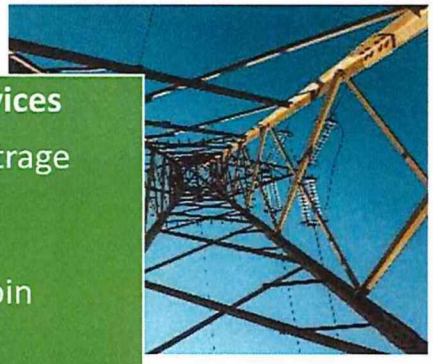
Storage Type	Description
Batteries	Battery storage, also referred to as electrochemical energy storage, stores electricity as chemical energy in its active materials.
Hydrogen	Hydrogen can be used as a fuel for a variety of applications. One application is to use hydrogen in a fuel cell to generate electricity.
Thermal	Thermal storage involves heating or cooling any type of material with high specific heat and discharging the medium at a later time.
Mechanical	Mechanical storage uses physical-mechanical processes to store energy. Pumped hydro storage (PHS) is an example of this approach.
Compressed Air	Compressed air energy storage (CAES) technology uses compressors powered by electricity to compress air until it is ready to be injected and stored in underground reservoirs. When the compressed air is released, it can spin a turbine to generate electricity.

Grid-Scale Battery Storage

- Global stationary battery storage deployments are poised to expand from 9 GW as of 2018 to 1,095 GW by 2040. Bloomberg New Energy Finance projects the anticipated 122-fold growth in stationary energy storage over the next two decades will require $662 billion in new investment.
- Exponential growth in battery electric vehicle (EV) adoption expected. In 2018 the global EV fleet totaled 5 million and is expected to grow 25 times larger by 2030.

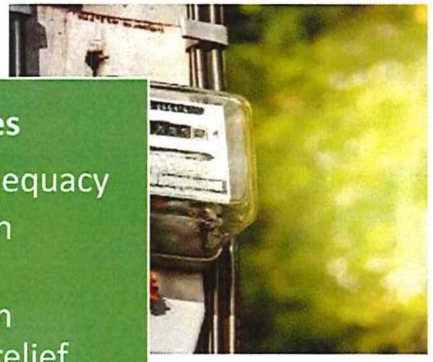
Market Analysis and Deployment Scenarios

Energy Storage Market Opportunities



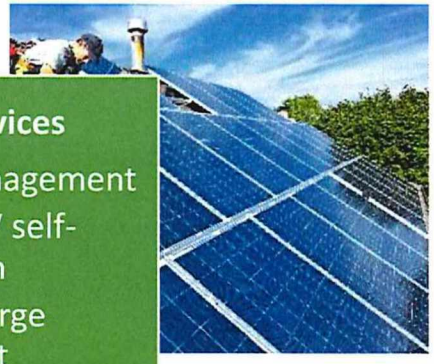
RTO/ISO services

- Energy arbitrage
- Frequency regulation
- Spin/non-spin reserves
- Voltage support
- Black start



Utility services

- Resource adequacy
- Transmission deferral
- Transmission congestion relief
- Distribution deferral



Customer services

- TOU bill management
- Increased PV self-consumption
- Demand charge management
- Backup power

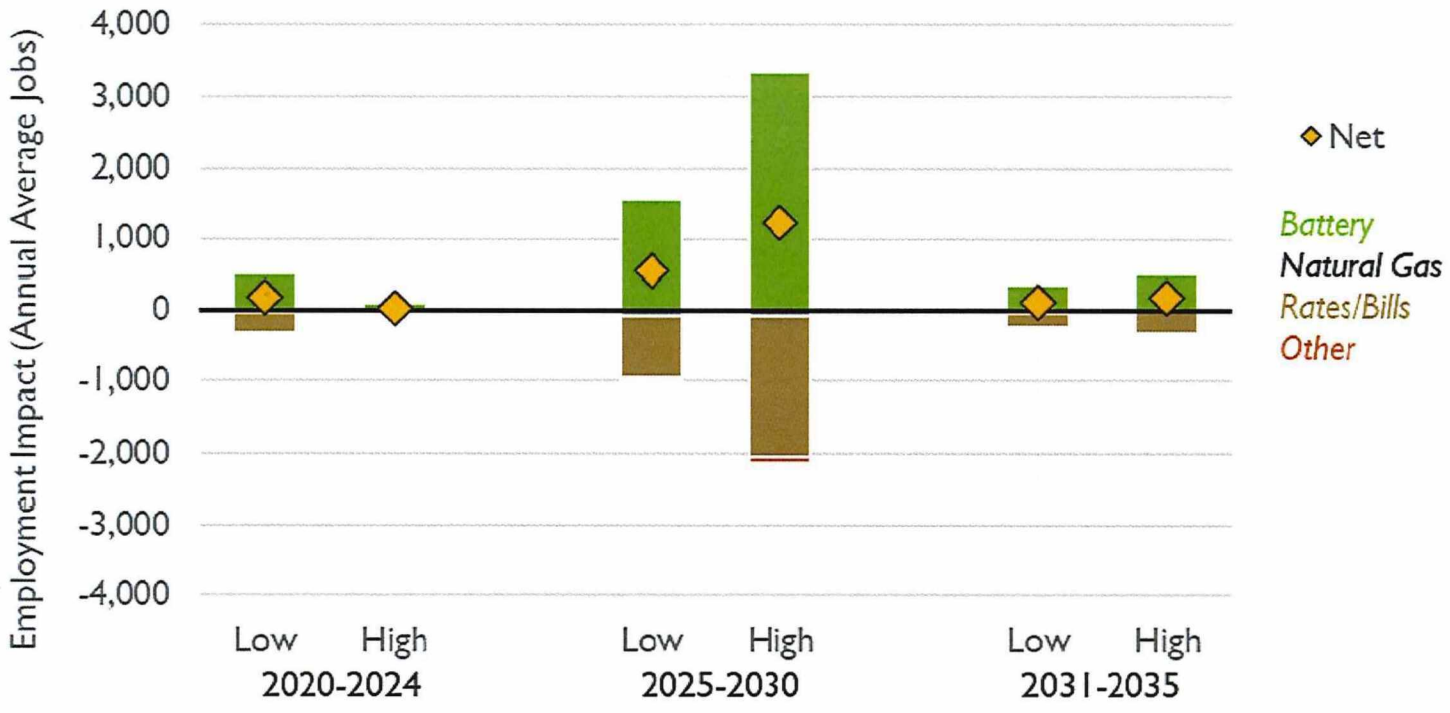
Storage Trajectories in Iowa

Scenario	Projected Storage Capacity (MW)				Projected Storage Energy (MWh)			
	2020	2025	2030	2035	2020	2025	2030	2035
High (Storage Generation + BTM)	1	60	1,900	2,130	3	220	7,510	8,320
Low (Load + BTM)	1	240	1,090	1,260	3	940	4,290	4,810

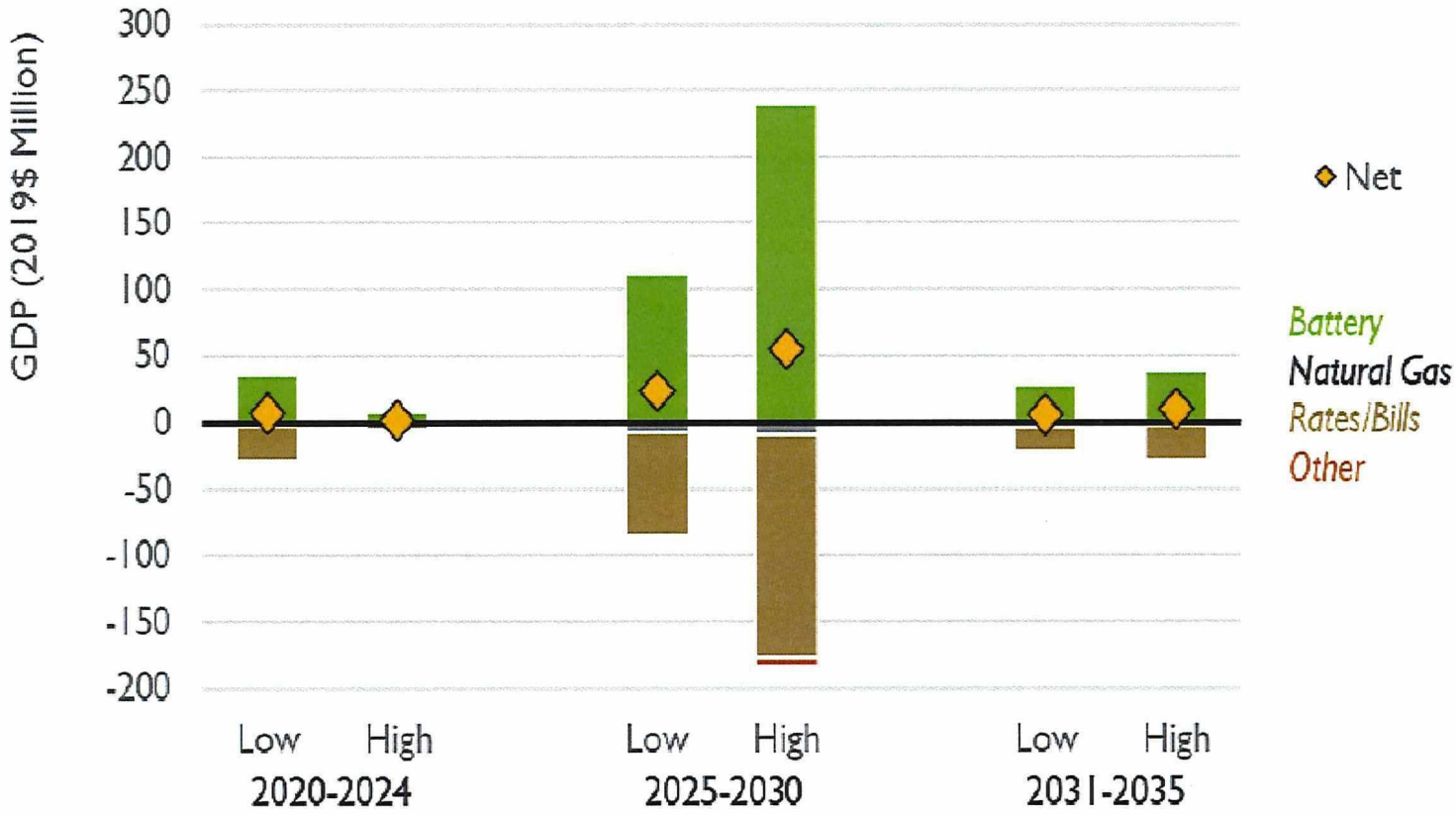
- Data from a 2019 study of the energy storage potential in Colorado were adapted for Iowa.
- Energy storage deployments are projected to range from just over 1 GW in 2035 to over 2 GW.
- We project that over 90 percent of energy storage systems will be deployed in utility-scale FTM applications. Storing curtailed wind energy for use at a later time could lead to $25.6 million annually in increased revenue to wind plant owners.

Economic Development Assessment

Economic Impact Analysis-Job Impacts

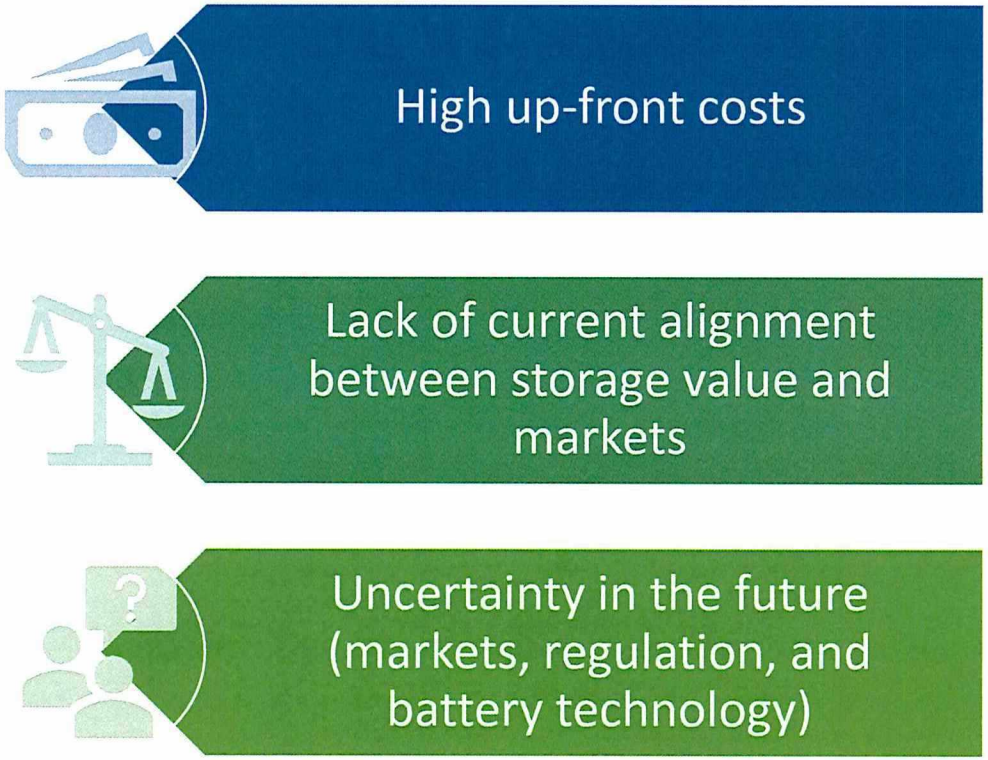


Economic Impact Analysis-GDP Impacts



Barriers, Opportunities, and Solutions

Barriers to Battery Storage Market Growth



Opportunities to Promote Battery Storage Market Growth

Policy type	Brief description	States with this and other policies	States with this policy only	Total
Procurement targets	Requires utilities to install specific amounts of energy storage	CA, CO, MA, NJ, NV, NY, OR		7
Regulatory requirements	Varying requirements for utilities to evaluate and/or plan for energy storage installations, among others	AZ, CA, CO, HI, MA, MD, MO, NJ, OR, VA, VT, WA	CT, ME, MN, NC, NM, TX	18
Demonstration programs	Funding for, state-led pilots of, or regulatory allowance for, individual storage projects	MA, MD, NH, NY, VA, WA	UT	7
Financial incentives	Establishment of discount rates, net metering allowances, tax rebates, or cash payments for BTM storage installations	AZ, CA, HI, MA, MD, MO, NH, NV, NY, OR, VA, VT	SC	13
Consumer protection	Provides interim allowance for BTM energy systems while standards are being developed	CO, NV		2

Source: Pacific Northwest National Laboratory - Energy Storage Policy Database.

Questions

The Iowa Energy Plan sparked great energy discussions among stakeholders across the state and throughout the industry. Technology-based energy research and development is one of seven key areas of the plan where the energy storage conversation began.

Source: Iowa Economic Development Authority, Iowa Energy Office. May 2019. Energy Storage Action Plan.